

NATIONAL HEALTH AND
MORBIDITY SURVEY 2016:

MATERNAL
AND CHILD
HEALTH

VOLUME TWO : Maternal and Child Health Findings



NATIONAL HEALTH AND MORBIDITY SURVEY 2016 : MATERNAL AND CHILD HEALTH (MCH)

Volume Two : Maternal and Child Health Findings

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The views expressed in this report are those of the authors alone and do not necessarily represent the opinions of other investigators participating in the survey, nor the views or policy of the Ministry of Health.

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TABLES OF CONTENTS

Acknowledgements	vi
List of Tables	viii
List of Abbreviations	xii
IV. Child Health	1
Vaccinations	2
Neonatal tetanus Protection	6
Care of Illness	7
Child Injuries	10
Care of Oral Health	12
V. Nutrition	17
Low Birth Weight	18
Nutritional Status of Children	20
Infant and Young Child Feeding	23
VI. Child Development	29
Developmental Delay	30
Autism	33
Access to Screen Time	35
Early Childhood Care and Education	38
VII. Child Protection	41
Indequate Care	42
Child Discipline	43
VIII. Reproductive Health	47
Antenatal Care	48
Intra-Partum Care	51
Awareness of and Practice of Natural Birthing	54
Post-natal Care	56
Post-natal Depression Screening	58
 List of Appendices	
Appendix 7 : Tables of Findings	61
Appendix 8 : Operational Definition of Variables	233

LIST OF TABLES

Child Health

VACCINATIONS

Table 4.1.2.1	: Sociodemographic profile of successful vs. unsuccessful households	3
Table 4.1.2.2	: Characteristics of children aged 12-23 months	62
Table 4.1.2.3	: Prevalence of children age 12-23 months vaccinated with BCG	63
Table 4.1.2.4	: Prevalence of children age 12-23 months vaccinated with DPT-IPVHib vaccine	65
Table 4.1.2.5	: Prevalence of children age 12-23 months vaccinated with Hep B vaccine	71
Table 4.1.2.6	: Prevalence of children age 12-23 months vaccinated with MMR vaccine	77
Table 4.1.2.7	: Prevalence of children age 12-23 months with verified complete vaccination, unvaccinated and incomplete vaccination against any vaccine preventable childhood disease before the survey and by their first birthday	79
Table 4.1.2.8	: Reasons for incomplete vaccination	81
Table 4.1.2.9	: Prevalence of children age 12-23 months vaccinated against vaccine preventable childhood diseases at private facilities before the survey and by their first birthday	82
Table 4.1.2.10	: Reasons more than half of vaccines were taken at private facilities	83
Table 4.1.2.11	: Source of information on vaccination	84
Table 4.1.2.12	: Vaccine most concerned about	84
Table 4.1.2.13	: Opinion on vaccination	85
Table 4.2.2.1	: Neonatal tetanus protection as seen by percentage of women age 15-49 years with a live birth in the last 2 years who had received anti-tetanus vaccine during their last pregnancy	85
Table 4.2.2.2	: Completed vaccination for Malaysia	87
Table 4.2.2.3	: Completed vaccination by state	89

CARE OF ILLNESS (DIARRHOEA & ACUTE RESPIRATORY INFECTIONS)

Table 4.3.2.1	: Sociodemographic characteristics of children 0-59 months affected by illness	121
Table 4.3.2.2	: Prevalence of children age 0-59 months with an episode of diarrhoea	122
Table 4.3.2.3	: Prevalence of children age 0-59 months with symptoms of acute respiratory infection (ARI)	123
Table 4.3.2.4	: Prevalence of children age 0-59 months reported to have had diarrhoea & symptoms of acute respiratory infection (ARI): either one or both in the last two weeks	124
Table 4.4.2.1	: Sociodemographic characteristics of children age 12-59 months with child injuries	125
Table 4.4.2.2	: Prevalence of child injuries among children age 12-59 months during the last one year	126

Oral Health

Table 4.5.2.1	: Perception on importance of looking after children's oral health	127
Table 4.5.2.2	: Frequency of cleaning/brushing child's teeth or supervision of child's tooth brushing	129
Table 4.5.2.3	: Prevalence of mothers who had ever brought their child for a dental visit	130
Table 4.5.2.4	: Timing of child's last dental visit	131
Table 4.5.2.5	: Opinion on timing of child's first dental check-up	133
Table 4.5.2.6	: Perception of age of a child's first dental visit	135
Table 4.5.2.7	: Willingness to take child for dental treatment upon advice	137
Table 4.5.2.8	: Reasons for not bringing child for dental treatment	139
Table 4.5.2.9	: Prevalence of mothers who had ever received advice from health personnel on looking after child's oral health	141
Table 4.5.2.10	: Child's dental visit in relation to perceived importance of child's oral health	143
Table 4.5.2.11	: Last dental visit in relation to perceived importance of child's oral health	143
Table 4.5.2.12	: Age of child's first dental visit in relation to perceived importance of child's oral health	144

Table 4.5.2.13 :	Willingness to bring child to see dentist in relation to perceived importance of child's oral health	144
Table 4.5.2.14 :	Ever received health personnel's advice on child's oral health in relation to perceived importance of a child's oral health	145

Nutrition

BIRTH WEIGHT

Table 5.1.2.1 :	Mean birth weight among children (below 5 years) by sociodemographic characteristics	146
Table 5.1.2.2 :	Birth weight status among children (below 5 years) by sociodemographic characteristics	148
Table 5.1.2.3 :	Low birth weight classification among children (below 5 years) by sociodemographic characteristics	150

NUTRITIONAL STATUS OF CHILDREN (AGE < 5 YEARS OLD)

Table 5.2.2.1 :	Mean Z score (weight for age, height for age, weight for height, BMI for age) among children (below 5 years) by sociodemographic characteristics	152
Table 5.2.2.2 :	Weight for age (WAZ) status based on WHO 2006 criteria among children (below 5 years) by sociodemographic characteristics	154
Table 5.2.2.3 :	Height for age (HAZ) status based on WHO 2006 criteria among children (below 5 years) by sociodemographic characteristics	156
Table 5.2.2.4 :	Weight for height (WHZ) status based on WHO 2006 criteria among children (below 5 years) by sociodemographic characteristics	158
Table 5.2.2.5 :	BMI for age status based on WHO 2006 criteria among children (below 5 years) by sociodemographic characteristics	160

INFANT AND YOUNG CHILD FEEDING

Table 5.3.2.1 :	Prevalence of early initiation and ever breastfeeding among infants below 6 months by sociodemographic characteristics	162
Table 5.3.2.2 :	Prevalence of exclusive breastfeeding practices among infants below 6 months old by sociodemographic characteristics	164
Table 5.3.2.3 :	Prevalence of predominant breastfeeding practices among infants below 6 months old by sociodemographic characteristics	166
Table 5.3.2.4 :	Prevalence of continued breastfeeding practices at 2 years among children at 20-23 months by sociodemographic characteristics	167
Table 5.3.2.5 :	Median duration of breastfeeding among children aged 0-35 months old by sociodemographic characteristics	168
Table 5.3.2.6 :	Prevalence of bottle feeding practices among children aged 0-23 months by sociodemographic characteristics	169
Table 5.3.2.7 :	Prevalence of age-appropriate breastfeeding practices among children aged 0-23 months old by sociodemographic characteristics	170
Table 5.3.2.8 :	Prevalence of milk feeding frequency within 24 hours among children aged 0-23 months old by sociodemographic characteristics	171
Table 5.3.2.9 :	Prevalence of minimum meal frequency, minimum dietary diversity, minimum acceptable diversity among children aged 0-23 months old by sociodemographic characteristics	173
Table 5.3.2.10 :	Factors that influence the decision to stop breastfeeding among children 0-23 months	175
Table 5.3.2.11 :	Milk feeding practice among children 0-23 months	176

Child Development

DEVELOPMENT DELAY

Table 6.1.2.1	: Percentage of children aged 6-59 months who were developmentally delayed	180
Table 6.1.2.2	: Percentage of children aged 6-59 months who had gross motor developmental delay	181
Table 6.1.2.3	: Percentage of children aged 6-59 months who had fine motor developmental delay	182
Table 6.1.2.4	: Percentage of children aged 6-59 months who had speech/ hearing developmental delay	183
Table 6.1.2.5	: Percentage of children aged 6-59 months who had social skills developmental delay	184

SUSPECTED AUTISM

Table 6.2.2.1	: Prevalence of suspected autism among children aged 18-35 months	185
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ACCESS TO SCREEN TIME

Table 6.3.2.1	: Prevalence of any exposure to screen time for children aged 0-23 months and exposure more than 2 hours for children aged 24-59 months	186
Table 6.3.2.2	: Prevalence of any exposure to television in children aged 0-23 months	187
Table 6.3.2.3	: Prevalence of any exposure to computer/tablet/smartphone in children aged 0-23 months	188
Table 6.3.2.4	: Prevalence of any exposure to screen time (either television/ other than television) in children aged 0-23 months	189
Table 6.3.2.5	: Prevalence of exposure to television more than 2 hours a day in children aged 24-59 months	190
Table 6.2.3.6	: Prevalence of exposure to screen time other than television more than 2 hours a day in children aged 24-59 months	191
Table 6.3.2.7	: Prevalence of exposure to screen time (either television/other than television) more than 2 hours a day in children aged 24-59 months	192

EARLY CHILDHOOD CARE AND EDUCATION

Table 6.4.2.1	: Percentage of children age 36-59 months who are attending an organized early childhood education program	193
Table 6.4.2.2	: Support for learning as seen by percentage of children age 36-59 months with whom adult household members have engaged in four or more activities that promote learning and school readiness during the last 3 days	194
Table 6.4.2.3	: Learning materials as seen by percentage of children under age 5 by numbers of children's books present in the household, and by playthings that child plays with	195

CHILD PROTECTION

Table 7.1.2.1	: Inadequate care as seen by percentage of children under age 5 left alone or left in the care of another child younger than 10 years of age for more than one hour at least once during the past week	197
Table 7.2.2.1	: Child disciplining methods experienced during the last one month among children aged 12-59 months	199
Table 7.2.2.2	: Attitudes toward physical punishment as seen by percentage of respondents to the child discipline module who believe that physical punishment is needed to bring up, raise, or educate a child properly	201

Maternal and reproductive Health

ANTENATAL CARE

Table 8.1.2.1	: Prevalence of mothers who attended antenatal care by number of visits during pregnancy of last child birth	202
Table 8.1.2.2	: Prevalence of mothers who attended antenatal care by timing of first antenatal visit, during pregnancy of last child birth	203
Table 8.1.2.3	: Antenatal care provider during pregnancy of last child birth	204
Table 8.1.2.4	: Prevalence of mothers aged 15-49 years who received antenatal care in public and private health facilities during pregnancy of last child birth	205
Table 8.1.2.5	: Prevalence of mothers aged 15-49 years who had undergone blood sample test, health education, and ultrasound scan examination at least once as part of antenatal care, during the pregnancy of last child birth	206
Table 8.1.2.6	: Prevalence of mothers aged 15-49 years who had undergone blood pressure measurement, urine sample test, abdominal examination at least once as part of antenatal care during the pregnancy of last child birth	208
Table 8.1.2.7	: Prevalence of mothers aged 15-49 years who had hypertensive disease, diabetes/ gestational diabetes mellitus or maternal obesity during pregnancy of last child birth	210
Table 8.1.2.8	: Prevalence of mothers aged 15-49 years who had anaemia or heart diseases during pregnancy of last child birth	212
Table 8.1.2.9	: Prevalence of mothers aged 15-19 years who had childbearing and percentage of mothers who had their first pregnancy before aged 20 years in this survey	213
Table 8.1.2.10	: Prevalence of pre-pregnancy care among mothers aged 15-49 years who had associated medical conditions	214

ASSISTANCE AT DELIVERY

Table 8.2.2.1	: Prevalence of safe and unsafe deliveries among mothers aged 15-49 years during their last pregnancy	215
Table 8.2.2.2	: Prevalence of mothers who received assistance during delivery of last child birth, by types of attendant	216
Table 8.2.2.3	: Prevalence of various types of persons cutting the cord	218
Table 8.2.2.4	: Prevalence of unsafe delivery by birth attendants and place of delivery, during their last child birth	220

PLACE OF DELIVERY

Table 8.2.2.5	: Prevalence of mothers who delivered their last child by place of delivery	220
Table 8.2.2.6	: Prevalence of mothers who delivered their last child by mode of delivery	223
Table 8.3.2.1	: Awareness and practice of natural birthing as seen by percentage of mothers who were aware of natural birth in this survey	225

POST-NATAL HEALTH CHECKS

Table 8.4.2.1	: Prevalence of mothers who had notified their delivery of last child to the nearest government health facility	226
Table 8.4.2.2	: Response to birth notification as seen by prevalence of mothers who received postnatal home visits within 24 hours of birth notification, after the last child birth	227
Table 8.4.2.3	: Prevalence of mothers aged 15-49 years who received scheduled home visits during the first, second, and third to fourth weeks postnatal	228
Table 8.4.2.4	: Prevalence of mothers aged 15-49 years who received at least one postnatal home visit, by week	230
Table 8.4.2.5	: Prevalence of mothers aged 15-49 years who attended clinics for postnatal care at one month postpartum	231
Table 8.5.2.1	: Postnatal depression screening by positive Edinburgh Postnatal Depression Scale (EPDS) screening test among mothers aged 15-49 who have a child aged 6-16 weeks	232

LIST OF ABBREVIATIONS

AAP	:	American Academy of Pediatrics
ANC	:	Antenatal care
ARI	:	Acute Respiratory Infection
ASD	:	Autism Spectrum Disorders
BCG	:	Bacille Calmette Guerin
BMI	:	Body Mass Index
CS	:	Caesarean section
DPT-IPVHib	:	Diphtheria, Pertussis, Tetanus, Inactivated Polio Vaccine, Haemophilus Influenza B
EB	:	Enumeration Block
EPDS	:	Edinburgh Postnatal Depression Scale
GIVS	:	Global Immunization Vision and Strategy 2006–2015
GVAP	:	Global Vaccine Action Plan
HCP	:	Health care providers
Hep B	:	Hepatitis B
IMCI	:	Integrated Management of Childhood Illnesses
LBW	:	Low Birth Weight
LQ	:	Living Quarters
MCH	:	Maternal and Child Health
M-CHAT	:	Modified Checklist for Autism in Toddlers
MDG	:	Millenium Development Goals
MICS	:	Multiple Indicator Cluster Survey
MOH	:	Ministry of Health Malaysia
MMR	:	Measles, Mumps, Rubella
NHMS	:	National Health and Morbidity Survey
NOR	:	National Obstetric Registry
SCS	:	Survey Creation System
SD	:	Standard Deviation
SE	:	Side effects
SPSS	:	Statistical Package for the Social Sciences
TBA	:	Traditional Birth Attendant
UNICEF	:	United Nations Children’s Education Fund
WHA	:	World Health Assembly
WHO	:	World Health Organization

IV. CHILD HEALTH

4.1 Vaccination

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4.1.1 Introduction

The Millennium Development Goal (MDG) 4 aimed to reduce child mortality by two thirds between 1990 and 2015 and immunization was an important component towards achieving this goal.¹ In addition, the Global Vaccine Action Plan (GVAP), which was endorsed by the 194 Member States of the World Health Assembly in May 2012, targeted in delivering universal access to immunization.² WHO Member States have committed to four global immunization goals, (1) sustaining and achieve world free polio, (2) meet global and regional elimination targets i.e. maternal and neonatal tetanus elimination, measles elimination, Hepatitis B accelerated control and Rubella elimination, (3) meet the immunisation coverage target, and (4) introduction of new vaccines. In 2014, the Regional Committee for the Western Pacific Region endorsed the Regional Framework of the Global vaccine Action Plan in the Western Pacific which specified eight (8) goals: (1) sustaining polio-free status; (2) measles elimination; (3) rubella elimination; (4) maternal and neonatal tetanus elimination; (5) accelerated control of hepatitis B; (6) accelerated control of Japanese encephalitis; (7) introduction of new vaccines; and (8) meeting regional vaccination coverage targets.

The vaccination coverage targets set by the Global Immunization Vision and Strategy 2006–2015 (GIVS), endorsed by the World Health Assembly in 2005 in resolution WHA58.15, were 90% national vaccination coverage and 80% vaccination coverage in every district by 2010.³ These targets have been maintained and further elaborated in GVAP as 90% national coverage and 80% coverage in every district with three doses of DTP-containing vaccines by 2015, and 90% national vaccination coverage and 80% vaccination coverage in every district with all vaccines in national programmes, unless otherwise recommended, by 2020.

In Malaysia, the vaccination coverage target is set based on the goals and the availability of vaccines in the facilities. As many vaccines are in combinations and the targeted diseases have different basic production (R_0), target for vaccination coverage is 95% for all. Health services in Malaysia are provided by government as well as the private health facilities. So are the vaccination services. Currently, here is no single reliable system for tracking of each individual's vaccination status. Thus, a household nation-wide survey is important in the assessment of valid and reliable vaccination coverage of the country.

4.1.2 Findings

Out of 11,388 respondents eligible for this module, 10,140 responded to this survey, with a response rate of 89.0%. Comparison of the sociodemographic profiles of the two groups is shown in **Table 4.1.2.1**. The percentage of non-citizen among those who did not respond to the survey was higher compared to the percentage of non-citizen among those who responded, but as the total non-citizen eligible for this study was only 4.2%, the impact to this difference was negligible.

1 http://www.who.int/topics/millennium_development_goals/child_mortality/en/

2 http://www.who.int/immunization/global_vaccine_action_plan/GVAP_doc_2011_2020/en/

3 http://www.wpro.who.int/about/regional_committee/65/documents/wpr_rc065_8_epi_corr1.pdf

Table 4.1.2.1 : Sociodemographic profile of household that responded vs households that did not respond

	Responded to survey		Not responded	
	No.	%	No.	%
Age of mother				
Mean (years)		31.37		31.15
Ethnicity of child				
Malay	7136	62.8	604	48.5
Chinese	1222	14.0	173	13.9
Indians	437	4.5	71	5.7
Other Bumiputera	1133	12.7	148	11.9
Others	212	6.0	250	20.1
Citizenship of child				
Malaysian	9973	95.4	1143	91.6
Permanent residents	15	0.4	0	0
Non-citizen	152	4.2	105	8.4

The profile of the respondents involved in this study is shown in **Table 4.1.2.2**. By ethnicity, the profile of those who were successfully interviewed was similar to the ethnicity by birth as reported by the Department of Statistics Malaysia. There is almost equal proportion by sex. Majority of the mothers of these children aged 25 to 39 years old. By marital status, 0.3% of the mothers were single, 2.5% of mothers and 2.5% of fathers had no formal education, with 7.2% earning less than RM1000 per month.

In this study, only children aged 12-23 months were eligible to be interviewed, as they were expected to complete their primary vaccination by then. Information on vaccination status was verified by immunisation cards volunteered by the mothers. In such instances where the vaccination cards were not available, the status of the vaccination was considered as self-reported by mothers.

Table 4.1.2.3 showed the prevalence of children aged 12-23 months who were vaccinated against BCG. Majority of the children were verified to have received BCG vaccination except for 7.7% of the children. The prevalence of those children who did not receive BCG vaccination was highest in Pahang (12.5%).

A total of 89.8% was verified to have received Dose 1 of DPT-IPV/Hib vaccine, 89.6% were verified to have received Dose 2 and 89.0% verified as completed the third dose of DPT-IPV/Hib vaccine. Self-reporting was 9.5% for all the three doses of DPT-IPV/Hib (**Table 4.1.2.4**). In the whole country 1.5% of the children aged 12-13 months did not received any DPT-IPV/Hib vaccination. Comparing between states, Sabah showed the highest prevalence (2.8%), followed by Pulau Pinang (2.7%) and Selangor (2.1) whereas WP Putrajaya did not report any. The percentage of non-vaccinated children was highest for non-citizens at 7.1%, compared to Malaysians and those with permanent residence and those with head of household without formal education was highest at 7.4% compared to other education levels.

Table 4.1.2.5 revealed that 92.2% of children aged 12-23 months were verified as received Dose 1 of Hepatitis B vaccination, with additional 7.8% self-reported, while 89.8% were verified to have received Dose 2 of Hepatitis B, with additional 9.6% self-reported, and only 88.4% had completed third dose of Hepatitis B vaccination with 9.9% was self-reported. Respondents who did not have any Hepatitis B vaccination were found in Kedah, WP Kuala Lumpur, Kelantan, Pulau Pinang and Melaka. A total of 1.7% children aged 12-23 months did not complete Hepatitis B vaccination. By states, the highest prevalence was noted in Pulau Pinang (3.1%), followed by Sabah (2.8%) and WP Kuala Lumpur and Kedah with 2.1% each. Those who did not complete Hepatitis B vaccination were

higher amongst non-Malaysians (6.9%) compared to Permanent Residence and Malaysians. Those with head of household without formal education had the highest incomplete Hepatitis B vaccination (6.5%) compared to other education levels.

A total of 87.3% of children aged 12-23 months were verified as having received MMR vaccination, with additional 9.3% self-reported as received MMR. Among those children aged 12-23 months, 3.4% were found as not vaccinated against MMR (**Table 4.1.2.6**). The prevalence was highest in WP Kuala Lumpur (6.0%), followed by Sabah (4.9%) and Selangor (4.7%). By profile, the non-vaccinated were higher among non-Malaysian (10.5%), and those with head of household with no formal education (15.8%).

Overall, 86.4% children were verified as having received complete primary vaccination by the age of 12 months, with an additional 8.9% self-reported as having completed their child's primary vaccination. A total of 4.5% of children received some vaccinations but did not complete all scheduled primary vaccination by the age of 12 months, and 0.1% had not received any vaccination (**Table 4.1.2.7**). The prevalence of children with incomplete primary vaccination was highest in Selangor (7.3%), followed by WP Kuala Lumpur (7.2%) and Sabah (7.2%). Incomplete vaccination was higher among those residing in urban areas as compared to those in rural areas (5.3% vs 2.9%). By profile, those who did complete their primary vaccination were those with mothers who do not have any formal education (18.0%) and non-Malaysians (10.9%). Top three reasons given for incomplete vaccination were lack of time (19.9%), the child being unwell (17.3%), and financial or geographical barriers (16.6%). A total of 1.3% were due to vaccine refusal, 4.0% refused vaccination, 2.4% worried about side effects, 2.1% did not trust the vaccine, 1.3% were doubtful about the halal status of the vaccine, 0.9% due to religious beliefs and 0.6% had a previous bad experience (all these were considered as decision by themselves) (**Table 4.1.2.8**). 6.2% of those who did not complete their primary vaccination were due to different schedules used by private facilities, where MMR vaccine was given later in life (**Table 4.1.2.8**).

A total of 6.2% children received more than 50% of their vaccination at private facilities. The prevalence was higher in urban areas compared to rural areas (8.3% vs 2.0%). It was highest in WP Kuala Lumpur (20.3%), followed by Selangor (14.4%) and Johor (5.8%). Examining the profiles of these children, they had mothers who had completed their tertiary education and with higher household income (**Table 4.1.2.9**). Top three reasons given for their preference were; shorter waiting times (43.9%), only able to go to clinic for vaccination during weekends (22.0%), and panel doctors (20.6%), as shown in **Table 4.1.2.10**.

When asked about their source of information about vaccination, majority (89.4%) mentioned doctors as their source, with 1% get information from electronic news or website and with 0.6% reported social media as their primary source (**Table 4.1.2.11**). Majority of the mothers do not have concern on any vaccine. However 0.6% mothers had concern on MMR vaccine (**Table 4.1.2.12**). Majority of the mothers believe that vaccines are protective, can prevent spread of disease, and are safe; 98.5%, 98.1%, and 98.2%, respectively.

Majority of them (98.5%) also reported that healthcare providers explained the side effects of the vaccine. They were also receptive towards the introduction of a new vaccine with 97.0 % response (**Table 4.1.2.13**).

4.1.3. Conclusion

In general, overall prevalence of children aged 12-23 months who completed their primary vaccination was more than 90%, however only 86.4% were verified with vaccination cards. Incomplete primary vaccination was higher among those with low education and non-Malaysians. About one-fifth of those with incomplete vaccination were due to accessibility problems and one-tenth due to vaccine refusal.

4.1.4. Recommendations

- i. To provide free primary immunization for all; irrespective of citizenship.
- ii. To ensure all healthcare providers (including private healthcare providers) to follow Ministry of Health schedule for primary immunization.
- iii. To establish an act or regulation for all children (under 5 years) to be immunized.
- iv. To develop a single electronic database or registry of children immunization for ease of follow-up (tracking of vaccination status) and documentation.
- v. To develop smart partnership between public and private facilities in providing services to public, particularly immunization services.

4.2 Neonatal Tetanus Protection

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4.2.1. Introduction

One of the MDGs target is to reduce by three quarters the maternal mortality ratio, with one strategy to eliminate maternal tetanus. Following on the 42nd and 44th World Health Assembly calls for elimination of neonatal tetanus, the global community continues to work to reduce the incidence of neonatal tetanus to less than 1 case of neonatal tetanus per 1,000 live births in every district by 2015.

To assess the status of tetanus vaccination coverage, women who had a live birth during the two years before the survey were asked if they had received tetanus toxoid injections during the pregnancy for their most recent birth and their status was verified as recorded within their antenatal cards.

4.2.2. Findings

Out of 10,263 mothers interviewed, 7864 mothers (74.8%) had produced antenatal cards for verification. Based on the available cards, 96.4% had received tetanus vaccination (**Table 4.2.2.1**). Examining these mothers sociodemographic profile, the percentage was noted to be lower among those who had completed tertiary education level (93.9%), Chinese ethnicity (90.6%), those who work in the private sector (93.3%), and those with higher household income (92.8%).

4.2.3. Conclusion

Overall, tetanus vaccination coverage was good but it was noted to be lower among those from higher socioeconomic background.

4.2.4. Recommendations

Ensure coverage of tetanus vaccination during pregnancy to all mothers irrespective of their socioeconomic background.

4.3 Care of Illness (Diarrhoea & Acute Respiratory Infections)

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4.3.1 Introduction

UNICEF reported that diarrhoea is a leading killer of children, accounting for nine percent of all deaths among children under age 5 worldwide in 2015.¹ Diarrhoeal disease is the second leading cause of death in children under five years old. It is both preventable and treatable. Globally there are nearly 1.7 billion cases of diarrhoeal diseases every year and diarrhoea is the leading cause of malnutrition in children under five years old.² Diarrhoea can have a detrimental impact on childhood growth and cognitive development.³ About 88% of diarrhoea-associated deaths are attributable to unsafe water, inadequate sanitation, and poor hygiene.^{4,5} Acute respiratory infection (ARI) in children less than 5 years old is considered as one of the major public health problems and it is recognized as the leading cause of mortality and morbidity in many developing countries. In young children, ARI is responsible for an estimated 3.9 million deaths worldwide, with 90% deaths due to bacterial pneumonia. In the developing countries, seven out of 10 deaths happen due to ARI in under 5-year age group.⁶

4.3.2 Findings

4.3.2.1. Socio-demographic characteristics of children

There were 15,188 eligible respondents aged 0-59 months in this study. More than half of respondents were males (51.9%) and 58.7% were children aged 24-59 months. By ethnicity, the majority were Malays (62.3%), followed by Chinese (15.9%), other Bumiputras (14.7%), and other ethnicities (2.2%). 36.2% of respondents were from high income families of more than RM5000 followed by 17.9% from families with income range from RM1000-RM1999, 13.5% from RM2000-RM2999 and the lowest 7.5% from income less than RM1000 (**Table 4.3.2.1**).

4.3.2.2. Diarrhoea

The prevalence of diarrhoea in the past two weeks preceding the survey among children aged 0-59 months was 4.4%. No significant difference in prevalence between gender was observed. Children aged 12-23 months were reported to have had higher prevalence of diarrhoea (7.1%) as compared to children aged 0-11 months (5.2%) and 24-59 months (3.2%), but the difference was not statistically significant. The Other Bumiputras had the highest prevalence at 8.8%, followed by Indians (5.3%), Others (5.0%), Malays (3.6%), and lastly, Chinese (3.3%). The prevalence was slightly higher among Permanent Residents/ Non Malaysians (5.0%) compared to Malaysian citizens at 4.4%. Children whose parents received no formal education/primary were reported to have higher prevalence of diarrhoea. Those children from the lowest household income (less than RM1000) were reported to have had higher prevalence of diarrhoea (7.3%) compared to others. As expected, the prevalence of diarrhoea among children from households with untreated water was highest at 12.5%, followed by unsanitary

1. <http://data.unicef.org/child-health/diarrhoeal-disease.html>

2. <http://www.who.int/mediacentre/factsheets/fs330/en/>

3. <http://www.who.int/mediacentre/factsheets/fs330/en/>

4. Bowen A, Agboatwalla M, Luby S, Tobery T, Ayers T, Hoekstra RM. Association between intensive handwashing and child development in Karachi, Pakistan: A cluster controlled trial. Arch Pediatr Adolesc Med. 2012 Sep

4. UNICEF. Progress for children: A report card on water and sanitation. Number 5, September 2006.

5. Black RE, Morris S, Bryce J. Where and why are 10 million children dying every year? Lancet. 2003;361(9376):2226-34.

6. Park K. Epidemiology of Communicable Diseases. Park's Textbook of Preventive and Social Medicine. 21 st ed. Jabalpur: M/S Banarsidas Bhanot Publishers; 2011. p. 156.

waste disposal, 6.8% and unsanitary latrines, 6.2%. Among those children with diarrhoea 45.0% were treated with ORS packets, while 41.4% received antibiotics, and 25.5% received both (**Table 4.3.2.2**).

4.3.2.3. Acute Respiratory Infection (ARI)

This survey reported 0.9% of children aged 0-59 months have symptoms of acute respiratory infection (ARI) in the past 2 weeks preceding the survey. The prevalence was slightly higher in males at 1.1% compared to females at 0.8%. By age group, the highest prevalence of ARI was noted among children aged 12-23 months (1.6%), followed by children aged 24-59 months (0.8%) and 0-11 months (0.6%). According to the ethnic groups, Other Bumiputras had the highest prevalence at 2.6%, followed by others (2.1%), Chinese (0.7%), Malays (0.6%), and Indians (0.3%). The prevalence was higher among Permanent Residents/ Non-Malaysians (2.4%) compared to Malaysian citizens (0.9%). Children whose parents received no formal/ primary education had higher prevalence of ARI. Children from the lowest household income (less than RM1000) were reported to have had higher prevalence of ARI (1.8%). Among those with ARI, more than half, (60.2%) were treated at public facilities, whilst 31.4% from private facilities, 2.7% received treatment elsewhere and 5.5% did not seek any advice or treatment. Antibiotics were given to 62.8% of these children. (**Table 4.3.2.3**).

4.3.2.4. Either one or both episodes of diarrhoea & ARI in the past two weeks

About 5.2% of children reported having had either diarrhoea or ARI in this study. Higher prevalence were observed among males (5.3%), children from age 12-23 months (8.3%), Other Bumiputras (10.5%), permanent residents/ non-Malaysian (7.5%) and parents with no formal or primary level education. The prevalence of children who had both diseases was 0.2%. No significant difference was observed between gender, age and ethnicity. All children who had both diseases were Malaysian citizens (0.2%). In addition, parents with no formal or primary level education status were found to have children with the highest prevalence of both diseases. Children with the lowest household income (RM1000-RM1999) were reported to have had higher prevalence of diarrhoea and ARI (0.3%) (**Table 4.3.2.4**).

4.3.3. Conclusion

In conclusion, 4.4% of children aged 0-59 months were reported to have had an episode of diarrhoea in the past two weeks, 0.9% had symptoms of ARI, 5.2% had either diarrhoea or ARI; while 0.2% had both diseases.

4.3.4. Recommendations

Diarrhoea prevention :

Diarrhoea among children can be prevented and avoided by the following this measures.

- i. Parents knowledge on hygienic practice is important particularly in food preparation for infants and young children
- ii. Basic hygiene standards such as proper hand washing, use of soap, safe food storage should be practised by all households
- iii. Proper sanitation & waste disposal and clean water supply should be in place to minimize the risk for food and waterborne infections
- iv. Use treated water or boiled water for drinking and food preparation

ARI prevention :

If any family members develop respiratory tract infection, it is important to take steps to prevent spreading the infection to other people especially other children. These steps are outlined below.

- i. Washing hands regularly and thoroughly, particularly after touching nose or mouth, and before handling food
- ii. Judicious use of antibiotics in treating children with ARI
- iii. Practice good personal hygiene
- iv. Do not share personal belongings

4.4 Child Injuries

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4.4.1. Introduction

Injury to young children is a public health problem. The WHO has estimated that nearly 90% of injuries to children are unintentional or “accidental”. Around 830,000 children die from such injuries every year, nearly 2300 each day¹. It was found that for every death due to injury, there were several thousand more children who survived with varying degrees of disability². Children are particularly vulnerable to injury because of their size, growth and development, inexperience and natural curiosity. The most common causes of childhood injuries are drowning, falls, fires or burns, poisoning, suffocation, and transportation-related injuries.^{3,4}

4.4.2. Findings

This study is the first population-based study to assess child injury at home, outdoors and at caretakers. This survey captured information on child injury aged 12-59 months. Overall, 3.8% of children aged 12 to 59 months were reported to have injuries in the last one year preceding the survey. Prevalence of child injury was higher among boys (4.4%) as compared to girls (3.2%). Children aged 24-59 months reported to have higher prevalence 4.2% as compared to children aged 12-23 months (2.9%). Among the various ethnicities, Chinese were reported as having the highest prevalence of child injuries (6.2%), while Other Bumiputera was (4.1%), Malays (3.4%), Indians (2.5%), and others (1.4%) respectively (**Table 4.4.4.2**).

By citizenship, Malaysians were reported to have a higher prevalence of child injuries (3.9%), followed by non-Malaysian (1.6%) and permanent residents (0.6%) respectively. The prevalence of child injuries among children of married mothers was 3.9% compared to prevalence of child injury among children of separated mothers; 1.5%.

Children of parents (both mothers and fathers) from higher educational level (4.9%) were reported to have higher prevalence of injury compared to those with lower educational status. Children of mothers who were employed in private sectors had the highest prevalence of child injury; 6.1%. Children from households earning more than RM5000 per month were reported to have a higher prevalence of injuries (5.9%). The majority of children (80.5%) sustained injuries inside the house, 13.3% outdoors, 6.2% from other sites and there were no cases reported from caretaker facilities. A significantly higher percentage of children from urban areas sustained injuries in the past one year (2.9%, 96% CI 2.00-4.10) compared to those from rural areas (1.0%, 95% CI 0.80-1.20).

4.4.3. Conclusion

The prevalence of injury among children 12 to 59 months was 3.8%. In general, injury happened among children from higher socioeconomic status, higher among boys and most of the time occurred at home.

1. Peden M, Oyegbite M, Ozanne-Smith J, et al. World Health Organization and UNICEF World Report on Child

2. Injury Prevention. Geneva, Switzerland: World Health Organization; 2008.

3. World Health Organization Report(2005) Child and adolescent injury prevention: A global to action

4. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. National Action Plan for Child Injury Prevention. Atlanta (GA): CDC, NCIPC; 2012

4.4.4. Recommendations

- i. Better supervision of children
- ii. Create child-friendly and safe environment
- iii. Ensure child minders and care givers are properly trained
- iv. Educate young parents on home safety and injury prevention
- v. Public awareness and campaign

4.5. Care of Oral Health

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4.5.1. Introduction

Milk or 'baby' teeth are important for many reasons. Not only are they needed to help children speak clearly and chew naturally, milk teeth are needed for the proper eruption of permanent teeth¹. Tooth decay can happen at any age and it is important that healthy oral hygiene habits be started from birth. The baby's gum should be wiped with a clean moist gauze or wash cloth every day. Brushing should commence as soon as the first teeth appear². Up to 18 months of age, it is recommended that the baby's teeth be brushed with plain water once a day after their last feed. From 18 months to 2 years, it is recommended that parents begin teaching their child to brush their own teeth using a pea-sized amount of toothpaste. From 2 to 8 years, young children should brush their teeth twice a day with parental supervision².

It is recommended that parents bring their child for their first dental visit before the child is two years of age. Regular check up by the dentist is also advised to help diagnose and prevent tooth decay as early as possible³. Taking into consideration the importance of beginning oral healthcare for young children as early as possible, the Oral Health Division in the MOH has accorded high priority for oral healthcare of toddlers (children below five years old) throughout the country. This programme started as a pilot project in Sarawak in 1991 and subsequently expanded throughout the nation on an ad-hoc basis in the following years. The findings of the National Oral Health Survey of Preschool Children in 2005 showed as high as 76.2% of 5-year-old preschool children had experience with dental caries⁴. Following this, in 2008, a national guideline was produced to create oral health awareness among parents, child care providers and health personnel⁵.

4.5.2. Findings

The findings below relate to eight questions in the Oral Health Module of the NHMS 2016 study, with areas of concern involving the perception of importance of oral healthcare for young children, oral hygiene practices for them and dental visits.

Perception on importance of looking after children's oral health

About 26.8% (95% CI: 21.55 – 32.76) of mothers reported that it was very important for them to look after their child's teeth, 72.8% (95% CI: 66.87 – 78.06) reported it was important, while 0.3% (95% CI: 0.16 – 0.55) did not think looking after their child's teeth was important. A very small proportion (0.1%, 95% CI: 0.06 – 0.17) of mothers reported not knowing the importance of looking after their child's teeth. Except for other ethnic groups, a significantly higher proportion of Other Bumiputerans (39.5%, 95% CI: 30.02 – 49.93) compared to Malays (23.3%, 95% CI: 17.98 – 29.60), thought that looking after their child's teeth was very important (**Table 4.5.2.1**).

1 <http://www.bupa.com.au/health-and-wellness/health-information/az-health-information/looking-after-childrens-teeth> (accessed on 31 May 2016)

2 http://www.mouthhealthy.org/en/az-topics/b/Breastfeeding?source=Morning_Huddle (accessed on 10 June 2016)

3 http://www.aapd.org/resources/frequently_asked_questions/?print=y (accessed on 10 June 2016)

4 Oral Health Division. Ministry of Health Malaysia. National Oral Health Survey of Preschool Children 2005 (NOHPS 2005).

5 Oral Health Division. Ministry of Health Malaysia. May 2008. Guidelines Early Childhood Oral Healthcare. Never Too Early To Start.

Frequency of cleaning/brushing child's teeth or supervision of a child's tooth brushing

About 74.0% (95% CI: 71.51 – 76.37) of mothers reported they cleaned/brushed their child's teeth or supervised their child's tooth brushing daily, while 19.0% (95% CI: 17.12 – 21.02) reported they had only done so once in a while. A low percentage of mothers (7.0%, 95% CI: 5.74 – 8.49) reported they had never ever cleaned/brushed their child's teeth or supervised their child's tooth brushing. The prevalence of mothers who reported not having cleaned/brushed their child's teeth or supervised their child's tooth brushing every day was significantly higher among those in the 20 to 29 age group range (9.3% - 9.5%) as compared to those aged 35 to 39 years (4.8%, 95% CI: 3.52 – 6.53). There was no significant difference seen among the other sociodemographic variables (**Table 4.5.2.2**).

Prevalence of mothers who had never brought their child for a dental visit

About 73% (95% CI: 69.61 – 76.71) of mothers reported they had never brought their child for a dental visit (dental check up/ dental treatment) before. The prevalence was significantly higher among mothers who were students compared to those who worked in the public/private sector, were self-employed or housewives (ranging from 62% - 75%). There was no significant difference seen among other sociodemographic variables (**Table 4.5.2.3**).

Prevalence of mothers who had ever brought their child for a dental visit

Only about 26.7% (95% CI: 23.29 – 30.39) reported that they had brought their child for a dental visit (dental check up/ dental treatment) before. There was no significant difference seen among the other sociodemographic variables (**Table 4.5.2.3**).

Timing of child's last dental visit

Among mothers who had ever brought their child for a dental visit, about 77.0% (95% CI: 73.91 – 79.88) had last taken their child for a dental visit (dental check up/ dental treatment) less than a year ago, while 17.5% (95% CI: 3.4 – 5.6) reported having done so in the last one to two years and a small percentage, more than 2 years ago (4.8%, 95% CI: 3.76 – 6.00). About 0.7% (95% CI: 0.34 – 1.48) of mothers reported they could not remember when they had last taken their child for a dental visit. There was no significant difference seen among the other sociodemographic variables (**Table 4.5.2.4**).

Opinion on timing of child's first dental visit

About 38.3% (95% CI: 34.53 – 42.17) of mothers opined that they needed to take their child for their first dental visit before their child turns two years of age, 27.5% (95% CI: 24.67 – 30.42) when their child is two to three years old and 25.3% (95% CI: 22.89 – 27.89) when their child is four to five years old. A further 9.0% (95% CI: 6.44 – 12.34) of mothers reported not knowing when they should take their child for their first dental visit. Significantly more mothers of Chinese ethnicity (14.5%, 95% CI: 9.72 – 21.01) reported not knowing the right timing of a child's first dental visit compared to the Indians (3.8%, 95% CI: 2.21 – 6.36). There was no significant difference seen among the other sociodemographic variables (**Table 4.5.2.5**).

Perception of age of a child's first dental visit

In this survey, a perception of age of a child's first dental visit was defined as 'good' if the mother's response was 'before two years of age' and 'poor' perception if the mother's response was other than 'before two years of age'. Overall, about 58.0% (95% CI: 53.99 – 61.82) of mothers had a poor perception of age of their child's first dental visit. There was no significant difference seen among the other sociodemographic variables among mothers with poor perception of age of a child's first dental visit (**Table 4.5.2.6**).

Willingness to take the child for dental treatment upon advice

The majority (99.2%, 95% CI: 98.74 - 99.44) of mothers reported that they would take their child for dental treatment upon advice. Only a small proportion (0.8%, 95% CI: 0.56 – 0.17) of mothers reported they were unwilling to bring their child for dental treatment. Significantly more mothers in the age group 45 to 49 years (100%, 95% CI: 4.2 – 7.8) reported that they would do so compared to mothers in the age group 30 to 34 years (99.7%, 95% CI: 99.29 – 99.86) and mothers aged 15 to 19 years (95.4%, 95% CI: 83.99 – 98.82). Notably, unemployed mothers (100%, 95% CI: 99.92 – 100.00) reported that they were willing to take their child for dental treatment compared to other occupational groups except housewives. There was no significant difference seen among the other sociodemographic variables (**Table 4.5.2.7**).

Reasons for not bringing a child for dental treatment

Among mothers who reported that they would not take their child for dental treatment upon advice, the reasons cited were as follows; “too young to get treatment” (70.8%, 95% CI: 54.07 – 83.28), “dental treatment for milk teeth was not important” (11.2%, 95% CI: 3.44 – 31.07), “the child was afraid of dental treatment (8.2%, 95% CI: 2.42 – 24.21). A further 6.9% (95% CI: 3.25 – 14.00) of mothers were opined that the dental clinic was too far (**Table 4.5.2.8**).

Prevalence of mothers who had ever received health personnel’s advice on child’s oral health

Less than half of mothers (42.8%, 95% CI: 37.74 – 48.08) reported that they had previously received advice from health care workers on looking after their children’s oral health. Significantly more mothers working in the private sector (63.5%, 95% CI: 55.87 – 70.42) reported that they had never received advice from health care workers on looking after their children’s oral health compared to mothers working in the public sector (49.4%, 95% CI: 43.53 – 55.27). There was no significant difference seen among the other sociodemographic variables (**Table 4.5.2.9**).

Perceived importance of child's oral health and dental visit

Among mothers who thought that it was very important to look after their child’s oral health, only 23.8% (95% CI: 19.17 – 29.05) reported ever bringing their child for a dental check up or dental treatment. In addition, among mothers who thought it was important to look after their child’s teeth, only 25.3% (95% CI: 22.03 – 28.96) had taken their child for a dental visit (**Table 4.5.2.10**).

Perceived importance of child's oral health and last dental visit

Among mothers who thought that it was very important to look after their child’s oral health, about 82.0% (95% CI: 76.21 - 86.71) reported ever taking their child for a dental check-up or dental treatment less than a year ago and 13.1% (95% CI: 9.34 – 18.14) had taken their child for a dental visit one to two years ago. Among mothers who thought it was important to look after children’s oral health, about 75.1% (95% CI: 71.46 – 78.40) had taken their child for a dental visit less than a year ago and 18.5% (95% CI: 15.95 – 22.27), one to two years ago (**Table 4.5.2.11**).

Perceived importance of child's oral health and age of child's first dental visit

Among mothers who thought that it was very important to look after their child’s oral health, about 42.3% (95% CI: 37.16 – 47.54) thought that their child’s first dental visit ought to be before two years of age. Meanwhile, among mothers who thought it was important to look after their child’s oral health, about 36.8% (95% CI: 41.16 – 32.68) thought that their child’s first dental visit ought to be before two years of age (**Table 4.5.2.12**).

Perceived importance of child's oral health and willingness to take children to see dentist

Among mothers who thought that it was very important to look after their child's oral health, 99.2% (95% CI: 98.31 - 99.63) reported that they would take their child to visit the dentist if advised to do so. Among mothers who thought that it was important to look after their child's oral health, 99.1% (95% CI: 98.61 – 99.47) reported that they would take their child to a dentist (Table 4.5.2.13).

Ever received health personnel's' advice on child's oral health and perceived importance of a child's oral health

Among mothers who had ever received health personnel's advice regarding care of their child's oral health, only 26.5% (95% CI: 22.24 – 31.15) thought that it was very important to look after their child's oral health. Among mothers who had never received such advice, 27.0% (95% CI: 19.97 – 35.52) thought that it was very important to look after their child's oral health (Table 4.5.2.14).

4.5.3. Conclusion

The findings of this survey showed that only one in four mothers perceived that looking after their children's teeth was very important. In addition to this, only about seven in ten mothers reported having cleaned/ brushed their child's teeth or supervised their child's tooth brushing every day. Notably, seven in ten mothers reported they had never taken their child for a dental visit. Among mothers who reported having ever taken their child for a dental visit, nine in ten mothers had sought oral health care for their child in the last two years. Of concern, is the observation that only about four in ten mothers were aware that they needed to take their child for their first dental visit before the age of two years.

Almost all mothers reported that they would take their child for dental care if they were advised to do so. Among mothers who did not take their child for treatment when advised to do so, the most commonly reported reason was that their child was too young to get treatment. About four in ten mothers reported they had ever received advice regarding the care of their child's teeth from health care personnel.

This study also showed that among mothers who perceived that it was very important to look after their child's oral health, only about one in four reported ever taking their child for a dental check up or for dental treatment. In addition to this, only two in five mothers who perceived that it was very important to look after their child's oral health were aware that the child's first dental visit ought to be before two years of age. It was also observed that among mothers who had ever received health personnel's advice on their child's oral healthcare, only about one in four mothers perceived that it was very important to look after their child's oral health.

Good oral health should begin from early childhood. In light of these findings, there is a strong need to promote greater awareness of the role of mothers in maintaining good oral health of their young children. Advice for mothers on oral health should include good oral hygiene habits for the very young child as well as educating them on the right timing for their child's dental visit which is before the age of two.

4.5.4. Recommendations

Taking into cognizance the findings of this survey, the following recommendations are proposed for promoting good oral health among young children:

- i. Strengthening oral healthcare programmes for toddlers.
- ii. Strengthening collaborative efforts with other stakeholders and agencies to improve oral health promotion efforts and compulsory referral of toddlers (0 to 4 year olds) for oral health care.
- iii. The following oral health messages are recommended to be disseminated amongst mothers/caregivers, towards good oral health among young children by health personnel, where possible:
 - a. It is very important to look after the milk teeth as soon as it erupts in the mouth.
 - b. The child's teeth should be cleaned/ brushed every day.
 - c. A child should have his/her first dental visit before the age of two.

V. NUTRITION

BIRTH WEIGHT, NUTRITIONAL STATUS & INFANT AND YOUNG CHILD FEEDING

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5.1. BIRTH WEIGHT

5.1.1. Introduction

Birth weight is an important indicator of reproductive health and general health status of the population. Low birth weight (LBW) has been defined by the World Health Organization (WHO) as weight at birth of less than 2,500 grams.¹ A baby's low weight at birth is either the result of a pre-term birth (before 37 weeks of gestation) or of restricted foetal (intrauterine) growth. LBW is closely associated with foetal and neonatal mortality and morbidity, inhibited growth and cognitive development and development of chronic diseases later in life. In Malaysia, the LBW data has only been reported as total number of infants regardless of the infants' gestational age. Therefore, this survey was conducted to fill the gap on LBW data reported in the country.

5.1.2. Findings

Mean birth weight by sociodemographic characteristics

The overall mean birth weight for children below five years of age was 3.02 kg (95% CI: 3.01-3.04). Mean birth weight was significantly higher among males [3.05 kg (95% CI: 3.02-3.07)] than females [2.99 kg (95% CI: 2.97- 3.02)]. Full term infants mean birth weight was significantly higher [3.07 kg (95% CI: 3.05-3.08)] than pre-term infants [2.39 kg (95% CI: 2.32-2.47)]. Based on birth weight classification, mean birth weight among extremely low birth weight infants (<1000g) was significantly lower in full term infants [0.64 kg (95% CI: 0.64-0.64)] than pre term infant [0.8 kg (95% CI: 0.72-0.88)]. Mean birth weight among very low weight (1000g -<1500g) in full term infants was 1.29 kg (95% CI: 1.20-1.39) and in pre-term infants was 1.33 kg (95% CI: 1.24-1.42)].

In comparison between ethnic groups, the highest mean body weight was among Malays and Chinese [3.04 kg (95% CI: 3.02-3.06), [3.04 kg (95% CI: 2.99-3.08)] respectively while the lowest prevalence was among Other Bumiputeras [2.94 kg (95% CI: 2.90-2.98)]. Based on household income, those with monthly income of RM5000 and above reported the highest mean birth weight of 3.06 kg (95% CI: 3.03-3.09), while the lowest mean birth weight came from those with income less than RM1000 per month [2.93 (95% CI: 2.89-2.98)] (**Table 5.1.2.1**).

Birth weight status by sociodemographic characteristics

The overall prevalence of LBW (<2500g) among infants were 9.7% (95% CI: 8.79-10.63) while for normal birth weight (>2500g), the prevalence was 90.3% (95% CI: 89.37-91.21). The prevalence for LBW infants was highest in Sarawak [16.2% (95% CI: 12.31-21.02)] and lowest in Johor [5.7% (95% CI: 4.15-7.89)]. Females [10.3% (95% CI: 8.95-11.78)] had a higher prevalence of LBW than males [9.1% (95% CI: 7.99-10.36)]. The prevalence of LBW was significantly higher among pre-term infants [55.5% (95% CI: 48.82-62.02)] than full term infants [6.4% (95% CI: 5.64-7.15)]. In terms of ethnicity, Other Bumiputera had the highest prevalence of LBW [15.1% (95% CI: 12.48-18.24)] while the lowest prevalence was amongst the Chinese [6.8% (95% CI: 4.93-9.41)].

1. United Nations Children's Fund and World Health Organization, Low Birthweight: Country, regional and global estimates. UNICEF, New York, 2004.

As for those with normal birth weight, the highest prevalence was in Johor [94.3% (95% CI: 92.11-95.85)] and the lowest in Sarawak [83.8% (95% CI: 78.98-87.69)]. The prevalence among males was 90.9% (95% CI: 89.64-92.01), whereby among females were 89.7% (95% CI: 88.22-91.05). By ethnicity, the highest prevalence of full term infants was among the Chinese [93.2% (95% CI: 90.59-95.07)] and the lowest was among Other Bumiputerans [84.9% (95% CI: 81.76-87.52)] (**Table 5.1.2.2**).

Birth weight classification by sociodemographic characteristics

The overall prevalence for extremely low birth weight (<1000 g) was 0.7% (95% CI: 0.34-1.36), 4.5% (95% CI: 2.72-7.28) for very low birth weight (1000 g - <1500 g) and 94.8% (95% CI: 92.07-96.68) were of low birth weight (1500 - <2500 g). For the extremely low birth weight infants, the prevalence was higher in males [1.0% (95% CI: 0.38-2.39)] than females [0.4% (95% CI: 0.16-1.06)]. Based on ethnicity, Chinese showed the highest prevalence [1.7% (95% CI: 0.39-6.73)] and those with income group of RM5000 and above had the highest prevalence [1.6% (95% CI: 0.61-4.01)].

Among very low birth weight infants, the prevalence was higher in males [5.2% (95% CI: 2.77-9.58)] than females [3.8% (95% CI: 1.69-8.26)]. For the ethnicity of the child with very low birth weight, Indians had the highest prevalence [6.6% (95% CI: 1.81-21.10)]. Furthermore, for very low birth weight, the highest prevalence was in those with income of RM1000–RM1999 [9.8% (95% CI: 3.69-23.76)] followed by those with income less than RM1000 [1.5% (95% CI: 0.30-6.84)].

For low birth weight, the prevalence was higher among females [95.8% (95% CI: 91.46-97.98)] than males [93.8% (95% CI: 89.52-96.45)]. The prevalence of LBW was highest among those of Other Bumiputera ethnicity [96.4% (95% CI: 90.71-98.67)]. In terms of household income, group of less than RM1000 had highest prevalence [98.5% (95% CI: 93.16-99.70)] and the lowest prevalence were from income group RM1000–RM1999 [89.9% (95% CI: 76.18-96.14)] (**Table 5.1.2.3**).

5.1.3. Conclusion

In Malaysia, the overall prevalence of LBW was higher among pre-term infants as compared to full term infants. Furthermore, higher prevalence of LBW was reported among separated/ divorced/ widowed/ never married mothers, household head with no formal education and household income groups less of than RM1000.

5.1.4. Recommendations

- i. Strengthen maternal nutrition of women in the reproductive age group to address the problem of macro and micro nutrition deficiency especially during prenatal and antenatal periods.
- ii. Strengthen the nutrition and health promotion on the importance of appropriate antenatal care among women in the reproductive age group.

5.2. NUTRITIONAL STATUS OF CHILDREN (AGE < 5 YEARS OLD)

5.2.1. Introduction

Nutritional status is one of the important indicators of overall health status in children and may have a long-term health impact in their future life. Malnutrition is defined as failure of the body to obtain appropriate amount of energy and nutrients in order to maintain healthy tissues and organ function. While malnutrition in the form of wasting, stunting, and underweight can result from an inadequate intake of energy and nutrient intakes, overweight and obesity problems are a result of excessive energy intake¹ (WHO, 1997).

There are four nutrition indices used to define nutritional status of children as measured through anthropometric measurements (body weight and height), namely weight-for-age, height-for-age, body mass index (BMI)-for-age and weight-for-height. Weight-for-age of the children reflects both acute and chronic malnutrition of the children, whereas height-for-age of the children is a measure of linear growth, in which reflects chronic malnutrition due to insufficient nutrition over a long-term period and recurrent or chronic illness. As for BMI-for-age, it provides a good indicator for levels of body fat, and it is associated with an increased risk of non-communicable chronic diseases during childhood as well as later in life. Based on WHO Growth Standard³ (2006) for children under 5 years old, weight-for-age <-2SD is classified as underweight, height-for-age <-2SD is classified as stunted, and BMI-for-age <-2SD is classified as thinness while BMI-for-age >2SD is classified as overweight. In addition, weight-for-height is an index used for assessing wasting, which reflects a recent and severe process of weight loss due to acute starvation or severe disease. It is the best indicator that reflects level of acute malnutrition in children and is defined by weight-for-height <-2SD according to WHO Growth Standard (2006).²

5.2.2. Findings

5.2.2.1. Nutritional status by weight for age

In terms of weight-for-age status, the findings showed that 84.7% (95% CI: 83.47-85.80) of children were in the normal range weight-for-age: > -2SD to ≤ +2SD). Meanwhile, 13.7% (95% CI: 12.60-14.85) of Malaysian children were underweight (Weight-for-age: < -2SD). Comparing the sexes, more males (14.9%) were underweight than females (12.4%). By age groups, the highest prevalence was found among children aged 6-11 months [17.3% (95% CI: 11.34-25.61)] and the lowest was among children aged 36-47 months [11.5% (95% CI: 9.61-13.74)]. Based on ethnicity of the child, those from 'Other Ethnicities' showed the highest total prevalence of underweight [21.7% (95% CI: 15.25-29.87)], followed by Other Bumiputeras [17.5% (95% CI: 14.62-20.84)], and Indians [15.3% (95% CI: 9.91-22.94)].

The prevalence of overweight (Weight-for-age: >+2SD) among Malaysian children below 5 years was 1.6% (95% CI: 1.33-2.03). Males showed a higher prevalence of overweight [1.8% (95% CI: 1.38-2.30)] compared to females [1.5% (95% CI: 1.05-2.13)]. By age groups, the highest prevalence of overweight was among children aged 36-47 months [2.6% (95% CI: 1.90-3.53)], followed by children aged 48-59 months [2.5% (95% CI: 1.77-3.48)]. Based on ethnicity of the child, Indians showed the highest number of overweight children [5.5% (95% CI: 2.77-10.66)], followed by 'Other Ethnicities' [1.9% (95% CI: 0.62-5.44)], and Other Bumiputeras [1.6% (95% CI: 0.85-2.94)] (**Table 5.2.2.2**).

2. The Dietary Reference Intake (DRI), Institute of Medicine (IOM) of the National Academies, United States, 1997

3. WHO Child Growth Standards: Methods and development: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age, World Health Organization, Switzerland, 2006

5.2.2.2 Nutritional status by height for age

In terms of height-for-age, about 76.0% (95% CI: 74.55-77.48) of the children were in the normal range (Height-for-age: $> -2SD$ to $\leq +2SD$). The national prevalence of stunting (height-for-age: $< -2SD$) was 20.7% (95% CI: 19.34-22.12).

By age group, the highest prevalence of stunting was noted among those aged 24-35 months at 23.5% (95% CI: 19.45-28.16) and the lowest was among children aged 6-11 months, 15.5% (95% CI: 10.38-22.48). Among the various ethnicities of the child, those from 'Other Ethnicities' showed the highest prevalence of stunting [29.5% (95% CI: 22.15-38.09)], followed by Other Bumiputeras [24.9% (95% CI: 21.69-28.48)] (**Table 5.2.2.3**).

5.2.2.3 Nutritional status by weight for height

Overall prevalence of wasting among Malaysian children ≤ 59 months in this study was 11.5% [(95% CI: 10.51-12.65)]. The prevalence of wasting was higher among males [13.3% (95% CI: 11.72-15.06)] than females [9.7% (95% CI: 8.47-11.06)]. Based on age and ethnicity of the child, the highest wasting prevalence was observed among children aged 48-59 months old and children of Indian ethnicity with a prevalence of 13.6% (95% CI: 11.47-15.95) and 17.3% (95% CI: 11.78-24.74) respectively.

The majority of Malaysian children in this survey had a body weight within the normal range 82.5% (95% CI: 81.04-83.79) while only 6.0% (95% CI: 5.09-7.07) were overweight. Prevalence of normal and overweight were higher among females than males. The findings of this survey also showed that children aged 48-59 months showed the highest prevalence of overweight [7.7% (95% CI: 6.06-9.63)] and the lowest percentage of normal weight for height status [78.8% (95% CI: 75.96-81.37)] (**Table 5.2.2.4**).

5.2.2.4 Nutritional status by BMI for age

The findings of the survey showed that the national prevalence of wasting (BMI for age $< -2SD$) was 11.2% (95% CI: 10.21-12.27). Males showed a higher prevalence of wasting [12.9% (95% CI: 11.40-14.60)] than females [9.4% (95% CI: 8.22-10.76)]. By age groups, the highest prevalence was noted among children aged below 5 months [13.3% (95% CI: 9.76-17.86)] and the lowest was among children aged 24-35 months [9.6% (95% CI: 7.17-12.83)]. By ethnicity of the child, Indians showed the highest prevalence of wasting [15.7% (95% CI: 10.84-22.16)], followed by Malays [12.0% (95% CI: 10.74-13.40)], and Chinese [10.2% (95% CI: 7.81-13.31)].

The overall national prevalence of overweight (BMI for age $> +2SD$) was 6.4% (95% CI: 5.40-7.49). The prevalence was higher among females [6.7% (95% CI: 5.07-8.70)] than males [6.1% (95% CI: 5.07-7.26)]. By age groups, the highest prevalence was noted among children aged 24-35 months [9.2% (95% CI: 5.62-14.82)] and the lowest was among children aged below 5 months [2.3% (95% CI: 1.16-4.52)]. Among the various ethnic groups of the child, Chinese had the highest prevalence of overweight [7.0% (95% CI: 3.67-12.93)], followed by Malays and Other Bumiputeras respectively; 6.4% (95% CI: 5.41-7.67) and 6.0% (95% CI: 4.31-8.29) (**Table 5.2.2.5**).

5.2.3. Conclusion

The prevalence of under nutrition that includes underweight, stunting and wasting among Malaysian children under five was much higher than the prevalence of overweight that warranted urgent and more extensive strategies to address these problems.

5.2.4. Recommendations

- i. To carry out an immediate comprehensive national landscape analysis on the nutritional status of the children in the country including stunting, wasting, underweight and overweight, so that more targeted intervention can be executed
- ii. Strengthen the multi-pronged strategies to address malnutrition among infants and young children through more aggressive nutrition advocacy and promotion as well as strengthening the management of malnutrition such as through management of severe and acute malnutrition and integrated management of childhood illnesses (IMCI).
- iii. To continue and strengthen the food and nutrition security of the children especially in addressing the problem of wasting, underweight and stunting via more holistic and sustainable approaches.

5.3. INFANT AND YOUNG CHILD FEEDING

5.3.1. Introduction

Appropriate infant feeding practices are crucial for children's survival as well as growth and development. An important part of infant feeding practices is breastfeeding, which plays a major role as the first protection to prevent infant from infections, besides being an ideal source of nutrients, economic and safe. The global practice of early initiation of breastfeeding recommends that infants should be put to the breast immediately after birth within one hour without any disruption. This practice determined the successful establishment and durations of breastfeeding. Thus, the Malaysian National Breastfeeding Policy^{1,2} was formulated in 1993 and revised in 2006 which states that all mothers are encouraged to breastfeed their babies exclusively with breast milk from birth until six months of age and thereafter to continue until the child is two years old. Complementary foods should be introduced only when the baby is six months old, and should be safe, solid, semi-solid or soft foods (age-appropriate feeding). Meal feeding frequency and dietary diversity should fulfil minimum acceptable diet and adequacy for both breastfeeding and non-breastfeeding children in ensuring the children nutrition needs.³

Therefore, in line with the UNICEF's Multiple Indicator Cluster Survey (MICS) conducted in various countries, this survey was also conducted in Malaysia since there are currently very limited national population data on infant and young child feeding practices. The most recent reported population data on infant feeding was in the National Health and Morbidity Survey (NHMS 2006) which factors contribute to duration of mothers breastfed their infants exclusively, information on the dietary diversity and adequacy of diet were not captured or addressed.

5.3.2. Findings

5.3.2.1. Breastfeeding

Prevalence of early initiation of breastfeeding among infants below 6 months old by sociodemographic characteristics

The overall prevalence of early initiation of breastfeeding within one hour of birth was 65.3% (95% CI: 61.42-68.88), initiation of breastfeeding within one day of birth was 24.3% (95% CI: 20.84-28.02), initiation of breastfeeding after one day was 6.9% (95% CI: 5.19-9.18) and having never put the baby to the breast was 3.6% (95% CI: 2.55-5.01). The prevalence of early initiation of breastfeeding was significantly higher among mothers from rural areas [59.8% (95% CI: 70.79-80.42)] as compared to mothers from urban areas [75.9% (95% CI: 54.71-64.67)]. In terms of ethnicity, the highest prevalence of early initiation of breastfeeding was among Other Bumiputerans [88.1% (95% CI: 80.62-92.93)], followed by Malays [65.4% (95% CI: 60.69-69.84)] and the lowest among the Chinese [49.0% (95% CI: 36.42-61.67)].

In addition, the percentage of mothers who initiated early breastfeeding within one hour of birth was among those aged 45-49 years and the lowest was among mothers aged 40-44 years old [27.1% (95% CI: 13.37-47.29)]. Comparing methods of delivery, mothers who had vaginal delivery (assisted vaginal breech delivery) [99.5% (95% CI: 94.52-99.96)] had the highest prevalence of early initiation of breastfeeding as compared to mothers who delivered via Caesarean section [49.0% (95% CI: 41.03-56.93)], or other assisted methods of delivery such as vacuum [35.2% (95% CI: 15.09-62.41)] and forceps [18.5% (95% CI: 2.23-69.41)].

1. MOH (Ministry of Health Malaysia) (2008b). Guidelines for the Feeding of Infants and Young Children, Ministry of Health Malaysia, Putrajaya

2. Indicators for Assessing Breastfeeding Practice, Report of an Informal Meeting, World Health Organisation, Geneva, 1991

3. Indicators for assessing infant and young child feeding practices, Washington D.C., USA, 2007

In addition, mothers who delivered their babies at home had a higher prevalence of early initiation of breastfeeding as compared to mothers who delivered at private facilities [54.2% (95% CI: 43.92-64.15)]. In terms of marital status, mother who were married/ cohabiting had a higher prevalence of early initiation of breastfeeding [65.3% (95% CI: 61.40-68.92)] compared to mothers who were separated /divorced/ widowed/ never married [31.4% (95% CI: 8.04-70.54)]. Mothers with primary education levels had a higher prevalence [71.2% (95% CI: 60.68-79.87)] of early initiation of breastfeeding than those with higher education levels [59.7% (95% CI: 52.84-66.28)]. On the other hand, mothers who were unemployed were more likely to initiate breastfeeding within one hour of birth. The highest prevalence of early initiation of breastfeeding was among mothers from the income group of RM3000-RM3999 [72.2% (95% CI: 63.60-79.45)] while the lowest was 13.1% (95% CI: 6.14-25.93) among mothers with monthly income less than RM1000 (**Table 5.3.2.1**).

Prevalence of exclusive breastfeeding practices among infants below 6 months old by sociodemographic characteristics

The overall prevalence of having ever breastfed was 98.1% (95% CI 96.23-99.04). The highest prevalence of having ever breastfed was among Indians [100% (95% CI: 100.00-100.00)], Malay [99.1% (95% CI: 97.85-99.60)] and the lowest was among Chinese [96.4% (95% CI: 89.93-98.74)]. On the other hand, mothers who were separated/ divorced/ widowed/ never married had a higher prevalence of having ever breastfed (100%) than those who were married/ cohabiting [98.1% (95% CI: 96.18-99.03)]. In addition, there was no significant difference on having ever breastfed by the methods of delivery. Mothers who were self-employed had the highest prevalence (100%) of having ever breastfed as compared to mothers working in the private sector [99.5% (95% CI: 98.09-99.87)] and public sector [98.6% (95% CI: 94.69-99.66)] followed by housewives [96.8% (95% CI: 93.01-98.60)]. Meanwhile, the highest prevalence of having ever breastfed by monthly income was seen in those with household income of RM1000-RM1999 [99.7% (95% CI: 97.99-99.96)] while the lowest was from those with household income RM5000 and above [96.0% (95% CI: 90.74-98.34)].

The overall prevalence of exclusive breastfeeding among infants under six months old was 47.1% (95% CI: 43.13-51.18). By ethnicity, the highest prevalence of exclusive breastfeeding was among Malays [48.9% (95% CI: 44.19-53.66)], followed by Other Bumiputera [46.0% (95% CI: 35.90-56.44)], Indians [41.8% (95% CI: 20.32-66.88)] and Chinese [29.6% (95% CI: 16.48-47.19)]. In terms of marital status, mothers who were married/ cohabiting had a higher prevalence of exclusive breastfeeding [47.4% (95% CI: 43.36-51.45)] than those who were separated/ divorced/ widowed/ never married [24.3% (95% CI: 6.38-60.15)]. In addition, housewives [53.4% (95% CI: 47.79-58.99)] were more likely to exclusively breastfeed their infants as compared to those working in the public sector [46.0% (95% CI: 36.42-55.98)], and self-employed mothers [43.0% (95% CI: 27.96-59.42)]. Mothers who had primary education levels [50.7% (95% CI: 38.18-63.15)] and without education [50.2% (95% CI: 26.89-73.49)] were more likely to exclusively breastfeed their infant as compared to those with secondary education [44.5% (95% CI: 38.60-50.56)]. In addition, the prevalence of infants under 6 months who were exclusively breastfed was highest among the lowest household income group of less than RM1000 [51.0% (95% CI: 38.38-63.52)] and the lowest was found among those with monthly household income of RM2000-RM2999 [41.0% (95% CI: 31.16-51.53)]. However, there was no significant difference by sex of the children, citizenship of mother, marital status, occupation and education level of the mothers (**Table 5.3.2.2**).

Prevalence of predominant breastfeeding practices among infants below 6 months old by sociodemographic characteristics

The overall prevalence of predominant breastfeeding among infants below 6 months was 17.1% (95% CI: 14.33-20.31). The highest prevalence of predominant breastfeeding was among Malays [18.3% (95% CI: 14.94-22.17)] followed by Chinese [17.8% (95% CI: 8.92-32.24)] and Indian [13.5% (95% CI: 4.84-32.34)]. However, mothers who had higher education levels were more likely to predominantly breastfeed [21.4% (95% CI: 16.17-27.76)] compared to mothers who had no formal education [18.2% (95% CI: 5.35-46.59)] and mothers who were educated up to primary school [14.7% (95% CI: 7.45-27.01)]. In terms of marital status, women who were separated/ divorced/ widowed/ never married had a higher prevalence of predominant breastfeeding [18.7% (95% CI: 4.22-54.61)] than mothers who were married/cohabiting [17.1% (95% CI: 14.29-20.32)]. On the other hand, mothers who were working in the private sector [22.1%, (95% CI: 15.75-30.06)] were more likely to predominantly breastfeed as compared to those working in the public sector [17.40%, (95% CI: 11.87-24.87)], housewives [15.1% (95% CI: 11.47-19.63)] and mothers who were self-employed [(12.1%, 95% CI: 5.67-23.95)]. In addition, the prevalence of infants predominantly breastfed was highest among those from household income of RM5000 and above [21.1% (95% CI: 15.70-27.77)] while the lowest prevalence was among those with income group of less than RM1000 [11.6% (95% CI: 5.34-23.34)] (**Table 5.3.2.3**).

Prevalence of continued breastfeeding at 2 years among children at 20-23 months old by sociodemographic characteristics

Overall, the prevalence of continued breastfeeding at two years old among children aged 20-23 months old was 39.4% (95% CI: 36.36-42.46). The highest prevalence of continued breastfeeding at two years of age was seen among children in Pahang [52.7% (95% CI: 37.78-67.08)], followed by Wilayah Persekutuan Putrajaya [49.3% (95% CI: 42.09-56.45)] and Terengganu [45.6% (95% CI: 37.17-54.29)]. The prevalence of continued breastfeeding at two years of age was seen among children from rural areas [46.1% (95% CI: 42.05-50.27)] as compared to children from urban areas [35.9% (95% CI: 31.82-40.09)]. Mothers who were Malays [44.9% (95% CI: 41.54-48.30)] and Other Bumiputera [43.2% (95% CI: 31.81-55.33)] were more likely to continue breastfeeding at two years as compared to Chinese [18.8% (95% CI: 11.15-29.97)] and Indian [10.4% (95% CI: 5.45-19.11)]. Mothers who had no formal education [62.4% (95% CI: 44.00-77.80)] were significantly more likely to continue breastfeeding at two years of age as compared to those with higher education levels [35.4% (95% CI: 30.57-40.54)]. On the other hand, mothers who were housewives [50.4% (95% CI: 45.62-55.08)] were significantly more likely to continue breastfeeding for 2 years as compared to those working in the private sector [26.0% (95% CI: 20.43-32.54)] and those self-employed [34.8% (95% CI: 26.83-43.67)]. In addition, the prevalence of children who continued to be breastfed at two years was highest among the lowest household income group of less than RM1000 [56.8% (95% CI: 48.75-64.59)] and the lowest among those from household income RM4000-RM4999 [31.2% (95% CI: 23.31-40.30)]. However, there was no significant difference by sex of the child, or citizenship and marital status of the mothers (**Table 5.3.2.4**).

Duration of breastfeeding among children aged 0-35 months old by sociodemographic characteristics

The median duration of breastfeeding among children aged 0-35 months old was 24 months (25th-75th: 16-32). The longest median duration of breastfeeding among this age group of children was in Kelantan (31 months, 25th-75th: 20-34), followed by Wilayah Persekutuan Putrajaya (30 months, 25th-75th: 20-33) and Terengganu (29 months, 25th-75th: 19-33). There was no significant difference in the median duration of breastfeeding by state, sex, ethnicity of mothers, citizenship, marital status, education, occupation and household income. The duration of breastfeeding was highest among Malays mothers (27 months, 25th-75th: 17-33) while the lowest was seen among Chinese mothers (19 months, 25th-75th: 14-30) (**Table 5.3.2.5**).

Prevalence of bottle feeding practices among children aged 0-23 months by sociodemographic characteristics

The prevalence of bottle feeding practices among Malaysian children aged 0-23 months was 63.7% (95% CI: 60.88-66.37). There was a significantly higher prevalence of bottle feeding practices among children in Negeri Sembilan [80.7% (95% CI: 72.86-86.75)] as compared to children in Terengganu [34.5% (95% CI: 27.62-42.11)], Kelantan [50.9% (95% CI: 42.43-59.32)], and Perak [55.1 (95% CI: 45.45-64.29)]. Mothers who had no formal education [(51.8% (95% CI: 39.95-63.40))] had a significant lower prevalence of bottle feeding than mothers with higher education levels [66.0% (95% CI: 60.16-71.36)]. In addition, housewives [56.1% (95% CI: 52.31-59.81)] were significantly less likely to bottle feed their children than mothers who were working in the public sector [67.7% (95% CI: 61.26-73.57)] and private sector [75.3% (95% CI: 68.32-81.22)]. However, those from higher household income groups which were RM5000 and above [70.1% (95% CI: 64.38-75.32)] and RM4000-RM4999 [68.3% (95% CI: 61.18-74.67)] were significantly more likely to bottle feed their children as compared to the lowest income group of RM1000-RM1999 [54.5% (95% CI: 46.77-62.07)] (**Table 5.3.2.6**).

Prevalence of age-appropriate breastfeeding practices among children aged 0-23 months old by sociodemographic characteristics

The prevalence of age-appropriate breastfeeding practices among children aged 0-23 months old was 93.1% (95% CI: 91.23-94.53). The state with the highest prevalence of children with age-appropriate breastfeeding practices was Pulau Pinang [99.6 (95% CI: 98.86-99.87)], followed by Negeri Sembilan [98.0 (95% CI: 92.97-99.46)]. Chinese mothers [99.0% (95% CI: 97.65-99.58)] were significantly more likely to practice age-appropriate breastfeeding as compared to other ethnicities. On the other hand, unemployed mothers [98.4% (95% CI: 95.26-99.48)] were significantly more likely to fulfil age-appropriate breastfeeding practices than housewives [90.6% (95% CI: 87.76-92.89)]. There was also no significant difference of age-appropriate breastfeeding practices by sex, citizenship of the mothers, marital status, education, occupation and household income (**Table 5.3.2.7**).

Prevalence of milk feeding frequency within 24 hours among children aged 0-23 months old by socio-demographic characteristics

The overall prevalence of milk feeding frequency among children who were taking more than two feeds within 24 hours was 95.5% (95% CI: 94.50-96.40). Negeri Sembilan reported the highest prevalence of milk feeding frequency [99.3% (95% CI: 98.03-99.76)] while Sabah & Labuan reported the lowest prevalence of milk feeding frequency [87.1% (95% CI: 83.77-89.84)] within 24 hours. By ethnicity, Malays [95.9% (95% CI: 94.01-97.19)] had a significantly higher prevalence of children taking at least two milk feeds within 24 hours than Other Bumiputera [89.3% (95% CI: 86.30-91.65)]. In the meantime, the prevalence of children who were fed at least two feeds of milk within 24 hours was significantly higher among those with monthly household income of RM5000 and above [97.3% (95% CI: 96.35-98.04)] than those with monthly household income of less than RM1000 [92.2% (95% CI: 87.07-95.35)] (**Table 5.3.2.8**).

Prevalence of minimum meal frequency, minimum dietary diversity, minimum acceptable diversity among children aged 0-23 months old by sociodemographic characteristics.

Minimum Meal Frequency

The overall prevalence of children with minimum meal frequency (children who received solid, semi-solid and soft food for breastfed and non-breastfed children) was 80.8% (95% CI: 78.73-82.68). By state, Wilayah Persekutuan Putrajaya had the highest prevalence of children with minimum meal frequency [98.0% (95% CI: 96.81-98.76)] while the lowest prevalence was

among children from Perak [56.5% (95% CI: 47.02-65.54)]. The prevalence of children who fulfilled the minimum meal frequency requirement were children from rural areas [85.0% (95% CI: 82.29-87.28)] as compared to children from urban areas [78.5% (95% CI: 75.66-81.10)]. On the other hand, Other Bumiputeras [91.5% (95% CI: 82.32-91.70)] were significantly more likely to fulfil the minimum meal frequency requirement than Indian children [60.8% (95% CI: 50.18-70.44)]. There was also a significantly higher prevalence of children with minimum meal frequency from the lowest household income groups [87.8% (95% CI: 82.55-91.58)] while the lowest was observed among children from higher income groups of RM5000 and above [76.7% (95% CI: 72.79-80.16)]. However, there was no significant difference between sex, marital status, educational and occupational status of the mothers.

Minimum Dietary Diversity

The overall prevalence of minimum dietary diversity (children who received foods from four or more food groups during the previous day) was 66.4% (95% CI: 63.94-68.70). By state, Terengganu had the highest prevalence of minimum dietary diversity [89.6% (95% CI: 83.84-93.46)] and the lowest was seen in Kelantan [27.5% (95% CI: 23.01-32.43)]. There was a significant higher prevalence of minimum dietary diversity among Other Bumiputera [81.0% (95% CI: 76.86-84.60)] than Malays [61.0% (95% CI: 57.69-64.19)]. However, there was no significant difference between sex, marital status, educational level, household income and occupation of the mother.

Minimum Acceptable Diet

The overall prevalence of minimum acceptable diet (children who breastfed at least the minimum dietary diversity and minimum meal frequency during the previous day for breastfed and non-breastfed) was 53.1% (95% CI: 50.80-55.35). By state, Malacca had the highest prevalence of children with minimum acceptable diet [72.5% (95% CI: 66.52-77.79)] while the lowest was in Kelantan [25.1% (95% CI: 20.76-30.09)]. The prevalence of children with minimum acceptable diet was higher among children from rural areas [58.2% (95% CI: 55.09-61.32)] as compared to children from urban areas [50.3% (95% CI: 47.27-53.26)]. Based on ethnicity, there was a higher prevalence among Other Bumiputera [69.8% (95% CI: 65.03-74.21)] and the lowest was among Indian [40.6% (95% CI: 32.48-49.33)]. There was a higher prevalence of children with minimum acceptable diet from the lowest household income group [60.1% (95% CI: 52.91-66.79)] while the lowest was children from the middle income group RM2000-RM2999 [47.9% (95% CI: 41.86-54.03)] (**Table 5.3.2.9**).

Factors that influence the decision to stop breastfeeding among children 0-23 months

Overall, 93.2% of mothers reported that they were not influenced by their employer, husband, mother, mother-in-law, grandmother in making the decision to stop breastfeeding. It was indeed the mother's own decision to stop breastfeeding. The three major reported barriers in practicing breastfeeding or factors that influenced the mothers to stop breastfeeding were having not enough milk [59.0% (95% CI: 55.43-62.38)], followed by tiredness due to work [16.4% (95% CI: 14.25-18.83)] and the baby having trouble suckling or latching on [8.6% (95% CI: 7.21-10.23)]. Some of the major factors related to the decision to stop breastfeeding among working mothers were difficulty to allocate time for breastfeeding or expressing breast milk [89.1 (95% CI: 59.53-97.84)], followed by difficulty in storing expressed breast milk [46.6 (95% CI: 25.25-69.26)] and mothers who found it hard to find a place to breastfeed or express breast milk at work [44.7 (95% CI: 23.82-67.62)] (**Table 5.3.2.10**).

Milk Feeding Practice among children 0-23 months

Breastfeed or bottle feed just before sleep or during sleep

The prevalence of children who were breastfed or bottle fed just before or during sleep was 88.3% (95% CI: 86.42-90.01). By state, Negeri Sembilan had the highest percentage of children who were breastfed or bottle fed just before or during sleep [97.8% (95% CI: 94.71-

99.10)] while the lowest was from Pahang [81.1% (95% CI: 75.06-85.91)]. Other Bumiputera has the highest prevalence of children practising breastfeeding or bottle feeding just before sleep or during sleep [97.8% (95% CI: 94.71-99.10)] compared to other ethnicities.

Giving plain water after breastfeeding or bottle feeding

The prevalence of children who did not drink plain water after breastfeeding or bottle feeding was 54.1% (95% CI: 51.33-56.78). By state, Wilayah Persekutuan Putrajaya had the highest prevalence of children who did not drink plain water after breastfeeding or bottle feeding [68.7% (95% CI: 61.45-75.21)] while Johor had the highest prevalence of children who practiced drinking plain water after breastfeeding or bottle feeding [64.4% (95% CI: 55.91-72.06)]. By ethnicity, those from the 'other' group [63.4% (95% CI: 54.99-71.05)] were significantly higher than Malay [42.7% (95% CI: 39.48-46.02)] to skip giving plain water after nursing. In addition, children from the lowest household income group of less than RM1000 [50.7% (95% CI: 42.61-58.68)] had higher prevalence of drinking plain water after breastfeeding or bottle feeding as compared to other household income groups.

Children who sleep with a milk bottle in their mouth

The majority of children did not sleep with a milk bottle in their mouth [87.2% (95% CI: 85.43-88.72)]. By state, Negeri Sembilan had the highest prevalence of children who did not sleep with a milk bottle in their mouth [96.8% (95% CI: 92.38-98.72)] while the lowest was in Perak [71.2% (95% CI: 63.86-77.64)]. However, there was no significant difference between sex, age of mother, ethnicity, citizenship, marital status, education, occupation and household income.

Sugar added to milk

Overall, almost all mothers did not feed their children aged 0-23 months with sugar added to milk [98.9% (95% CI: 98.43-99.18)]. However, there was no significant difference by state, sex, educational status, marital status and household income (**Table 5.3.2.11**).

Conclusion

This study indicates that early initiation of breastfeeding was more common among Other Bumiputeras, mothers who were married, mothers who had a vaginal delivery, and mothers with lower education levels. Apart from that, exclusive breastfeeding practices for babies below six months of age was more common among Malay mothers, housewives and mothers with lower education levels. We observed that mothers from rural areas tend to breastfeed longer than mothers from urban areas. In addition, almost all children were fed appropriately according to their age. Overall acceptable diet was relatively low especially in the state of Kelantan.

Recommendations

- i. To establish a more supportive breastfeeding environment especially at the workplace and public places such as the availability of facilities to breastfeed or express breast milk and to store expressed breast milk for working mothers.
- ii. To strengthen the breastfeeding education and support to mothers who delivered via caesarean section and also address specific problems of breastfeeding among this group of mothers.
- iii. To create awareness among parents or caregivers about the importance of dietary diversity for children under two years and to provide specific infant feeding training to health care providers.
- iv. To educate parents or caregivers on how to fulfil dietary diversity requirement for children under two years old in order to improve nutritional status of children especially stunting among children within this age group.

VI. CHILD DEVELOPMENT

6.1. Developmental Delay

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6.1.1. Introduction

Developmental delay (DD) is defined as the failure of an individual under the age 5 years to meet expected developmental milestones across multiple areas of intellectual functioning.¹ The prevalence of developmental delay among infants, toddlers and preschool children has been estimated at 5-16% globally.² Delayed development is commonly associated with mental or physical disabilities or both, resulting in substantial functional limitation on major life activities.^{3,4}

Most developmental disabilities are thought to be caused by multiple risk factors. These includes genetic and environmental factors as well as complications during antenatal, perinatal and postnatal period.⁵ Early detection and intervention can improve neurodevelopmental outcomes and maximise the child's abilities.

The Ministry of Health Malaysia has taken initiatives to improve the early detection of developmental delay among children aged 0 to 6 years through regular clinic visit and developmental screening tests. The revised child health programme (2008) includes specific developmental screening at specified intervals. Red Flags for the various developmental domains namely gross motor, vision and fine motor, speech and language as well as social skills have been included. In addition, the Modified Checklist for Autism in Toddlers (MCHAT) was incorporated in the New Child Health Record Book and has been fully implemented from year 2013.

6.1.2. Findings

In NHMS 2016, the developmental milestones were assessed according to the respondent's age. The questions were derived from four components i.e gross motor, fine motor, social skills and speech. Failure in any one of the above components was categorized as developmental delay.

The total prevalence of developmental delay among children aged 6-59 months was 3.3% (95% CI: 2.58-4.19). According to the four components, the highest prevalence was found in speech at 1.7% (95% CI: 1.22-2.44) followed by social skills at 1.2% (95% CI: 0.85-1.57), fine motor at 0.7% (95% CI: 0.52-1.01) and gross motor at 0.6% (95% CI: 0.41-0.87).

The prevalence of developmental delay among Malaysian citizens was 3.1% (95% CI: 2.43-3.93). However the non-Malaysian citizens showed higher prevalence of 14.3% (95% CI: 8.69-22.52), probably due to smaller numbers of respondents.

The percentages of children aged 6-59 months who were developmentally delayed according to sociodemographic status is shown in Table 6.1.2. The percentages of developmental delay according to various age groups was 4.8% (95% CI: 2.04-10.75) for those aged 6-11 months, 4.0% (95% CI: 2.80-5.81) for those aged 12-23 months and 2.9% (95% CI: 2.25-3.66) for those aged 24-59 months.

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 4. Karoly L., Greenwood S., Everingham J., Hoube M., Kilburn C., Rydell M., 2005. Investing in our children: what we know and don't know about the cost and benefits of early interventions. RAND report.
 5. Center For Disease Control and Prevention (CDC) <http://www.cdc.gov/ncbddd/childdevelopment/index.html>
 6. Amar Singh H. 2005. Pre-schoolers-Who's Baby an Evaluation of the Need for Health Service (Child Health Surveillance) Pre -School Children. Eight National Paediatric Conference, (pp. 1-8). Malaysia.

The prevalence was higher in males, at 3.9% (95% CI: 2.89-5.22%) compared to females, 2.6% (95% CI: 1.99-3.51). The prevalence of developmental delay was highest among other ethnicities at 10.2% (95% CI: 4.99-19.60) followed by other Bumiputeras at 4.0% (95% CI: 2.07-7.69), Chinese at 3.2% (95% CI: 1.96-5.22), Malays at 3.0% (95% CI: 2.38-3.78) and Indians at 1.7% (95% CI: 0.92-3.31).

Prevalence of developmental delay among children whose parents were never married or separated was 2.2% (95% CI: 1.00-4.89) and among those married or cohabiting was 3.3% (95% CI: 2.59-4.12).

With regards to maternal education, we documented highest prevalence of developmental delay in children whose mother received primary education at 6.3% (95% CI: 4.13-9.64) followed by mothers with no formal education at 4.8% (95% CI: 2.25-9.99). The prevalence of developmental delay in children whose mother's receive secondary and tertiary education was 2.9% (95% CI: 2.27-3.59) and 2.7% (95% CI: 1.93-3.84) respectively.

With regards to paternal education, we documented a similar trend where the highest prevalence of developmental delay was seen in children whose fathers received primary education, at 5.6% (95% CI: 4.01-7.78), followed by fathers without formal education at 3.4% (95% CI: 1.33-8.41), secondary and tertiary education at 3.2% (95% CI 2.44-4.31) and 2.5% (95 % CI: 1.71-3.57) respectively.

Prevalence of development delay in children was highest among unemployed parents, with unemployed mothers at 4.1% (95% CI: 3.12-5.30) and unemployed fathers at 5.2% (95% CI: 1.81-14.24). The lowest prevalence of developmental delay among children was noted among self-employed mother at 1.5% (95% CI: 0.81-2.64) and fathers who worked in the public sector was 3.1% (95% CI: 2.11-4.44). **[Table 6.1.2.1]**

6.1.2.1. Prevalence of Gross Motor Developmental Delay

The total prevalence of children aged 6-59 months old who had gross motor developmental delay was 0.6% (95% CI: 0.41-0.87) as shown in [Table 6.1.2.2]. The prevalence was higher among boys, 0.7% (95% CI: 0.40-1.09) compared to girls, 0.5% (95% CI: 0.34-0.83). Children aged 6-11 months were noted to be the highest prevalence which was 1.1% (95% CI: 0.30-4.02) followed by 12-23 months old with 0.6% (95% CI: 0.50-0.80) and 24-59 months old 0.5% (95% CI: 0.34-0.86). By ethnicity, the prevalence was highest among others at 3.0% (95% CI: 0.96-8.80) whereas among other Bumiputera was 0.9% (95% CI: 0.41-1.77), Malay was 0.6% (95% CI: 0.32-0.93), Chinese was 0.3% (95% CI: 0.26-0.47) and Indians was 0.1% (95% CI: 0.03-0.28).

6.1.2.2. Prevalence of Fine Motor Developmental Delay

The total prevalence of children aged 6-59 months old who had fine motor developmental delay was 0.7% (95% CI: 0.52-1.01) as shown in [Table 6.1.2.3]. The prevalence was higher among boys, 0.9% (95% CI: 0.55-1.34) compared to girls, 0.6% (95% CI: 0.34-1.00). Children aged 24-59 months old were noted to have the highest prevalence which was 0.8% (95% CI: 0.58-1.24) followed by those aged 12-23 months old, 0.5% (95% CI: 0.33-0.70) and 6-11 months old, 0.4% (95% CI: 0.05-2.89). By ethnicity, the prevalence was highest among others at 2.4% (95% CI: 0.44-11.71) whereas among other Bumiputeras was 1.0% (95% CI: 0.54-1.97), Malay and Chinese were 0.6% (95% CI: 0.41-1.01) and (95% CI: 0.47-0.85) respectively and lastly Indians was 0.3% (95% CI: 0.06-1.89).

6.1.2.3. Prevalence of Speech/ Hearing Developmental Delay

The total prevalence of children aged 6-59 months old who had speech/ hearing developmental delay was 1.7% (95% CI: 1.22-2.44) as shown in [Table 6.1.2.4]. The prevalence was higher among boys, 2.2% (95% CI: 0.46-3.27) compared to girls, 1.2% (95% CI: 0.84-1.80). Children aged 12-23 months old were noted have the highest prevalence which was 3.5% (95% CI: 2.29-5.30) followed by those in the 24-59months group, 1.1% (95% CI: 0.77-1.72) and 6-11 months old, 0.6% (95% CI: 0.18-2.26). By ethnicity, the prevalence was highest among other Bumiputeras at 2.8% (95% CI: 1.2-0-6.51) whereas among other was 1.8% (95% CI: 0.81-3.93), Malay was 1.6% (95% CI: 1.19-2.19), Chinese was 1.3% (95% CI: 0.76-2.11) and Indians was 1.2% (95% CI: 0.64-2.33).

6.1.2.4. Prevalence of Developmental Delayed in Social Skills

The overall prevalence of children aged 6-59 months who were developmentally delayed in social skills was 1.2% (95% CI: 0.85-1.57) as shown in [Table 6.1.2.5]. The prevalence was higher among boys, 1.4% (95% CI: 0.96-2.00) compared to girls, 0.9% (95% CI: 0.52-1.59). Children aged 6-11 months old were noted to have the highest prevalence which was 11.2% (95% CI: 4.44-25.48) followed by 24-59 months old, 1.2% (95% CI: 0.89-1.70) and 12-23 months old, 0.2% (95% CI: 0.15-0.35). By ethnicity, the prevalence was highest among others at 3.5% (95% CI: 1.19-10.02) whereas among other Bumiputeras was 1.3% (95% CI: 0.59-2.94), Malay and Chinese were 1.1% (95% CI: 0.81-1.53) and (95% CI: 0.38-3.18) respectively and lastly Indians was 0.3% (95% CI: 0.05-1.66).

6.1.3. Conclusion

From this study, the prevalence of developmental delay in children aged 6-59 months was 3.3%. The findings showed that more boys experienced developmental delay overall as well as in each component compared to girls. Globally, the estimated prevalence for developmental delay among infants, toddlers and preschool children was 5 to 16%. The discrepancy of these figures can be attributed to exclusion of the preschool age group in our study. Higher prevalence of developmental delay in children aged 6-59 months was seen in mothers who received primary or no formal education, and among parents who are unemployed.

6.1.4. Recommendations

Based on these findings, the recommendations are as below:

- i. There is a need to increase parental knowledge and awareness on normal childhood development through better utilisation of the Child Health Record Book and innovative methods such as social media.
- ii. The prevalence of children attending formal education at nurseries in this study is noted to be at 53%. It is highly recommended for the educators to be trained in early childhood education with emphasis on developmental aspects.
- iii. Health care providers are highly recommended to use the standardised developmental screening tools to identify RED FLAGS of developmental delay which would prompt early detection and intervention.

6.2. Autism

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6.2.1. Introduction

Autism is a complex neurodevelopmental and behavioral disorder that includes impairment in social interaction, developmental and communication skills. Studies in the Western Pacific Region report varying prevalence rates ranging from 2.8 to 94 per 10,000.¹ Only one available study in South East Asia, namely Indonesia estimates the rate at 11.7/10000.¹

Currently, there is no epidemiological data to describe prevalence of autism in Malaysia. In 2005, a small scale feasibility study on the use of M-CHAT involving 4,767 toddlers in 5 districts, showed an M-CHAT failure rate of 0.6% with an autism prevalence rate of 16 per 10,000.^{2,3} A study screening Egyptian toddlers for ASD using M-CHAT (validated Arabic version) showed failure of MCHAT in 23.8%^{4,5}. Following the study, MOH carried out routine screening for autism for toddlers at 18 and 36 months of age using M-CHAT. M-CHAT is a validated screening tool used in early detection of ASD in toddlers between age 18-36 months and is highly recommended by the American Academy of Pediatrics.^{4,5}

This study was carried out to determine the prevalence of children aged 18 – 36 months old at risk of autism in Malaysia among children who had not been screened for autism using the M-CHAT questionnaire. Parents of selected children were asked whether the M-CHAT was performed for their children previously. Verification was done by reviewing child health records.

6.2.2. Findings

A total of 5,846 children aged 18-36 months were included in the study, of which 1,308 children were selected to complete the MCHAT as it had not been done previously. A total of 51 children failed the MCHAT during the study. Overall, prevalence of failed M-CHAT is 1.6%, including those who those who were told to have failed M-CHAT previously. Although there was slightly higher prevalence among male toddlers (1.8%) as compared to female toddlers (1.4%), the difference is not statistically significant. There was no significant finding within all sociodemographic variables.

Out of 8,271 children under 5 years with child health records, 1,730 (20.9%) of them (1,064 children aged 18-35 months and 666 aged 36-59 months) had never been screened for autism using the M-CHAT. M-CHAT was also performed for children more than 36 months as they never had any formal screening prior to the study. From this study, we also discovered that 22 parents of children who failed MCHAT screening reported that their children were not referred for further management (**Table 6.2.2.1**).

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6.2.3. Conclusion

In this study, the prevalence of failed MCHAT is 1.6%, which is higher compared to 0.6% in the feasibility study in 2005. This study revealed that one fifth of children aged 18-59 months with child health record books were not screened for MCHAT. A total of 22 children who failed MCHAT previously were never referred for further assessment and intervention.

6.2.4. Recommendations

In view of the findings, the following recommendations are made:

- i. Intensify autism awareness programmes among health care providers and public.
- ii. Ensure adequate training for health care providers so they are comfortable to carry out and analyse the MCHAT screening tool.
- iii. Promptly refer the children who failed the autism screening to the appropriate specialities.

6.3. Access to Screen Time

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6.3.1. Introduction

Screen time is the time spent on screen-based activities each day namely the use of television, computers, tablets, electronic games, hand-held devices or other visual devices.¹ The continuous development of new technology has led to longer screen time and this can influence a child's learning and development.

The American Academy of Paediatrics (AAP) recommends children older than two should watch not more than 1 to 2 hours of quality entertainment media per day and discourages media use by children younger than age two. Excessive screen time has been correlated with obesity, sleep disorders, behavioural problems and attention problems, impaired academic performance and negative effects on vision.² Every additional hour of television exposure at 29 months of age corresponds to decreases in classroom engagement.³

Evidence also shows that media, both foreground and background have potentially negative effects and no known positive effects for children younger than 2 years. Background television has the direct effect of distracting a child and the indirect effect of taking parent's attention away from the child.⁴ The National Health and Morbidity Survey 2016; collected information on exposure to television and screen time among children age 0 to 59 months.

6.3.2. Findings

6.3.2.1. Any exposure to screen time for children aged 0-23 months and exposure more than 2 hours for children aged 24-59 months

The prevalence of exposure to any screen time, regardless of duration, for children aged 0-23 months and more than 2 hours for children aged 24-59 months was 52.2% (95% CI:48.65-54.69) as shown in (Table 6.3.2.1). Boys showed higher prevalence, 53.4% (95% CI:50.28-56.48) compared to girls, 50.9% (95% CI:48.19-53.54).

By ethnicity, it was noted that those under 'Others' had the highest prevalence at 63.7% (95% CI:53.43-72.91) followed by Indians at 61.1% (95% CI:54.80-67.09), Other Bumiputera at 55.9% (95% CI:50.17-61.50), Malay at 51.3% (95% CI:48.50-54.07) and lastly Chinese at 47.6% (95% CI:40.59-54.68).

A total of 51.8% (95% CI: 49.32-54.71) Malaysian children have excessive exposure to screen time. However the permanent residents showed higher prevalence of 88.5% (95% CI: 57.61-97.74) probably due to smaller numbers of respondents while the prevalence among Non-Malaysians was 64.7% (95% CI:55.00-73.29). In terms of mother's education, the prevalence was highest among mothers who received secondary education at 53.3% (95% CI: 50.59-56.01) while for father's education, fathers without formal education showed the highest prevalence at 56.8% (95% CI: 42.53-70.08).

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With regards to parental occupation, parents who were working in private sectors were found to be the highest in prevalence, which is mothers at 53.3% (95% CI:48.50-57.97) and fathers at 54.4% (95% CI:51.58-57.23). No significant differences in the prevalence among household income categories were noted in this study.

6.3.2.2. Any exposure to television in children aged 0-23 months

The prevalence of any exposure to television, regardless of duration, in children aged 0-23 months was 73.3% (95% CI:69.64-76.67) as shown in Table 6.3.2.2. A similar proportion of boys and girls have excessive television screen time, 73.4% (95% CI:66.87-78.98) and 73.2% (95% CI:69.84-76.40) respectively.

By ethnicity, it was noted that the group under 'Others' had the highest prevalence of excessive television screen time at 79.3% (95% CI:61.76-90.94) followed by Indians at 78.2% (95% CI:67.29-86.26), Other Bumiputera at 74.5% (95% CI:69.46-78.92), Chinese at 73.2% (95% CI:63.00-81.45) and lastly Malays at 72.4% (95% CI:68.20-76.26).

6.3.2.3. Any exposure to screen time other than television in children aged 0-23 months

The prevalence of children with any exposure to screen time other than television regardless of duration, for children aged 0-23 months was 44.4% (95% CI:41.71-47.16) (**Table 6.3.2.3**). Boys and girls showed almost similar prevalence, 44.5% (95% CI:40.95-48.05) and 44.4% (95% CI:40.76-48.00) respectively.

By ethnicity, it was noted that the group under 'Others' had the highest prevalence at 55.7% (95% CI:47.85-63.20) followed by Other Bumiputera at 52.9% (95% CI:44.48-60.14), Malay at 44.2% (95% CI:41.96-47.59), Chinese at 37.8% (95% CI:31.92-44.04) and lastly Indians at 31.7% (95% CI:22.33-42.90).

6.3.2.4. Any exposure to screen time (either Television/other than Television) in children aged 0-23 months

The prevalence of children exposed to any screen time (either television/ other than television) regardless of duration, for children aged 0-23 months was 74.4% (95% CI:70.76-77.70) as shown in (**Table 6.3.2.4**). Boys and girls showed almost similar prevalence, 74.8% (95% CI:68.25-80.32) and 74.0% (95% CI:70.56-77.11) respectively.

By ethnicity, it was noted that the group under 'Others' had the highest prevalence at 81.3% (95% CI:64.36-91.26) followed by Indians at 78.5% (95% CI:67.41-86.56), Other Bumiputera at 76.8% (95% CI:72.24-80.89), Chinese at 74.2% (95% CI:64.47-82.65) and lastly Malays at 73.2% (95% CI:68.89-77.03).

6.3.2.5. Exposure to Television more than 2 hours a day in children aged 24-59 months

The prevalence of children exposed to television more than 2 hours a day in children aged 24-59 months was 32.6% (95% CI:29.26-36.21) (**Table 6.3.2.5**). Boys showed higher prevalence, 34.0% (95% CI:30.06-38.16) compared to girls, 31.2% (95% CI:27.22-35.48).

By ethnicity, it was noted that the group under 'Others' had the highest prevalence at 45.2% (95% CI:30.38-60.89) followed by Indians at 43.4% (95% CI:32.66-54.74), Other Bumiputera at 34.9% (95% CI:26.84-43.88), Malays at 32.4% (95% CI:28.91-36.08) and lastly Chinese at 26.2% (95% CI:20.10-33.34).

6.3.2.6. Exposure to screen time other than television more than 2 hours a day in children aged 24-59 months

The prevalence of children exposed to screen time other than television more than 2 hours a day for children aged 24-59 months was 9.7% (95% CI:7.93-11.86) as shown in **(Table 6.3.2.6)**. Boys showed higher prevalence, 10.2% (95% CI:7.95-12.91) compared to girls, 9.3% (95% CI:7.23-11.77).

By ethnicity, it was noted that the group under 'Others' had the highest prevalence at 17.1% (95% CI:10.06-29.07) followed by Other Bumiputera at 12.6% (95% CI:8.94-17.59), Malay at 10.3% (95% CI:8.13-13.01), Indian at 5.3% (95% CI:2.21-12.33) and lastly Chinese at 4.8% (95% CI:3.14-7.16).

6.3.2.7. Exposure to screen time (either television/ other than television) more than 2 hours a day in children aged 24-59 months

The prevalence of children exposed to screen time (either television/other than television) more than 2 hours a day in children aged 24-59 months old was 36.2% (95% CI:32.63-40.00) **(Table 6.3.2.7)**. Boys showed higher prevalence, 37.7% (95% CI:32.41-42.17) compared to girls, 34.7% (95% CI:30.52-39.13).

By ethnicity, it was noted that the group under 'Others' had the highest prevalence at 50.0% (95% CI:38.67-61.35) followed by at Indians 47.0% (95% CI:35.98-58.26), Other Bumiputera at 41.8% (95% CI:33.27-50.76), Malays at 35.6% (95% CI:31.93-39.48) and lastly Chinese at 28.0% (95% CI:21.58-35.47).

6.3.3. Conclusion

It was found that 52.2% of children under 5 years of age were exposed to inappropriate screen time. This statistic is alarming as the AAP discourages media use for children below 2 years and limits the duration of screen time up to 2 hours/ day for children more than 2 years of age. Findings also showed that prevalence of children who had been exposed to television for more than 2 hours in a day was higher than those who had been exposed to computers/ tablets/ smartphones. Boys were exposed to screen time more than girls in both categories. The older children had higher screen time exposure, either television or computers/ tablets/ smart phones.

6.3.4. Recommendations

- i. Parent education on appropriate screen time should be instilled as early as at antenatal visits. Parents should be advised to reduce screen time exposure for their children especially before or during bed time to minimize the effects of screen time on sleep and well-being.
- ii. Health care providers should discourage media use for children younger than 2 years. Unstructured playtime is more valuable for the developing brain than any electronic media exposure.
- iii. Nurseries, child care centres and schools need to develop screen time policy and guidelines.
- iv. Further studies on parent's perception towards exposure to screen time are needed to evaluate their awareness of consequences of exposure to screen time.
- v. Research on long-term effects of early media exposure on children's physical, mental, and social health is needed.

6.4. Early Childhood Care and Education

Contributors : Rajini Sooryanarayana, Rosliza Abdul Manaf, Shubash Shander Ganapathy, Nik Mazlina Mohammad, Norazizah Ibrahim Wong, Tahir Aris

6.4.1. Introduction

The national education system, through the Malaysian Education Act 1996 aims to provide quality care and early education to pre-school children.¹ The National Education Policy 2012 focuses upon growth and development holistically to include physical, emotional, spiritual, intellectual and social development of children from birth to 4 years of age.² A structured system with a curriculum in place as prescribed by the Ministry of Education aims to ensure that children aged 4 to 6 years receive compulsory pre-school education provided by government, private or non-governmental agencies.

Pre-school attendance and early childhood programmes are important as they may influence readiness of children for primary school. Early childhood programmes offered by private and governmental providers have an organised learning structure. This is in comparison to baby-sitting and day-care services which usually do not have a structured learning system in place. In Malaysia, a structured programme for children below five years of age is not compulsory as it is not part of the government policy. However, various governmental and private agencies have taken the initiative to provide these facilities to meet the growing needs in the population.

With the influx of technology into our daily lives and lesser reading habits among the general population,³ it is important to ensure that children are given the best stimulus for their brains in terms of reading materials, toys, and more importantly, the engagement with children themselves. Previous research highlights the importance of verbal interaction between the children and caregivers, as well as better quality of care, as having a positive association with young children's social and cognitive development.^{4,5}

In this survey, information on various activities supporting early learning was collected. These included involvement of adults in reading or looking at books together with children, playing together with various types of toys, telling stories to or singing songs with the child, besides going outdoors to play (**Table 6.4.2.2**). In addition, detailed information on the availability of reading materials appropriate for the children's age and the types of toys are also reported (**Table 6.4.2.3**).

6.4.2. Findings

On average, only half of children aged 36 to 59 months attended an organised early childhood education programme (53.1%, **Table 6.4.2.1**). Children from 48 to 59 months were twice as common to receive early childhood education compared to the younger age group. Overall, attendance to early childhood education did not differ by gender and marital status of the mother. In terms of ethnicity, the highest proportion of children aged 36-59 months attending an early childhood education programme was among the Chinese (73.6%), followed by Indians (59.6%), Malays (51.4%), other Bumiputeras (37.5%) and other ethnicities (42.3%). Parents' education level seems to have an influence in their decision to send their children for early childhood education. The highest proportion of children receiving early childhood education was reported among children with parents who had higher education background. A higher proportion of working parents from the public and private sectors appeared to send their children to these programmes, compared to self-employed or unemployed parents. Similar findings were noted among parents with higher earning.

1 Attorney Generals Chambers Malaysia. (1996). Education Act 1996. Retrieved from http://www.federalgazette.agc.gov.my/outputaktap/20150709_A1490_BI_A1490%20BI.pdf.

2 Ministry of Education Malaysia. (2012). National Education Policy. Retrieved from <http://www.moe.gov.my/userfiles/file/BUKU%20DASAR.pdf>.

3 Shahriza Abdul Karim, N., & Hasan, A. (2007). Reading habits and attitude in the digital age: Analysis of gender and academic program differences in Malaysia. *The Electronic Library*, 25(3), 285-298.

4 Duncan, G. J. (2003). Modeling the impacts of child care quality on children's preschool cognitive development. *Child development*, 74(5), 1454-1475.

5 Phillips, D., McCartney, K., & Scarr, S. (1987). Child-care quality and children's social development. *Developmental psychology*, 23(4), 537.

Table 6.4.2.2 shows that the proportion of children aged 36 to 59 months who have had adults engaging with them in four or more activities that promote learning and school readiness during the 3 days preceding the survey was only 24.6%. These activities include reading books to or looking at picture books with the child, telling stories to the child, singing songs or lullabies to or with the child, taking the child to the playground, playing with the child and lastly, naming, counting or drawing things with the child. In terms of adults' engagement in activities with children, there was no gender and an age difference noted, nor was there any difference seen among parents' occupation or income level. Interestingly, adult involvement in children's learning was more common among Malays (25.2%), compared to Chinese (22.5%) or Indians (17.5%). Adult involvement was inversely related to mothers' education level; higher proportion was seen among mothers who received no formal education (29.9%) and mothers with primary education (30.0%) compared to mothers with secondary (23.1%) and higher education (24.2%). Mothers who are married appeared to have a lower proportion of engaging with the child (24.2%) compared to those who were separated, divorced, widowed or not married (34.8%). There was no difference in terms of fathers' education level with their engagement with children.

Table 6.4.2.3 shows that half (55.5%) of children under the age of 5 years had at least three children's books in their homes. The proportion of children with 10 or more books declines to 18.3%. While no gender differentials were observed, a higher percentage of Chinese (60.5%) and Indian (61.0%) children were reported to have access to three or more children's books than other ethnic groups. The same finding holds true for children with access to ten or more books. The number of children's books increases with the child's age. Homes of 11.2% of children age 0-11 months have three or more children's books, while the figure was 45.6% for children age 12-23 months and 73.6% for children age 24-59 months. A similar trend was also observed among children with ten or more children's books. The proportion of children, who have access to 3 books or more, and 10 books or more were highest among those with parents who received higher education, work in the public sector and were in the highest income bracket. Those from urban areas appear to have a significantly higher access to three or more children's books (60.0%, 95% CI 57.70-62.30) compared to rural areas (47.1%, 95% CI 44.7-49.40), and similarly for access to ten or more children's books (20.6%, 95% CI 18.7%-22.7% compared to 13.9%, 95% CI 12.3-15.8)

Table 6.4.2.3 also shows the types of toys the children play with and the proportion of children having two or more types of playthings in their homes. The types of playthings included in the questionnaire were homemade toys (such as dolls and cars, or other toys made at home), toys that came from a store, and household objects (such as pots and bowls) or objects and materials found outside the home (such as sticks, rocks, animal shells, or leaves). It was interesting to note that 91.4% of children play with toys that came from a store, compared to 56.0% who used household objects or objects found outside their home to play with. Homemade toys were proven unpopular where only 25.9% of children in the survey had them as their toys. Children's gender, parents' occupations and parents' education did not seem to affect children who had manufactured toys, homemade toys or household objects as toys. The proportion of children who had two or more types of playthings to play with was 60.7% among male children and 64.2% among female children. Children in the youngest age group reported the lowest proportion of having two or more types of playthings. Parental education, occupation and income did not show any difference in terms of children having two or more types of playthings. A significant difference is seen for homemade toys, where children from rural areas appear to have a significantly higher prevalence of 61.2% (95% CI 58.90-63.50) compared to urban areas (53.1%, 96% CI 50.70-55.55).

6.4.3. Conclusion

Malaysian education has grown by leaps and bounds. Surprisingly, only slightly more than half of Malaysian parents sent their children to early childhood education programmes. In addition, only one in four engaged actively with their child in various activities that promote learning and school readiness. It appears that higher levels of education and earning capacity in parents enable them to send their children to early education programmes, and procure children's books and toys. However,

it also seems that the same group of parents spend lesser time than others in spending time with their children, reading, writing, singing, or playing with them. Parents of lower socioeconomic group appeared to engage more with their children. Regardless of the socioeconomic background, the most common playthings among children are store bought toys, as compared to homemade toys or household objects used as toys. Those from urban areas appear to have better access to books, while homemade toys are favoured by those in rural areas.

6.4.4. Recommendations

- i. There is a need to increase awareness among Malaysian parents on the importance of early childhood education.
- ii. They should also be encouraged to engage with their children from an early age to enable bonding, help promote learning as well as preparing children for school.
- iii. Reading to their children and playing with a variety of playthings should be encouraged in order to develop cognitive skills of the children.

VII. CHILD PROTECTION

CHILD PROTECTION

7.1. Inadequate Care

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7.1.1. Introduction

One of the aspects that reflects quality of care in young children is adequate parental supervision. Children should not be left unattended at home or be left under the care of another child, to ensure their safety. Lack of supervision has been linked to a number of negative outcomes such as unintentional injuries in young children.¹ A child who is left unattended or left in the care of another child under 10 years of age is more susceptible to accidents and injuries.²

7.1.2. Findings

Table 7.1.2.1 shows the distribution of children under five being left alone or left in the care of another child younger than 10 years of age for more than one hour at least once during the past week. About 2.7% of children aged 0-59 months were left in the care of other children, while 0.2% was left alone during the week preceding the interview. Combining the two, it was calculated that a total of 2.9% of children were left with inadequate care during the past week, either by being left alone or in the care of another child. More girls (2.6%) were found to have inadequate care compared to boys (3.1%). Inadequate care was more prevalent among children of Malay ethnicity (3.4%), as opposed to Chinese (2.1%), and Indians (0.9%). Children aged 24-59 months (3.0%) and 12-23 months (3.6%) were left with inadequate care more often than those aged 0-11 months (1.6%). Mothers who were married had a lower occurrence of leaving their child with inadequate care (2.9%) as compared to mothers who were never married, separated, divorced or widowed (3.8%). Parents working in the public sector and of higher socioeconomic background in terms of education and income appeared to leave their children with inadequate care more often than other parents. 51.9% of parents from rural areas appear to leave their child alone compared to 34.5% of parents in urban areas. However, fewer parents in rural areas left their child under the care of another child in the past one week (1.8% compared to 3.2%) and this difference was statistically significant. Combining the two, overall inadequate care of children was observed to occur at 1.9% (95% CI 1.5-2.5) in rural areas as compared to 3.3% (95% CI 2.80-4.00) in urban areas, a finding that was statistically significant (**Table 7.1.2.1**).

7.1.3. Conclusion

While children below five should not be left unattended at all, the findings revealed that 2.9% of parents admitted to leaving their child alone or under the care of another child in the past week. It was alarming to note that a higher proportion of parents from better socioeconomic backgrounds left their children with inadequate care compared to parents with lower education and lesser income.

7.1.4. Recommendations

- i Parents need to be educated to positively engage and discipline a child in a manner that does not affect their well-being or retard their physical and psychological growth.
- ii Parents must be educated on the possible negative impact of violent punishments to the health and development of their children.
- iii This change in attitude should be reinforced through advocacy by health professionals, health promotions, education to parents and a supportive environment for parents to raise their children.

1 Dubowitz, H. (2013). Neglect in children. *Pediatric annals*, 42(4), e72-e76.

2 Schnitzer, P. G., Dowd, M. D., Kruse, R. L., & Morrongiello, B. A. (2015). Supervision and risk of unintentional injury in young children. *Injury prevention*, 21(e1), e63-e70

7.2. Child Discipline

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7.2.1. Introduction

Child discipline is necessary to teach the child self-control and acceptable behavior. This is an essential part in the development of the child's ability to handle conflict and manage emotions. Positive parenting methods reinforces good behavior and also encourages and instills responsibility. It builds upon the child's self-esteem, physical and psychological integrity and dignity. However, we too often see the use of punitive and physical punishment on children to intimidate and punish the child, with detrimental effects.

Different cultures often have differing views on acceptable levels of punishment and discipline towards a child. A study in Singapore had reported that in a multiethnic society, it is often hard to reach a consensus to determine the boundary between physical punishment and abuse.¹ Maltreatment and violence may affect the child's development and learning abilities, leading to poor self-esteem, emotional disturbances and even depression.² Respondents of this questionnaire were asked a series of questions on the methods of discipline used by the respondent or any family member in the past one month on the selected child and their perceived need for physical punishment towards children. Discipline is divided to any form of violent punishment and only non-violent punishments. Violent punishment consists of psychological aggression and physical punishment.

7.2.2. Findings

7.2.2.1. Disciplinary methods used

Our study shows that 70.8% of children aged 12-59 months received some form of violent disciplinary method from their parents or caregivers. Psychological aggression was high at 57.8% among parents and caregivers in Malaysia. 55.0% of children received some form of physical punishment however severe physical punishment method was low at 5.2%.

Female children between the ages of 12-59 months were more likely to receive only non-violent disciplinary methods at 30.5% compared to males at 24.4%. Male children were more commonly subjected to all other forms of punishment, including psychological aggression and physical punishments. Children aged 12-23 months were commonly subjected to only non-violent discipline at 38.0% compared to children of other age groups. These younger children also had the lowest prevalence in any physical punishment or violent disciplinary methods at 43.0% and 60.0% respectively. It is seen that as the children age, the occurrence of physical punishment increases and the only non-violent discipline decreases.

The Malay and Chinese ethnicities used more only non-violent disciplinary methods compared to Indians, other Bumiputeras and other ethnicities. Indians were seen to be highest to practice psychological aggression at 66.9%. Other ethnic groups had the highest prevalence of any physical punishment and violent discipline, at 64.6% and 77.4% respectively. Malaysian citizens practiced higher only non-violent discipline compared to non-Malaysians. They also practiced lower psychological aggression, any physical and severe physical punishment and any violent discipline compared to non-Malaysians. Parents who are single (never married, separated, divorced or widowed) were more prevalent in using only non-violent disciplinary methods at 42.7% compared to married or co-inhabiting parents at 27.3%. Single parents also had a lower prevalence of psychological aggression, any physical and severe physical punishment and any violent disciplinary method compared to those in the latter group.

1. Ngiam, X.Y., & Tung, S.S. (2016). The acceptability of Caning Children in Singapore. *Journal of Development & Behavioral Pediatrics*, 37 (2), 158-163
2. Bureau of Statistics Punjab. MICS 2014 Final Report. Available at bos.punjab.gov.pk/finalreport. Accessed July 22, 2016

In terms of education level of the mother and the father, only non-violent punishments were highest among those with higher education, at 29.7% and 29.6% respectively. Psychological aggression, any physical punishment and any violent discipline were highest among mothers and fathers with no education background.

Mothers who work in the public and private sectors, were more likely to use only non-violent discipline compared to mothers who are self-employed and housewives. Self-employed mothers were more likely to use psychological aggression, any form of physical punishment and any form of violent discipline compared to others. Fathers working in the private sector had the lowest prevalence of only non-violent discipline at 25.5% and the highest use of psychological aggression, any physical punishment and any violent punishment at 60.0%, 56.6% and 73.1% respectively.

There appeared to be no large difference in the use of only non-violent discipline among household income groups. There was a higher prevalence in the use of severe physical punishment among those whose household income is less than RM3000 compared to those whose income is RM3000 and above. Households in the highest income quintile had the highest use of psychological aggression at 60.4% and lowest use of severe physical punishment at 3.7%. There was no large difference in the disciplinary methods used between urban and rural respondents (**Table 7.1.2.2**).

7.2.2.2. Attitude

In Malaysia, 54.8% of parents and caregivers believed that physical punishment is needed to bring up, raise or educate the child properly. There was no difference observed among Malays, Chinese and Indian ethnicity. Other Bumiputeras, however, had the highest belief in the need for physical punishment at 59.9%.

73.9% of permanent residents were found to believe that physical punishments are needed compared to Malaysian and non-Malaysian citizens. Mothers who are single had a lower belief in the need for physical punishment at 50.0% compared to married mothers at 54.6%. It was seen that mothers with higher education and fathers with no education background had the lowest belief in the need for physical punishment.

Mothers and fathers working in the public sector had the highest belief in the need for physical punishment, at 56.5% and 55.4% respectively, compared to those working in private sector, self-employed or unemployed. Households earning less than RM 1000 and households in the lowest income quintile had the highest belief in the need for physical punishment at 60.0% and 57.8% respectively (**Table 7.2.2.2**)

7.2.3. Conclusion

A sustainable future is built on the basis of a healthy future generation. Negative experiences and environmental influences early in life have been shown to adversely affect the learning, behaviour, physical and mental well-being of a child.³ There is a high use of violent disciplinary methods among Malaysian parents. Single parents are more prevalent in using only non-violent punishment methods. Only non-violent discipline is also more prevalent among parents with higher education. Households with an income of less than RM 3000 are more prevalent in using severe physical punishment compared to households earning RM 3000 and above. More than half of the parents still believe in the need for physical punishment and this belief appears to be almost consistent among the three major ethnicities, Malays, Chinese and Indians, in Malaysia. Households in the lowest income quintile have the highest belief in the need for physical punishments towards children.

7.2.4. Recommendations

- i. Parents need to be educated to positively engage and discipline a child in a manner that does not affect their well-being or retard their physical and psychological growth.
- ii. Parents must be educated on the possible negative impact of violent punishments to the health and development of their children.
- iii. This change in attitude should be reinforced through advocacy by health professionals, health promotions, education to parents and a supportive environment for parents to raise their children.

VIII. MATERNAL AND REPRODUCTIVE HEALTH

8.1. ANTENATAL CARE

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8.1.1. Introduction

Antenatal care coverage is one of the key health indicators used to track achievement progress towards the Millennium Development Goal ⁴ and 5¹. Antenatal care is one of the four pillars of safe motherhood. Antenatal care services are provided with the aim to improve pregnancy outcomes through a series of monitoring activities in the management plan. These services are the foundation of any maternal and child health care services provided by public and private facilities. In Malaysia, these services are implemented through a coordinated integrated healthcare approach in the public health system. The perinatal care manual was introduced in 2001² and revised in 2013³ to help healthcare providers in managing all stages of pregnancies: pre-pregnancy care, antenatal care, intrapartum care and postnatal care. This manual has been implemented widely and is emphasised through healthcare training and supervision as a program guidance for monitoring and evaluation.

Appropriate risk identification, management by type of providers and level of facilities as well as appropriate referrals are the concepts of management under the pillars of primary health care. The risk approach system using colour codes was formulated according to this concept and has been implemented in Malaysia since 1987 and underwent 3 reviews for improvement⁴. The primary healthcare concept in providing this service has always been monitored through a district specific approach in term of its accessibility, acceptability, adequacy, quality, continuity, equality, technologically appropriateness and sustainability to fulfil disease preventive community health needs.

Empowering mothers and their family through good communication helps convey the messages on risks and symptoms in pregnancy at every antenatal visit hence ensuring the pregnant women towards a safer pregnancy. Antenatal visits also provide an opportunity to furnish information on birth spacing, which is recognized as an important factor in improving infant survival. WHO recommends a minimum of four antenatal visits based on a review of the effectiveness of different models of antenatal care.¹ It is important for pregnant women to start attending antenatal care visits before 12 weeks of gestation, for early risk identification, intervention and treatment aiming to reduce maternal and perinatal morbidity and mortality. The National Health and Morbidity Survey 2016 were conducted with an objective to determine the prevalence of maternity care service utilization among pregnant women in Malaysia.

8.1.2. Findings

Table 8.1.2.1 showed that 97.4% (95%CI: 96.85-97.7) of respondents received adequate antenatal visits as suggested by WHO with a minimum of 4 total visits. Antenatal care coverage in adolescents aged 15-19 year was 94.0% (95%CI: 89.14-96.71), in the minority group (others) at 93.3% (95% CI: 87.86-96.37) and in non-Malaysians at 93.2% (95% CI: 88.11-96.19). Women with tertiary education had four or more antenatal visits at 98.2% (95%CI: 97.60-98.72) as compared to women with no formal education at 95.7% (95% CI: 75.56-99.38). 93.4% (95%CI: 74.43-98.57) of unemployed women and 89.3% (95% CI: 69.05-96.89) of students had adequate antenatal visits. Women with

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1. Indicators for Monitoring the Millennium Development Goals: Definitions, Rationale, Concepts and Sources [Internet]. New York: United Nations; 2012 Nov 19. 5.5 Antenatal care coverage (at least one visit and at least four visits); 2012 Mar 5 [cited 2013 Jul 1]; [about 3 screens]. Available from: <http://mdgs.un.org/unsd/mi/wiki/5-5-Antenatal-care-coverage-at-least-one-visit-and-at-least-four-visits.ashx>
 2. MOH. Perinatal care manual. 2002. 1st edition.
 3. MOH. Perinatal care manual, 2013. 3rd edition
 4. Ravindran J, Shamsuddin K, Selvaraju S. Did we do it right? An evaluation of colour coding system for antenatal care in Malaysia. Med J Malaysia, vol58(1), 2003, pp37-53. Available from: http://www.e-mjm.org/2003/v58n1/Colour_Coding_System.pdf

household income in the poorest quintile had 96.9% (95% CI: 95.46-97.85) antenatal coverage of four or more visit whilst those in the richest quantile at 99 % (95%CI: 97.86-99.55). Those with household income less than RM1000 had 95.7 % (95% CI: 93.07-97.37) and those with income more than RM5000 had antenatal coverage at 98.4 % (95% CI: 97.39-99.0).

Table 8.1.2.2 showed only 69.1% (95%CI: 67.78-70.39) women were booked in the first trimester (≤ 12 weeks) whilst 1.7 % (95%CI: 1.40-2.17) had late booking in the third trimester (> 28 weeks). 48.3% (95% CI: 42.06-54.65) of teenagers who had early booking as compared to 9.9 % (95% CI: 6.65-14.62) who were booked late. Fewer unwed mothers 17.3% (95% CI: 7.63-34.64) came for first trimester booking, 38.7 % (95% CI: 20.53-60.64) in the second trimester ($> 12-28$ weeks) and 21.2% (95% CI: 9.04-42.26) had booking in the third trimester.

Table 8.1.2.3 shows the prevalence of mothers who received their antenatal care by their antenatal care providers during the pregnancy of the last childbirth. All the mothers who received antenatal care in this survey were seen by skilled healthcare providers either doctor or nurse. As the mother can have more than one healthcare provider, 99.6% mothers reported had seen doctor, 89.1% had seen nurse during the pregnancy of the last childbirth. Besides seeing the skilled healthcare providers, it is reported some mothers had seen traditional birth attendants and doulas/ others at 0.7% and 0.1% respectively.

Table 8.1.2.4 showed the distribution of ANC coverage by type of antenatal care facilities. Public health facility provided 85.0% (95% CI: 83.91-86.07) of antenatal care in Malaysia as compared to the private health facility at 14.4% (95% CI: 13.33-15.43). The antenatal care recipients for private facilities were mostly between ages 35-39 years at 23.0% (95% CI: 19.39-27.12), non-Malaysians at 19.5% (95% CI: 14.57-25.55) and those with tertiary education at 25.5% (95% CI: 23.21-27.95). Pregnant women who are employed in the private sector received antenatal care in private facility at 23.6% (95% CI: 21.08-26.35) whilst those who were self-employed at 18.7% (95%CI: 14.91-23.15) and students at 33.9 % (95% CI: 18.03-54.39). Those with a household income more than RM5000 were also seen at the private facility at 28.6% (95% CI: 26.25-31.04). Only 88.5% (95% CI: 82.33-92.66) of adolescent and 67.2% (95% CI: 37.12-87.63) of unwed mothers received antenatal care in the public facility.

Table 8.1.2.5 and **Table 8.1.2.6** showed the distribution of assessment during ANC visits. 99.0% (95%CI: 98.53-99.28) women had at least blood pressure, urine examination and abdominal examination at every antenatal visit. 98.9 % (95%CI: 96.32-99.70) of adolescents had at least these 3 assessments antenatally whilst women in age group 45-49 years had only 84.9% (95%CI: 41.80-97.78). 82.5 % (95%CI: 53.35-95.08) single mothers had these 3 assessments antenatally. It was noted that 98.8 % (95%CI: 98.39-99.12) received health education once during their antenatal visits which includes breastfeeding practices, nutritional information, follow-up compliance and information on birthing process. ATT immunization coverage in Malaysia was documented at 96.4 % (95% CI: 95.69-97.08). In the Federal Territory of Kuala Lumpur there was only 88.0% (95% CI: 83.66-91.25) coverage of ATT immunization. Pregnant students receiving ATT vaccination was at a lower rate of 79 % (95% CI: 46.22-94.31). Most women had at least one ultrasound scan during their pregnancy at 99.4% (95%CI: 99.13-99.61).

Table 8.1.2.7 and **Table 8.1.2.8** showed the common co- morbidities during pregnancy. Prevalence of cardiac diseases in pregnancy in Malaysia was at 0.5% and it was more common in women aged 20-24 years at 0.8%. The prevalence of anaemia in pregnancy was 29.3% (95%CI: 27.86-30.74) and was more common among women aged 45-49 years at 51.7 % (95% CI: 24.06-78.33). Anaemia among other Bumiputera was high at 40.0% (95%CI: 36.59-43.43) and lowest among Chinese ethnicity at 19.6% (95%CI: 16.16-23.67) Single unwed mothers had a high prevalence of anaemia at 43.2% (95% CI: 23.72-65.03) and those with household income less than RM1000 was at 38.3% (95% CI: 33.86-42.95). The prevalence of Diabetes Mellitus/Gestational Diabetes Mellitus in pregnancy was 13.5% (95%CI: 12.47-14.52) and highest among women aged 45-49 years at 48.2% (95%CI: 21.61-75.90). Prevalence in Indians were at 17.5% (95% CI: 12.35-24.21), those with tertiary education at 14.3% (95% CI: 12.35-16.45). The prevalence of hypertensive disorders in pregnancy in Malaysia

was 5.8 % (95% CI: 5.07-6.63). Maternal obesity was seen in 14.6% (95%CI: 13.54-15.67) of all pregnant women and highest at 69.2% (95%CI: 38.95-88.81) in age 45-49 years.

Table 8.1.2.9 shows the prevalence of pregnancy in adolescents between 15-19 years and women who had their first child before the age of 20 years. Incidence of pregnancy in adolescence aged 15-19 years was 6.8% whilst those with their first pregnancy before aged 20 years was at 16.7%. Sarawak had a higher prevalence of adolescent pregnancy and the first pregnancy before 20 years of age at 15.0% and 32.0% respectively.

Table 8.1.2.10 shows the prevalence of pre pregnancy care among mothers aged 15-49 years with associated medical conditions. Prevalence of associated medical conditions in pregnant women in Malaysia was at 94.4 % (95% CI:90.76-96.61)

8.1.3. Conclusion

This national survey gives us a glimpse in to the challenges faced by Malaysia in order to achieve MDG4 and MDG5 as well as preparing the country in achieving the future targets of SDGs. The crucial targeted health indicators reflect the ability to identify those who at risk, adequacy in program monitoring, appropriateness of care given and level of management by appropriate personnel. These findings give us room for improvement to reduce maternal and perinatal morbidity and mortality. Those at risk at in age group between 15-24 years, the 'other' ethnic group, non-citizens, mothers with lower education and lower income. These groups of women had a higher prevalence of no antenatal care, adequate basic requirement of antenatal visits as well as late booking in the 3rd trimester and only a few had early booking in the first trimester. Single mothers and students were noted to have very poor antenatal coverage. A significant amount of them were seen in the private facilities for antenatal care. Based on record analysis high coverage was noted for the 3 minimum assessment during antenatal visits. However this does not reflect the quality of care. Co-morbidities during pregnancy is one of the main issues faced as it increases maternal morbidity and mortality. Emphasising pre-pregnancy counselling, early booking and follow up in these women ensures a better pregnancy outcome along with good quality antenatal care. Not all mothers with known associated medical conditions attend postnatal clinics. The importance of follow up should be emphasized at every antenatal visit. Sarawak, Sabah, Pahang and Perlis had higher incidence of women having their first pregnancy before 20 years. Further analysis to assess the socio-demographic influence will give a better explanation. This survey in overall help the program planner, implementers and advocator to put more concerted effort in emphasising maternal healthcare. Using existing documentation based on aggregated data doesn't portray the achievements that had been made. Further sub-analysis using this survey data may help targeted states to focus on specific activity for quality improvement effort.

8.1.5. Recommendations

- i. Examining the quality of services provided should be prioritize based on district problem approach and monitored closely by respective states.
- ii. Identifying the importance of adequate training in adhering to guidelines, perinatal care manual as well as proper supervision must be emphasized and monitored as output of the process indicators.
- iii. Mapping the program achievement using specific monitoring tools will facilitate the state and national level program managers.
- iv. Patient-doctor communication in improving their health seeking behavior will further improve the service by better acceptance from at high risk.
- v. Early identification, appropriate management, referral and documentation should be always strengthened.
- vi. Marketing and awareness of the pre pregnancy care is of utmost importance to improve maternal and perinatal morbidity and mortality
- vii. Regular monitoring of existing health services should be strengthened as the number does not reflect quality and provision does not mean acceptance to improve behaviors and outcomes.

8.2. INTRA-PARTUM CARE

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8.2.1. Introduction

Intra-partum care consists of care given to the mother during the labour process which has potential short and long term effects on her physical and emotional outcome, as well as the newborn.

It refers to the childbirth phase, in which access to skilled care during this phase is one of the most important factors to prevent maternal death. Safe childbirth is when mothers had received skilled care during the process of delivery. According to the World Health Organisation (WHO), skilled care is care provided to the mother and her newborn during pregnancy, childbirth and the immediate postpartum period by a competent health staff with adequate equipment and a plan of referral system in advance in case of any emergency.¹ It is one of the indicators under the Millennium Development Goals (MDGs) in assessing the maternal health services in a country. Globally, the coverage for births attended by skilled health personnel was set at 90 %.²

The definition for safe childbirth in this survey is a childbirth conducted by skilled health providers, either midwives or doctors. If the childbirth was conducted by persons other than midwives or doctors, it is deemed unsafe childbirth. Besides, the place of delivery also plays an important role in providing a safe environment to the mother and her newborn.

There are five modes of delivery which consist of spontaneous vaginal delivery, assisted breech, vacuum, forceps and lower segment Caesarean section. The lower segment Caesarean section is effective in saving the life of the mother and her newborn. The trend of Caesarean section is increasing, both in developed and developing countries. Assisted delivery such as vacuum and forceps is intended to save the lives of mothers and newborns, however, it is also associated with maternal morbidities such as perineal tears and postpartum haemorrhage.^{3,4}

8.2.2. Findings

Assistance at delivery

There was a total of 10,221 of women aged 15 to 49 years who had live births in the two years preceding this survey. The response rate for this survey was 85.6%. Information was obtained either from antenatal cards or verbal reports, in 7,864 (74.8%) women and 2,399 (25.2%) women, respectively. It showed 99.5% (95% CI: 99.24- 99.67) of births were delivered by health staff and 0.5% (95% CI: 0.33 – 0.76) of births were delivered by unskilled attendants, i.e Traditional Birth Attendants (TBAs), other categories or no attendants at birth. The prevalence of safe delivery improved with increasing maternal age, higher level of maternal education and household income. All states reported prevalence of more than 99% except for Sabah and Labuan with 96.8% (95% CI: 94.35-98.26) of safe delivery. **See Table 8.2.2.1 and Table 8.2.2.2.**

According to the standard practice of attending delivery by skilled personnel, the person who conducts the delivery of baby and cuts the cord is the same personnel. However, it is also observed that in a small number of safe deliveries, umbilical cords were cut by individuals other than health staff. Findings showed that these were done by the patients' husband. **See Table 8.2.2.3.**

1 WHO, Department of Reproductive Health & Research, 2004. Making Pregnancy Safer: The Critical Role of Skilled Attendant, Page 6

2 WHO 2015. Health in 2015: from MDGs, Millennium Development Goals to SDGs, Sustainable Development Goals

3 Royal College of Obstetrician and Gynaecologist, 2011. Green Top Guideline, Operative Vaginal Delivery, no 26, page 10,

4 Johanson RB, Menon BK., 2000. Vacuum extraction versus forceps for assisted vaginal delivery. Cochrane Database Syst. Rev. 2000:2 CD000224

Unsafe delivery

The survey showed 99.5% of mothers practiced safe delivery and 0.5% of them had (95% CI: 0.33 – 0.76) unsafe delivery, that comprised of 41 cases. The prevalence of unsafe delivery was higher among mothers aged 15 to 19, 2.0%, Malaysian citizen 4.1%, non-educated mother 4.6%, unemployed 6.6% and poorest group 1.6%. Married mother as well as divorcee had same prevalence of practicing unsafe delivery, 0.5%. The states of Sabah and WP Labuan had the highest case of unsafe delivery (3.2%), followed by Kelantan (0.5%). There was no unsafe delivery among respondents in Perlis and Terengganu.

On further analysis of the unsafe deliveries, 39.7% (95% CI: 21.71 – 60.92) were conducted by traditional birth attendants, 49.7% (95% CI: 29.43 – 70.10) were conducted by other unskilled personnel and 10.6 % (95% CI: 4.60 – 22.62) were those who had no attendant during delivery. Among deliveries conducted by traditional birth attendants, the prevalence was highest among non-Malaysian citizens at 44.0% (95% CI:14.87-78.01) and self-employed mothers at 72.6% (95% CI:26.39-95.14). For Sabah and WP Labuan, it was mainly conducted by traditional birth attendants with the prevalence of 45.9% (95% CI: 20.21-74.04), followed by other unskilled personnel at 54.1% (95% CI:25.96-79.79). **See Table 8.2.2.4.**

Place of delivery

Childbirth that takes place in health facilities can reduce the health risk to both mother and her newborn and increases the chance of early tertiary management if required. Table 12 shows the distribution of women who had live birth within last 2 years by place of delivery, with breakdown according to socio-demographic profiles. Majority (80.5%) of deliveries took place in government facilities, followed by private facilities (18.6%). Only 0.5 percent of birth occurred at home and 0.36 percent occurred in other places outside health facilities. Three main reasons given for home delivery were fast labour, no transportation and distance to health facility. Of those delivered at home, majority was unsafe delivery which accounted for 84.1%. Prevalence of home delivery was higher among respondents 15-19 years and non-Malaysians. Chinese women were more likely to deliver in private facilities, as well as women with higher educational level and income. **See Table 8.2.2.5.**

Mode of delivery

This survey collected the final mode of delivery of the last child. As for Caesarean section (CS), it is not known whether it was an elective or an emergency caesarean section. There was 75.5% of spontaneous vaginal delivery (SVD), 20.7% of CS and 3.4% of instrumental delivery and 0.3% of assisted breech delivery among mother who had last child birth in 2 years preceding the survey. Increasing maternal age was associated with higher rates of CS. Prevalence of CS was higher among Chinese and Indians ethnicity as compared to Malays. Higher education level, household income and working mothers are associated with higher prevalence of CS.

Further breakdown of deliveries according to type of facility showed similar trend between public and private facilities. Public facilities had SVD 78.3% and CS 18.8% whereas private facilities had SVD 62.2% and CS 29.6%. However, the percentage of CS among deliveries in private facilities was noted to be higher. **See Table 8.2.2.6.**

8.2.3. Conclusion

The prevalence of safe delivery among women with childbirth within last two years in this survey was 99.5 per cent, and the findings correspond to the national administrative data of safe delivery, of 99.7 per cent in 2014.⁵ This has exceeded the global target set by the World Health Organisation (WHO) of 90% safe deliveries² and the national target of 95%.⁶ The coverage for safe childbirth has been achieved; however there is still a small number of childbirths being conducted by unskilled individuals.

Majority of deliveries were in government health facilities, 80.5% (95% CI: 77.06-83.61) followed by private health facilities, 18.6% (95% CI: 15.50-22.19). The trend also tallies with national administrative data, although the figure in this survey was slightly lower for government health facilities, 83.2%, but higher for private health facilities, 12.9%. The discrepancy could be due to under reporting of deliveries at private health facilities to the administrative data system. This survey also reported lower percentage of home delivery, 0.5% (95% CI: 0.23-1.00) but higher percentage of delivery in other places outside health facilities 0.4% (95% CI: 0.17 – 0.76) compared to national data, 1.29% and 0.04% respectively.

The overall prevalence of SVD was 75.5% (95% CI: 74.26-76.67) and CS, 20.7% (95% CI: 19.59-21.82). Public facilities reported SVD at 78.3% and CS, 18.8%. The findings correspond to national administrative data in 20,147,⁷ which reported percentage of SVD and CS as 75% and 21%, respectively. According to National Obstetric Registry (NOR), the percentage was 59.7% for SVD and 35.6% for CS.⁸ The NOR data is from 14 major tertiary government hospitals. As the referral centres for management of high risk cases, the probability of CS were higher. This explains its higher percentage in NOR as compared to findings in this survey. The findings on increasing maternal age and higher prevalence of CS among mothers of Indian ethnicity were also reported in the NOR.

8.2.4. Recommendations

- i. Health staff must assist the mother and her spouse to decide on the most appropriate place for delivery as part of a birth preparedness plan. This should be discussed with mothers during antenatal care. Mother should also be explained on how to recognize the active phase of labour and inform health staff immediately. Should a woman who is considered to be the low risk group decides to deliver at home; an assessment will be made by health staff. It includes ease of access, good family support and a safe and clean home environment.
- ii. The presence of the trained birth attendant during delivery must be continuously emphasized to the mothers. This is to monitor the progress of labour, ascertain the well-being of the foetus and mother and to identify the early warning signs of complications.
- iii. Caesarean section should only be conducted in the presence of medical indications, since it is also associated with short and long term risks of the woman, her child, and future pregnancies.⁴ If indicated, it can effectively prevent maternal and perinatal mortality and morbidity.

4 WHO 2015, WHO Statement on Caesarean Section Rates. WHO/RHR/15.02

5 MOH Malaysia, Annual Report Family Health 2014, Health Information and Management System

6 Plan of Action MDG5 MOH Malaysia, 2010-2015.

7 Health Informatics Centre, MOH 2014

8 National Obstetric Registry, 3rd report of National Obstetric Registry, 2011-2012.

8.3. AWARENESS OF AND PRACTICE OF NATURAL BIRTHING

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8.3.1. Introduction

Natural birthing is defined as a method of giving birth in which there is little or no use of pain medicine and other medical involvement.⁵ It is mentioned that natural birthing or gentle birthing is a method of childbirth in which medical intervention is minimized and the mother often practices relaxation and breathing techniques to control pain and ease delivery.⁶ It implies a non-medicated birth by letting the natural process of labour and birth take place without, or with minimal interventions.

There are few techniques and methods of natural birth which include hypnobirthing, the Lamaze method and the Bradley method. Basically all these methods teach specific self-hypnosis, relaxation and breathing techniques without pain and without the need for medical intervention. Water birth is childbirth that occurs in water. Proponents believe water birth results in a more relaxed and less painful birth process. However, there is no significant benefit of water birth over conventional birthing processes.⁷ Another practice of natural birth is lotus birth, which entails leaving the umbilical cord uncut and the baby remains attached to the placenta until the cord naturally separates. However, there is no evidence that the lotus birth is beneficial.⁸

In general, gentle birthing groups have their own philosophy of natural birth. This concept includes pregnancy and childbirth as natural and healthy physiological processes; whereby medical interventions should only be performed in true emergencies and according to evidence-based practices, as well as that pregnancy and childbirth should not be traumatic events and mothers have a right to proper prenatal care besides access to safe and gentle birthing options.

With the current set up and intrapartum care guidelines in our government hospitals, having a natural birthing in government hospitals is quite difficult, especially among mothers who totally refuse medical intervention. Therefore, such mothers resort to unassisted home birth. More often, these mothers and spouses have attended natural /gentle birthing classes during the antenatal period. They would have been given guidance and developed the confidence to go through natural birthing. They deliver in the presence of a doula, who may be their own spouses or paid personnel (from the natural birth support group) to provide support during their labour and the birth process. The doulas are birth companions who are trained in natural pain relief methods. However, they are not qualified to conduct deliveries, thus mothers end up delivering unattended by skilled personnel.

The risk of complications can be very high and mothers choosing unassisted childbirth are not only endangering themselves but also their newborns. The WHO reported that at least 15 per cent of all pregnant women develop sudden serious complications and require life-saving access to quality obstetric services.

8.3.2. Findings

There was a total of 10,263 of women aged 15 to 49 years had live birth in the two years preceding this survey. Mothers were asked whether they had ever heard natural birth and followed by understanding on the concept of natural birth and ever practice of natural birth. Those who delivered via water birth, lotus birth and use hypnobirthing technique are component of natural birth.

5 Cambridge Academic Content Dictionary

6 <http://medical-dictionary.thefreedictionary.com/natural+childbirth>

7 The American College of Obstetricians and Gynecologists & American Academy of Pediatrics 2014. Immersion in Water during Labor and Delivery. No 594

8 Royal College of Obstetricians & Gynaecologists, 2008. RCOG statement of umbilical non-severance or "lotus birth"

The survey showed that only about 16.1% (95% CI: 15.08 – 17.21) of mothers had ever heard about natural birth. The prevalence was higher among mothers aged 25 to 29 and 30 to 34. This group had significant findings (95% CI: 18.06 – 22.06) and (95% CI: 18.72 – 23.33) compared to 45 to 49 age group. Malaysian citizen 16.9%, Malays 18.9% and married as well as cohabiting 16.3% had higher prevalence of ever heard about natural birth. Mothers who are married as well as well as cohabiting had significant findings (95% CI: 15.28 – 17.45) compared to single mothers. Those who had tertiary level of education, 36.8% and public sector workers, 33.6% showed higher prevalence of having ever heard about natural birth.

Among mothers who had ever heard on natural birth, 65.5% (95% CI: 62.08 – 68.85) understood on the term of natural birth. The prevalence was highest among Malays 74.45%, Malaysian citizens 66.2% and those who had tertiary level of education 69.5%. However, only 6 respondents, 0.6% (95% CI: 0.22 – 1.52) answered that they had ever practised of natural birthing. All of these respondents were Malaysian citizen and married. Most of them were Malay, age between 25 to 29 years old, had tertiary level of education and housewife. See **Table 8.3.2.1**.

8.3.4. Conclusion

The knowledge on natural birth concept was still low among Malaysian mothers. The groups with higher knowledge were those aged 25 to 34, with tertiary education level, working mothers as well housewife and among Malay and Chinese ethnicity. Even that, the understanding on natural birth was also low among those who knew about natural birth and only a few ever practised it.

8.3.5. Recommendations

- i. The natural birth concept is still unclear. Even though the survey showed that the practice is low, safe delivery still has to be promoted actively. With the current advances in technology, misleading information on natural birth might attract the public first without the consideration of its safety. The promotion of safe delivery should emphasize on what is safe delivery and if natural birth is being discussed, emphasis should be on the safety features of natural birth, if any. This component should be explored in the next study and target those aged 25 to 34 years, with tertiary education levels.
- ii. The MOH allows women to make their preferred informed choice on the place of delivery, depending on the risk of the pregnancy. However, the MOH has serious concerns and reservations for women attempting unassisted home births. The risk of complications can be very high and mothers choosing unassisted childbirth are not only endangering themselves but also their newborns. It is important for all pregnant women to make an informed choice regarding safety for herself and her baby, with advice given by health care providers.

8.4. POSTNATAL CARE

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8.4.1. Introduction

Postnatal care is a continuation of the care women received during her pregnancy, labour and birth¹. It covers a critical transitional time for a women, her newborn and her family, on a physiological, emotional and social level. Major changes occur during this period which determine the well-being of mothers and newborns. Inadequate postnatal care can reduce opportunities for early detection and management of problems and disease². Skilled care and early identification of problems could reduce the incidence of death and disability. WHO recommends postnatal care as early as possible within 24 hours of birth for mothers and newborns. They also recommend at least three additional postnatal contacts for all mothers and newborns within 48–72 hours after birth, between 7–14 days after birth and six weeks after birth³.

Safe motherhood programmes have recently increased emphasis on the importance of postnatal care to mother until at one month post-delivery. To assess the extent of postnatal care services, women were asked whether they received a scheduled postnatal home visit after their delivery. Malaysian Perinatal Care manual suggest nine postnatal visits in a normal pregnancy and delivery starting within 24 hours following this schedule; day 1, 2, 3, 4, 6, 8, 10, 15 and 20 of puerperium². Any abnormality observed during these visits may require appropriate referrals and more visits.

The postpartum period is from the end of labour and until the genital tract has returned to normal. It may take 6–8 weeks for the mother to return back to her normal self. Support on breast feeding, counseling on baby care and immunization of the infant, counseling on maternal nutrition, service provision for contraception and provision for psychological support should be continued throughout the postpartum period. In Malaysia, mothers would receive postnatal examination when they bring their child for immunization at one month postnatal².

8.4.2. Findings

Data were gathered from information recorded in the antenatal card except for postnatal depression module where data were collected via self-administered questionnaire. These were analysed by socio-demographic characteristics using SPSS version 20.

8.4.2.1. Birth Notification

Birth notification should be done as soon as possible following a delivery in order for the health care personnel to deliver immediate postnatal care. Majority of respondents (94.3%) notified their deliveries to the nearest government health care facilities after being discharged from the hospital, of which 68.1% of the notifications were done within 24 hours (**Table 8.4.2.1**).

8.4.2.2. Response to Birth Notification

Among those who notified the birth within 24 hours of delivery, 91.2% of them received postnatal home visit within 24 hours of birth notification. For home visits within 24 hours of birth notification, all states reported more than 90% performance except for Wilayah Persekutuan Putrajaya (83.7%), Sabah and Wilayah Persekutuan Labuan (53.7%) and Sarawak (45.3%) (**Table 8.4.2.2**).

1. Postnatal Care; NICE Quality Standard [QS37] Published date: July 2013
2. Perinatal Care Manual (3rd Edition), Ministry of Health Malaysia, 2013
3. WHO Recommendations on Postnatal Care of the Mother and Newborn; October 2013

8.4.2.3. Postnatal Home Visits

Majority of the mothers who notified their birth (92.3%) received postnatal home visits at least one visit per week. Of those who had postnatal visits, 88.0% received three scheduled home visits. All states reported performance of 90% and more for the three scheduled home visits except for Wilayah Persekutuan Kuala Lumpur (83.1%), Selangor (82.5%), Johor (73.7%), Sarawak (37.0%) and Sabah and Wilayah Persekutuan Labuan (26.1%). More than one third of mothers from Sabah and Wilayah Persekutuan Labuan (39.8%) and Sarawak (36.6%) did not receive postnatal home visits (**Table 8.4.2.3**).

Among those who had postnatal home visits, 97.4% received home visit during the first week of delivery, 92.8% mothers received home visit during second week of delivery and 87.3% during third or fourth week. For home visit during first week, all states reported performance of 90% and more. However, for home visits during second week, Sarawak and Sabah and Wilayah Persekutuan Labuan showed lower percentage at 72.5% and 68.4%, respectively. For third to fourth week of delivery, ten states reported over 90% of home visits. The least postnatal home visits during these period was observed in Sarawak (60.6%) and Sabah and Wilayah Persekutuan Labuan (52.9%) (**Table 8.4.2.4**).

8.4.2.4. Postnatal clinic visits

Majority of mothers (98.2%) visited the clinics for postnatal care at one month postpartum (**Table 8.4.2.5**).

8.4.3. Conclusion

Majority of the deliveries were notified to the nearest health clinic. Mothers received prompt response from the health care team. Almost all mothers received postnatal home visit within 24 hours of birth notification. All states reported more than 90% performance except for Wilayah Persekutuan Putrajaya, Sabah and Wilayah Persekutuan Labuan and Sarawak.

Majority of mothers received postnatal home visits. Mothers in all states received all three scheduled home visits. However, states in East Malaysia showed the least performance. All states showed good performance of home visit during the first week and second week after delivery. Almost all mothers attended postnatal clinic visits at one month postnatal.

8.4.4. Recommendations

- i. All mothers should be advised on the importance of early notification of delivery. Postnatal visits should be initiated as soon as possible after receiving birth notification. Studies should be carried out at the states where the promptness of response is lacking to determine the possible contributing factors.
- ii. All health care personnel should be taught on the importance of postnatal home visits throughout the postnatal period. They should adhere to the Malaysian Perinatal Care Manual recommendations. The implications of poor performance of postnatal home visits towards the health of the mother and child should be explored.
- iii. Defaulter tracing services should be strengthened for mothers who failed to attend the one month postnatal clinic visit especially for high risk cases.

8.5. POSTNATAL DEPRESSION SCREENING

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8.5.1. Introduction

Postpartum depression is the most common complication of childbearing¹. The 10-question Edinburgh Postnatal Depression Scale (EPDS) is a valuable and efficient way of identifying patients at risk for perinatal depression. The EPDS is easy to administer and has proven to be an effective screening tool. However, the EPDS is not a diagnostic tool and must always be used in conjunction with clinical assessment. A careful clinical assessment should be carried out to confirm the diagnosis. As it reflects the woman's experience of the last 7 days, the EPDS may need to be repeated on further occasions as clinically warranted². At each postnatal contact, women should be asked about their emotional wellbeing, family and social support, and their usual coping strategies for dealing with day to day matters. All women and their families or partners should be encouraged to tell their health care professionals about any changes in mood, emotional state and behaviour that are outside of the woman's normal pattern³. In a postpartum depression study among Malay women from a rural area in Kedah, those screened positive with EPDS were assessed for confirmation of diagnosis. The prevalence of postpartum depression was 21.08% based on the Tenth Edition of the International Classification for Disease: Diagnostic Criteria for Research (ICD-10: DCR-10)⁴.

8.5.2. Findings

A total of 850 from 1136 respondents completed the self-administered questionnaire using the Edinburgh Postnatal Depression Scale (EPDS). A total of 12.7% of them were screened positive with a score of 12 and more or item number ten score more than zero. The prevalence of positive EPDS screening test was highest among the 30-34 age group (16.8%), followed by the 25-29 age group (11.8%), 20-24 age group (10.5%) and 15-19 age group (10.5%) (**Table 8.5.2.1**).

By ethnicity, Indians were observed to have the highest positive EPDS score [41.6% (95% CI: 21.46-64.91)], followed by Chinese [25.1% (95% CI: 12.00-45.19)] and Malays [8.4% (95% CI: 5.94-11.79)]. The Indian ethnicity showed a significantly higher percentage compared to other ethnicities (**Table 8.5.2.1**).

Mothers working in the private sector had the highest prevalence of EPDS score [18.6% (95% CI: 10.28-31.27)], followed by those who were self-employed [13.8% (95% CI: 6.64-26.35)] and those from the housewife / unemployed / student group [12.2% (95% CI: 9.00-16.29)]. However, there was no significant difference among them. In terms of mothers' education level, there was no significant difference between no formal education level, secondary education level and higher education level (**Table 8.5.2.1**).

8.5.3. Conclusion

Among those screened with EPDS, a total of 12.7% of them were positive with a score of 12 and more or item number ten score more than zero. Highest prevalence was seen in women of Indian ethnicity.

1. Wisner, K.L., Parry, B.L., and Piontek, C.M. 2002. Postpartum Depression. *N Engl J Med*, 347 (3), 194-199.
2. Cox, J.L., Holden, J.M., and Sagovsky, R. 1987. Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry*. 150:782-786.
3. WHO Recommendations on Postnatal Care of the Mother and Newborn. October 2013
4. Rushidi, W.M.W.M., Hayati, M.R. Baizuri, B., Amir, A., Nazar, M.M. 2005. Postpartum depression among Malay women from a rural area in Kedah, North West of Peninsular Malaysia: Prevalence and risk factors. *Malaysian Journal of Psychiatry*, 13 (1), 3-19. ISSN 0128-8628

8.5.4. Recommendations

- i. Enhance promotion of mental health to antenatal and postnatal mothers.
- ii. Increase knowledge and skills of health care providers regarding perinatal mental health.
- iii. Explore screening opportunities for postnatal depression in health care.

APPENDIX 7 : LIST OF TABLES

Table 4.1.2.2. Characteristics of Children aged 12-23 months

	Unweighted count	Estimated population	%	95% CI	
				Lower	Upper
MALAYSIA	10,140	511,517	100.0	100.00	100.00
State					
Johor	707	58,737	11.5	11.24	11.73
Kedah	673	35,504	6.9	6.84	7.04
Kelantan	635	37,702	7.4	7.26	7.48
Melaka	782	14,207	2.8	2.72	2.84
Negeri Sembilan	699	18,064	3.5	3.41	3.66
Pahang	650	27,649	5.4	5.30	5.52
P.Pinang	659	22,257	4.4	4.29	4.42
Perak	612	35,597	7.0	6.81	7.11
Perlis	663	4,368	0.9	0.84	0.87
Selangor	673	103,703	20.3	19.84	20.72
Terengganu	628	26,072	5.1	5.04	5.16
Sabah and WP Labuan	738	54,084	10.6	10.07	11.09
Sarawak	625	39,799	7.8	7.55	8.02
WP Kuala Lumpur	599	30,768	6.0	5.86	6.18
WP Putrajaya	797	3,006	0.6	0.58	0.59
Locality					
Urban	6,019	352,311	68.9	68.50	69.20
Rural	4,121	159,206	31.1	30.80	31.50
Sex					
Male	5,240	264,211	51.7	50.24	53.06
Female	4,900	247,306	48.3	46.94	49.76
Ethnicity					
Malay	7,136	321,376	62.8	61.55	64.09
Chinese	1,222	71,540	14.0	13.08	14.94
Indians	437	22,978	4.5	3.92	5.15
Other Bumiputera	1,133	65,127	12.7	12.18	13.30
Others	212	30,496	6.0	5.00	7.09
Citizenship					
Malaysian citizen	9,973	488,062	95.4	94.42	96.24
Permanent Resident	15	1,856	0.4	0.17	0.77
Non-Malaysian	152	21,600	4.2	3.43	5.18
Age of mother					
<25	1,196	62,588	12.4	11.47	13.31
25-39	8,215	409,578	80.9	79.76	82.00
40-59	637	34,072	6.7	6.02	7.51
Marital status of mother					
Single	32	1,471	0.3	0.19	0.44
Married/ Cohabiting	9,904	498,845	98.2	97.80	98.44
Separated/ Divorced	131	6,476	1.3	1.04	1.57
Widowed	25	1,452	0.3	0.18	0.46
Mother's education					
No formal education	192	12,748	2.5	2.06	3.07
Primary	1,058	58,777	11.6	10.68	12.56
Secondary	5,235	258,707	51.0	49.61	52.38
Higher	3,580	177,108	34.9	33.60	36.24
Father's education					
No formal education	183	11,981	2.5	2.00	3.03
Primary	1,177	64,377	13.2	12.29	14.26
Secondary	5,295	257,822	53.1	51.61	54.49
Higher	2,996	151,797	31.2	29.90	32.60
Head of household Occupation					
Public Sector	2,405	96,583	19.0	18.01	20.08
Private Sector	4,726	263,899	52.0	50.63	53.33
Self-employed	2,711	134,418	26.5	25.32	27.66
Housewife/Unemployed	238	12,792	2.5	2.16	2.94
Household income					
Less than RM1000	772	36,559	7.2	6.62	7.84
RM1000 – RM1999	1,886	91,140	18.0	16.95	19.04
RM2000 – RM2999	1,665	78,708	15.5	14.59	16.49
RM3000 – RM3999	1,361	66,056	13.0	12.16	13.94
RM4000 – RM4999	1,022	51,782	10.2	9.39	11.09
RM5000 and above	3,370	182,910	36.1	34.75	37.40

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.1.2.3 : Prevalence of children age 12-23 months vaccinated against BCG, NHMS 2016, N=10,138

	Verified						Self-reported						No			
	Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	
				Lower	Upper				Lower	Upper						
MALAYSIA	9,419	471,781	92.3	91.52	93.00	0	-	-	-	-	712	39,397	7.7	7.00	8.48	
State																
Johor	666	55,088	93.8	91.51	95.48	0	-	-	-	-	41	3,649	6.2	4.50	8.50	
Kedah	633	33,389	94.3	92.01	95.92	0	-	-	-	-	39	2,029	5.7	4.10	8.00	
Kelantan	616	37,011	98.3	96.96	99.00	0	-	-	-	-	18	659	1.7	1.00	3.00	
Melaka	754	13,671	96.4	94.68	97.57	0	-	-	-	-	26	511	3.6	2.40	5.30	
Negeri Sembilan	663	16,770	92.8	88.52	95.61	0	-	-	-	-	36	1,294	7.2	4.40	11.50	
Pahang	574	24,205	87.5	84.53	90.04	0	-	-	-	-	76	3,444	12.5	10.00	15.50	
P.Pinang	576	19,535	87.9	85.12	90.21	0	-	-	-	-	82	2,690	12.1	9.80	14.90	
Perak	560	32,440	91.1	88.34	93.31	0	-	-	-	-	52	3,157	8.9	6.70	11.70	
Perlis	598	3,947	90.4	87.83	92.40	0	-	-	-	-	65	421	9.6	7.60	12.20	
Selangor	608	92,143	88.9	85.84	91.39	0	-	-	-	-	63	11,490	11.1	8.60	14.20	
Terengganu																
Sabon and WP	588	24,437	93.7	91.43	95.44	0	-	-	-	-	40	1,635	6.3	4.60	8.60	
Labuan	716	52,278	96.7	93.89	98.20	0	-	-	-	-	22	1,806	3.3	1.80	6.11	
Sarawak	552	36,055	90.7	89.44	91.83	0	-	-	-	-	72	3,696	9.3	8.20	10.60	
WP Kuala Lumpur	542	27,897	90.8	88.11	92.94	0	-	-	-	-	56	2,826	9.2	7.10	11.90	
WP Putrajaya	32	1,663	94.2	79.00	98.61	0	-	-	-	-	2	102	5.8	1.40	21.00	
Locality																
Urban	5,599	324,613	92.2	91.10	93.14	0	-	-	-	-	416	27,522	7.8	6.86	8.90	
Rural	3,820	147,168	92.5	91.71	93.28	0	-	-	-	-	296	11,875	7.5	6.72	8.29	
Sex																
Male	4,867	242,834	92.0	90.87	93.01	0	-	-	-	-	366	21,100	8.0	7.00	9.10	
Female	4,552	228,947	92.6	91.46	93.60	0	-	-	-	-	346	18,290	7.4	6.40	8.50	
Ethnicity																
Malay	6,622	294,581	91.8	90.72	92.69	0	-	-	-	-	506	26,470	8.2	7.30	9.30	
Chinese	1,103	64,251	89.8	87.24	91.91	0	-	-	-	-	119	7,289	10.2	8.10	12.80	
Indians	414	21,437	93.3	88.38	96.28	0	-	-	-	-	22	1,528	6.7	3.70	11.60	
Other																
Bumiputera	1,077	62,029	95.2	93.87	96.32	0	-	-	-	-	56	3,099	4.8	3.70	6.10	
Others	203	29,483	96.7	92.88	98.48	0	-	-	-	-	9	1,013	3.3	1.50	7.10	
Citizenship																
Malaysian citizen	9,259	448,946	92.0	91.25	92.78	0	-	-	-	-	705	38,780	8.0	7.20	8.80	
Permanent Resident	15	1,856	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	-
Non-Malaysian	145	20,980	97.1	93.70	98.72	0	-	-	-	-	7	620	2.9	1.30	6.30	

	Verified						Self-reported						No		
	Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	Lower	Upper
				Lower	Upper				Lower	Upper					
Marital status of mother															
Married/	9,212	460,450	92.3	91.47	92.98	0	-	-	-	696	38,630	7.7	7.00	8.50	
Cohabiting															
Never married/															
Separated/															
Divorced/	168	8,688	93.6	88.68	96.51	0	-	-	-	13	590	6.4	3.50	11.30	
Widowed															
Education of household head															
None	186	11,939	94.7	89.45	97.43	0	-	-	-	12	666	5.3	2.60	10.60	
Primary	1,196	65,493	95.2	93.59	96.40	0	-	-	-	58	3,316	4.8	3.60	6.40	
Secondary	5,139	251,573	93.3	92.41	94.10	0	-	-	-	379	18,060	6.7	5.90	7.60	
Higher	2,839	139,273	89.0	87.04	90.73	0	-	-	-	260	17,180	11.0	9.30	13.00	
Occupation of household head															
Public Sector	2,250	89,967	93.2	91.66	94.39	0	-	-	-	155	6,616	6.8	5.60	8.30	
Private Sector	4,383	243,043	92.1	90.98	93.17	0	-	-	-	338	20,720	7.9	6.80	9.00	
Self-employed	2,502	123,004	91.6	89.84	93.05	0	-	-	-	206	11,300	8.4	6.90	10.20	
Housewife/															
Unemployed/	229	12,222	95.5	89.54	98.17	0	-	-	-	9	570	4.5	1.80	10.50	
student															
Household income															
Less than															
RM1000	729	34,403	94.2	91.95	95.83	0	-	-	-	42	2,124	5.8	4.20	8.00	
RM1000 –															
RM1999	1,788	86,492	95.0	93.30	96.34	0	-	-	-	96	4,514	5.0	3.70	6.70	
RM2000 –															
RM2999	1,555	73,793	93.8	92.15	95.13	0	-	-	-	108	4,871	6.2	4.90	7.80	
RM3000 –															
RM3999	1,260	60,189	91.1	88.60	93.15	0	-	-	-	100	5,854	8.9	6.90	11.40	
RM4000 –															
RM4999	949	47,986	92.7	90.18	94.57	0	-	-	-	73	3,796	7.3	5.40	9.80	
RM5000 and above	3,077	164,823	90.2	88.54	91.59	0	-	-	-	290	17,970	9.8	8.40	11.50	

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.1.2.4. : Prevalence of children age 12-23 months vaccinated with DPT-IPV/Hib vaccine, NHMS 2016, N=10,139

	DOSE 1																	
	Verified						Self-reported						No					
	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	95% CI	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	95% CI	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	95% CI
MALAYSIA	9,208	459,493	89.8	88.97	90.65	87.71	87.2	48,579	9.5	8.71	10.34	3,398	0.7	0.50	0.90			
State																		
Johor	644	53,090	90.4	87.69	92.54	6.91	60	5,276	9.0	6.91	11.60	372	0.6	0.20	1.90			
Kedah	624	33,027	93.0	90.59	94.87	4.42	41	2,182	6.1	4.42	8.49	294	0.8	0.40	1.90			
Kelantan	560	32,073	85.1	80.94	88.43	11.10	72	5,434	14.4	11.10	18.50	195	0.5	0.10	2.10			
Malaka	710	12,958	91.2	88.94	93.05	6.59	68	1,194	8.4	6.59	10.65	55	0.4	0.10	1.00			
Negeri Sembilan	658	16,614	92.0	87.69	94.85	4.67	38	1,351	7.5	4.67	11.78	100	0.6	0.20	1.70			
Pahang	573	24,166	87.4	84.38	89.91	84.38	573	24,166	87.4	84.38	89.91	226	0.8	0.20	2.90			
P.Pinang	566	19,199	86.3	83.34	88.73	12.7	87	2,828	12.7	10.34	15.52	230	1.0	0.50	2.30			
Perak	549	31,893	89.6	86.68	91.94	7.38	58	3,428	9.6	7.38	12.48	276	0.8	0.30	1.90			
Perlis	590	3,892	89.1	86.46	91.28	8.33	70	457	10.5	8.33	13.07	19	0.4	0.10	1.30			
Selangor	605	91,530	88.3	85.12	90.81	8.60	63	11,491	11.1	8.60	14.16	683	0.7	0.20	1.80			
Terengganu	582	24,191	92.8	90.38	94.62	4.67	41	1,669	6.4	4.67	8.71	213	0.8	0.30	2.00			
Sabah and Sarawak	691	50,393	93.2	90.13	95.33	3.80	42	3,108	5.7	3.80	8.61	582	1.1	0.40	2.85			
WP Labuan	548	35,797	90.1	88.68	91.28	8.72	76	3,954	9.9	8.72	11.32	0	-	-	-			
WP Kuala Lumpur	540	27,777	90.3	87.52	92.48	7.12	56	2,854	9.3	7.12	11.99	137	0.4	0.10	1.40			
WP Putrajaya	32	1,663	94.2	79.00	98.61	1.39	2	102	5.8	1.39	21.00	0	-	-	-			
Locality																		
Urban	5,474	315,597	89.6	88.37	90.67	8.66	510	34,240	9.7	8.66	10.89	2,474	0.7	0.45	1.09			
Rural	3,734	143,896	90.4	89.47	91.28	8.18	362	14,339	9.0	8.18	9.92	924	0.6	0.37	0.91			
Sex																		
Male	4,765	238,173	90.2	88.95	91.25	8.37	450	24,959	9.4	8.37	10.65	1,031	0.4	0.20	0.60			
Female	4,443	221,320	89.5	88.17	90.68	8.42	422	23,620	9.6	8.42	10.81	2,366	1.0	0.60	1.50			
Ethnicity																		
Malay	6,464	285,661	88.9	87.74	89.96	9.34	623	33,348	10.4	9.34	11.52	2,320	0.7	0.50	1.10			
Chinese	1,083	63,256	88.4	85.78	90.62	9.25	137	8,188	11.4	9.25	14.08	96	0.1	0.00	0.50			
Indians	410	21,294	92.7	87.74	95.72	4.28	27	1,684	7.3	4.28	12.26	0	-	-	-			
Other	1,054	60,594	93.0	91.33	94.43	5.22	76	4,238	6.5	5.22	8.08	295	0.5	0.10	1.80			
Bumiputera	197	28,689	94.1	89.44	96.75	1.67	9	1,121	3.7	1.67	7.90	686	2.2	0.90	5.50			
Citizenship																		
Malaysian citizen	9,054	437,452	89.6	88.75	90.47	9.00	865	47,851	9.8	9.00	10.68	2,712	0.6	0.40	0.80			
Permanent Resident	15	1,856	100.0	100.00	100.00	-	0	-	-	-	-	-	-	-	-	-	-	-
Non-Malaysian	139	20,186	93.5	88.00	96.53	1.41	7	728	3.4	1.41	7.85	686	3.2	1.30	7.70			

	DOSE 1														
	Verified						Self-reported								
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	Upper
Marital status of mother															
Married/	9,003	448,205	89.8	88.88	90.59	854	47,771	9.6	8.77	10.43	58	3,311	0.7	0.50	0.90
Cohabiting															
Never married/															
Separated/	167	8,669	93.4	88.49	96.35	14	609	6.6	3.65	11.51	0	-	-	-	-
Divorced/															
Widowed															
Education of household head															
None	184	11,571	91.8	84.68	95.78	11	612	4.9	2.26	10.12	3	421	3.3	1.00	10.70
Primary	1,173	64,052	93.1	91.06	94.65	71	4,015	5.8	4.43	7.65	11	754	1.1	0.50	2.30
Secondary	5,021	244,905	90.8	89.74	91.74	477	23,536	8.7	7.81	9.74	23	1,305	0.5	0.30	0.90
Higher	2,772	135,486	86.6	84.47	88.39	309	20,217	12.9	11.10	14.98	21	831	0.5	0.30	0.90
Occupation of head of household															
Public Sector	2,204	87,428	90.5	88.77	92.02	193	8,913	9.2	7.74	10.97	8	242	0.3	0.10	0.50
Private Sector	4,295	238,435	90.4	89.11	91.47	408	24,056	9.1	8.03	10.34	23	1,408	0.5	0.30	0.90
Self-employed	2,428	117,970	87.8	85.79	89.55	255	14,739	11.0	9.30	12.89	27	1,661	1.2	0.70	2.10
Housewife/															
Unemployed/	227	12,140	94.9	88.97	97.73	11	652	5.1	2.27	11.03	0	-	-	-	-
student															
Household income															
Less than	716	33,619	92.0	89.07	94.13	48	2,523	6.9	4.93	9.58	8	417	1.1	0.40	2.90
RM1000 -															
RM1000 -	1,741	83,698	91.9	89.85	93.54	131	6,721	7.4	5.78	9.37	13	673	0.7	0.40	1.40
RM1999 -															
RM2000 -	1,523	71,998	91.5	89.56	93.06	132	6,184	7.9	6.34	9.70	10	527	0.7	0.30	1.50
RM2999 -															
RM3000 -	1,238	58,877	89.1	86.45	91.34	115	6,549	9.9	7.84	12.47	8	630	1.0	0.40	2.40
RM3999 -															
RM4000 -	923	46,510	89.8	86.98	92.09	95	5,163	10.0	7.71	12.80	4	109	0.2	0.10	0.70
RM4999 -															
RM5000 and above	3,006	160,696	87.9	86.11	89.41	348	21,172	11.6	10.05	13.29	16	1,041	0.6	0.30	1.10

Some cells have respondent count <30. Results should be interpreted with caution.

	DOSE 2 (SELF-REPORTED)														
	Verified						Self-reported						No		
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper
MALAYSIA	9,184	458,127	89.6	88.69	90.39	874	48,689	9.5	8.74	10.37	81	4,654	0.9	0.70	1.20
State															
Johor	643	52,967	90.2	87.46	92.35	60	5,276	9.0	6.91	11.60	4	495	0.8	0.30	2.20
Kedah	622	32,911	92.7	90.22	94.59	42	2,220	6.3	4.52	8.60	9	373	1.0	0.50	2.30
Kelantan	559	32,020	84.9	80.80	88.30	72	5,434	14.4	11.10	18.50	4	248	0.7	0.20	2.10
Malaka	709	12,926	91.0	88.67	92.86	69	1,226	8.6	6.78	10.92	4	55	0.4	0.10	1.00
Negeri Sembilan	658	16,614	92.0	87.69	94.85	38	1,351	7.5	4.67	11.78	3	100	0.6	0.20	1.70
Pahang	572	24,112	87.2	84.17	89.74	74	3,266	11.8	9.44	14.68	4	270	1.0	0.30	2.90
P.Pinang	564	19,093	85.8	82.81	88.31	87	2,828	12.7	10.34	15.52	8	337	1.5	0.70	3.10
Perak	549	31,893	89.6	86.68	91.94	58	3,428	9.6	7.38	12.48	5	276	0.8	0.30	1.90
Perlis	588	3,878	88.8	86.11	90.99	69	451	10.3	8.20	12.92	6	39	0.9	0.40	2.00
Selangor	602	91,219	88.0	84.81	90.53	63	11,491	11.1	8.60	14.16	8	994	1.0	0.40	2.20
Terengganu	582	24,177	92.7	90.32	94.58	41	1,682	6.5	4.72	8.77	5	213	0.8	0.30	2.00
Sabah and Sarawak	691	50,392	93.2	90.13	95.33	40	2,988	5.5	3.60	8.39	7	703	1.3	0.60	3.00
WP Labuan	545	35,553	89.4	87.86	90.83	78	4,093	10.3	8.99	11.77	1	106	0.3	0.00	1.90
WP Kuala Lumpur	535	27,492	89.4	86.48	91.67	56	2,854	9.3	7.12	11.99	8	422	1.4	0.70	2.90
WP Putrajaya	32	1,663	94.2	79.00	98.61	2	102	5.8	1.39	21.00	0	-	-	-	-
Locality															
Urban	5,455	314,485	89.3	88.05	90.37	513	34,412	9.8	8.71	10.94	51	3,414	1.0	0.67	1.40
Rural	3,729	143,642	90.3	89.30	91.13	361	14,276	9.0	8.14	9.88	30	1,240	0.8	0.52	1.16
Sex															
Male	4,750	237,524	89.9	88.70	91.01	453	25,084	9.5	8.42	10.70	36	1,555	0.6	0.40	0.90
Female	4,434	220,603	89.2	87.86	90.41	421	23,605	9.5	8.42	10.81	45	3,098	1.3	0.90	1.80
Ethnicity															
Malay	6,446	284,654	88.6	87.41	89.66	625	33,479	10.4	9.38	11.56	64	3,196	1.0	0.70	1.40
Chinese	1,081	63,158	88.3	85.64	90.49	139	8,286	11.6	9.38	14.22	2	96	0.1	-	0.50
Indians	409	21,247	92.5	87.55	95.54	27	1,684	7.3	4.28	12.26	1	47	0.2	-	1.40
Other	1,054	60,593	93.0	91.33	94.43	74	4,119	6.3	5.06	7.88	5	416	0.6	0.20	1.90
Bumiputera	194	28,476	93.4	88.72	96.19	9	1,121	3.7	1.67	7.90	9	899	2.9	1.40	6.20
Citizenship															
Malaysian citizen	9,033	436,299	89.4	88.51	90.24	867	47,961	9.8	9.02	10.70	72	3,755	0.8	0.60	1.00
Permanent Resident	14	1,749	94.2	66.38	99.27	0	-	-	-	-	1	107	5.8	0.70	33.60
Non-Malaysian	137	20,079	93.0	87.52	96.14	7	728	3.4	1.41	7.85	8	792	3.7	1.60	8.10

	DOSE 2 (SELF-REPORTED)															
	Verified						Self-reported						No			
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper		Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper
Marital status of mother																
Married/	8,982	447,023	89.5	88.64	90.36	856	47,881	9.6	8.79	10.45	77	4,383	0.9	0.70	1.20	
Cohabiting																
Never married/																
Separated/	165	8,557	92.2	86.64	95.59	14	609	6.6	3.65	11.51	2	113	1.2	0.20	7.30	
Divorced/																
Widowed																
Education of household head																
None	182	11,465	91.0	83.87	95.12	11	612	4.9	2.26	10.12	5	527	4.2	1.50	11.00	
Primary	1,168	63,718	92.6	90.52	94.23	71	4,015	5.8	4.43	7.65	16	1,087	1.6	0.90	2.90	
Secondary	5,016	244,691	90.7	89.66	91.67	476	23,458	8.7	7.78	9.71	29	1,597	0.6	0.40	1.00	
Higher	2,761	134,845	86.1	84.05	88.00	312	20,405	13.0	11.21	15.11	29	1,284	0.8	0.50	1.30	
Occupation of head of household																
Public Sector	2,200	87,369	90.5	88.71	91.96	193	8,914	9.2	7.74	10.97	12	300	0.3	0.20	0.60	
Private Sector	4,284	237,698	90.1	88.81	91.20	410	24,141	9.1	8.06	10.37	32	2,061	0.8	0.50	1.20	
Self-employed	2,422	117,585	87.5	85.49	89.28	255	14,762	11.0	9.32	12.91	33	2,023	1.5	0.90	2.40	
Housewife/																
Unemployed/	225	12,027	94.0	87.95	97.14	11	652	5.1	2.27	11.03	2	113	0.9	0.10	5.30	
student																
Household income																
Less than	716	33,661	92.1	89.20	94.23	47	2,474	6.8	4.81	9.44	9	424	1.2	0.50	3.00	
RM1000 –																
RM1000 –	1,735	83,262	91.4	89.34	93.10	131	6,724	7.4	5.79	9.37	19	1,106	1.2	0.70	2.00	
RM1999 –																
RM2000 –	1,519	71,861	91.3	89.38	92.90	132	6,184	7.9	6.34	9.70	14	664	0.8	0.40	1.70	
RM3000 –																
RM3999 –	1,237	58,754	88.9	86.24	91.17	115	6,549	9.9	7.84	12.47	9	753	1.1	0.50	2.60	
RM4000 –																
RM4999 –	920	46,353	89.5	86.67	91.81	97	5,276	10.2	7.91	13.03	5	154	0.3	0.10	0.80	
RM5000 and above	2,996	160,141	87.6	85.79	89.12	349	21,216	11.6	10.08	13.32	25	1,553	0.8	0.50	1.50	

Some cells have respondent count <30. Results should be interpreted with caution.

	COMPLETE															
	Verified							Self-reported							No	
	Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	
MALAYSIA	9,140	455,023	89.0	88.05	89.81	873	48,558	9.5	8.71	10.34	126	7,888	1.5	1.20	2.00	
State																
Johor	641	52,744	89.8	87.03	92.03	60	5,249	8.9	6.87	11.55	6	745	1.3	0.60	2.80	
Kedah	618	32,691	92.1	89.52	94.06	42	2,220	6.3	4.52	8.60	13	592	1.7	0.90	3.10	
Kelantan	556	31,961	84.8	80.64	88.15	72	5,434	14.4	11.10	18.50	7	307	0.8	0.30	2.20	
Malaka	706	12,885	90.7	88.37	92.60	70	1,229	8.6	6.81	10.92	6	93	0.7	0.30	1.50	
Negeri Sembilan	655	16,543	91.6	87.32	94.49	37	1,318	7.3	4.51	11.60	7	204	1.1	0.50	2.40	
Pahang	571	24,110	87.2	84.17	89.73	73	3,214	11.6	9.27	14.47	6	324	1.2	0.40	3.00	
P.Pinang	558	18,780	84.4	81.24	87.07	88	2,866	12.9	10.49	15.71	13	611	2.7	1.60	4.70	
Perak	549	31,893	89.6	86.68	91.94	58	3,428	9.6	7.38	12.48	5	276	0.8	0.30	1.90	
Perlis	583	3,847	88.1	85.35	90.35	69	451	10.3	8.20	12.92	11	70	1.6	0.90	2.90	
Selangor	595	89,963	86.8	83.48	89.46	64	11,547	11.1	8.65	14.22	14	2,193	2.1	1.20	3.80	
Terengganu	579	24,025	92.1	89.64	94.09	40	1,635	6.3	4.56	8.57	9	413	1.6	0.80	3.10	
Sabah and Sarawak	686	49,650	91.8	88.44	94.25	40	2,984	5.5	3.59	8.38	12	1,450	2.7	1.39	5.12	
WP Labuan	546	35,619	89.6	88.06	90.97	77	4,026	10.1	8.85	11.57	1	106	0.3	0.00	1.90	
WP Kuala Lumpur	534	27,439	89.2	86.29	91.52	56	2,856	9.3	7.13	12.00	9	474	1.5	0.80	3.10	
WP Putrajaya	32	1,663	94.2	79.00	98.61	2	102	5.8	1.39	21.00	0	-	-	-	-	
Locality																
Urban	5,425	312,138	88.6	87.34	89.74	513	34,395	9.8	8.70	10.94	81	5,778	1.6	1.22	2.21	
Rural	3,715	142,886	89.8	88.74	90.73	360	14,163	8.9	8.07	9.80	45	2,110	1.3	0.89	1.98	
Sex																
Male	4,729	235,750	89.2	87.97	90.40	446	24,550	9.3	8.23	10.48	64	3,864	1.5	1.00	2.10	
Female	4,411	219,274	88.7	87.29	89.91	427	24,008	9.7	8.57	10.98	62	4,024	1.6	1.20	2.30	
Ethnicity																
Malay	6,418	282,696	88.0	86.76	89.10	623	33,198	10.3	9.30	11.47	94	5,434	1.7	1.30	2.30	
Chinese	1,080	62,957	88.0	85.31	90.25	140	8,487	11.9	9.62	14.55	2	96	0.1	0.00	0.50	
Indians	404	21,116	91.9	87.04	95.04	28	1,704	7.4	4.37	12.32	5	158	0.7	0.30	1.80	
Other	1,052	60,505	92.9	91.18	94.31	73	4,048	6.2	4.96	7.76	8	574	0.9	0.40	2.00	
Bumiputera	186	27,749	91.0	86.02	94.32	9	1,121	3.7	1.67	7.90	17	1,625	5.3	3.10	9.10	
Citizenship																
Malaysian citizen	8,998	433,930	88.9	87.99	89.78	866	47,830	9.8	8.99	10.67	108	6,254	1.3	1.00	1.70	
Permanent Resident	14	1,749	94.2	66.38	99.27	-	-	0.0	-	0.00	1	107	5.8	0.70	33.60	
Non-Malaysian	128	19,344	89.6	83.51	93.56	7	728	3.4	1.41	7.85	17	1,527	7.1	4.00	12.30	

	COMPLETE															
	Verified						Self-reported						No			
	Unweighed count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper		Unweighed count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighed count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper
Marital status of mother																
Married/	8,939	443,935	88.9	87.98	89.78	89.78	855	47,750	9.6	8.76	10.43	121	7,602	1.5	1.20	2.00
Cohabiting																
Never married/																
Separated/	164	8,541	92.1	86.49	95.44	95.44	14	609	6.6	3.65	11.51	3	129	1.4	0.30	6.80
Divorced/																
Widowed																
Education of household head																
None	177	11,118	88.2	80.60	93.09	93.09	10	558	4.4	1.96	9.71	11	928	7.4	3.60	14.50
Primary	1,159	63,280	91.9	89.83	93.66	93.66	71	4,015	5.8	4.43	7.65	25	1,526	2.2	1.40	3.60
Secondary	4,998	243,680	90.3	89.26	91.32	91.32	477	23,452	8.7	7.78	9.71	46	2,614	1	0.60	1.50
Higher	2,749	133,538	85.3	83.14	87.24	87.24	311	20,333	13.0	11.17	15.06	42	2,662	1.7	1.10	2.70
Occupation of head of household																
Public Sector	2,192	86,867	89.9	88.09	91.53	91.53	196	9,006	9.3	7.83	11.07	17	710	0.7	0.30	1.80
Private Sector	4,260	235,903	89.4	88.08	90.57	90.57	407	23,970	9.1	8.00	10.30	59	4,026	1.5	1.10	2.10
Self-employed	2,413	116,880	87.0	84.93	88.80	88.80	254	14,711	10.9	9.28	12.87	43	2,780	2.1	1.40	3.10
Housewife/																
Unemployed/	222	11,925	93.2	87.26	96.51	96.51	11	652	5.1	2.27	11.03	5	215	1.7	0.50	5.00
student																
Household income																
Less than	713	33,537	91.7	88.83	93.93	93.93	47	2,470	6.8	4.80	9.42	12	552	1.5	0.70	3.30
RM1000 –																
RM1000 –	1,726	82,620	90.7	88.56	92.47	92.47	129	6,610	7.3	5.67	9.24	30	1,862	2	1.30	3.10
RM1999 –																
RM2000 –	1,511	71,493	90.8	88.88	92.47	92.47	132	6,184	7.9	6.34	9.70	22	1,032	1.3	0.80	2.20
RM2999 –																
RM3000 –	1,234	58,725	88.9	86.20	91.13	91.13	114	6,476	9.8	7.74	12.35	13	855	1.3	0.60	2.70
RM3999 –																
RM4000 –	915	45,895	88.6	85.59	91.10	91.10	98	5,323	10.3	7.99	13.12	9	564	1.1	0.40	3.00
RM4999 –																
RM5000 and above	2,980	158,657	86.7	84.90	88.38	88.38	350	21,229	11.6	10.08	13.32	40	3,023	1.7	1.10	2.60

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.1.2.5 : Prevalence of children age 12-23 months vaccinated with Hep B vaccine, NHMS 2016, N=10,136

	DOSE 1															
	Verified						Self-reported						No			
	Unweighed count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighed count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighed count	Estimated population	Prevalence (%)	Lower	Upper	
MALAYSIA	9,410	471,267	92.2	91.37	92.87	721	39,915	7.8	7.09	8.58	5	201	0	0	0.1	
State																
Johor	667	55,212	94.0	91.75	95.66	40	3,525	6.0	4.34	8.25	0	-	-	-	-	-
Kedah	633	33,397	94.1	91.76	95.76	39	2,029	5.7	4.07	7.97	1	78	0.2	0	1.6	
Kelantan	616	37,011	98.2	96.87	98.93	18	659	1.7	1.00	3.04	1	32	0.1	0	0.6	
Malaka	751	13,608	95.8	93.98	97.06	30	586	4.1	2.86	5.93	1	13	0.1	0	0.6	
Negeri Sembilan	662	16,737	92.7	88.34	95.45	37	1,327	7.3	4.55	11.66	0	-	-	-	-	-
Pahang	571	24,083	87.4	84.33	89.87	77	3,485	12.6	10.13	15.67	0	-	-	-	-	-
P.Pinang	576	19,535	87.8	84.99	90.09	82	2,690	12.1	9.77	14.85	1	32	0.1	0	1	
Perak	560	32,440	91.1	88.34	93.31	52	3,157	8.9	6.69	11.66	0	-	-	-	-	-
Perlis	597	3,940	90.3	87.81	92.39	65	421	9.7	7.61	12.19	0	-	-	-	-	-
Selangor	608	91,797	88.5	85.41	91.03	65	11,906	11.5	8.97	14.59	0	-	-	-	-	-
Terengganu	588	24,437	93.7	91.43	95.44	40	1,635	6.3	4.56	8.57	0	-	-	-	-	-
Sabah and Sarawak	714	52,159	96.4	93.65	98.12	24	1,924	3.6	1.98	6.31	0	-	-	-	-	-
WP Labuan	550	35,938	90.4	89.13	91.55	74	3,813	9.6	8.45	10.87	0	-	-	-	-	-
WP Kuala Lumpur	544	28,058	91.2	88.59	93.24	54	2,665	8.7	6.63	11.24	1	45	0.1	0	1	
WP Putrajaya	773	2,916	97.0	95.55	97.98	24	90	3.0	2.02	4.45	0	-	-	-	-	-
Locality																
Urban	5,593	324,250	92.0	93.69	98.02	421	27,885	7.9	6.95	9.00	4	169	0.0	0.02	0.15	
Rural	3,817	147,016	92.4	91.60	93.17	300	12,029	7.6	6.82	8.38	1	32	0.0	0.00	0.14	
Sex																
Male	4,862	242,439	91.8	90.65	92.83	371	21,547	8.2	7.14	9.31	3	90	0	0	0.1	
Female	4,548	228,828	92.5	91.39	93.52	350	18,368	7.4	6.43	8.56	2	111	0	0	0.2	
Ethnicity																
Malay	6,615	294,319	91.6	90.58	92.55	512	26,721	8.3	7.38	9.36	5	201	0.1	0	0.2	
Chinese	1,103	64,288	89.9	87.29	91.96	119	7,253	10.1	8.04	12.71	0	-	-	-	-	-
Indians	415	21,450	93.3	88.38	96.28	22	1,528	6.7	3.72	11.62	0	-	-	-	-	-
Other																
Bumiputera	1,073	61,621	94.6	93.02	95.86	60	3,506	5.4	4.14	6.98	0	-	-	-	-	-
Others	204	29,590	97.0	93.24	98.72	8	906	3.0	1.28	6.76	0	-	-	-	-	-
Citizenship																
Malaysian citizen	9,249	448,324	91.9	91.08	92.62	715	39,401	8.1	7.34	8.88	5	201	0	0	0.1	
Permanent Resident	15	1,856	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	-
Non-Malaysian	146	21,086	97.6	94.39	99.01	6	513	2.4	0.99	5.61	0	-	-	-	-	-

	DOSE 1												
	Verified						Self-reported						
	Unweighed count	Estimated population	Prevalence (%)	Lower	Upper	95% CI	Unweighed count	Estimated population	Prevalence (%)	Lower	Upper	95% CI	
Marital status of mother													
Married/	9,202	459,849	92.1	91.32	92.85	92.85	705	39,150	7.8	7.11	8.64	8.64	0.1
Cohabiting													
Never married/													
Separated/	168	8,688	93.6	88.68	96.51	96.51	13	590	6.4	3.49	11.32	11.32	-
Divorced/													
Widowed													
Education of household head													
None	186	11,939	94.7	89.45	97.43	97.43	12	666	5.3	2.57	10.55	10.55	-
Primary	1,198	65,600	95.3	93.75	96.51	96.51	57	3,221	4.7	3.49	6.25	6.25	-
Secondary	5,128	250,786	93.0	92.08	93.82	93.82	386	18,685	6.9	6.11	7.85	7.85	0.2
Higher	2,838	139,352	89.0	87.05	90.73	90.73	263	17,169	11.0	9.26	12.94	12.94	0.1
Occupation of head of household													
Public Sector	2,192	86,867	89.9	88.09	91.53	91.53	196	9,006	9.3	7.83	11.07	11.07	-
Private Sector	4,260	235,903	89.4	88.08	90.57	90.57	407	23,970	9.1	8.00	10.30	10.30	0.12
Self-employed	2,413	116,880	87.0	84.93	88.80	88.80	254	14,711	10.9	9.28	12.87	12.87	0.37
Housewife/													
Unemployed/	222	11,925	93.2	87.26	96.51	96.51	11	652	5.1	2.27	11.03	11.03	-
student													
Household income													
Less than	728	34,336	93.9	91.66	95.60	95.60	43	2,191	6.0	4.32	8.25	8.25	0.6
RM1000													
RM1000 –	1,786	86,338	94.8	92.98	96.14	96.14	99	4,754	5.2	3.86	7.02	7.02	-
RM1999													
RM2000 –	1,554	73,709	93.6	91.98	94.99	94.99	110	4,967	6.3	4.97	7.98	7.98	0.3
RM2999													
RM3000 –	1,257	60,077	91.1	88.53	93.09	93.09	99	5,800	8.8	6.78	11.32	11.32	0.8
RM3999													
RM4000 –	948	47,932	92.6	90.06	94.47	94.47	74	3,850	7.4	5.53	9.94	9.94	-
RM4999													
RM5000 and	3,076	164,779	90.1	88.45	91.51	91.51	293	18,085	9.9	8.46	11.52	11.52	0.2
above													

Some cells have respondent count <30. Results should be interpreted with caution.

	DOSE 2																		
	Verified						Self-reported						No						
	Unweighed count	Estimated population	Prevalence (%)	Lower	Upper	95% CI	Unweighed count	Estimated population	Prevalence (%)	Lower	Upper	95% CI	Unweighed count	Estimated population	Prevalence (%)	Lower	Upper	95% CI	
MALAYSIA	9,215	459,171	89.8	88.89	90.60		869	48,897	9.6	8.77	10.41		55	3,401	0.7	0.50	1.00		
State																			
Johor	646	53,297	90.7	88.08	92.85		58	5,069	8.6	6.60	11.21		3	372	0.6	0.20	1.90		
Kedah	625	33,047	93.1	90.65	94.92		41	2,182	6.1	4.42	8.49		7	274	0.8	0.30	1.90		
Kelantan	559	32,033	85.0	80.83	88.33		73	5,468	14.5	11.19	18.59		3	201	0.5	0.10	2.20		
Malaka	712	12,986	91.4	89.14	93.23		68	1,194	8.4	6.59	10.65		2	28	0.2	0.00	0.80		
Negeri Sembilan	659	16,661	92.2	87.95	95.08		38	1,337	7.4	4.60	11.70		2	66	0.4	0.10	1.50		
Pahang	572	24,114	87.2	84.18	89.74		75	3,309	12.0	9.59	14.84		3	226	0.8	0.20	2.90		
P.Pinang	567	19,255	86.5	83.63	88.95		87	2,828	12.7	10.34	15.52		5	174	0.8	0.30	1.90		
Perak	550	31,964	89.8	86.90	92.11		58	3,428	9.6	7.38	12.48		4	205	0.6	0.20	1.60		
Perlis	589	3,886	89.0	86.32	91.16		69	450	10.3	8.18	12.89		5	32	0.7	0.30	1.80		
Selangor	601	90,570	87.3	84.09	90.00		66	12,180	11.7	9.19	14.89		6	953	0.9	0.40	2.30		
Terengganu	584	24,259	93.0	90.66	94.86		40	1,635	6.3	4.56	8.57		4	178	0.7	0.20	1.90		
Sabah and Sarawak	692	50,540	93.4	90.47	95.54		41	3,059	5.7	3.71	8.52		5	485	0.9	0.33	2.39		
WP Labuan	549	35,810	90.1	88.62	91.38		74	3,839	9.7	8.45	11.02		1	180	0.3	0.00	1.80		
WP Kuala Lumpur	541	27,853	90.5	87.81	92.69		56	2,826	9.2	7.05	11.88		2	89	0.3	0.10	1.20		
WP Putrajaya	769	2,895	96.3	94.67	97.47		25	94	3.1	2.13	4.60		3	16	0.5	0.20	1.90		
Locality																			
Urban	5,477	315,064	89.4	88.20	90.54		507	34,612	9.8	8.75	11.01		35	2,636	0.7	0.48	1.17		
Rural	3,738	144,107	90.5	89.60	91.41		362	14,286	9.0	8.14	9.89		20	765	0.5	0.29	0.79		
Sex																			
Male	4,770	237,907	90.1	88.82	91.17		446	25,127	9.5	8.42	10.73		23	1,129	0.4	0.20	0.80		
Female	4,445	221,264	89.5	88.14	90.67		423	23,770	9.6	8.47	10.88		32	2,272	0.9	0.60	1.50		
Ethnicity																			
Malay	6,466	285,368	88.8	87.63	89.89		624	33,537	10.4	9.40	11.58		45	2,423	0.8	0.50	1.20		
Chinese	1,080	62,711	87.7	84.89	89.98		139	8,649	12.1	9.78	14.85		3	180	0.3	0.10	0.80		
Indians	412	21,390	93.1	88.15	96.06		25	1,587	6.9	3.94	11.85		0	-	-	-	-		
Other																			
Bumiputera	1,058	60,774	93.3	91.61	94.70		72	4,002	6.1	4.90	7.69		3	351	0.5	0.10	1.90		
Others	199	28,927	94.9	90.37	97.32		9	1,121	3.7	1.67	7.90		4	447	1.5	0.50	4.50		
Citizenship																			
Malaysian citizen	9,059	436,891	89.5	88.62	90.37		862	48,169	9.9	9.05	10.75		51	2,954	0.6	0.40	0.90		
Permanent Resident	15	1,856	100.0	100.00	100.00		100	-	0.0	0.00	0.00		0	-	-	-	-	-	
Non-Malaysian	141	20,424	94.6	89.41	97.28		7	728	3.4	1.41	7.85		4	447	2.1	0.70	6.30		

	DOSE 2																		
	Verified						Self-reported						No						
	Unweighed count	Estimated population	Prevalence (%)	95% CI		Upper	Unweighed count	Estimated population	Prevalence (%)	95% CI		Upper	Unweighed count	Estimated population	Prevalence (%)	95% CI		Lower	Upper
Marital status of mother																			
Married/	9,010	447,883	89.7	88.80	90.54	851	48,089	9.6	8.82	10.50	54	3,315	0.7	0.50	1.00				
Cohabiting																			
Never married/	167	8,669	93.4	88.49	96.35	14	609	6.6	3.65	11.51	0	-	-	-	-				
Separated/																			
Divorced/																			
Widowed																			
Education of household head																			
None	186	11,810	93.7	87.31	96.98	11	612	4.9	2.26	10.12	1	182	1.4	0.20	9.50				
Primary	1,175	64,119	93.2	91.16	94.75	71	4,015	5.8	4.43	7.65	9	687	1.0	0.40	2.30				
Secondary	5,026	245,100	90.9	89.81	91.81	472	23,294	8.6	7.72	9.65	23	1,352	0.5	0.30	0.90				
Higher	2,770	134,664	86.0	83.89	87.92	311	20,777	13.3	11.42	15.38	21	1,093	0.7	0.40	1.30				
Occupation of head of household																			
Public Sector	2,208	87,403	90.5	88.70	92.00	191	9,014	9.3	7.80	11.10	6	166	0.2	0.10	0.40				
Private Sector	4,299	238,065	90.2	88.90	91.40	406	24,263	9.2	8.10	10.40	21	1,571	0.6	0.30	1.00				
Self-employed	2,427	118,044	87.8	85.90	89.60	256	14,749	11.0	9.30	12.90	27	1,578	1.2	0.70	2.00				
Housewife/																			
Unemployed/	227	12,140	94.9	89.00	97.70	11	652	5.1	2.30	11.00	0	-	-	-	-				
student																			
Household income																			
Less than	720	33,917	92.8	90.09	94.77	47	2,474	6.8	4.81	9.44	5	168	0.5	0.20	1.10				
RM1000 -																			
RM1000 -	1,743	83,821	92.0	89.99	93.66	130	6,655	7.3	5.72	9.29	12	617	0.7	0.30	1.40				
RM1999 -																			
RM2000 -	1,525	72,061	91.6	89.64	93.14	131	6,135	7.8	6.28	9.64	9	513	0.7	0.30	1.50				
RM2999 -																			
RM3000 -	1,238	58,727	88.9	86.15	91.16	115	6,704	10.1	8.01	12.78	8	625	0.9	0.40	2.40				
RM3999 -																			
RM4000 -	923	46,323	89.5	86.47	91.85	95	5,135	9.9	7.66	12.74	4	324	0.6	0.10	2.90				
RM4999 -																			
RM5000 and above	3,005	160,227	87.6	85.82	89.18	348	21,527	11.8	10.23	13.51	17	1,155	0.6	0.30	1.20				

Some cells have respondent count <30. Results should be interpreted with caution.

	DOSE 3														
	Verified						Self-reported						No		
	Unweighed count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighed count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighed count	Estimated population	Prevalence (%)	Lower	Upper
MALAYSIA	9,105	452,315	88.4	87.50	89.31	894	50,665	9.9	9.10	10.78	140	8,489	1.7	1.30	2.10
State															
Johor	639	52,599	89.5	86.76	91.81	62	5,449	9.3	7.16	11.93	6	690	1.2	0.50	2.60
Kedah	616	32,538	91.6	89.01	93.69	42	2,220	6.3	4.52	8.60	15	746	2.1	1.20	3.70
Kelantan	553	31,625	83.9	79.67	87.36	73	5,477	14.5	11.21	18.62	9	600	1.6	0.70	3.50
Malaka	705	12,868	90.6	88.24	92.49	70	1,229	8.6	6.81	10.92	7	110	0.8	0.40	1.60
Negeri Sembilan	655	16,543	91.6	87.32	94.49	38	1,351	7.5	4.67	11.78	6	171	0.9	0.40	2.10
Pahang	572	24,128	87.3	84.23	89.79	74	3,264	11.8	9.44	14.67	4	256	0.9	0.30	2.90
P.Pinang	555	18,659	83.8	80.66	86.57	89	2,905	13.1	10.65	15.90	15	693	3.1	1.90	5.20
Perak	546	31,768	89.2	86.29	91.62	59	3,447	9.7	7.43	12.53	7	381	1.1	0.50	2.30
Perlis	581	3,834	87.8	85.01	90.07	70	458	10.5	8.35	13.10	12	76	1.7	1.00	3.10
Selangor	590	88,736	85.6	82.17	88.41	70	12,982	12.5	9.87	15.76	13	1,986	1.9	1.00	3.50
Terengganu	579	24,025	92.1	89.64	94.09	40	1,635	6.3	4.56	8.57	9	413	1.6	0.80	3.10
Sabah and WP Labuan	681	49,467	91.5	88.17	93.90	42	3,127	5.8	3.83	8.65	15	1,490	2.8	1.50	5.01
Sarawak	545	35,517	89.3	87.71	90.79	77	4,026	10.1	8.85	11.57	2	208	0.5	0.10	2.10
WP Kuala Lumpur	529	27,151	88.2	85.23	90.71	59	2,987	9.7	7.51	12.46	11	631	2.1	1.10	3.90
WP Putrajaya	759	2,858	95.1	93.28	96.43	29	109	3.6	2.54	5.18	9	39	1.3	0.60	2.50
Locality															
Urban	5,394	309,637	87.9	86.60	89.07	530	36,299	10.3	9.20	11.52	95	6,375	1.8	1.38	2.37
Rural	3,711	142,678	89.6	88.60	90.60	364	14,366	9.0	8.19	9.94	45	2,115	1.3	0.90	1.97
Sex															
Male	4,710	234,500	88.8	87.46	89.96	457	26,012	9.8	8.72	11.10	72	3,652	1.4	1.0	1.9
Female	4,395	217,816	88.1	86.67	89.35	437	24,654	10.0	8.81	11.26	68	4,837	2	1.4	2.7
Ethnicity															
Malay	6,397	281,316	87.5	86.31	88.69	637	34,281	10.7	9.62	11.82	101	5,732	1.8	1.3	2.4
Chinese	1,069	61,803	86.4	83.44	88.88	144	9,349	13.1	10.60	16.01	9	388	0.5	0.3	1.1
Indians	405	21,166	92.1	87.25	95.23	29	1,724	7.5	4.44	12.39	3	88	0.4	0.1	1.3
Other															
Bumiputera	1,049	60,245	92.5	90.73	93.96	75	4,191	6.4	5.16	8.00	9	691	1.1	0.5	2.3
Others	185	27,784	91.1	86.27	94.35	9	1,121	3.7	1.67	7.90	18	1,591	5.2	3.1	8.8
Citizenship															
Malaysian citizen	8,964	431,187	88.4	87.40	89.24	887	49,937	10.2	9.40	11.13	121	6,890	1.4	1.1	1.8
Permanent Resident	14	1,749	94.2	66.38	99.27	-	-	0.0	0.00	0.00	1	107	5.8	0.7	33.6
Non-Malaysian	127	19,379	89.7	83.89	93.60	7	728	3.4	1.41	7.85	18	1,492	6.9	4.0	11.8

	DOSE 3														
	Verified						Self-reported						No		
	Unweighed count	Estimated population	Prevalence (%)	95% CI Lower	Upper	Unweighed count	Estimated population	Prevalence (%)	95% CI Lower	Upper	Unweighed count	Estimated population	Prevalence (%)	95% CI Lower	Upper
Marital status of mother															
Married/															
Cohabiting	8,905	441,295	88.4	87.43	89.27	876	49,857	10.0	9.16	10.88	134	8,135	1.6	1.3	2.1
Never married/															
Separated/															
Divorced/	163	8,473	91.3	85.57	94.91	14	609	6.6	3.65	11.51	4	197	2.1	0.6	7.2
Widowed															
Education of household head															
None	177	11,224	89.1	81.94	93.58	10	558	4.4	1.96	9.71	11	821	6.5	3.2	12.9
Primary	1,160	63,317	92.0	89.89	93.71	71	4,015	5.8	4.43	7.65	24	1,489	2.2	1.3	3.5
Secondary	4,983	242,439	89.9	88.76	90.89	486	24,301	9.0	8.06	10.06	52	3,006	1.1	0.8	1.6
Higher	2,728	131,927	84.3	82.06	86.27	323	21,592	13.8	11.91	15.92	51	3,016	1.9	1.3	2.9
Occupation of head of household															
Public Sector	2,183	86,524	89.6	87.67	91.23	201	9,369	9.7	8.15	11.51	21	690	0.7	0.3	1.7
Private Sector	4,242	234,143	88.7	87.37	89.95	421	25,454	9.6	8.50	10.92	63	4,303	1.6	1.2	2.2
Self-employed	2,404	116,233	86.5	84.43	88.34	256	14,971	11.1	9.46	13.08	50	3,166	2.4	1.6	3.4
Housewife/															
Unemployed/	223	11,966	93.5	87.55	96.76	11	652	5.1	2.27	11.03	4	174	1.4	0.4	4.9
student															
Household income															
Less than															
RM1000	710	33,330	91.2	88.22	93.43	47	2,470	6.8	4.80	9.42	15	759	2.1	1.1	3.9
RM1000 –															
RM1999	1,723	82,711	90.8	88.71	92.53	131	6,751	7.4	5.81	9.41	31	1,630	1.8	1.2	2.7
RM2000 –															
RM2999	1,509	71,243	90.5	88.52	92.19	133	6,234	7.9	6.40	9.77	23	1,232	1.6	0.9	2.6
RM3000 –															
RM3999	1,228	58,291	88.2	85.46	90.55	117	6,715	10.2	8.03	12.79	16	1,050	1.6	0.8	3.0
RM4000 –															
RM4999	914	45,828	88.5	85.45	90.98	101	5,458	10.5	8.24	13.39	7	496	1	0.3	3.0
RM5000 and															
above	2,960	156,817	85.7	83.82	87.45	362	22,771	12.4	10.85	14.25	48	3,322	1.8	1.2	2.7

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.1.2.6 : Prevalence of children age 12-23 months vaccinated with MMR vaccine, NHMS 2016, N=10,139

	Verified						Self-reported						No					
	Unweighed count	Estimated population	Prevalence (%)	95% CI		Unweighed count	Estimated population	Prevalence (%)	95% CI		Unweighed count	Estimated population	Prevalence (%)	95% CI				
				Lower	Upper				Lower	Upper				Lower	Upper			
MALAYSIA	9,000	446,704	87.3	86.36	88.25	849	47,623	9.3	8.54	10.14	290	17,140	3.4	2.80	4.00			
State																		
Johor	632	51,989	88.5	85.63	90.88	63	5,582	9.5	7.37	12.18	12	1,167	2.0	1.10	3.60			
Kedah	606	32,006	90.1	87.35	92.38	42	2,213	6.2	4.50	8.58	25	1,285	3.6	2.30	5.50			
Kelantan	546	31,531	83.6	79.42	87.12	71	5,439	14.4	11.11	18.52	18	732	1.9	1.00	3.80			
Melaka	703	12,849	90.4	88.11	92.36	64	1,110	7.8	6.08	9.98	15	248	1.7	1.00	2.90			
Negeri Sembilan	650	16,379	90.7	86.43	93.68	36	1,321	7.3	4.52	11.63	13	365	2.0	1.20	3.50			
Pahang	576	24,272	87.8	84.78	90.27	65	2,891	10.5	8.21	13.22	9	486	1.8	0.80	3.60			
P.Pinang	549	18,448	82.9	79.66	85.70	89	2,900	13.0	10.63	15.87	21	909	4.1	2.60	6.20			
Perak	541	31,349	88.1	84.98	90.59	57	3,347	9.4	7.18	12.22	14	900	2.5	1.50	4.30			
Perlis	574	3,789	86.7	83.90	89.13	67	439	10.1	7.96	12.63	22	140	3.2	2.10	4.80			
Selangor	580	87,204	84.1	80.53	87.10	64	11,601	11.2	8.69	14.29	29	4,897	4.7	3.10	7.20			
Terengganu	570	23,600	90.5	87.81	92.67	37	1,459	5.6	4.01	7.75	21	1,014	3.9	2.50	5.90			
Sabah and Sabah																		
WP Labuan	677	49,125	90.8	87.58	93.30	37	2,389	4.4	3.09	6.27	24	2,569	4.8	2.82	7.90			
Sarawak	542	35,251	88.7	86.85	90.28	77	4,026	10.1	8.85	11.57	5	474	1.2	0.50	2.80			
WP K.Lumpur	510	26,110	84.9	81.54	87.67	55	2,810	9.1	7.00	11.84	34	1,849	6.0	4.20	8.50			
WP Putrajaya	744	2,802	93.2	91.20	94.81	25	94	3.1	2.13	4.60	28	110	3.6	2.50	5.30			
Locality																		
Urban	5,311	304,521	86.4	85.08	87.68	497	33,533	9.5	8.48	10.66	211	14,257	4.0	3.32	4.92			
Rural	3,689	142,183	89.3	88.33	90.26	352	14,089	8.9	8.02	9.80	79	2,886	1.8	1.41	2.33			
Sex																		
Male	4,669	233,756	88.5	87.20	89.66	436	24,668	9.3	8.25	10.55	134	5,739	2.2	1.70	2.70			
Female	4,331	212,948	86.1	84.57	87.51	413	22,955	9.3	8.21	10.48	156	11,400	4.6	3.70	5.80			
Ethnicity																		
Malay	6,319	277,973	86.5	85.24	87.68	605	32,185	10.0	9.02	11.10	211	11,170	3.5	2.80	4.30			
Chinese	1,057	61,710	86.3	83.43	88.67	139	8,703	12.2	9.84	14.95	26	1,127	1.6	1.00	2.40			
Indians	406	21,172	92.1	87.27	95.25	25	1,628	7.1	4.08	12.01	6	178	0.8	0.30	1.90			
Other																		
Bumiputera	1,040	59,495	91.4	89.38	92.99	72	4,061	6.2	4.97	7.80	21	1,571	2.4	1.50	3.90			
Others	178	26,354	86.4	79.86	91.08	8	1,047	3.4	1.49	7.70	26	3,095	10.1	6.20	16.20			
Citizenship																		
Malaysian citizen	8,864	426,280	87.3	86.36	88.28	843	46,969	9.6	8.83	10.48	265	14,770	3.0	2.50	3.60			
Permanent Resident	14	1,749	94.2	66.38	99.27	0	-	-	-	-	1	107	5.8	0.70	33.60			
Non-Malaysian	122	18,675	86.5	79.88	91.13	6	654	3.0	1.18	7.55	24	2,271	10.5	6.60	16.40			

	Verified					Self-reported					No				
	Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper				Lower	Upper
Marital status of mother															
Married/	8,802	435,986	87.3	86.33	88.25	832	46,843	9.4	8.60	10.23	281	16,460	3.3	2.80	3.90
Co-habiting															
Never married/															
Separated/	163	8,336	89.8	83.66	93.86	13	580	6.3	3.41	11.19	5	362	3.9	1.60	9.30
Divorced/															
Widowed															
Education of household head															
None	170	10,131	80.4	69.06	88.26	9	484	3.8	1.57	9.06	19	1,990	15.8	8.50	27.50
Primary	1,145	62,387	90.7	88.39	92.51	71	4,190	6.1	4.61	8.01	39	2,244	3.3	2.20	4.70
Secondary	4,945	240,220	89.1	87.89	90.12	468	23,532	8.7	7.79	9.76	108	5,994	2.2	1.70	2.90
Higher	2,685	130,724	83.5	81.29	85.51	297	19,217	12.3	10.56	14.23	120	6,593	4.2	3.20	5.60
Occupation of head of household															
Public Sector	2,166	86,281	89.3	87.44	90.97	184	8,652	9.0	7.48	10.69	55	1,650	1.7	1.10	2.70
Private Sector	4,188	230,513	87.3	85.90	88.67	399	24,163	9.2	8.05	10.40	139	9,224	3.5	2.80	4.40
Self-employed	2,376	114,969	85.6	83.47	87.43	250	13,937	10.4	8.84	12.13	84	5,465	4.1	3.00	5.60
Housewife/															
Unemployed/	219	11,658	91.1	85.02	94.91	11	652	5.1	2.27	11.03	8	482	3.8	1.80	7.80
student															
Household income															
Less than															
RM1000 –	703	32,883	89.9	86.79	92.42	48	2,573	7.0	5.03	9.76	21	1,103	3.0	1.70	5.20
RM1000 –	1,709	81,164	89.1	86.62	91.17	124	5,970	6.6	5.25	8.16	52	3,959	4.3	2.80	6.60
RM1999 –	1,495	70,665	89.8	87.74	91.51	129	6,129	7.8	6.27	9.63	41	1,914	2.4	1.70	3.60
RM2000 –	1,214	58,019	87.8	85.11	90.12	113	6,262	9.5	7.46	11.97	34	1,775	2.7	1.70	4.30
RM3000 –	912	45,729	88.3	85.29	90.78	95	5,026	9.7	7.54	12.41	15	1,028	2.0	1.00	4.00
RM4000 –															
RM4999	2,907	154,190	84.3	82.35	86.07	337	21,397	11.7	10.15	13.45	126	7,323	4.0	3.10	5.20
RM5000 and above															

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.1.2.7 : Prevalence of children age 12-23 months with verified complete vaccination, unvaccinated and incomplete vaccination against any vaccine preventable childhood disease before the survey and by their first birthday, NHMS 2016

	Verified Complete Vaccination						Self-reported Complete Vaccination						Incomplete vaccination						Unvaccinated?					
	Prevalence (%)		95% CI		Unweighted count	Estimated population	Prevalence (%)		95% CI		Unweighted count	Estimated population	Prevalence (%)		95% CI		Unweighted count	Estimated population	Prevalence (%)		95% CI			
	Lower	Upper	Lower	Upper			Lower	Upper	Lower	Upper			Lower	Upper	Lower	Upper			Lower	Upper	Lower	Upper	Lower	Upper
MALAYSIA	8,920	441,881	86.4	85.44	87.39	45,688	8.9	8.19	9.74	375	23,181	4.5	3.92	5.24	8	430	0.1	0.04	0.19					
State																								
Johor	629	51,744	88.1	85.18	90.50	5,203	8.9	6.79	11.47	19	1,791	3.0	1.90	4.87	0	-	0.0	0.00	0.00					
Kedah	606	32,006	90.4	87.60	92.57	2,156	6.1	4.36	8.43	26	1,256	3.5	2.31	5.40	0	-	0.0	0.00	0.00					
Kelantan	542	31,322	83.1	78.90	86.69	70	5,397	14.3	11.02	18.42	22	952	2.5	1.39	4.56	0	-	0.0	0.00	0.00				
Malaka	695	12,705	89.6	87.16	91.60	64	1,110	7.8	6.09	10.00	21	367	2.6	1.66	4.01	0	-	0.0	0.00	0.00				
Negeri Sembilan	647	16,306	90.3	86.04	93.31	35	1,288	7.1	4.36	11.45	15	404	2.2	1.33	3.75	2	66	0.4	0.09	1.46				
Pahang	562	23,673	85.6	82.47	88.29	64	2,841	10.3	8.05	13.02	23	1,004	3.6	2.41	5.44	1	131	0.5	0.07	3.29				
P.Pinang	541	18,154	81.7	78.37	84.59	87	2,832	12.7	10.37	15.56	30	1,239	5.6	3.89	7.93	0	-	0.0	0.00	0.00				
Perak	539	31,302	87.9	84.84	90.47	57	3,347	9.4	7.18	12.22	15	868	2.4	1.43	4.12	1	80	0.2	0.03	1.59				
Perlis	568	3,750	85.9	82.96	88.32	67	439	10.1	7.96	12.63	27	173	4.0	2.72	5.72	1	6	0.1	0.02	0.96				
Selangor	573	85,616	82.6	78.95	85.76	59	10,471	10.1	7.75	13.08	39	7,545	7.3	5.20	10.11	0	-	0.0	0.00	0.00				
Terengganu	569	23,551	90.3	87.61	92.51	37	1,459	5.6	4.01	7.75	21	1,016	3.9	2.53	5.95	1	47	0.2	0.03	1.27				
Sabah and WP Labuan	663	47,959	88.7	85.18	91.43	36	2,319	4.3	2.98	6.12	38	3,752	6.9	4.62	10.30	1	53	0.1	0.01	0.70				
Sarawak	542	35,251	88.7	86.85	90.28	77	4,026	10.1	8.85	11.57	5	474	1.2	0.50	2.84	0	-	0.0	0.00	0.00				
WP.KLumpur	502	25,747	83.8	80.42	86.70	53	2,715	8.8	6.73	11.52	42	2,216	7.2	5.26	9.81	1	45	0.1	0.02	1.04				
WP.Putrajaya	742	2,795	93.0	90.92	94.59	23	87	2.9	1.92	4.30	32	125	4.1	2.92	5.85	0	-	0.0	0.00	0.00				
Locality																								
Urban	5,261	301,184	85.5	84.14	86.81	482	31,941	9.1	8.07	10.18	265	18,634	5.3	4.45	6.30	7	376	0.1	0.04	0.26				
Rural	3,659	140,697	88.5	87.36	89.48	346	13,747	8.6	7.83	9.53	110	4,546	2.9	2.25	3.62	1	53	0.0	0.00	0.24				
Sex																								
Male	4,626	230,699	87.4	86.04	88.65	428	23,699	9.0	7.93	10.15	174	9,281	3.5	2.83	4.36	5	259	0.1	0.04	0.25				
Female	4,294	211,182	85.4	83.86	86.84	400	21,989	8.9	7.85	10.06	201	13,900	5.6	4.62	6.83	3	170	0.1	0.01	0.33				
Age of respondents																								
Less than 25	1,044	54,200	86.6	83.85	88.97	108	5,439	8.7	6.87	10.93	42	2,806	4.5	3.10	6.44	1	131	0.2	0.03	1.47				
25-39	7,226	353,382	86.3	85.18	87.40	667	37,165	9.1	8.23	10.00	308	18,493	4.5	3.82	5.33	7	298	0.1	0.03	0.17				
40-59	572	29,819	87.5	83.00	90.97	46	2,659	7.8	5.20	11.55	19	1,594	4.7	2.63	8.19	0	-	-	-					
Respondent's education																								
None	162	9,982	78.3	67.04	86.49	8	341	2.7	1.29	5.48	21	2,294	18.0	10.24	29.69	1	131	1.0	0.14	6.95				
Primary	952	53,307	90.7	88.28	92.65	60	2,776	4.7	3.43	6.48	45	2,640	4.5	3.14	6.38	1	53	0.1	0.01	0.64				
Secondary	4,661	227,945	88.2	86.91	89.29	428	22,598	8.7	7.78	9.81	139	7,907	3.1	2.44	3.82	3	133	0.1	0.01	0.20				
Higher	3,081	147,067	83.1	81.03	84.98	327	19,756	11.2	9.65	12.88	165	10,045	5.7	4.49	7.16	3	112	0.1	0.02	0.20				

	Verified Complete Vaccination						Unvaccinated ²						Incomplete ²						Self-reported					
	Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI					
				Lower	Upper				Lower	Upper				Lower	Upper				Lower	Upper				
Ethnicity																								
Malay	6,276	275,421	85.8	84.49	86.99	590	30,998	9.7	8.69	10.72	256	14,386	4.5	3.72	5.38	6	245	0.1	0.03	0.19				
Chinese	1,040	60,441	84.5	81.48	87.08	136	8,184	11.4	9.24	14.08	46	2,915	4.1	2.70	6.10	0	-	-	-	-				
Indian	398	20,932	91.1	86.31	94.39	24	1,576	6.9	3.90	11.81	14	458	2.0	1.11	3.55	0	-	-	-	-				
Other																								
Bumiputera	1,030	58,939	90.5	88.47	92.20	70	3,883	6.0	4.74	7.48	32	2,252	3.5	2.35	5.07	1	53	0.1	0.01	0.58				
Others	176	26,149	85.7	79.13	90.52	8	1,047	3.4	1.49	7.70	27	3,169	10.4	6.40	16.45	1	131	0.4	0.06	3.00				
Citizenship																								
Malaysian citizen	8,786	421,662	86.5	85.44	87.41	822	45,034	9.2	8.47	10.06	349	20,728	4.3	3.64	4.96	7	298	0.1	0.03	0.14				
Permanent Resident	14	1,749	94.2	66.38	99.27	0	-	-	-	-	1	107	5.8	0.73	33.62	0	-	-	-	-				
Non-Malaysian	120	18,470	85.5	78.76	90.38	6	654	3.0	1.18	7.55	25	2,345	10.9	6.84	16.80	1	131	0.6	0.09	4.21				
Respondent																								
Occupation																								
Public Sector	2,129	83,545	85.6	83.33	87.68	207	9,995	10.2	8.58	12.20	88	3,979	4.1	2.93	5.66	1	33	0.0	0.00	0.24				
Private Sector	1,945	111,214	84.8	82.50	86.79	221	13,221	10.1	8.48	11.94	82	6,672	5.1	3.83	6.73	3	85	0.1	0.02	0.24				
Self-employed	640	30,112	79.5	74.93	83.48	87	5,618	14.8	11.33	19.20	35	2,001	5.3	3.46	7.99	2	127	0.3	0.08	1.40				
Housewife/Unemployed/student	4,150	213,290	88.8	87.41	90.07	305	16,400	6.8	5.93	7.85	167	10,292	4.3	3.41	5.37	2	185	0.1	0.02	0.35				
Household income																								
Less than RM1000	700	32,769	89.7	86.53	92.21	46	2,395	6.6	4.63	9.20	24	1,309	3.6	2.16	5.90	1	53	0.1	0.02	1.03				
RM1000 – RM1999	1,700	80,667	88.6	86.13	90.74	123	5,949	6.5	5.23	8.14	60	4,343	4.8	3.20	7.07	1	47	0.1	0.01	0.37				
RM2000 – RM2999	1,488	70,383	89.5	87.41	91.24	128	6,079	7.7	6.22	9.57	45	1,990	2.5	1.75	3.64	2	212	0.3	0.06	1.11				
RM3000 – RM3999	1,205	57,521	87.1	84.29	89.46	110	6,152	9.3	7.31	11.80	45	2,371	3.6	2.38	5.37	0	-	-	-	-				
RM4000 – RM4999	903	45,119	87.1	83.95	89.76	94	4,983	9.6	7.46	12.33	25	1,680	3.2	1.89	5.51	0	-	-	-	-				
RM5000 and above	2,864	151,368	82.8	80.78	84.66	324	19,862	10.9	9.40	12.54	175	11,446	6.3	5.07	7.71	4	118	0.1	0.02	0.19				

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.1.2.8 : Reasons for incomplete vaccination NHMS 2016, N=220

	Reason	Prevalence (%)	95% CI		Unweighted count
			Lower	Upper	
1	No time	19.9	13.18	28.94	36
2	Child unwell	17.3	10.53	27.06	56
3	Cost/transport	16.6	9.42	27.61	25
4	No vaccine stock at private	10.7	5.72	19.22	14
5	Forgotten	10.0	5.97	16.29	25
6	Not due yet at private	6.2	2.82	13.14	11
7	Refused vaccine	4.0	1.70	9.26	9
8	Don't trust vaccine	2.1	0.82	5.13	7
9	Allergic	1.5	0.54	4.11	6
10	Doubt halal	1.3	0.46	3.84	4
11	Worried about side effects	2.4	0.70	7.63	5
12	Religion do not allow	0.9	0.26	3.16	3
13	Bad experience	0.6	0.09	3.51	2
14	Others	6.5	3.43	11.84	17

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.1.2.9 : Prevalence of children age 12-23 months vaccinated against vaccine preventable childhood diseases at private facilities before the survey and by their first birthday, NHMS 2016 (N=439)

	Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper
MALAYSIA	439	30,347	6.2	5.53	7.04
State					
Johor	32	3,306	5.8	4.08	8.14
Kedah	4	262	0.7	0.28	2.01
Kelantan	19	1,662	4.6	2.76	7.44
Melaka	30	512	3.7	2.54	5.44
Negeri Sembilan	18	598	3.4	2.17	5.43
Pahang	10	450	1.7	0.89	3.10
P.Pinang	30	981	4.6	3.25	6.62
Perak	23	1,425	4.1	2.71	6.10
Perlis	22	144	3.4	2.19	5.15
Selangor	74	13,035	14.4	11.34	18.04
Terengganu	4	196	0.8	0.29	2.06
Sabah and WP Labuan	21	1,078	2.0	1.33	3.07
Sarawak	10	724	1.9	1.00	3.48
WP Kuala Lumpur	107	5,840	20.3	16.93	24.21
WP Putrajaya	35	136	4.6	3.33	6.42
Locality					
Urban	369	27,229	8.3	7.24	9.41
Rural	70	3,119	2.0	1.55	2.55
Sex					
Male	227	15,821	6.3	5.28	7.45
Female	212	14,526	6.2	5.20	7.45
Age of respondents					
Less than 25	18	1,683	2.7	1.51	4.84
25-39	383	25,657	6.6	5.80	7.53
40-59	34	2,700	8.6	5.49	13.20
Respondent's education					
None	-	-	0.9	0.48	1.54
Primary	13	504	4.0	3.25	4.93
Secondary	140	10,084	12.3	10.58	14.28
Higher	284	19,698			
Ethnicity					
Malay	240	15,822	12.3	4.32	6.09
Chinese	141	9,853	15.9	13.06	19.29
Indians	28	2,479	11.3	6.85	17.97
Other Bumiputera	15	749	1.2	0.72	1.89
Others	15	1,445	4.9	2.83	8.20
Citizenship					
Malaysian citizen	426	28,958	6.2	5.52	7.06
Permanent Resident	0	-	-	-	-
Non-Malaysian	13	1,389	6.7	3.82	11.44
Respondent Occupation					
Public Sector	100	5,589	6.0	4.49	8.10
Private Sector	158	12,009	9.9	8.15	12.09
Self-employed	43	2,437	5200.0	4.80	10.13
Housewife/ Unemployed/ student	138	10,313	4.4	3.57	5.43
Household income					
Less than RM1000	3	71	0.2	0.00	1.03
RM1000 – RM1999	10	464	0.5	0.25	2.86
RM2000 – RM2999	22	1,329	1.7	1.00	7.13
RM3000 – RM3999	46	3,165	5.0	3.45	7.13
RM4000 – RM4999	33	1,613	3.2	2.03	5.08
RM5000 and above	321	23,428	14.3	12.49	16.43

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.1.2.10: Reasons more than half of vaccines were taken at private facilities NHMS 2016, N=439

	Reason	Prevalence (%)	95% CI		Unweighted count
			Lower	Upper	
1	Short waiting time	43.9	37.58	50.46	160
2	Free only weekend	22.0	17.21	27.61	123
3	Panel doctor	20.6	15.69	26.48	83
4	Continue from ANC	3.0	1.82	5.07	16
5	Trust private	1.7	0.80	3.66	10
6	Near workplace/home	1.7	0.92	3.00	12
7	Government shortage of vaccine	1.6	0.47	5.51	4
8	Don't know location/services	1.6	0.71	3.39	7
9	Private explained side effects	0.4	0.10	1.50	3
10	Vaccine from private more potent	0.1	0.01	0.58	1
11	Others	3.5	2.08	5.72	20

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.1.2.11 : Source of information on vaccination NHMS 2016, N=4,669

	Reason	Prevalence (%)	95% CI		Unweighted count
			Lower	Upper	
1	Doctors	89.4	87.99	90.62	4,145
2	Child homebased card	6.9	5.85	8.20	325
3	Electronic news/website	1.0	0.63	1.71	62
4	Social media	0.6	0.33	1.01	21
5	Printed materials	0.1	0.03	0.54	20
6	Pharmacies	0.2	0.10	0.36	10
7	None	1.8	1.53	2.05	86

Table 4.1.2.12 : Vaccine most concerned about, N=10,038

	Vaccine	Prevalence (%)	95% CI		Unweighted count
			Lower	Upper	
1	None	99.0	98.63	99.34	9,962
2	MMR	0.6	0.38	1.02	46
3	DPT/IPV/Hib	0.2	0.09	0.37	17
4	BCG	0.1	0.06	0.24	10
5	Hep B	0.0	0.01	0.10	3

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.1.2.13 : Opinion on vaccination NHMS 2016

	Opinion				95% CI	
	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	
NV04	9,771	494,586	97.0	96.46	97.38	
NV06	10,002	503,248	98.5	98.06	98.88	
NV07	9,957	500,750	98.1	97.59	98.49	
NV08	9,958	501,136	98.2	97.68	98.55	
NV10	10,023	503,244	98.5	98.00	98.88	

Table 4.2.2.1 : Neonatal tetanus protection as seen by percentage of women age 15-49 years with a live birth in the last 2 years who had received anti-tetanus vaccine during their last pregnancy, NHMS 2016

	ATT OVERALL				ATT CARD				ATT VERBAL			
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper
MALAYSIA	9,768	472,633	93.2	92.31 93.91	7,679	366,295	96.4	95.69 97.08	2,089	106,338	83.4	80.92 85.54
State												
Johor	701	56,338	96.3	93.63 97.86	527	41,559	97.6	95.53 98.77	174	14,780	92.7	83.60 96.90
Kedah	674	35,253	98.2	96.26 99.18	576	29,988	98.2	95.90 99.22	98	5,265	98.5	89.89 99.79
Kelantan	636	36,890	99.0	97.12 99.64	457	25,675	98.8	95.99 99.63	179	11,215	99.4	96.83 99.90
Melaka	764	13,638	96.7	94.94 97.87	561	10,208	99.6	98.66 99.87	203	3,430	89.1	83.17 93.06
Negeri Sembilan	664	17,187	95.4	93.38 96.87	532	13,362	97.9	96.26 98.80	132	3,826	87.8	80.74 92.49
Pahang	655	27,257	99.3	98.22 99.71	466	19,588	99.0	97.54 99.59	189	7,669	100.0	0.00 100.00
P.Pinang	572	18,945	85.7	82.58 88.33	418	13,723	94.3	90.79 96.51	154	5,222	69.1	62.66 74.93
Perak	600	34,521	96.9	94.93 98.16	462	26,761	97.8	96.04 98.84	138	7,759	93.9	86.46 97.38
Perlis	661	4,298	99.3	98.02 99.75	511	3,330	99.5	98.30 99.83	150	968	98.8	91.68 99.83
Selangor	605	87,651	85.2	81.60 88.12	441	62,153	91.8	88.00 94.42	164	25,498	72.4	64.95 78.85
Terengganu Sabah & Sarawak	626	25,568	98.6	97.23 99.27	521	21,272	98.8	97.40 99.49	105	4,296	97.3	91.53 99.15
WP Labuan	766	50,982	97.0	94.80 98.28	664	44,664	98.7	96.46 99.53	102	6,318	86.5	76.04 92.77
Sarawak	605	37,853	96.9	94.98 98.11	559	34,578	97.6	95.71 98.62	46	3,275	90.6	77.13 96.46
WP K. Lumpur	462	23,309	76.2	72.28 79.79	338	16,992	88.0	83.66 91.25	124	6,317	56.1	48.73 63.24
WP Putrajaya	777	2,942	98.2	97.04 98.94	646	2,443	98.6	97.45 99.29	131	500	96.2	91.15 98.45

Some cells have respondent count <30. Results should be interpreted with caution.

	ATT OVERALL						ATT CARD						ATT VERBAL					
	Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI				
				Lower	Upper				Lower	Upper				Lower	Upper			
Age of respondents																		
15-19	429	32,794	94.8	90.04	97.37	335	25,588	96.8	92.47	98.65	94	7,206	88.5	72.05	95.82			
20-24	1,644	101,129	96.9	95.68	97.83	1,303	79,322	98.2	96.94	98.93	341	21,807	92.6	88.63	95.30			
25-29	3,438	173,882	92.8	91.17	94.12	2,704	135,301	95.0	93.35	96.28	734	38,581	85.7	81.31	89.23			
30-34	2,790	115,525	91.4	89.52	92.98	2,188	88,265	97.5	96.29	98.28	602	27,260	76.1	70.76	80.70			
35-39	1,206	42,130	90.0	86.45	92.73	974	31,859	95.7	92.22	97.70	262	10,271	67.15	62.99	71.42			
40-44	246	6,888	91.2	84.33	95.21	192	5,695	94.1	86.96	97.45	54	1,194	79.4	58.35	91.42			
45-49	15	284	100.0	0.00	100.00	13	265	100.0	100.00	100.00	2	20	100.0	100.00	100.00			
Respondent's education																		
None	77	3,627	95.7	75.56	99.38	75	3,540	95.6	75.10	99.37	2	87	100.0	100.00	100.00			
Primary	1,039	54,786	96.6	94.83	97.84	867	45,002	98.2	96.45	99.14	172	9,784	89.9	83.02	94.21			
Secondary	5,144	254,640	95.7	94.75	96.53	4,041	199,411	97.4	96.44	98.07	1,103	55,229	90.2	87.17	92.58			
Higher	3,299	148,287	87.6	85.59	89.35	2,523	108,816	93.9	91.94	95.34	776	39,471	74.0	69.36	78.12			
Ethnicity																		
Malay	6,937	309,110	96.5	95.60	97.14	5,381	234,976	97.2	96.31	97.90	1,556	74,133	94.1	91.77	95.81			
Chinese	888	54,786	76.7	73.02	80.05	629	38,120	90.6	86.84	93.40	259	16,666	56.8	50.34	63.03			
Indians	403	20,224	89.4	82.24	93.89	324	16,165	94.8	87.57	97.95	79	4,059	72.8	54.39	85.73			
Other	62,483	62,483	97.7	96.46	98.54	1,015	54,548	99.0	98.14	99.45	143	7,935	89.8	82.16	94.41			
Bumiputera	1,158																	
Others	382	26,030	90.1	85.23	93.46	330	22,486	94.3	89.43	96.96	52	3,544	70.3	54.85	82.22			
Citizenship																		
Malaysian citizen	9,308	441,839	93.4	92.52	94.16	7,292	340,119	96.5	95.76	97.19	2,016	101,720	84.2	81.68	86.38			
Permanent Resident	46	2,459	100.0	0.00	100.00	40	1,839	100.0	0.00	100.00	6	620	100.0	0.00	100.00			
Non-Malaysian	373	26,033	88.4	83.49	91.96	317	22,627	94.5	90.06	96.99	56	3,407	61.9	47.10	74.71			
Respondent Occupation																		
Public Sector	2,365	84,830	96.5	94.88	97.59	1,848	65,557	98.2	96.91	98.97	517	19,274	91.0	85.54	94.55			
Private Sector	2,069	119,887	87.3	84.97	89.37	1,539	86,741	93.3	90.99	95.05	530	33,146	74.8	69.49	79.50			
Self-employed	720	33,444	92.2	88.62	94.77	518	23,327	97.2	93.65	98.75	202	10,117	82.6	74.02	88.77			
Housewife	4,397	221,416	95.5	94.43	96.33	3,606	180,906	97.3	96.32	98.05	791	40,510	88.0	84.45	90.88			
Unemployed	84	4,981	99.1	95.43	99.84	68	4,253	100.0	0.00	100.00	16	728	94.3	74.03	98.98			
Student	37	2,671	77.7	54.92	90.84	26	1,503	79.0	46.22	94.31	11	1,168	75.9	41.40	93.37			
Household income																		
Less than RM1000	794	37,225	99.1	97.32	99.72	672	32,110	99.7	98.95	99.93	122	5,115	95.6	82.72	98.99			
RM1000 - RM1999	1,884	87,842	98.4	97.46	98.97	1,546	72,245	98.9	97.96	99.45	338	15,598	95.9	92.46	97.77			
RM2000 - RM2999	1,660	79,088	97.6	96.21	98.46	1,331	63,169	98.4	96.81	99.16	329	15,920	94.6	90.43	96.98			
RM3000 - RM3999	1,332	63,365	95.4	93.24	96.95	1,038	48,831	96.5	94.01	97.98	294	14,534	92.1	86.14	95.58			
RM4000 - RM4999	989	48,616	95.4	92.63	97.11	762	36,996	96.8	94.57	98.19	227	11,619	90.9	81.51	95.77			
RM5000 and above	3,050	151,574	85.9	83.86	87.76	2,281	109,025	92.8	90.74	94.46	769	42,549	72.2	67.69	76.26			

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.2 : Completed vaccination for Malaysia

MALAYSIA																					
	Verified Complete Vaccination																				
	Verified Fully Immunised					Self-Reported					Incomplete					Unvaccinated					
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	
Population Size	8,920	441,881	86.4	85.44	87.39	828	45,688	8.9	8.19	9.74	375	23,181	4.5	3.92	5.24	8	430	0.1	0.04	0.19	
Male	4,626	230,699	87.4	86.04	88.65	428	23,699	9.0	7.93	10.15	174	9,281	3.5	2.83	4.36	5	259	0.1	0.04	0.25	
Female	4,294	211,182	85.4	83.86	86.84	400	21,989	8.9	7.85	10.06	201	13,900	5.6	4.62	6.83	3	170	0.1	0.01	0.33	
Age of respondents																					
Less than 25 years	1,044	54,200	86.6	83.85	88.97	108	5,439	8.7	6.87	10.93	42	2,806	4.5	3.10	6.44	1	131	0.2	0.03	1.47	
25-39 years	7,226	353,382	86.3	85.18	87.40	667	37,165	9.1	8.23	10.00	308	18,493	4.5	3.82	5.33	7	298	0.1	0.03	0.17	
40-59 years	572	29,819	87.5	83.00	90.97	46	2,659	7.8	5.20	11.55	19	1,594	4.7	2.63	8.19	0	-	-	-	-	
Respondents education																					
No formal education	162	9,982	78.3	67.04	86.49	8	341	2.7	1.29	5.48	21	2,294	18.0	10.24	29.69	1	131	1.0	0.14	6.95	
Primary education	952	53,307	90.7	88.28	92.65	60	2,776	4.7	3.43	6.48	45	2,640	4.5	3.14	6.38	1	53	0.1	0.01	0.64	
Secondary education	4,661	227,945	88.2	86.91	89.29	428	22,598	8.7	7.78	9.81	139	7,907	3.1	2.44	3.82	3	133	0.1	0.01	0.20	
Tertiary education	3,081	147,067	83.1	81.03	84.98	327	19,756	11.2	9.65	12.88	165	10,045	5.7	4.49	7.16	3	112	0.1	0.02	0.20	
Ethnicity																					
Malay	6,276	275,421	85.8	84.49	86.99	590	30,998	9.7	8.69	10.72	256	14,386	4.5	3.72	5.38	6	245	0.1	0.03	0.19	
Chinese	1,040	60,441	84.5	81.48	87.08	136	8,184	11.4	9.24	14.08	46	2,915	4.1	2.70	6.10	0	0	0.0	0.00	0.00	
Indian	398	20,932	91.1	86.31	94.39	24	1,576	6.9	3.90	11.81	14	458	2.0	1.11	3.55	0	0	0.0	0.00	0.00	
Other	1,030	58,939	90.5	88.47	92.20	70	3,883	6.0	4.74	7.48	32	2,252	3.5	2.35	5.07	1	53	0.1	0.01	0.58	
Bumiputera	176	26,149	85.7	79.13	90.52	8	1,047	3.4	1.49	7.70	27	3,169	10.4	6.40	16.45	1	131	0.4	0.06	3.00	
Citizenship																					
Malaysian citizen	8,786	421,662	86.5	85.44	87.41	822	45,034	9.2	8.47	10.06	349	20,728	4.3	3.64	4.96	7	298	0.1	0.03	0.14	
Permanent Resident	14	1,749	94.2	66.38	99.27	0	-	-	-	-	1	107	5.8	0.73	33.62	0	-	-	-	-	
Non-Malaysian	120	18,470	85.5	78.76	90.38	6	654	3.0	1.18	7.55	25	2,345	10.9	6.84	16.80	1	131	0.6	0.09	4.21	

Some cells have respondent count <30. Results should be interpreted with caution.

Respondent	Verified Complete Vaccination															
	Verified Fully Immunised				Self-Reported				Incomplete				Unvaccinated			
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper
Occupation																
Public Sector	2,129	83,545	85.6	83.33 87.68	207	9,995	10.2	8.58 12.20	88	3,979	4.1	2.93 5.66	1	33	0.0	0.00 0.24
Private Sector	1,945	111,214	84.8	82.50 86.79	221	13,221	10.1	8.48 11.94	82	6,672	5.1	3.83 6.73	3	85	0.1	0.02 0.24
Self-employed	640	30,112	79.5	74.93 83.48	87	5,618	14.8	11.33 19.20	35	2,001	5.3	3.46 7.99	2	127	0.3	0.08 1.40
Housewife/ unemployed	4,150	213,290	88.8	87.41 90.07	305	16,400	6.8	5.93 7.85	167	10,292	4.3	3.41 5.37	2	185	0.1	0.02 0.35
Household income																
Less than RM1000-	700	32,769	89.7	86.53 92.21	46	2,395	6.6	4.63 9.20	24	1,309	3.6	2.16 5.90	1	53	0.1	0.02 1.03
RM1000- RM1999	1,700	80,667	88.6	86.13 90.74	123	5,949	6.5	5.23 8.14	60	4,343	4.8	3.20 7.07	1	47	0.1	0.01 0.37
RM2000- RM2999	1,488	70,383	89.5	87.41 91.24	128	6,079	7.7	6.22 9.57	45	1,990	2.5	1.75 3.64	2	212	0.3	0.06 1.11
RM3000- RM3999	1,205	57,521	87.1	84.29 89.46	110	6,152	9.3	7.31 11.80	45	2,371	3.6	2.38 5.37	0	-	-	- -
RM4000- RM4999	903	45,119	87.1	83.95 89.76	94	4,983	9.6	7.46 12.33	25	1,680	3.2	1.89 5.51	0	-	-	- -
RM5000 and above	2,864	151,368	82.8	80.78 84.66	324	19,862	10.9	9.40 12.54	175	11,446	6.3	5.07 7.71	4	118	0.1	0.02 0.19

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.3 : Completed vaccination by state for Johor

	JOHOR																							
	Complete Vaccination						Self-reported						Incomplete						Unvaccinated					
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper				
Population Size	629	51,744	88.1	85.18	90.50	59	5,203	0.1	0.07	0.11	629	51,744	88.1	85.18	90.50	0	-	-	-	-	-			
Male	340	26,841	87.9	83.76	91.13	34	2,972	9.7	6.87	13.62	8	716	2.3	1.14	4.76	0	-	-	-	-	-	-		
Female	289	24,903	88.3	83.80	91.65	25	2,230	7.9	5.24	11.77	11	1,075	3.8	2.03	7.03	0	-	-	-	-	-	-		
Age of respondents																								
Less than 25 years	66	5,112	85.3	73.27	92.49	7	766	12.8	6.06	24.99	2	114	1.9	0.46	7.58	0	-	-	-	-	-	-		
25-39 years	519	43,127	88.4	85.17	90.93	50	4,250	8.7	6.51	11.56	15	1,436	2.9	1.72	4.97	0	-	-	-	-	-	-		
40-59 years	40	3,098	96.1	77.14	99.45	0	-	-	-	0.00	1	125	3.9	0.55	22.86	0	-	-	-	-	-	-		
Respondents education																								
No formal education	5	433	71.2	31.27	93.07	0	-	-	-	-	2	175	28.8	6.93	68.73	0	-	-	-	-	-	-		
Primary education	53	4,480	92.8	80.78	97.53	1	82	1.7	0.24	11.20	3	266	5.5	1.56	17.71	0	-	-	-	-	-	-		
Secondary education	364	28,950	89.4	85.54	92.33	33	2,817	8.7	6.10	12.26	6	613	1.9	0.82	4.33	0	-	-	-	-	-	-		
Tertiary education	207	17,881	85.9	80.32	90.16	25	2,304	11.1	7.35	16.36	7	620	3.0	1.34	6.49	0	-	-	-	-	-	-		
Ethnicity																								
Malay	410	33,439	87.3	83.46	90.33	39	3,593	9.4	6.79	12.82	13	1,279	3.3	1.88	5.85	0	-	-	-	-	-	-		
Chinese	150	12,377	89.1	82.69	93.27	17	1,462	10.5	6.38	16.86	1	59	0.4	0.06	2.98	0	-	-	-	-	-	-		
Indian	47	3,018	95.0	84.36	98.53	2	113	3.5	0.77	14.82	1	46	1.5	0.20	9.67	0	-	-	-	-	-	-		
Other	13	1,364	90.6	64.16	98.09	1	35	2.3	0.30	15.75	1	107	7.1	0.97	37.44	0	-	-	-	-	-	-		
Bumiputera	9	1,545	83.7	54.19	95.73	0	-	-	-	-	3	300	16.3	4.27	45.81	0	-	-	-	-	-	-		
Citizenship																								
Malaysian citizen	621	50,331	88.3	85.33	90.68	59	5,203	9.1	7.00	11.81	16	1,491	2.6	1.55	4.37	0	-	-	-	-	-	-		
Permanent Resident	1	125	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-		
Non-Malaysian	7	1,288	81.1	47.37	95.34	0	-	-	-	-	3	300	18.9	4.66	52.63	0	-	-	-	-	-	-		

Some cells have respondent count <30. Results should be interpreted with caution.

Respondent	Complete Vaccination																
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated				
	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper			Lower	Upper	
Occupation																	
Public Sector	106	8,284	92.1	84.78	96.05	7	558	6.2	2.77	13.30	2	154	1.7	0.42	6.62	0	-
Private Sector	200	16,833	88.0	82.36	92.07	17	1,616	8.5	5.13	13.62	7	671	3.5	1.61	7.48	0	-
Self-employed	42	3,251	75.0	60.00	85.73	8	640	14.8	7.05	28.34	4	443	10.2	3.83	24.56	0	-
Housewife/ unemployed	281	23,376	89.6	85.18	92.76	26	2,316	8.9	5.95	13.03	5	407	1.6	0.58	4.16	0	-
Household income																	
Less than RM1000	5	335	50.0	20.85	79.18	2	160	23.9	6.04	60.50	2	175	26.1	6.56	63.96	0	-
RM1000- RM1999	86	5,857	92.0	81.35	96.79	3	271	4.3	1.20	13.96	2	239	3.8	0.94	13.85	0	-
RM2000- RM2999	86	6,589	87.8	78.39	93.41	9	679	9.0	4.47	17.45	2	239	3.2	0.80	11.88	0	-
RM3000- RM3999	115	9,537	91.2	84.51	95.19	8	639	6.1	2.95	12.23	4	278	2.7	0.89	7.71	0	-
RM4000- RM4999	88	7,589	88.1	79.40	93.46	11	889	10.3	5.50	18.52	1	134	1.6	0.22	10.24	0	-
RM5000 and above	248	21,622	86.8	81.74	90.61	26	2,565	10.3	6.95	14.99	8	725	2.9	1.38	6.05	0	-

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.3 : Completed vaccination by state for Kedah

	KEDAH																								
	Complete Vaccination								Self-reported				Incomplete				Unvaccinated								
	Verified Fully Immunised				95% CI				Prevalence (%)				95% CI				Prevalence (%)				95% CI				
	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper
Population Size	606	32,006	90.4	87.59	92.57	40	2,156	6.1	4.36	8.44	26	1,256	3.5	2.31	5.41	0	-	-	-	0	-	-	-	-	-
Male	310	16,307	89.0	84.76	92.14	26	1,385	7.6	4.99	11.28	13	635	3.5	1.87	6.34	0	-	-	-	0	-	-	-	-	-
Female	296	15,699	91.9	87.90	94.60	14	771	4.5	2.55	7.86	13	621	3.6	1.99	6.54	0	-	-	-	0	-	-	-	-	-
Age of respondents																									
Less than 25 years	77	3,685	85.8	75.18	92.32	7	433	10.1	4.67	20.40	4	177	4.1	1.42	11.39	0	-	-	-	0	-	-	-	-	-
25-39 years	479	25,785	90.6	87.49	93.00	31	1,617	5.7	3.87	8.26	21	1,058	3.7	2.31	5.93	0	-	-	-	0	-	-	-	-	-
40-59 years	47	2,464	95.1	83.18	98.71	2	105	4.1	0.86	17.11	1	21	0.8	0.11	5.65	0	-	-	-	0	-	-	-	-	-
Respondents education																									
No formal education	4	246	100.0	100.00	100.00	0	-	-	-	-	0	-	0.0	-	-	0	-	-	-	0	-	-	-	-	-
Primary education	61	2,748	91.8	83.17	96.23	3	131	4.4	1.30	13.67	5	114	3.8	1.55	9.09	0	-	-	-	0	-	-	-	-	-
Secondary education	433	22,860	91.1	87.86	93.59	27	1,434	5.7	3.80	8.52	15	790	3.1	1.81	5.41	0	-	-	-	0	-	-	-	-	-
Tertiary education	91	5,367	85.1	76.05	91.06	10	591	9.4	4.81	17.42	6	353	5.6	2.36	12.68	0	-	-	-	0	-	-	-	-	-
Ethnicity																									
Malay	525	27,292	89.9	86.88	92.34	34	1,798	5.9	4.12	8.46	26	1,256	4.1	2.70	6.30	0	-	-	-	0	-	-	-	-	-
Chinese	39	2,309	92.8	77.64	97.97	3	179	7.2	2.03	22.36	0	-	-	-	0	-	-	-	0	-	-	-	-	-	-
Indian	18	1,397	88.6	68.46	96.56	3	179	11.4	3.44	31.54	0	-	-	-	0	-	-	-	0	-	-	-	-	-	-
Other	4	91	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	0	-	-	-	-	-
Bumiputera	20	917	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	0	-	-	-	-	-
Citizenship																									
Malaysian citizen	594	31,309	90.2	87.35	92.42	40	2,156	6.2	4.45	8.60	26	1,256	3.6	2.36	5.52	0	-	-	-	0	-	-	-	-	-
Permanent Resident	4	133	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	0	-	-	-	-	-
Non-Malaysian	8	564	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	0	-	-	-	-	-

Respondent	Complete Vaccination																
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated				
	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	
Occupation																	
Public Sector	94	5,481	83.8	74.84	89.96	14	808	12.4	7.08	20.68	4	254	3.9	1.39	10.35	0	-
Private Sector	107	6,186	88.2	80.61	93.03	13	656	9.4	5.18	16.32	3	174	2.5	0.72	8.26	0	-
Self-employed	60	3,100	91.7	80.95	96.61	1	83	2.4	0.34	15.42	5	199	5.9	2.19	14.89	0	-
Housewife/ unemployed	331	16,624	93.1	89.55	95.47	12	609	3.4	1.84	6.24	14	629	3.5	1.94	6.30	0	-
Household income																	
Less than RM1000	71	2,472	91.9	81.44	96.70	4	171	6.4	2.15	17.33	2	47	1.7	0.42	6.92	0	-
RM1000- RM1999	156	7,394	93.1	87.51	96.31	4	205	2.6	0.86	7.45	9	342	4.3	2.01	9.00	0	-
RM2000- RM2999	141	7,948	91.7	85.85	95.25	10	425	4.9	2.43	9.65	5	296	3.4	1.34	8.43	0	-
RM3000- RM3999	91	5,492	92.0	84.25	96.08	6	364	6.1	2.66	13.33	2	116	1.9	0.44	8.07	0	-
RM4000- RM4999	37	2,245	87.5	72.21	94.96	4	214	8.3	2.72	22.75	2	107	4.2	0.82	18.73	0	-
RM5000 and above	99	5,862	83.9	75.25	89.91	12	777	11.1	6.22	19.11	6	349	5.0	2.14	11.20	0	-

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.3 : Completed vaccination by state for Kelantan

	KELANTAN																				
	Complete Vaccination						Unvaccinated														
	Verified Fully Immunised			Self-reported			Incomplete			Unvaccinated											
	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper						
Population Size	542	31,322	83.1	78.89	86.69	0	-	-	-	-	22	952	2.5	1.38	4.57	70	5,397	14.3	11.01	18.43	
Male	287	17,019	87.8	82.54	91.62	0	-	-	-	-	12	480	2.5	1.08	5.56	30	1,887	9.7	6.32	14.69	
Female	255	14,304	78.2	71.24	83.90	0	-	-	-	-	10	471	2.6	1.07	6.08	40	3,510	19.2	13.81	26.06	
Age of respondents																					
Less than 25 years	62	3,574	81.9	68.57	90.31	0	-	-	-	-	4	54	1.2	0.38	3.97	13	739	16.9	8.67	30.38	
25-39 years	423	24,263	83.7	78.72	87.66	0	-	-	-	-	16	719	2.5	1.25	4.88	47	4,013	13.8	10.12	18.64	
40-59 years	54	3,334	80.2	65.16	89.76	0	-	-	-	-	2	178	4.3	0.89	18.31	10	646	15.5	7.35	29.85	
Respondents education																					
No formal education	9	317	79.5	47.83	94.23	0	-	-	-	-	4	70	17.6	4.40	49.80	1	12	2.9	0.36	20.28	
Primary education	75	3,564	93.8	81.04	98.17	0	-	-	-	-	3	47	1.2	0.31	4.73	3	188	5.0	1.12	19.36	
Secondary education	324	17,192	82.7	76.78	87.34	0	-	-	-	-	11	687	3.3	1.50	7.10	40	2,912	14.0	9.84	19.56	
Tertiary education	132	10,163	80.7	72.27	87.02	0	-	-	-	-	4	148	1.2	0.43	3.15	26	2,284	18.1	11.93	26.60	
Ethnicity																					
Malay	518	29,843	82.8	78.39	86.47	0	-	-	-	-	19	887	2.5	1.30	4.61	67	5,310	14.7	11.30	18.99	
Chinese	9	503	85.3	51.55	96.95	0	-	-	-	-	1	11	1.9	0.24	14.06	2	75	12.7	2.22	48.39	
Indian	2	39	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	
Other	9	467	87.9	57.55	97.48	0	-	-	-	-	2	53	9.9	1.68	41.61	1	12	2.2	0.26	16.50	
Bumiputera	4	470	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	
Citizenship																					
Malaysian citizen	542	31,322	83.2	78.91	86.71	0	-	-	-	-	21	943	2.5	1.36	4.55	70	5,397	14.3	11.02	18.43	
Permanent Resident	0	-	-	-	-	0	-	-	-	-	1	9	100.0	100.00	100.00	0	-	-	-	-	
Non-Malaysian	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	

Respondent	Complete Vaccination																	
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated					
	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI		
		Lower	Upper			Lower	Upper			Lower	Upper			Lower	Upper			
Occupation																		
Public Sector	102	7,286	77.6	67.49	85.31	0	-	-	4	241	2.6	0.76	8.38	22	1,857	19.8	12.53	29.81
Private Sector	77	5,637	82.9	71.15	90.54	0	-	-	5	369	5.4	1.90	14.60	11	790	11.6	5.54	22.79
Self-employed	92	5,001	81.9	69.79	89.88	0	-	-	1	8	0.1	0.02	0.99	15	1,096	17.9	10.00	30.10
Housewife/ unemployed	270	13,363	87.4	81.17	91.73	0	-	-	12	332	2.2	0.88	5.26	21	1,600	10.5	6.45	16.54
Household income																		
Less than RM1000-	83	3,873	99.2	97.44	99.74	0	-	-	2	20	0.5	0.12	2.11	1	12	0.3	0.04	2.14
RM1000- RM1999	176	8,634	85.4	77.13	90.96	0	-	-	6	142	1.4	0.52	3.71	19	1,340	13.2	7.83	21.54
RM2000- RM2999	86	4,988	81.3	69.32	89.38	0	-	-	6	357	5.8	2.00	15.83	11	787	12.8	6.42	24.01
RM3000- RM3999	56	3,625	84.5	70.51	92.54	0	-	-	3	60	1.4	0.32	5.96	9	606	14.1	6.39	28.33
RM4000- RM4999	37	2,616	76.4	57.91	88.42	0	-	-	1	42	1.2	0.17	8.45	8	765	22.3	10.61	41.08
RM5000 and above	103	7,550	77.3	67.25	84.95	0	-	-	4	330	3.4	1.06	10.21	22	1,888	19.3	12.28	29.09

Some cells have respondent count <30. Results should be interpreted with caution.

Respondent Occupation	Complete Vaccination															
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated			
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	
168	2,929	88.3	83.02	92.02	18	279	8.4	5.28	13.13	7	111	3.3	1.59	6.90	-	
180	3,195	89.3	83.72	93.16	17	305	8.5	5.22	13.59	3	77	2.2	0.69	6.51	-	
53	968	81.1	69.19	89.15	9	167	14.0	7.24	25.24	3	59	4.9	1.56	14.45	-	
293	5,599	92.5	89.00	94.93	19	334	5.5	3.44	8.76	8	120	2.0	0.97	4.02	-	
Household income																
26	509	92.1	72.88	98.08	2	43	7.9	1.92	27.12	0	-	-	-	-	-	-
125	2,356	95.9	90.87	98.24	6	100	4.1	1.76	9.13	0	-	-	-	-	-	-
142	2,662	89.8	84.00	93.60	10	176	5.9	3.12	10.95	8	128	4.3	2.13	8.58	-	
119	2,268	93.2	87.00	96.53	8	138	5.7	2.77	11.31	1	28	1.1	0.16	7.67	-	
76	1,242	90.2	80.92	95.21	8	135	9.8	4.79	19.08	0	-	-	-	-	-	-
207	3,666	83.4	78.04	87.71	30	517	11.76	8.18	16.63	12	211	0.0	0.03	0.08	-	

Some cells have respondent count <30. Results should be interpreted with caution.

Respondent	Complete Vaccination																			
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated							
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper					
Occupation																				
Public Sector	138	3,247	90.9	84.06	94.93	8	230	6.4	3.17	12.65	2	64	1.8	0.44	6.86	1	33	0.9	0.13	6.30
Private Sector	157	4,352	88.8	82.58	92.99	12	392	8.0	4.52	13.74	4	124	2.5	0.94	6.61	1	33	0.7	0.09	4.68
Self-employed	45	1,237	75.0	41.72	92.66	5	378	23.0	5.98	58.27	1	33	2.0	0.27	13.29	0	-	-	-	-
Housewife/ unemployed	302	7,330	94.0	90.41	96.25	10	288	3.7	1.96	6.83	8	183	2.4	1.13	4.84	0	-	-	-	-
Household income																				
Less than RM1000	38	704	88.0	68.29	96.16	2	72	9.0	2.25	30.07	1	24	2.9	0.41	18.16	0	-	-	-	-
RM1000- RM1999	122	2,774	96.7	91.13	98.80	3	73	2.5	0.73	8.43	2	23	0.8	0.17	3.52	0	-	-	-	-
RM2000- RM2999	104	2,690	93.8	86.80	97.23	4	130	4.5	1.71	11.47	2	47	1.6	0.41	6.40	0	-	-	-	-
RM3000- RM3999	105	2,578	83.3	61.16	94.07	6	425	13.7	3.87	38.61	3	91	2.9	0.93	8.92	0	-	-	-	-
RM4000- RM4999	72	1,964	96.3	88.42	98.91	3	75	3.7	1.09	11.58	0	-	-	-	-	0	-	-	-	-
RM5000 and above	206	5,595	87.5	82.11	91.44	17	513	8.0	4.95	12.75	7	220	3.4	1.64	7.07	2	66	1.0	0.26	4.07

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.3 : Completed vaccination by state for Pahang

	PAHANG																									
	Complete Vaccination								Self-reported				Incomplete				Unvaccinated									
	Verified Fully Immunised		95% CI		Unweighted count		Prevalence (%)		95% CI		Unweighted count		Prevalence (%)		95% CI		Unweighted count		Prevalence (%)		95% CI					
Unweighted count	Estimated population	Lower	Upper	Unweighted count	Estimated population	Lower	Upper	Unweighted count	Estimated population	Lower	Upper	Unweighted count	Estimated population	Lower	Upper	Unweighted count	Estimated population	Lower	Upper	Unweighted count	Estimated population	Lower	Upper			
Population Size	562	23,673	85.6	82.46	88.29	64	2,841	10.3	8.05	13.03	23	1,004	3.6	2.40	5.45	1	131	0.5	0.07	3.30	3.30					
Male	287	12,265	85.7	81.25	89.27	35	1,581	11.0	7.93	15.18	10	461	3.2	1.72	5.97	0	-	-	-	-	-	-	-	-	-	
Female	275	11,407	85.5	80.73	89.26	29	1,260	9.4	6.56	13.41	13	542	4.1	2.35	6.96	1	131	1.0	0.14	6.64	6.64					
Age of respondents																										
Less than 25 years	80	3,124	83.9	72.22	91.29	8	385	10.3	5.19	19.55	2	83	2.2	0.55	8.50	1	131	3.5	0.50	20.87	20.87					
25-39 years	436	18,657	85.4	81.94	88.37	53	2,309	10.6	8.08	13.73	20	867	4.0	2.55	6.14	0	-	-	-	-	-	-	-	-	-	
40-59 years	42	1,744	91.5	77.43	97.15	2	108	5.6	1.44	19.64	1	54	2.8	0.40	17.53	0	-	-	-	-	-	-	-	-	-	
Respondents education																										
No formal education	39	1,350	86.0	61.18	95.98	2	89	5.7	1.37	20.58	0	-	-	-	-	1	131	8.4	1.22	40.18	40.18					
Primary education	55	2,283	86.3	74.61	93.09	5	209	7.9	3.24	17.93	3	154	5.8	1.86	16.81	0	-	-	-	-	-	-	-	-	-	
Secondary education	334	14,264	88.7	84.91	91.70	32	1,458	9.1	6.41	12.69	9	351	2.2	1.12	4.21	0	-	-	-	-	-	-	-	-	-	
Tertiary education	132	5,697	78.3	71.09	84.04	25	1,085	14.9	10.10	21.43	11	499	6.8	3.79	12.06	0	-	-	-	-	-	-	-	-	-	
Ethnicity																										
Malay	414	18,499	85.1	81.57	88.09	50	2,344	10.8	8.24	14.00	20	889	4.1	2.64	6.30	0	-	-	-	-	-	-	-	-	-	
Chinese	46	1,752	80.7	66.51	89.81	9	328	15.1	7.26	28.78	2	91	4.2	0.97	16.37	0	-	-	-	-	-	-	-	-	-	
Indian	23	594	89.8	70.32	97.06	2	44	6.6	1.34	26.99	1	23	3.5	0.49	21.45	0	-	-	-	-	-	-	-	-	-	
Other	71	2,066	95.9	84.75	98.98	2	89	4.1	1.02	15.25	0	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Bumiputera	8	763	82.0	43.23	96.46	1	36	3.9	0.49	24.92	0	-	-	-	-	1	131	14.1	1.96	57.52	57.52					
Citizenship																										
Malaysian citizen	554	22,910	85.7	82.63	88.38	63	2,804	10.5	8.22	13.31	23	1,004	3.8	2.49	5.63	0	-	-	-	-	-	-	-	-	-	
Permanent Resident	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	-	-	
Non-Malaysian	8	763	82.0	43.23	96.46	1	36	3.9	0.49	24.92	0	-	-	-	-	1	131	14.1	1.96	57.52	57.52					

	Complete Vaccination															
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated			
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper
Respondent																
Occupation																
Public Sector	93	4,096	75.0	66.32 82.11	22	1,007	18.5	12.39 26.59	8	355	6.5	3.21 12.74	0	-	-	-
Private Sector	101	4,425	85.1	77.35 90.51	14	622	12.0	7.15 19.32	4	154	3.0	1.09 7.79	0	-	-	-
Self-employed Housewife/ unemployed	30	1,413	95.6	83.71 98.91	3	65	4.4	1.09 16.29	0	-	-	-	0	-	-	-
	335	13,618	88.5	84.25 91.69	25	1,146	7.4	5.00 10.95	11	495	3.2	1.78 5.73	1	131	0.9	0.12 5.80
Household income																
Less than RM1000-	49	2,146	93.7	82.03 98.00	3	143	6.3	2.00 17.97	0	-	-	-	0	-	-	-
RM1000- RM1999	126	4,860	88.6	81.42 93.18	12	532	9.7	5.52 16.48	2	96	1.7	0.43 6.80	0	-	-	-
RM2000- RM2999	111	4,920	89.1	80.84 94.06	8	350	6.3	3.18 12.23	3	120	2.2	0.69 6.71	1	131	2.4	0.34 14.93
RM3000- RM3999	69	2,901	85.6	75.12 92.13	8	403	11.9	6.01 22.18	2	85	2.5	0.62 9.50	0	-	-	-
RM4000- RM4999	59	2,583	83.3	72.36 90.44	9	413	13.3	6.97 23.93	3	106	3.4	1.06 10.53	0	-	-	-
RM5000 and above	148	6,264	79.7	72.85 85.18	24	999	12.7	8.43 18.72	13	597	7.6	4.41 12.76	0	-	-	-

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.3 : Completed vaccination by state for Pulau Pinang

	PULAU PINANG																		
	Complete Vaccination						Incomplete												
	Verified Fully Immunised			Self-reported			Unvaccinated			Unvaccinated									
Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	95% CI	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	95% CI	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	95% CI		
Population Size	541	18,154	81.7	78.37	84.59	87	2,832	12.7	10.37	15.57	30	1,239	5.6	3.88	7.94	0	-	-	
Age of respondents																			
Less than 25 years	265	9,506	82.9	78.02	86.89	32	1,191	10.4	7.36	14.47	18	768	6.7	4.22	10.49	0	-	-	
25-39 years	276	8,648	80.4	75.65	84.38	55	1,641	15.2	11.81	19.47	12	470	4.4	2.44	7.70	0	-	-	
40-59 years	58	2,046	78.5	66.52	87.02	8	256	9.8	4.85	18.92	6	304	11.7	5.41	23.42	0	-	-	
60-69 years	454	15,183	81.6	77.98	84.70	77	2,495	13.4	10.77	16.57	24	934	5.0	3.34	7.47	0	-	-	
70-79 years	27	858	91.4	70.91	97.87	2	81	8.6	2.13	29.09	0	-	-	-	-	0	-	-	
Respondents education																			
No formal education	8	372	57.6	30.18	80.97	0	-	-	-	-	5	274	42.4	19.03	69.82	0	-	-	
Primary education	54	1,794	81.3	68.26	89.79	6	204	9.3	4.09	19.58	4	208	9.4	3.60	22.53	0	-	-	
Secondary education	267	8,597	82.1	77.30	86.00	49	1,587	15.1	11.55	19.62	8	293	2.8	1.39	5.57	0	-	-	
Tertiary education	209	7,292	83.4	78.22	87.53	32	1,041	11.9	8.44	16.54	12	411	4.7	2.66	8.17	0	-	-	
Ethnicity																			
Malay	297	9,791	81.3	76.76	85.06	56	1,845	15.3	11.89	19.50	11	413	3.4	1.89	6.13	0	-	-	
Chinese	190	5,998	83.6	78.10	87.94	28	843	11.8	8.14	16.67	10	333	4.6	2.49	8.49	0	-	-	
Indian	41	1,728	92.3	78.62	97.51	3	144	7.7	2.49	21.38	0	-	-	-	-	0	-	-	
Other	3	101	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	-	0	-	-
Bumiputera	10	537	52.1	30.48	73.03	0	-	-	-	-	9	493	47.9	26.97	69.52	0	-	-	
Citizenship																			
Malaysian citizen	531	17,638	83.1	79.93	85.92	87	2,832	13.3	10.87	16.29	21	746	3.5	2.29	5.37	0	-	-	
Permanent Resident	1	61	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	-	0	-	-
Non-Malaysian	9	455	48.0	26.56	70.23	0	-	-	-	-	9	493	52.0	29.77	73.44	0	-	-	

	Complete Vaccination																
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated				
	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	
	Lower	Upper		Lower	Upper		Lower	Upper		Lower	Upper	Lower	Upper		Lower	Upper	
Respondent																	
Occupation																	
Public Sector	85	2,872	77.2	68.13	84.25	22	752	20.2	13.54	29.09	3	97	2.6	0.83	7.86	-	-
Private Sector	201	6,704	81.9	76.43	86.34	37	1,209	14.8	10.77	19.93	8	272	3.3	1.65	6.58	-	-
Self-employed	33	1,060	82.5	65.42	92.16	3	89	6.9	2.16	19.90	3	136	10.6	3.40	28.58	-	-
Housewife/ unemployed	222	7,517	83.4	77.97	87.72	24	761	8.4	5.65	12.44	16	734	8.1	5.01	12.96	-	-
Household income																	
Less than RM1000-	7	243	88.9	49.22	98.51	0	-	-	-	-	1	30	11.1	1.49	50.78	-	-
RM1000- RM1999	67	2,394	82.2	70.96	89.72	6	196	6.7	3.01	14.44	6	322	11.1	5.10	22.33	-	-
RM2000- RM2999	96	3,261	84.2	76.02	90.02	13	416	10.8	6.23	17.94	5	194	5.0	2.04	11.72	-	-
RM3000- RM3999	79	2,555	80.3	70.52	87.45	15	491	15.4	9.32	24.47	3	135	4.2	1.36	12.49	-	-
RM4000- RM4999	66	2,215	86.9	76.63	93.05	8	296	11.6	5.87	21.63	1	39	1.5	0.21	10.02	-	-
RM5000 and above	224	7,413	79.5	74.20	83.95	45	1,433	15.4	11.55	20.16	13	478	5.1	2.95	8.77	-	-

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.3 : Completed vaccination by state for Perak

	PERAK																				
	Complete Vaccination					Self-reported					Unvaccinated										
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper						
Population Size	539	31,302	0.9	0.85	0.90	57	3,347	0.1	0.07	0.12	15	868	0.0	0.01	0.04	1	80	0.0	0.00	0.00	0.02
Male	303	16,271	88.9	84.65	92.10	30	1,600	8.7	5.97	12.63	6	349	1.9	0.81	4.41	1	80	0.4	0.06	0.06	3.06
Female	236	15,030	86.9	82.01	90.61	27	1,748	10.1	6.86	14.65	9	519	3.0	1.51	5.86	0	-	-	-	-	-
Age of respondents																					
Less than 25 years	77	4,586	96.8	90.37	98.97	3	153	3.2	1.03	9.63	0	-	-	-	-	0	-	-	-	-	-
25-39 years	425	24,694	86.5	82.80	89.46	50	2,985	10.5	7.84	13.81	14	798	2.8	1.61	4.82	1	80	0.3	0.04	0.04	1.98
40-59 years	30	1,581	93.8	76.97	98.58	1	35	2.1	0.28	13.42	1	69	4.1	0.57	24.10	0	-	-	-	-	-
Respondents education																					
No formal education	9	761	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-
Primary education	72	4,382	89.5	78.94	95.12	7	432	8.8	3.83	19.08	1	80	1.6	0.23	10.80	0	-	-	-	-	-
Secondary education	266	14,684	88.0	83.34	91.47	23	1,327	8.0	5.21	11.96	10	598	3.6	1.89	6.69	1	80	0.5	0.07	0.07	3.35
Tertiary education	188	11,162	87.4	81.92	91.45	24	1,414	11.1	7.31	16.44	4	189	1.5	0.50	4.27	0	-	-	0.00	0.00	0.00
Ethnicity																					
Malay	388	20,755	87.3	83.46	90.28	42	2,337	9.8	7.21	13.25	10	615	2.6	1.37	4.83	1	80	0.3	0.05	0.05	2.37
Chinese	90	5,554	86.2	77.44	91.94	10	655	10.2	5.38	18.41	4	233	3.6	1.26	9.88	0	-	-	-	-	-
Indian	41	2,903	92.5	80.21	97.41	4	215	6.9	2.19	19.55	1	20	0.6	0.09	4.41	0	-	-	-	-	-
Other	17	1,495	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-
Bumiputera	3	595	80.9	29.96	97.67	1	140	19.1	2.33	70.04	0	-	-	-	-	0	-	-	-	-	-
Citizenship																					
Malaysian citizen	538	31,047	87.8	84.73	90.40	57	3,347	9.5	7.23	12.31	15	868	2.5	1.44	4.15	1	80	0.2	0.03	0.03	1.60
Permanent Resident	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-
Non-Malaysian	1	255	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-

Respondent	Complete Vaccination																
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated				
	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper			Lower	Upper	
Occupation																	
Public Sector	113	6,364	86.8	79.02	92.01	13	765	10.4	5.91	17.76	3	201	2.7	0.87	8.28	0	-
Private Sector	115	6,787	88.8	81.66	93.40	12	692	9.1	5.04	15.74	3	163	2.1	0.60	7.33	0	-
Self-employed	48	2,692	79.5	64.41	89.21	8	616	18.2	9.04	33.16	0	-	-	-	-	1	80
Housewife/ unemployed	259	14,998	90.9	86.92	93.79	20	993	6.0	3.79	9.44	9	503	3.1	1.54	5.97	0	-
Household income																	
Less than RM1000	46	2,662	96.0	88.08	98.76	3	110	4.0	1.24	11.92	0	-	-	-	-	0	-
RM1000- RM1999	115	6,256	88.0	80.17	93.02	11	614	8.6	4.43	16.18	5	238	3.4	1.30	8.34	0	-
RM2000- RM2999	121	6,832	86.5	79.06	91.57	15	883	11.2	6.63	18.23	2	104	1.3	0.33	5.17	1	80
RM3000- RM3999	82	4,639	88.0	78.58	93.58	7	416	7.9	3.63	16.33	3	218	4.1	1.35	12.03	0	-
RM4000- RM4999	47	2,705	84.0	70.95	91.87	8	428	13.3	6.43	25.43	1	87	2.7	0.38	16.90	0	-
RM5000 and above	127	8,116	88.6	81.73	93.15	12	821	9.0	5.01	15.54	4	219	2.4	0.83	6.72	0	-

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.3 : Completed vaccination by state for Perlis

	PERLIS																			
	Complete Vaccination					Self-reported					Incomplete					Unvaccinated				
	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper
Population Size	568	3,750	85.9	82.95	88.33	67	439	10.1	7.96	12.63	27	173	4.0	2.72	5.73	1	6	0.1	0.02	0.96
Male	269	1,906	84.9	80.49	88.52	34	242	10.8	7.75	14.81	14	96	4.3	2.54	7.12	0	-	-	-	-
Female	299	1,844	86.8	82.85	89.97	33	197	9.3	6.66	12.81	13	77	3.6	2.11	6.14	1	6	0.3	0.04	1.96
Age of respondents																				
Less than 25 years	74	508	83.3	74.26	89.61	16	102	16.7	10.39	25.74	0	-	-	-	-	0	-	-	-	-
25-39 years	454	2,990	86.5	83.30	89.25	45	298	8.6	6.46	11.42	25	161	4.7	3.16	6.83	1	6	0.2	0.02	1.21
40-59 years	34	213	82.4	67.30	91.46	6	39	15.3	6.97	30.25	1	6	2.3	0.32	14.62	0	-	-	-	-
Respondents education																				
No formal education	1	6	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Primary education	57	395	89.8	79.87	95.10	6	38	8.6	3.87	18.05	1	7	1.6	0.23	10.67	0	-	-	-	-
Secondary education	309	2,029	87.0	82.95	90.16	33	219	9.4	6.70	13.03	12	79	3.4	1.92	5.88	1	6	0.3	0.04	1.79
Tertiary education	201	1,320	83.4	78.13	87.56	28	182	11.5	8.04	16.22	13	81	5.1	2.98	8.66	0	-	-	-	-
Ethnicity																				
Malay	523	3,389	85.7	82.70	88.31	61	396	10.0	7.85	12.68	25	162	4.1	2.78	6.02	1	6	0.1	0.02	1.06
Chinese	25	163	80.4	63.61	90.62	5	29	14.4	5.96	30.83	2	11	5.2	1.28	18.72	0	-	-	-	-
Indian	5	34	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Other Bumiputera	4	9	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Others	11	156	91.6	58.23	98.83	1	14	8.4	1.17	41.77	0	-	-	-	-	0	-	-	-	-
Citizenship																				
Malaysian citizen	566	3,722	85.8	82.84	88.25	67	439	10.1	8.01	12.71	27	173	4.0	2.74	5.76	1	6	0.1	0.02	0.97
Permanent Resident	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Non-Malaysian	2	28	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-

Respondent	Complete Vaccination																			
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated							
	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI				
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper				
Occupation																				
Public Sector	139	899	85.9	79.63	90.49	14	91	8.7	5.21	14.23	9	56	5.4	2.80	10.05	0	-	-	-	-
Private Sector	100	682	86.8	79.41	91.82	12	81	10.3	5.89	17.30	3	17	2.2	0.70	6.57	1	6	0.8	0.11	5.18
Self-employed	50	333	82.7	71.24	90.27	8	49	12.3	6.17	22.88	3	20	5.0	1.61	14.48	0	-	-	-	-
Housewife/ unemployed	279	1,836	86.1	81.73	89.49	33	218	10.2	7.29	14.15	12	79	3.7	2.12	6.47	0	-	-	-	-
Household income																				
Less than RM1000	50	330	90.6	79.16	96.03	3	21	5.9	1.90	16.70	2	13	3.6	0.89	13.34	0	-	-	-	-
RM1000- RM1999	124	814	86.4	79.73	91.08	16	101	10.7	6.64	16.89	4	27	2.9	1.08	7.49	0	-	-	-	-
RM2000- RM2999	119	775	88.2	81.54	92.69	14	89	10.2	6.08	16.52	2	14	1.6	0.40	6.26	0	-	-	-	-
RM3000- RM3999	79	522	85.8	76.94	91.59	9	59	9.7	5.12	17.76	4	27	4.5	1.69	11.40	0	-	-	-	-
RM4000- RM4999	68	459	86.9	76.58	93.05	7	52	9.9	4.57	20.12	3	17	3.2	1.04	9.63	0	-	-	-	-
RM5000 and above	124	823	80.8	73.86	86.23	18	116	11.4	7.24	17.41	12	74	7.3	4.14	12.41	1	6	0.6	0.08	4.02

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.3 : Completed vaccination by state for Selangor

	SELANGOR																			
	Complete Vaccination					Self-reported					Incomplete					Unvaccinated				
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper
Population Size	573	85,616	82.6	78.94	85.76	39	7,545	7.3	5.20	10.11	0	-	-	-	0	-	-	-	-	-
Male	291	45,143	84.8	79.58	88.80	27	5,406	10.1	6.91	14.67	16	2,715	5.10	2.92	8.75	0	-	-	-	-
Female	282	40,474	80.4	74.75	84.97	32	5,065	10.1	6.92	14.39	23	4,830	9.59	6.28	14.38	0	-	-	-	-
Age of respondents																				
Less than 25 years	48	7,548	88.8	75.95	95.22	6	724	8.5	3.23	20.62	2	227	2.67	0.47	13.71	0	-	-	-	-
25-39 years	481	71,162	82.2	78.15	85.70	49	8,857	10.2	7.65	13.56	32	6,512	7.53	5.22	10.74	0	-	-	-	-
40-59 years	38	5,973	78.3	61.25	89.20	4	891	11.7	4.37	27.68	4	762	10.00	3.55	25.09	0	-	-	-	-
Respondents education																				
No formal education	1	544	42.2	5.67	89.83	0	-	-	-	-	2	746	57.85	10.17	94.33	0	-	-	-	-
Primary education	33	6,586	97.1	81.73	99.61	0	-	-	-	-	1	195	2.88	0.39	18.27	0	-	-	-	-
Secondary education	271	36,962	87.6	82.33	91.43	21	3,457	8.2	5.14	12.81	10	1,784	4.23	2.20	7.98	0	-	-	-	-
Tertiary education	266	41,142	77.7	72.04	82.43	38	7,014	13.2	9.57	18.03	26	4,820	9.10	6.07	13.41	0	-	-	-	-
Ethnicity																				
Malay	425	56,124	81.7	77.23	85.44	42	7,220	10.5	7.66	14.25	30	5,358	7.80	5.36	11.21	0	-	-	-	-
Chinese	81	13,565	79.3	68.74	86.94	12	2,300	13.4	7.49	22.95	6	1,245	7.28	3.10	16.14	0	-	-	-	-
Indian	42	7,297	90.6	75.73	96.71	4	761	9.4	3.29	24.27	0	-	-	-	-	0	-	-	-	-
Other	11	1,631	73.5	42.45	91.27	1	189	8.5	1.18	42.14	2	398	17.93	4.49	50.37	0	-	-	-	-
Bumiputera	14	7,000	92.8	62.47	99.01	0	-	-	-	-	1	544	7.21	0.99	37.53	0	-	-	-	-
Citizenship																				
Malaysian citizen	559	79,418	81.5	77.68	84.81	59	10,471	10.7	8.25	13.88	39	7,545	7.74	5.54	10.73	0	-	-	-	-
Permanent Resident	2	653	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Non-Malaysian	12	5,545	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-

	Complete Vaccination																
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated				
	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper			Lower	Upper	
Respondent																	
Occupation																	
Public Sector	122	17,303	84.6	76.40	90.25	11	1,792	8.8	4.65	15.90	9	1,370	6.69	3.28	13.17	-	-
Private Sector	181	28,935	79.4	72.61	84.83	22	4,185	11.5	7.49	17.21	17	3,329	9.13	5.58	14.60	-	-
Self-employed	32	3,462	66.0	45.95	81.62	6	1,372	26.2	12.49	46.79	2	410	7.82	1.95	26.57	-	-
Housewife/ unemployed	235	35,286	86.4	80.36	90.78	20	3,123	7.6	4.69	12.22	11	2,436	5.96	3.07	11.27	-	-
Household income																	
Less than RM1000-	11	1,158	83.9	41.87	97.41	2	223	16.1	2.59	58.13	0	-	-	-	-	-	-
RM1000- RM1999	56	7,151	85.1	65.00	94.60	3	515	6.1	1.71	19.63	2	739	8.79	1.94	32.01	-	-
RM2000- RM2999	89	11,107	93.7	83.70	97.76	4	709	6.0	2.05	16.22	1	32	0.27	0.04	1.91	-	-
RM3000- RM3999	77	9,936	83.6	71.95	91.01	9	1,330	11.2	5.35	21.94	3	619	5.21	1.68	15.04	-	-
RM4000- RM4999	73	11,052	89.6	79.13	95.11	6	816	6.6	2.66	15.48	2	471	3.82	0.95	14.09	-	-
RM5000 and above	265	44,681	78.1	72.67	82.63	35	6,879	12.0	8.61	16.52	31	5,684	9.93	6.87	14.14	-	-

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.3 : Completed vaccination by state for Terengganu

TERENGGANU																				
	Complete Vaccination																			
	Verified Fully Immunised					Self-reported					Incomplete					Unvaccinated				
	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper
Population Size	569	23,551	90.3	87.60	92.51	37	1,459	5.6	4.01	7.75	2,100	1,016	3.9	2.53	5.95	1	47	0.0	0.00	0.01
Male	298	12,379	91.0	0.00	0.05	19	720	5.3	3.32	0.08	9	457	3.4	1.74	6.40	1	47	0.0	0.05	0.03
Female	271	11,172	89.6	0.00	0.06	18	739	5.9	3.67	0.09	12	559	4.5	2.53	7.81	0	-	-	-	-
Age of respondents																				
Less than 25 years	59	2,406	88.6	0.00	0.05	3	133	4.9	1.55	0.14	3	177	6.5	2.10	18.58	0	-	-	-	-
25-39 years	451	18,649	90.4	0.23	0.06	30	1,137	5.5	3.79	0.08	17	788	3.8	2.37	6.11	1	47	0.0	0.06	0.04
40-59 years	56	2,361	90.8	0.00	0.07	4	188	7.2	2.70	0.18	1	51	1.9	0.27	12.62	0	-	-	-	-
Respondents education																				
No formal education	2	148	66.4	-0.00	-0.00	0	-	-	-	-	1	75	33.6	4.10	85.66	0	-	-	-	-
Primary education	54	2,032	91.2	-0.00	-0.02	1	49	2.2	0.31	0.14	3	148	6.6	2.14	18.67	0	-	-	-	-
Secondary education	339	13,660	91.2	-0.31	-0.06	24	921	6.1	4.06	0.09	8	357	2.4	1.17	4.77	1	47	0.0	0.06	0.02
Tertiary education	174	7,711	89.3	-0.00	-0.06	12	489	5.7	3.14	0.10	9	437	5.1	2.63	9.49	0	-	-	-	-
Ethnicity																				
Malay	564	23,261	90.6	0.18	0.06	37	1,459	5.7	4.08	0.08	19	900	3.5	2.23	5.47	1	47	0.0	0.06	0.04
Chinese	2	85	67.4	-0.00	-0.00	0	-	-	-	-	1	41	32.6	4.15	84.42	0	-	-	-	-
Indian	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Other	1	32	100.0	-0.00	-0.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Bumiputera	2	173	69.9	-0.00	-0.00	0	-	-	-	-	1	75	30.1	3.69	82.93	0	-	-	-	-
Citizenship																				
Malaysian citizen	567	23,398	90.5	0.18	0.06	37	1,459	5.6	4.05	0.08	20	941	3.6	2.34	5.61	1	47	0.0	0.06	0.04
Permanent Resident	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Non-Malaysian	2	153	67.2	-	-	0	-	-	-	-	1	75	32.8	4.02	85.07	0	-	-	-	-

	Complete Vaccination																			
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated							
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper					
Respondent Occupation																				
Public Sector	116	4,908	87.2	0.00	0.08	12	477	8.5	4.71	0.15	5	241	4.3	1.78	9.97	0	-	-	-	
Private Sector	66	2,806	94.8	0.00	0.03	4	102	3.4	1.23	0.09	1	52	1.8	0.25	11.54	0	-	-	-	
Self-employed Housewife/ unemployed	59	2,449	83.5	1.60	0.11	7	333	11.4	5.48	0.22	2	102	3.5	0.87	12.91	1	47	0.0	0.11	0.03
	328	13,389	92.0	0.00	0.04	14	547	3.8	2.19	0.06	13	620	4.3	2.45	7.31	0	-	-	-	-
Household income																				
Less than RM1000-	73	2,699	92.4	0.00	0.01	1	25	0.9	0.12	0.06	4	198	6.8	2.42	17.52	0	-	-	-	-
RM1000- RM1999	178	6,920	91.4	0.62	0.05	11	409	5.4	2.92	0.10	4	195	2.6	0.97	6.68	1	47	0.0	0.05	0.03
RM2000- RM2999	106	4,589	92.8	0.00	0.05	7	255	5.2	2.37	0.11	2	101	2.0	0.51	7.85	0	-	-	-	-
RM3000- RM3999	55	2,395	87.3	0.00	0.08	4	206	7.5	2.86	0.18	3	141	5.1	1.66	14.83	0	-	-	-	-
RM4000- RM4999	40	1,661	86.3	0.00	0.09	5	180	9.4	3.63	0.22	2	84	4.4	1.07	16.22	0	-	-	-	-
RM5000 and above	116	5,234	88.5	0.00	0.06	9	382	6.5	3.31	0.12	6	296	5.0	2.26	10.77	0	-	-	-	-

Some cells have respondent count <30. Results should be interpreted with caution.

Respondent Occupation	Complete Vaccination															
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated			
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	
92	7,544	93.2	80.78	97.82	3	181	2.2	0.69	7.00	2	368	4.5	0.91	19.75	-	
83	6,710	87.1	77.88	92.78	9	562	7.3	3.68	13.93	5	435	5.6	2.07	14.50	-	
38	2,751	83.8	69.62	92.12	4	292	8.9	3.28	21.99	4	239	7.3	2.63	18.59	-	
398	27,782	87.9	82.73	91.68	18	1,181	3.7	2.16	6.40	25	2,589	8.2	4.93	13.32	1.20	
Household income																
Less than RM1000-	145	9,887	88.1	79.87	93.23	6	527	4.7	1.72	12.17	9	757	6.7	3.20	13.68	3.33
RM1000- RM1999	168	13,590	88.6	79.18	94.08	5	265	1.7	0.70	4.16	12	1,483	9.7	4.51	19.52	-
RM2000- RM2999	85	5,541	91.8	83.24	96.17	5	332	5.5	2.29	12.64	2	164	2.7	0.60	11.42	-
RM3000- RM3999	65	4,166	86.1	73.74	93.13	4	261	5.4	1.99	13.78	5	414	8.6	3.14	21.27	-
RM4000- RM4999	39	3,001	88.2	70.88	95.84	1	47	1.4	0.19	9.36	4	354	10.4	3.30	28.33	-
RM5000 and above	126	9,918	87.9	79.68	93.08	13	786	7.0	3.91	12.09	6	580	5.1	1.75	14.18	-

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.3 : Completed vaccination by state for Sarawak

	SARAWAK															
	Complete Vaccination								Unvaccinated							
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated			
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	
Population Size	542	35,251	88.7	86.85	90.28	77	4,026	10.1	8.84	11.58	5	474	1.2	0.50	2.84	-
Age of respondents																
Less than 25 years	127	8,029	87.8	81.59	92.10	17	909	9.9	6.37	15.17	2	208	2.3	0.57	8.57	-
25-39 years	384	25,454	88.7	86.32	90.73	57	2,973	10.4	8.58	12.46	3	267	0.9	0.30	2.86	-
40-59 years	27	1,567	91.5	76.58	97.28	3	145	8.5	2.72	23.42	0	-	-	-	-	-
Respondents education																
No formal education	15	881	81.8	59.37	93.22	4	196	18.2	6.78	40.63	0	-	-	-	-	-
Primary education	98	6,153	92.1	86.03	95.64	9	449	6.7	3.63	12.12	1	80	1.2	0.17	8.01	-
Secondary education	320	21,241	86.2	83.17	88.81	57	2,996	12.2	9.99	14.73	4	395	1.6	0.60	4.19	-
Tertiary education	105	6,765	94.6	89.09	97.43	7	384	5.4	2.57	10.91	0	-	-	-	-	-
Ethnicity																
Malay	135	8,739	83.8	78.57	87.91	31	1,587	15.2	11.37	20.06	1	106	1.0	0.14	6.83	-
Chinese	109	6,678	89.8	83.56	93.89	13	671	9.0	5.35	14.82	1	85	1.1	0.16	7.67	-
Indian	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-
Other Bumiputera	292	18,485	90.0	86.72	92.55	33	1,768	8.6	6.45	11.41	3	284	1.4	0.44	4.23	-
Others	6	1,349	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	-
Citizenship																
Malaysian citizen	539	34,806	88.5	86.70	90.17	77	4,026	10.2	8.94	11.71	5	474	1.2	0.50	2.87	-
Permanent Resident	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-
Non-Malaysian	3	445	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	-

	Complete Vaccination															
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated			
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower	95% CI Upper	
Respondent																
Occupation																
Public Sector	95	6,052	89.8	83.97	93.64	14	689	10.2	6.36	16.03	0	-	-	-	-	
Private Sector	102	7,167	93.1	87.61	96.21	10	535	6.9	3.79	12.39	0	-	-	-	-	
Self-employed Housewife/ unemployed	18	1,073	85.9	62.73	95.64	2	92	7.4	1.80	25.65	1	85	6.8	0.96	35.34	
	324	20,813	87.0	83.84	89.68	51	2,710	11.3	9.08	14.05	4	390	1.6	0.61	4.26	
Household income																
Less than RM1000-	92	5,602	86.3	79.56	91.11	17	887	13.7	8.89	20.44	0	-	-	-	-	
RM1000- RM1999	132	8,301	86.3	80.23	90.77	21	1,129	11.7	7.86	17.19	2	185	1.9	0.47	7.50	
RM2000- RM2999	86	5,414	87.9	81.47	92.34	15	744	12.1	7.66	18.53	0	-	-	-	-	
RM3000- RM3999	54	3,479	88.2	78.58	93.80	9	467	11.8	6.20	21.42	0	-	-	-	-	
RM4000- RM4999	35	2,466	84.1	69.31	92.50	5	280	9.6	3.95	21.36	2	187	6.4	1.58	22.34	
RM5000 and above	112	7,900	93.5	88.11	96.58	9	444	5.3	2.79	9.68	1	102	1.2	0.17	8.18	

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.3 : Completed vaccination by state for W.P Kuala Lumpur

	KUALA LUMPUR																				
	Complete Vaccination						Self-reported			Incomplete			Unvaccinated								
	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	95% CI	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	95% CI	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	95% CI			
Population Size	502	25,747	83.8	80.42	86.70	53	2,715	8.8	6.73	11.52	42	2,216	7.2	5.26	9.81	1	45	0.1	0.02	1.05	
Age of respondents																					
Less than 25 years	37	2,063	82.6	67.63	91.46	5	286	11.5	4.48	26.28	3	150	6.0	1.91	17.25	0	-	-	-	-	-
25-39 years	437	22,244	83.9	80.26	87.02	45	2,287	8.6	6.42	11.49	36	1,929	7.3	5.17	10.16	1	45	0.2	0.02	1.21	
40-59 years	26	1,348	82.9	66.23	92.26	3	142	8.7	2.78	24.12	3	137	8.4	2.70	23.41	0	-	-	-	-	
Respondents education																					
No formal education	2	168	78.2	23.36	97.68	0	-	-	-	-	1	47	21.8	2.32	76.64	0	-	-	-	-	-
Primary education	29	1,705	75.8	58.16	87.54	4	253	11.2	3.97	27.97	5	292	13.0	5.11	29.30	0	-	-	-	-	-
Secondary education	220	11,300	88.6	83.82	92.07	18	875	6.9	4.32	10.70	11	583	4.6	2.44	8.39	0	-	-	-	-	-
Tertiary education	250	12,525	81.1	75.95	85.30	31	1,587	10.3	7.19	14.47	25	1,294	8.4	5.58	12.39	1	45	0.3	0.04	2.07	
Ethnicity																					
Malay	317	14,120	85.0	81.00	88.29	32	1,428	8.6	6.14	11.92	23	1,017	6.1	4.09	9.05	1	45	0.3	0.04	1.92	
Chinese	110	5,625	80.8	73.32	86.64	16	838	12.0	7.50	18.78	10	494	7.1	3.85	12.74	0	-	-	-	-	-
Indian	30	1,477	83.3	67.39	92.32	1	47	2.6	0.37	16.65	5	249	14.1	5.96	29.70	0	-	-	-	-	-
Other	9	527	88.0	48.06	98.32	1	72	12.0	1.68	51.94	0	-	-	-	-	0	-	-	-	-	-
Bumiputera	36	3,998	83.6	69.30	91.98	3	330	6.9	2.23	19.39	4	456	9.5	3.61	22.82	0	-	-	-	-	-
Citizenship																					
Malaysian citizen	465	21,828	84.1	80.73	86.89	49	2,336	9.0	6.85	11.73	38	1,760	6.8	4.96	9.20	1	45	0.2	0.02	1.24	
Permanent Resident	0	-	-	-	-	0	-	-	-	-	1	107	100.0	100.00	100.00	0	-	-	-	-	-
Non-Malaysian	37	3,919	84.4	70.19	92.51	4	378	8.1	2.95	20.53	3	349	7.5	2.44	20.84	0	-	-	-	-	-

	Complete Vaccination															
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated			
	Unweighted count	Estimated population	Prevalence (%)		Unweighted count	Estimated population	Prevalence (%)		Unweighted count	Estimated population	Prevalence (%)		Unweighted count	Estimated population	Prevalence (%)	
			Lower	Upper			Lower	Upper			Lower	Upper			Lower	Upper
87	3,926	82.7	73.14	89.34	9	440	9.3	4.85	17.01	7	382	8.0	3.63	16.88	-	-
209	10,346	81.6	76.08	86.02	30	1,471	11.6	8.12	16.30	16	822	6.5	3.90	10.57	-	-
22	1,039	65.1	47.93	79.14	6	289	18.1	8.36	35.01	6	267	16.7	7.65	32.73	0	0.4
183	10,388	89.2	83.50	93.07	8	514	4.4	2.11	8.99	13	746	6.4	3.59	11.16	-	-
Household income																
2	89	66.3	15.02	95.61	0	-	-	-	-	1	45	33.7	4.39	84.98	-	-
48	3,123	87.1	72.75	94.46	2	151	4.2	0.93	16.94	4	312	8.7	3.04	22.50	-	-
54	2,684	90.3	79.89	95.61	2	100	3.4	0.83	12.56	4	189	6.4	2.39	15.84	-	-
54	2,782	86.8	76.24	93.07	6	288	9.0	4.05	18.80	3	136	4.2	1.36	12.43	-	-
56	2,714	86.4	75.56	92.87	8	384	12.2	6.13	22.88	1	44	1.4	0.19	9.28	-	-
287	14,248	81.6	76.98	85.47	34	1,676	9.6	6.87	13.25	29	1,490	8.5	5.87	12.25	1	45
															0.04	1.83

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.3 : Completed vaccination by state for W.P. Labuan

	WP. LABUAN															
	Complete Vaccination				Self-reported				Incomplete				Unvaccinated			
	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI	Unweighted count	Estimated population	Prevalence (%)	95% CI
Population Size	32	1,663	94.2	78.03 - 98.69	2	102	5.8	1.31 - 21.97	0	-	-	-	0	-	-	-
Male	13	835	94.0	63.77 - 99.28	1	54	6.0	0.72 - 36.23	0	-	-	-	0	-	-	-
Female	19	828	94.5	67.11 - 99.32	1	48	5.5	0.68 - 32.89	0	-	-	-	0	-	-	-
Age of respondents																
Less than 25 years	10	364	78.2	40.47 - 94.97	2	102	21.8	5.03 - 59.53	0	-	-	-	0	-	-	-
25-39 years	16	905	100.0	100.00 - 100.00	0	-	-	-	0	-	-	-	0	-	-	-
40-59 years	5	352	100.0	100.00 - 100.00	0	-	-	-	0	-	-	-	0	-	-	-
Respondents education																
No formal education	4	205	100.0	100.00 - 100.00	0	-	-	-	0	-	-	-	0	-	-	-
Primary education	6	440	100.0	100.00 - 100.00	0	-	-	-	0	-	-	-	0	-	-	-
Secondary education	16	649	92.4	58.30 - 99.05	1	54	7.6	0.95 - 41.70	0	-	-	-	0	-	-	-
Tertiary education	6	369	88.5	44.69 - 98.64	1	48	11.5	1.36 - 55.31	0	-	-	-	0	-	-	-
Ethnicity																
Malay	11	673	100.0	100.00 - 100.00	0	-	-	-	0	-	-	-	0	-	-	-
Chinese	1	41	100.0	100.00 - 100.00	0	-	-	-	0	-	-	-	0	-	-	-
Indian	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-
Other	15	612	85.8	55.27 - 96.70	2	102	14.2	3.30 - 44.73	0	-	-	-	0	-	-	-
Bumiputera	5	337	100.0	100.00 - 100.00	0	-	-	-	0	-	-	-	0	-	-	-
Citizenship																
Malaysian citizen	30	1,580	94.0	77.06 - 98.63	2	102	6.0	1.37 - 22.94	0	-	-	-	0	-	-	-
Permanent Resident	1	41	100.0	100.00 - 100.00	0	-	-	-	0	-	-	-	0	-	-	-
Non-Malaysian	1	41	100.0	100.00 - 100.00	0	-	-	-	0	-	-	-	0	-	-	-

Respondent	Complete Vaccination						Self-reported						Incomplete						Unvaccinated							
	Verified Fully Immunised			95% CI			Unweighted count			Prevalence (%)			95% CI			Unweighted count			Prevalence (%)			95% CI				
	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	
Occupation																										
Public Sector	3	187	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Private Sector	4	212	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Self-employed Housewife/ unemployed	4	230	81.1	29.33	97.79	1	54	18.9	2.21	70.67	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	21	1,034	95.6	71.55	99.46	1	48	4.4	0.54	28.45	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Household income																										
Less than RM1000-	1	55	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RM1000- RM1999	2	171	78.1	16.08	98.52	1	48	21.9	1.48	83.92	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RM2000- RM2999	3	157	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RM3000- RM3999	8	280	83.9	34.77	98.08	1	54	16.1	1.92	65.23	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RM4000- RM4999	4	206	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RM5000 and above	13	752	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.2.2.3 : Completed vaccination by state for W.P.Putrajaya

	WP. PUTRAJAYA																								
	Complete Vaccination					Self-reported					Incomplete					Unvaccinated									
	Verified Fully Immunised		95% CI			Prevalence (%)		Estimated population			Unweighted count		95% CI			Prevalence (%)		Estimated population			Unweighted count		95% CI		
	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper	Unweighted count	Estimated population	Prevalence (%)	Lower	Upper
Population Size	742	2,795	93.0	90.92	94.59	23	87	2.9	1.92	4.30	32	125	4.1	2.92	5.86	0	-	-	-	-	-	-	-	-	-
Male	391	1,446	94.0	91.29	95.93	10	37	2.4	1.29	4.39	15	55	3.6	2.17	5.87	0	-	-	-	-	-	-	-	-	-
Female	351	1,348	91.9	88.52	94.31	13	50	3.4	1.98	5.76	17	69	4.7	2.91	7.62	0	-	-	-	-	-	-	-	-	-
Age of respondents																									
Less than 25 years	11	48	86.6	58.61	96.74	1	4	6.7	0.91	35.78	1	4	6.7	0.91	35.78	0	-	-	-	-	-	-	-	-	-
25-39 years	696	2,616	93.0	90.87	94.67	22	83	2.9	1.95	4.44	29	114	4.0	2.80	5.82	0	-	-	-	-	-	-	-	-	-
40-59 years	32	120	96.9	81.02	99.57	0	-	-	-	-	1	4	3.1	0.43	18.98	0	-	-	-	-	-	-	-	-	-
Respondents education																									
No formal education	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Primary education	4	15	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Secondary education	201	762	94.4	90.42	96.81	5	19	2.3	0.97	5.46	7	26	3.3	1.56	6.70	0	-	-	-	-	0	-	-	-	-
Tertiary education	535	2,010	92.4	89.81	94.32	18	68	3.1	1.97	4.90	25	98	4.5	3.03	6.68	0	-	-	-	-	0	-	-	-	-
Ethnicity																									
Malay	728	2,730	93.2	91.20	94.77	23	87	3.0	1.97	4.41	30	113	3.8	2.70	5.45	0	-	-	-	-	0	-	-	-	-
Chinese	1	8	70.0	12.67	97.40	0	-	-	-	-	1	3	30.0	2.60	87.33	0	-	-	-	-	0	-	-	-	-
Indian	8	24	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Other	5	33	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Bumiputera	0	-	-	-	-	0	-	-	-	-	1	9	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-
Others	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Citizenship																									
Malaysian citizen	741	2,791	93.2	91.27	94.79	23	87	2.9	1.93	4.32	31	116	3.9	2.73	5.46	0	-	-	-	-	0	-	-	-	-
Permanent Resident	1	4	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Non-Malaysian	0	-	-	-	-	0	-	-	-	-	1	9	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-

Respondent Occupation	Complete Vaccination															
	Verified Fully Immunised				Self-reported				Incomplete				Unvaccinated			
	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper	Unweighted count	Estimated population	Prevalence (%)	95% CI Lower Upper
576	2,166	93.4	91.11 95.09	18	68	2.9	1.84 4.59	23	86	3.7	2.48 5.53	0	-	-	-	-
62	236	94.1	85.26 97.78	1	4	1.5	0.21 10.09	3	11	4.4	1.41 12.75	0	-	-	-	-
14	52	93.2	64.18 99.05	1	4	6.8	0.95 35.82	0	-	-	-	0	-	-	-	-
89	336	89.7	80.72 94.72	3	11	3.0	0.96 8.86	6	28	7.4	3.16 16.21	0	-	-	-	-
Household income																
1	4	100.0	100.00 100.00	0	-	-	-	0	-	-	-	0	-	-	-	-
19	71	100.0	100.00 100.00	0	-	-	-	0	-	-	-	0	-	-	-	-
59	225	96.8	88.16 99.21	1	4	1.6	0.22 10.44	1	4	1.6	0.22 10.44	0	-	-	-	-
97	366	93.4	86.70 96.81	1	4	0.9	0.13 6.38	6	22	5.7	2.58 12.14	0	-	-	-	-
106	400	95.5	89.69 98.13	3	11	2.7	0.86 7.98	2	8	1.8	0.45 6.91	0	-	-	-	-
459	1,725	91.6	88.67 93.76	18	68	3.6	2.28 5.66	23	91	4.8	3.19 7.26	0	-	-	-	-

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.3.2.1 : Sociodemographic characteristics of children 0-59 months affected by illness, NHMS 2016, N=15,188

Sociodemographic characteristics	Unweighted count	Estimated population	Prevalence (%)
Locality			
Urban	8,997	1,612,357	64.7
Rural	6,191	880,532	35.3
Sex			
Male	7,871	1,293,897	51.9
Female	7,317	1,198,993	48.1
Age			
0-11 months	696	481,031	19.3
12-23 months	10,091	548,001	22.0
24-59 months	4,401	1,463,859	58.7
Ethnicity			
Malay	10,686	1,549,757	62.3
Chinese	1,737	394,775	15.9
Indians	642	120,949	4.9
Other Bumiputera	1,789	366,480	14.7
Others	294	55,542	2.2
Citizenship			
Malaysian citizen	14,930	2,441,209	98.1
Permanent Resident/ Non-Malaysian	235	48,137	1.9
Mother's education			
No formal education/ Primary	1,834	303,629	12.5
Secondary	7,720	1,263,703	51.8
Higher	5,472	871,268	35.7
Father's education			
No formal education/ Primary	1,993	328,471	14.2
Secondary	7,812	1,253,735	54.1
Higher	4,597	733,996	31.7
Mother's Occupation			
Public Sector	3,755	480,331	19.7
Private Sector	3,238	612,375	25.1
Self-employed	1,108	173,807	7.1
Housewife/ unemployed/ student	6,938	1,172,223	48.1
Father's Occupation			
Public Sector	3,575	457,408	19.7
Private Sector	6,772	1,192,949	51.4
Self-employed	3,954	650,209	28.0
Unemployed/ student	136	21,606	0.9
Household income			
Less than RM1000	1,154	185,627	7.5
RM1000 – RM1999	2,840	442,941	17.9
RM2000 – RM2999	2,436	383,285	15.5
RM3000 – RM3999	2,041	333,205	13.5
RM4000 – RM4999	1,522	231,184	9.4
RM5000 and above	5,105	895,481	36.2

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.3.2.2 : Prevalence of children age 0-59 months with an episode of diarrhoea, NHMS 2016, N=15,188

Sociodemographic characteristics	Unweighted count	Estimated population	Prevalence %	95% CI	
				Lower	Upper
MALAYSIA	804	110,486	4.4	3.68	5.33
Locality					
Urban	435	67,640	4.2	3.30	5.30
Rural	369	42,845	4.9	4.00	5.90
Sex					
Male	429	57,535	4.5	3.58	5.52
Female	375	52,950	4.4	3.30	5.87
Age					
0-11 months	29	25,232	5.2	3.07	8.84
12-23 months	646	38,682	7.1	6.03	8.27
24-59 months	129	46,572	3.2	2.42	4.16
Ethnicity					
Malay	463	55,932	3.6	2.76	4.71
Chinese	79	12,857	3.3	2.10	5.00
Indians	50	6,439	5.3	2.50	10.80
Other Bumiputera	191	32,408	8.8	5.97	12.92
Others	19	2,763	5.0	2.47	9.8
Citizenship					
Malaysian citizen	786	107,970	4.4	3.69	5.30
Permanent Resident/ Non-Malaysian	16	2,429	5.0	2.29	10.77
Mother's education					
No formal education/ Primary	140	21,313	7.0	3.97	12.10
Secondary	421	53,723	4.3	3.25	5.54
Higher	235	33,016	3.8	2.55	5.61
Father's education					
No formal education/ Primary	130	16,274	5.0	3.24	7.52
Secondary	418	59,258	4.7	3.86	5.79
Higher	191	25,563	2.3	2.30	5.24
Mother's Occupation					
Public Sector	186	18,120	3.8	2.22	6.35
Private Sector	160	30,280	4.9	3.68	6.63
Self-employed	43	4,186	2.4	1.39	4.15
Housewife/ unemployed/ student	407	55,417	4.7	3.72	6.00
Father's Occupation					
Public Sector	167	15,423	3.4	1.99	5.68
Private Sector	356	52,764	4.4	3.50	5.58
Self-employed	211	32,960	5.1	3.58	7.14
Unemployed/ student	9	1,182	5.5	2.01	13.99
Household income					
Less than RM1000	89	13,617	7.3	3.64	14.20
RM1000 – RM1999	151	21,340	4.8	3.54	6.54
RM2000 – RM2999	120	14,525	3.8	2.63	5.44
RM3000 – RM3999	126	23,437	7.0	4.49	10.86
RM4000 – RM4999	71	8,727	3.8	1.85	7.60
RM5000 and above	236	27,533	3.1	2.30	4.11
Water And Sanitation					
Source of drinking Water					
Treated Water	762	104,023	4.3	3.56	5.11
Untreated Water	42	6,463	12.5	5.57	25.57
Method of disposing garbage					
Sanitary waste disposal	578	74,277	3.8	3.07	4.69
Unsanitary waste disposal	218	34,750	6.8	4.78	9.62
Others	8	1,459	6.4	2.65	14.84
Newly sanitary or unsanitary latrine					
Sanitary latrine	761	105,481	4.4	3.61	5.30
Unsanitary latrine	43	5,005	6.3	3.47	11.06
Management of Diarrhoea					
Oral Rehydration Salts (ORS)	399	49,665	45.0	36.56	53.66
Antibiotics	319	45,688	41.4	32.49	50.87
ORS & Antibiotics	218	28,190	25.5	19.83	32.21

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.3.2.3 : Prevalence of children age 0-59 months with symptoms of acute respiratory infection (ARI),NHMS 2016, N=15,188

Sociodemographic characteristics	Unweighted count	Estimated population	Prevalence %	95% CI	
				Lower	Upper
MALAYSIA	186	22,974	0.9	0.68	1.24
Locality					
Urban	136	17,154	1.1	0.80	1.40
Rural	118	15,065	1.7	1.20	2.40
Sex					
Male	110	13,734	1.1	0.75	1.50
Female	76	9,240	0.8	0.49	1.21
Age					
0-11 months	5	2,973	0.6	0.16	2.41
12-23 months	140	8,896	1.6	1.25	2.10
24-59 months	41	11,105	0.8	0.51	1.13
Ethnicity					
Malay	117	9,164	0.6	0.42	0.83
Chinese	11	2,615	0.7	0.26	1.71
Indians	4	305	0.3	0.08	0.79
Other Bumiputera	49	9,702	2.6	1.53	4.54
Others	4	1,177	2.1	0.44	9.55
Citizenship					
Malaysian citizen	182	21,797	0.9	0.67	1.19
Permanent Resident/ Non-Malaysian	4	1,177	2.4	0.52	10.81
Mother's education					
No formal education/Primary	36	4,821	1.6	0.82	3.05
Secondary	95	12,010	1.0	0.61	1.49
Higher	55	6,142	0.7	0.44	1.12
Father's education					
No formal education/Primary	36	6,969	2.1	1.04	4.28
Secondary	92	10,781	0.9	0.60	1.23
Higher	39	3,395	0.5	0.27	0.78
Mother's Occupation					
Public Sector	36	3,658	0.8	0.38	1.50
Private Sector	42	5,902	1.0	0.55	1.69
Self-employed	19	1,245	0.7	0.40	1.27
Housewife/unemployed/student	88	12,087	1.0	0.68	1.57
Father's Occupation					
Public Sector	34	2,864	0.6	0.32	1.21
Private Sector	80	10,636	0.9	0.63	1.26
Self-employed	49	6,834	1.1	0.53	2.06
Unemployed/student	4	638	3.0	0.40	18.78
Household income					
Less than RM1000	19	3,272	1.8	0.53	5.67
RM1000 – RM1999	36	3,976	0.9	0.53	1.52
RM2000 – RM2999	32	3,345	0.9	0.51	1.48
RM3000 – RM3999	30	3,511	1.1	0.61	1.82
RM4000 – RM4999	13	2,416	1.0	0.38	2.85
RM5000 and above	54	6,259	0.7	0.46	1.07
Source of advice or treatment (N=952)					
Public	107	13,145	60.2	46.73	72.24
Private	56	6,850	31.4	20.89	44.14
Community Health Provider	1	579	2.7	0.34	17.95
TCM	0	-	-	-	-
No advice or treatment sought	12	1,271	5.5	3.02	9.92
Received Antibiotic (N=952)					
Yes	116	14,422	62.8	48.08	75.44
No	70	8,551	37.2	24.56	51.92

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.3.2.4 : Prevalence of children age 0-59 months reported to have had diarrhoea & symptoms of acute respiratory infection (ARI): either one or both in the last two weeks, NHMS 2016, N=15,188

Sociodemographic characteristics	Either one disease episode of diarrhoea or symptoms of acute respiratory infection (ARI)					Both disease episodes of diarrhoea and symptoms of acute respiratory infection (ARI)				
	Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI	
				Upper	Lower				Upper	Lower
MALAYSIA	952	128,486	5.2	4.38	6.06	37	4,943	0.2	0.08	0.49
Locality										
Urban	519	78,369	4.9	3.90	6.00	16	1677	0.1	0.0	0.2
Rural	433	50,116	5.7	4.80	6.80	21	3265	0.1	0.0	0.4
Sex										
Male	519	68,040	5.3	4.35	6.36	20	3,229	0.2	0.07	0.84
Female	434	60,477	5.0	3.88	6.54	17	1,713	0.1	0.06	0.35
Age										
0-11 months	33	26,337	5.5	3.28	9.02	1	1,867	0.4	0.05	2.80
12-23 months	756	45,557	8.3	7.18	9.65	30	2,021	0.4	0.23	0.59
24-59 months	164	56,622	3.9	3.11	4.81	6	1,055	0.1	0.02	0.25
Ethnicity										
Malay	563	64,091	4.1	3.26	5.25	17	1,005	0.1	0.04	0.12
Chinese	90	15,471	3.9	2.46	6.19	0	-	-	-	-
Indians	52	6,563	5.4	2.62	10.91	2	182	0.2	0.04	0.58
Other Bumiputera	222	38,354	10.5	7.53	14.39	18	3,756	1.0	0.31	3.38
Others	23	3,940	7.1	3.77	12.97	0	-	-	-	-
Citizenship										
Malaysian citizen	931	124,825	5.1	4.36	6.00	37	4,943	0.2	0.08	0.50
Permanent Resident/ Non-Malaysian	20	3,606	7.5	3.62	14.88	0	-	-	-	-
Mother's education										
No formal education/ Primary	164	24,832	8.2	5.06	13.00	12	1,303	0.4	0.17	1.09
Secondary	502	63,022	5.0	3.93	6.32	14	2,712	0.2	0.04	1.07
Higher	279	38,230	4.4	3.12	6.15	11	928	0.1	0.05	0.24
Father's education										
No formal education/ Primary	156	20,750	6.3	4.50	8.83	10	2,492	0.8	0.15	3.67
Secondary	497	68,512	5.5	4.56	6.55	13	1,527	0.1	0.05	0.30
Higher	223	28,558	3.9	2.71	5.57	7	401	0.1	0.02	0.17
Mother's Occupation										
Public Sector	214	21,119	4.4	2.70	7.08	8	660	0.1	0.04	0.45
Private Sector	195	35,495	5.8	4.47	7.49	7	687	0.1	0.05	0.25
Self-employed	61	5,346	3.1	1.92	4.90	1	86	0.0	0.01	0.36
Housewife/ unemployed/ student	473	63,963	5.5	4.43	6.73	21	3,510	0.3	0.10	0.92
Father's Occupation										
Public Sector	194	17,766	3.9	2.44	6.14	7	522	0.1	0.03	0.43
Private Sector	421	61,788	5.2	4.24	6.33	15	1,613	0.1	0.06	0.29
Self-employed	252	37,507	5.8	4.26	7.78	8	2,288	0.4	0.06	1.95
Unemployed/student	12	1,765	8.2	3.04	20.16	1	56	0.3	0.04	1.82
Household income										
Less than RM1000	104	14,837	8.0	4.17	14.79	4	2,052	1.1	0.18	6.46
RM1000 – RM1999	178	24,195	5.5	4.16	7.17	9	1,122	0.3	0.09	0.71
RM2000 – RM2999	147	17,570	4.6	3.30	6.35	5	301	0.1	0.03	0.22
RM3000 – RM3999	153	26,675	8.0	5.38	11.76	3	274	0.1	0.02	0.35
RM4000 – RM4999	82	10,983	4.8	2.57	8.68	2	161	0.1	0.02	0.31
RM5000 and above	277	32,854	3.7	2.85	4.72	13	938	0.1	0.04	0.25

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.4.2.1 : Sociodemographic characteristics of children age 12-59 months with child injuries; NHMS 2016, N=14,492

Sociodemographic characteristics	Unweighted count	Prevalence (%)	Estimated population
Locality			
Urban	8,698	64.2	1,290,787
Rural	5,894	36	721,072
Sex			
Male	7,512	51.6	1,038,147
Female	6,980	48.4	973,712
Age of child			
12-23 months	10,091	27.2	548,001
24-59 months	4,401	72.8	1,463,859
Ethnicity			
Malay	10,231	61.7	1,239,092
Chinese	1,652	16.0	320,495
Indians	614	4.8	96,835
Other Bumiputera	1,679	15.1	303,389
Others	278	2.4	47,370
Citizenship			
Malaysian citizen	14,246	97.9	1,965,770
Permanent Resident/ Non-Malaysian	224	2.1	43,106
Marital status of mother			
Never married/ cohabiting	31	0.1	2,345
Married	14,140	97.9	1,935,514
Separated/ Divorced/ Widowed	228	2.0	39,072
Mother's education			
None	268	2.0	40,104
Primary	1,498	11.5	226,941
Secondary	7,350	50.5	996,524
Higher	5,243	36.0	710,476
Father's education			
None	260	1.9	36,002
Primary	1,653	13.0	244,675
Secondary	7,453	53.7	1,007,781
Higher	4,405	31.3	587,618
Mother's occupation			
Public Sector	3,621	20.2	398,335
Private Sector	3,077	24.7	486,303
Self-employed	1,073	7.8	153,478
Unemployed/ student	6,557	47.3	930,228
Father's occupation			
Public Sector	3,441	19.6	367,904
Private Sector	6,444	51.4	967,827
Self-employed	3,791	28.0	526,981
Unemployed/ student	129	1.0	18,786
Household income			
Less than RM1000	1,098	7.8	154,779
RM1000 – RM1999	2,697	17.6	351,215
RM2000 – RM2999	2,323	15.0	300,010
RM3000 – RM3999	1,945	13.5	270,002
RM4000 – RM4999	1,459	9.7	193,980
RM5000 and above	4,885	36.3	724,556

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.4.2.2 : Prevalence of child injuries among children age 12-59 months during the last one year, NHMS 2016, N=14,492

Sociodemographic characteristics	Unweighted count	Estimated population	Prevalence %	95% CI	
				Lower	Upper
MALAYSIA	393	76,920	3.8	2.80	5.22
Locality					
Urban	259	57,553	2.9	2.00	4.10
Rural	134	19,367	1.0	0.80	1.20
Sex					
Male	229	45,280	4.4	2.87	6.61
Female	164	31,640	3.2	2.16	4.86
Age of child					
12-23 months	230	15,924	2.9	2.28	3.70
24-59 months	163	60,996	4.2	2.90	5.98
Ethnicity					
Malay	278	41,557	3.4	2.33	4.84
Chinese	35	19,786	6.2	2.11	16.71
Indians	14	2,427	2.5	1.20	5.17
Other Bumiputera	59	12,383	4.1	2.68	6.17
Others	6	663	1.4	0.69	2.80
Citizenship					
Malaysian citizen	387	76,257	3.9	2.83	5.31
Permanent Resident/ Non-Malaysian	6	663	1.5	0.75	3.13
Marital status of mother					
Never married/ cohabiting	0	-	-	-	-
Married	383	74,889	3.9	2.83	5.29
Separated/ Divorced/ Widowed	5	599	1.5	0.46	4.96
Mother's education					
None	8	1,769	4.4	1.66	11.20
Primary	31	6,575	2.9	1.65	5.03
Secondary	196	32,489	3.3	2.46	4.34
Higher	153	34,655	4.9	2.77	8.44
Father's education					
None	7	823	2.3	1.00	5.15
Primary	39	7,478	3.1	1.97	4.72
Secondary	189	35,289	3.5	2.66	4.62
Higher	137	28,819	4.9	2.50	9.39
Mother's occupation					
Public Sector	117	14,975	3.8	2.51	5.59
Private Sector	87	29,444	6.1	2.92	12.28
Self-employed	25	3,113	2.0	1.26	3.26
Unemployed/ student	158	27,779	3.0	2.21	4.02
Father's occupation					
Public Sector	100	8,825	2.4	1.45	3.95
Private Sector	187	48,297	5.0	3.18	7.81
Self-employed	80	13,940	2.6	1.73	4.02
Unemployed/ student	6	1,270	6.8	2.70	15.95
Household income					
Less than RM1000	23	3,453	2.2	0.94	5.19
RM1000 – RM1999	72	13,235	3.8	2.71	5.23
RM2000 – RM2999	49	9,329	3.1	1.70	5.63
RM3000 – RM3999	62	9,562	3.5	2.21	5.63
RM4000 – RM4999	37	7,906	4.1	2.03	8.00
RM5000 and above	149	33,334	4.6	2.54	8.25
Place of injury					
Inside the house	308	58,871	80.5	71.09	87.36
Outdoor	43	9,744	13.3	8.43	20.41
Caretaker facilities	0	-	-	-	-
Others	21	4,535	6.2	3.26	11.47

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.1 : Perception on importance of looking after children's oral health, NHMS 2016, N=15,179

	Not important			Important			Very important			Don't Know											
	Unweighted count	95% CI		Unweighted count	95% CI		Unweighted count	95% CI		Unweighted count	95% CI										
		Prevalence (%)	Lower		Upper	Prevalence (%)		Lower	Upper		Prevalence (%)	Lower	Upper								
MALAYSIA	57	7,321	0.3	0.16	0.55	10,941	1,814,633	72.8	66.87	78.06	4,150	667,390	26.8	21.55	32.76	31	2,426	0.1	0.06	0.17	
Locality																					
Urban	34	5,862	0.3	0.10	0.60	5,963	1,369,000	71.9	64.70	78.10	2,387	527,100	27.7	21.50	34.90	19	1,908	0.1	0.00	0.20	
Rural	23	1,459	0.2	0.10	0.50	4,978	445,800	75.5	72.10	79.20	1,763	140,300	23.9	20.50	27.60	12	518	0.1	0.00	0.20	
Age of mother																					
15-19 Year	4	226	0.9	0.22	3.27	144	20,821	78.9	66.34	87.68	43	5,310	20.1	11.53	32.75	1	24	0.1	0.01	0.69	
20-24 Year	6	2,007	0.7	0.16	2.96	1,231	234,403	80.3	74.20	85.16	342	54,480	18.7	13.94	24.50	12	1,210	0.4	0.15	1.12	
25-29 Year	14	1,581	0.2	0.08	0.53	3,143	557,964	74.0	67.53	79.53	1,077	194,243	25.8	20.20	32.22	6	437	0.1	0.04	0.08	
30-34 Year	17	1,122	0.1	0.06	0.28	3,852	611,493	71.0	63.57	77.42	1,662	248,725	28.9	22.44	36.29	2	147	0.0	0.00	0.07	
35-39 Year	11	565	0.1	0.06	0.33	1,896	289,978	70.9	62.90	77.82	763	117,881	28.8	21.93	36.87	8	461	0.1	0.04	0.33	
40-44 Year	3	472	0.5	0.15	1.89	562	69,114	78.9	71.30	84.89	182	17,884	20.4	14.39	28.13	2	147	0.2	0.05	0.62	
45-49 Year	0	-	-	-	-	51	7,585	80.8	58.73	92.60	21	1,797	19.2	7.40	41.27	0	-	-	-	-	
50 Years and above	0	-	-	-	-	2	309	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	
Ethnicity of mother																					
Malay	27	3,163	0.2	0.08	0.57	7,701	1,156,270	76.4	70.16	81.75	2,816	352,278	23.3	17.98	29.60	12	901	0.1	0.03	0.13	
Chinese	6	647	0.2	0.05	0.65	1,222	266,299	73.8	61.47	83.31	359	94,026	25.9	16.43	38.27	2	384	0.1	0.01	0.78	
Indians	4	440	0.4	0.13	1.13	478	81,931	71.1	61.02	79.43	141	32,887	28.5	20.14	38.74	0	-	-	-	-	
Other	6	560	0.2	0.07	0.38	912	209,289	60.3	49.92	69.78	615	137,308	39.5	30.02	49.93	1	65	0.0	0.00	0.14	
Bumiputera	12	1,164	1.1	0.32	3.95	568	75,877	74.3	62.75	83.23	160	24,000	23.5	14.47	35.81	16	1,076	1.1	0.43	2.55	
Citizenship of mother																					
Malaysian citizen	52	5,377	0.2	0.12	0.45	10,403	1,708,613	73.3	67.17	78.59	3,940	615,878	26.4	21.09	32.52	29	2,087	0.1	0.05	0.17	
Permanent Resident	0	-	-	-	-	46	7,455	85.6	68.10	94.31	15	1,254	14.4	5.69	31.90	0	-	-	-	-	
Non-Malaysian	3	597	0.6	0.08	4.40	432	75,598	75.7	64.82	84.00	136	23,367	23.4	14.96	34.64	2	338	0.3	0.24	0.47	
Marital status of mother																					
Married/ Cohabiting	52	5,712	0.2	0.12	0.46	10,671	1,752,964	73.3	67.20	78.59	4,035	631,111	26.4	21.08	32.48	30	2,364	0.1	0.06	0.18	
Single/ Separated/ Divorced/ Widowed	3	261	0.5	0.14	2.04	210	38,703	79.9	68.86	87.78	56	9,388	19.4	11.56	30.68	1	62	0.1	0.02	0.88	

	Not important				Important				Very important				Don't Know							
	Unweighted count	Estimated population	95% CI		Unweighted count	Estimated population	95% CI		Unweighted count	Estimated population	95% CI		Unweighted count	Estimated population	95% CI					
			Prevalence (%)	Lower			Upper	Prevalence (%)			Lower	Upper			Prevalence (%)	Lower	Upper			
Education of mother																				
No Formal	5	878	2.0	0.45	8.18	221	36,184	81.3	70.83	88.60	43	7,056	15.9	8.48	27.69	11	396	0.9	0.19	4.12
Primary	13	938	0.4	0.16	0.83	1,177	194,723	75.1	68.28	80.95	355	62,577	24.2	18.42	30.99	9	877	0.3	0.11	1.00
Secondary	24	3,546	0.3	0.12	0.68	5,841	952,452	75.4	69.96	80.19	1,839	305,641	24.2	19.46	29.69	8	1,014	0.1	0.03	0.19
Higher	13	612	0.1	0.03	0.19	3,612	605,703	69.5	60.91	76.96	1,843	264,744	30.4	22.95	39.01	3	138	0.0	0.00	0.06
Occupation of mother																				
Public Sector	7	175	0.0	0.01	0.09	2,306	321,645	67.0	58.78	74.24	1,441	158,446	33.0	25.71	41.18	1	65	0.0	0.00	0.10
Private Sector	9	789	0.1	0.05	0.33	2,413	442,752	72.3	62.55	80.38	810	168,088	27.5	19.43	37.28	3	398	0.1	0.01	0.45
Self-employed	2	198	0.1	0.02	0.66	845	126,034	72.5	60.71	81.83	257	47,317	27.2	17.91	39.08	4	258	0.1	0.05	0.43
Housewife	35	4,716	0.4	0.19	0.89	5,170	871,549	76.9	72.22	80.92	1,523	255,996	22.6	18.52	27.22	23	1,705	0.2	0.08	0.29
Unemployed	2	96	0.4	0.06	2.82	94	16,291	70.4	57.22	80.93	34	6,743	29.2	18.45	42.80	0	-	-	-	-
Student	0	-	-	-	-	33	10,900	75.9	47.14	91.77	18	3,456	24.1	8.23	52.86	0	-	-	-	-
Household income																				
Less than RM1000	9	1,970	1.1	0.28	3.97	894	136,186	73.4	65.18	80.21	244	47,010	25.3	18.48	33.66	7	462	0.2	0.09	0.72
RM1999	14	2,985	0.7	0.23	1.97	2,192	338,469	76.5	71.58	80.86	613	99,391	22.5	18.07	27.60	16	1,375	0.3	0.15	0.63
RM2000 – RM3000	9	702	0.2	0.07	0.45	1,818	285,937	74.7	68.54	79.93	605	96,268	25.1	19.87	31.25	3	103	0.0	0.01	0.13
RM3999	4	207	0.1	0.02	0.22	1,518	253,058	76.0	70.03	81.02	516	79,878	24.0	18.90	29.90	2	36	0.0	0.00	0.08
RM4000 – RM4999	6	620	0.3	0.09	0.83	1,063	168,699	73.0	62.50	81.39	453	61,865	26.8	18.33	37.30	0	-	-	-	-
RM5000 and above	14	743	0.1	0.03	0.21	3,378	613,502	68.5	59.02	76.69	1,708	280,687	31.3	23.19	40.85	3	449	0.1	0.01	0.29

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.2 : Frequency of cleaning/brushing child's teeth or supervision of child's tooth brushing, NHMS 2016, N=14,615

Sociodemographic characteristics	Every day						Once in a few days						Never			
	Unweighted count	Estimated Population	%	95% CI		Unweighted count	Estimated Population	%	95% CI		Unweighted count	Estimated Population	%	95% CI		
				Lower	Upper				Lower	Upper				Lower	Upper	
MALAYSIA	10,468	1,594,832	74.0	71.51	76.37	3,221	409,344	19.0	17.12	21.02	926	150,656	7.0	5.74	8.49	
Locality																
Urban	5787	1,194,000	62.7	60.1	65.2	1695	286,800	15.1	13.3	17.1	511	121,500	6.4	5.00	8.10	
Rural	4681	401,000	68.2	65.1	71.1	1526	122,500	20.8	18.1	23.9	415	29,140	5.0	4.10	6.00	
Age of mother																
15-19 Year	114	14,321	64.9	50.74	76.80	46	3,953	17.9	9.98	30.04	21	3,802	17.2	8.80	30.97	
20-24 Year	979	163,222	70.1	64.87	74.88	361	47,351	20.3	16.09	25.38	148	22,224	9.5	6.74	13.35	
25-29 Year	2,878	433,803	71.3	67.95	74.47	893	118,001	19.4	16.77	22.34	273	56,430	9.3	6.90	12.37	
30-34 Year	3,950	576,729	75.0	71.01	78.54	1,119	150,223	19.5	16.63	22.78	288	42,409	5.5	4.26	7.11	
35-39 Year	1,876	298,466	78.1	73.90	81.87	596	65,132	17.1	13.83	20.84	147	18,353	4.8	3.52	6.53	
40-44 Year	527	64,049	74.2	68.05	79.49	173	17,767	20.6	15.47	26.84	43	4,522	5.2	2.69	9.94	
45-49 Year	52	6,301	67.2	41.45	85.52	18	2,569	27.4	9.05	58.82	2	512	5.5	0.96	25.60	
50 Year and above	0	-	-	-	-	1	303	98.0	74.85	99.88	1	6	2.0	0.12	25.15	
Ethnicity of mother																
Malay	7,282	940,191	72.8	70.02	75.48	2,357	262,387	20.3	18.18	22.66	541	88,227	6.8	5.29	8.79	
Chinese	1,047	225,296	70.2	63.09	76.43	339	70,499	22.0	16.69	28.34	142	25,184	7.8	5.61	10.88	
Indians	458	72,857	74.5	61.12	84.42	90	11,318	11.6	8.42	15.69	55	13,650	14.0	6.47	27.53	
Other Bumiputera	1,164	248,339	81.1	76.86	84.79	225	43,491	14.2	10.84	18.42	73	14,218	4.6	3.02	7.09	
Others	426	70,384	74.1	67.50	79.78	196	17,605	18.5	13.96	24.19	112	6,980	7.3	4.65	11.42	
Citizenship of mother																
Malaysian citizen	9,965	1,480,653	73.7	70.94	76.20	3,059	389,369	19.4	17.42	21.48	867	140,178	7.0	5.64	8.59	
Permanent Resident	40	5,549	72.8	48.74	88.25	11	1,000	13.1	5.75	27.19	6	1,076	14.1	2.58	50.42	
Non-Malaysian	372	70,865	76.4	69.59	82.02	137	14,930	16.1	11.79	21.57	50	7,005	7.5	4.49	12.42	
Marital status of mother																
Married/Cohabiting	10,194	1,523,907	73.8	71.27	76.14	3,149	396,545	19.2	17.33	21.22	901	144,972	7.0	5.72	8.58	
Single/Separated/Divorced/ Widowed	183	33,160	73.4	61.11	82.83	58	8,754	19.4	10.99	31.85	22	3,287	7.3	3.10	16.11	
Education of mother																
No Formal	150	30,306	72.8	62.32	81.23	71	7,747	18.6	11.54	28.59	51	3,582	8.6	4.37	16.23	
Primary	959	160,020	67.0	62.26	71.33	410	61,427	25.7	21.09	30.93	139	17,564	7.3	5.46	9.83	
Secondary	5,271	801,137	74.1	71.11	76.90	1,668	195,473	18.1	15.87	20.53	476	84,448	7.8	6.17	9.84	
Higher	3,964	562,984	75.5	70.21	80.08	1,051	140,209	18.8	15.32	22.85	256	42,646	5.7	4.00	8.10	
Occupation of mother																
Public Sector	2,823	332,420	78.9	74.56	82.74	681	67,257	16.0	13.01	19.45	131	21,426	5.1	3.04	8.40	
Private Sector	2,196	369,225	72.0	67.72	75.87	684	108,840	21.2	17.33	25.71	226	34,917	6.8	5.34	8.64	
Self-employed	748	116,760	72.3	64.98	78.51	267	33,035	20.4	15.49	26.48	62	11,810	7.3	3.47	14.73	
Housewife	4,479	718,524	72.9	70.27	75.43	1,524	189,366	19.2	17.01	21.65	489	77,324	7.8	6.26	9.80	
Unemployed	76	12,505	65.1	41.85	82.87	34	4,824	25.1	11.75	45.78	13	1,878	9.8	2.96	27.76	
Student	36	5,191	68.6	41.62	87.02	9	1,552	20.5	8.59	41.48	1	822	10.9	1.51	49.18	
Household income																
Less than RM1000	700	114,723	68.9	62.68	74.51	317	40,215	24.2	18.89	30.33	99	11,560	6.9	4.67	10.20	
RM1000 – RM1999	1,826	268,759	69.9	65.46	73.97	704	85,738	22.3	19.07	25.89	195	30,065	7.8	5.48	11.04	
RM2000 – RM2999	1,667	238,630	71.1	65.28	76.27	521	67,091	20.0	16.44	24.07	165	29,966	8.9	6.79	13.53	
RM3000 – RM3999	1,424	223,272	78.4	73.26	82.73	405	44,952	15.8	12.65	19.50	129	16,681	5.9	3.36	10.02	
RM4000 – RM4999	1,098	157,125	77.9	68.76	84.91	302	33,439	16.6	12.40	21.80	69	11,210	5.6	2.33	12.69	
RM5000 and above	3,696	579,895	76.0	72.54	79.23	954	135,525	17.8	15.14	20.75	257	47,159	6.2	4.74	8.03	

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.3 : Prevalence of mothers who had ever brought their child for a dental visit, NHMS 2016, N=14,886

Sociodemographic characteristics	Yes, had ever brought child for a dental visit				No, had never brought child for a dental visit				
	Unweighted count	Estimated Population	Prevalence (%)	95% CI	Unweighted count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper			Lower	Upper	
MALAYSIA	4,052	619,234	26.7	23.29	30.39	1,700,782	73.3	69.61	76.71
Locality									
Urban	2,174	449,300	25.6	22.00	29.60	1,306,000	74.4	70.40	78.00
Rural	1,878	170,000	30.1	25.90	34.60	394,600	69.9	65.40	74.10
Age of mother									
15-19 Year	33	6,225	26.3	12.16	47.81	17,483	73.7	52.19	87.84
20-24 Year	383	56,130	21.1	16.18	26.96	210,301	78.9	73.04	83.82
25-29 Year	1,070	160,213	23.4	20.42	26.75	523,358	76.6	73.25	79.58
30-34 Year	1,592	246,300	30.4	25.20	36.14	564,054	69.6	63.86	74.80
35-39 Year	739	115,621	29.4	25.35	33.71	278,226	70.6	66.29	74.65
40-44 Year	189	23,041	26.6	21.06	33.01	63,558	73.4	66.99	78.94
45-49 Year	18	1,136	12.1	5.57	24.35	8,246	87.9	75.65	94.43
50 Year and above	1	303	98.0	74.85	99.88	6	2.0	0.12	25.15
Ethnicity of mother									
Malay	2,970	390,120	28.0	24.24	32.01	1,004,933	72.0	67.99	75.76
Chinese	338	76,123	21.9	16.27	28.73	272,014	78.1	71.27	83.73
Indians	208	35,120	32.3	19.75	48.07	73,572	67.7	51.93	80.25
Other Bumiputera	362	88,103	27.1	22.00	32.95	236,668	72.9	67.05	78.00
Others	147	19,502	20.0	14.40	26.99	78,223	80.0	73.01	85.60
Citizenship of mother									
Malaysian citizen	3,894	582,621	26.8	23.44	30.56	1,587,443	73.2	69.44	76.56
Permanent Resident	17	2,005	26.3	11.36	49.82	5,620	73.7	50.18	88.64
Non-Malaysian	114	24,342	25.2	17.35	35.04	72,346	74.8	64.96	82.65
Marital status of mother									
Married/Cohabiting	3,966	597,942	26.8	23.32	30.68	1,629,813	73.2	69.32	76.68
Single/Separated/Divorced/Widowed	59	11,027	23.7	16.62	32.50	35,597	76.3	67.50	83.38
Education of mother									
No Formal	43	7,613	17.9	9.91	30.05	35,022	82.1	69.95	90.09
Primary	347	63,723	25.6	19.97	32.07	185,655	74.4	67.93	80.03
Secondary	2,115	302,223	26.1	22.88	29.51	857,431	73.9	70.49	77.12
Higher	1,511	234,700	28.6	23.26	34.69	584,924	71.4	65.31	76.74
Occupation of mother									
Public Sector	1,123	151,353	33.9	30.10	37.89	295,266	66.1	62.11	69.90
Private Sector	754	119,999	21.3	16.22	27.50	442,848	78.7	72.50	83.78
Self-employed	304	43,850	26.7	20.86	33.40	120,590	73.3	66.60	79.14
Housewife	1,805	289,427	27.2	24.02	30.72	773,006	72.8	69.28	75.98
Unemployed	24	2,534	11.6	5.15	24.09	19,306	88.4	75.91	94.85
Student	9	477	3.6	1.62	7.82	12,772	96.4	92.18	98.38
Household income									
Less than RM1000	282	46,405	26.9	21.37	33.34	125,874	73.1	66.66	78.63
RM1000 – RM1999	775	113,568	27.4	23.61	31.57	300,728	72.6	68.43	76.39
RM2000 – RM2999	719	105,489	29.2	25.63	33.02	255,947	70.8	66.98	74.37
RM3000 – RM3999	580	96,166	32.0	26.70	37.74	204,666	68.0	62.26	73.30
RM4000 – RM4999	427	61,340	28.4	22.79	34.81	154,480	71.6	65.19	77.21
RM5000 and above	1,255	194,102	23.2	18.26	29.06	641,625	76.8	70.94	81.74

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.4 : Timing of child's last dental visit, NHMS 2016, N=4,047

	Less than one year ago			1 - 2 years ago			More than 2 years ago			Can not remember										
	count	95% CI		Estimated population	95% CI		count	95% CI		Estimated population	95% CI									
		Prevalence (%)	Lower		Upper	Prevalence (%)		Lower	Upper		Prevalence (%)	Lower	Upper							
MALAYSIA	3,422	475,672	77.0	73.91	79.88	108,075	17.5	15.00	20.32	108	29,354	4.8	3.76	6.00	31	4,392	0.7	0.34	1.48	
Locality																				
Urban	1,804	342,000	76.1	72.20	79.60	81,840	18.2	15.20	21.60	61	21,250	4.7	3.50	6.40	14	2,769	0.6	0.20	1.60	
Rural	1,618	133,600	78.6	74.00	82.60	26,240	15.4	11.70	20.00	47	8,108	4.8	3.30	6.90	17	1,623	1.0	0.40	2.10	
Age of mother																				
15-19 Year	30	4,680	75.2	39.12	93.45	2	23.2	6.28	57.77	0	0	0.0	0.00	0.00	1	98	1.6	0.43	5.59	
20-24 Year	322	43,542	78.0	69.26	84.77	47	18.8	12.50	27.30	7	1,072	1.9	0.59	6.06	5	726	1.3	0.37	4.51	
25-29 Year	899	120,228	75.0	68.97	80.26	130	18.5	13.96	24.18	30	9,253	5.8	3.63	9.07	11	1,043	0.7	0.24	1.74	
30-34 Year	1,343	195,168	79.7	75.26	83.48	188	15.6	12.10	19.98	50	10,667	4.4	3.13	6.03	9	792	0.3	0.10	1.09	
35-39 Year	631	86,787	75.1	68.68	80.61	88	18.2	13.76	23.60	16	6,365	5.5	3.09	9.65	3	1,388	1.2	0.19	7.04	
40-44 Year	158	16,396	71.2	58.49	81.21	26	22.9	13.77	35.57	4	1,295	5.6	1.96	15.08	1	75	0.3	0.04	2.40	
45-49 Year	17	1,012	89.1	50.91	98.46	1	10.9	1.54	49.09	0	-	-	-	-	0	-	-	-	-	
50 Years and above	1	303	100.0	100.00	100.00	0	-	-	-	0	-	-	-	-	0	-	-	-	-	
Ethnicity of mother																				
Malay	2,540	302,881	77.7	74.03	81.01	347	18.4	15.36	21.93	65	12,893	3.3	2.37	4.60	15	2,164	0.6	0.17	1.80	
Chinese	273	56,167	73.8	65.98	80.33	45	14.8	10.32	20.88	16	8,153	10.7	6.74	16.60	4	505	0.7	0.17	2.59	
Indians	187	31,379	89.3	80.26	94.53	15	7.7	3.67	15.59	4	919	2.6	0.88	7.52	2	104	0.3	0.05	1.83	
Other	287	64,642	74.5	65.68	81.71	51	18.4	12.17	26.88	14	4,793	5.5	3.56	8.47	8	1,337	1.5	0.61	3.85	
Bumiputera	114	13,046	66.9	56.21	76.08	24	23.3	12.96	38.35	8	1,894	9.7	3.92	22.10	1	12	0.1	0.01	0.45	
Citizenship of mother																				
Malaysian citizen	3,298	448,686	77.2	74.08	80.12	460	17.5	14.93	20.34	101	26,586	4.6	3.61	5.79	30	4,121	0.7	0.33	1.53	
Permanent Resident	11	1,515	75.6	45.19	92.05	5	19.5	5.84	48.61	1	99	5.0	0.90	23.01	0	-	-	-	-	
Non-Malaysian	92	17,915	73.6	62.49	82.34	17	18.3	9.65	32.05	5	1,966	8.1	2.88	20.65	0	-	-	-	-	
Marital status of mother																				
Married/ Cohabiting	3,351	459,160	77.0	73.83	79.91	474	17.5	14.97	20.37	107	28,651	4.8	3.79	6.08	29	4,029	0.7	0.31	1.47	
Single/ Separated/ Divorced/ Widowed	50	8,955	81.2	63.07	91.63	8	17.9	7.95	35.65	0	-	-	-	-	1	92	0.8	0.15	4.53	

	Less than one year ago					1 - 2 years ago					More than 2 years ago					Can not remember					
	count	Estimated population	Prevalence (%)		95% CI	count	Estimated population	Prevalence (%)		95% CI	count	Estimated population	Prevalence (%)		95% CI	count	Estimated population	Prevalence (%)		95% CI	
			Lower	Upper				Lower	Upper				Lower	Upper				Lower	Upper		Lower
Education of mother																					
No Formal	38	6,855	90.0	71.24	97.06	2	444	5.8	0.92	29.13	3	314	4.1	1.09	14.40	0	-	-	-	-	-
Primary	276	42,033	66.5	55.47	75.93	57	17,732	28.0	19.39	38.70	10	2,854	4.5	2.10	9.41	3	616	1.0	0.22	4.13	4.13
Secondary	1,787	235,005	78.1	74.20	81.52	248	48,581	16.1	13.19	19.60	61	15,820	5.3	3.75	7.32	15	1,563	0.5	0.22	1.24	1.24
Higher	1,291	183,513	78.2	73.55	82.22	175	39,583	16.9	13.32	21.13	33	9,663	4.1	2.65	6.33	12	1,942	0.8	0.23	2.95	2.95
Occupation of mother																					
Public Sector	969	122,335	80.8	75.58	85.17	122	22,424	14.8	11.00	19.67	23	6,238	4.1	2.48	6.77	9	357	0.2	0.08	0.70	0.70
Private Sector	629	88,741	74.3	67.82	79.79	103	22,446	18.8	14.41	24.11	17	7,683	6.4	3.49	11.54	4	641	0.5	0.15	1.93	1.93
Self-employed	258	35,422	81.3	73.03	87.50	32	6,593	15.1	9.30	23.68	9	1,378	3.2	1.43	6.85	3	167	0.4	0.10	1.40	1.40
Housewife	1,510	218,835	75.9	71.19	79.99	222	53,555	18.6	14.71	23.16	57	13,119	4.5	3.22	6.39	14	2,956	1.0	0.40	2.60	2.60
Unemployed	21	1,949	76.9	45.23	93.06	2	352	13.9	2.99	45.73	1	234	9.2	1.18	46.48	0	-	-	-	-	-
Student	9	477	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-
Household income																					
Less than RM1000	235	31,796	68.5	53.64	80.37	38	12,781	27.5	16.77	41.75	7	1,459	3.1	1.33	7.27	2	369	0.8	0.16	3.85	3.85
RM1000 - RM1999	640	83,889	74.5	67.98	80.08	95	20,247	18.0	13.45	23.63	30	7,759	6.9	4.40	10.64	8	711	0.6	0.21	1.90	1.90
RM2000 - RM2999	621	82,538	78.2	72.12	83.34	83	19,894	18.9	14.11	24.74	11	2,551	2.4	1.27	4.54	4	506	0.5	0.08	2.70	2.70
RM3000 - RM3999	506	81,451	85.1	77.18	90.65	55	9,959	10.4	5.79	18.00	15	3,397	3.6	1.83	6.78	3	871	0.9	0.25	3.24	3.24
RM4000 - RM4999	356	48,424	79.3	69.41	86.64	54	11,071	18.1	11.52	27.37	10	1,300	2.1	0.98	4.54	5	255	0.4	0.09	1.92	1.92
RM5000 and above	1,052	146,247	75.3	69.69	80.24	159	33,286	17.1	13.48	21.56	35	12,888	6.6	4.43	9.85	9	1,680	0.9	0.20	3.72	3.72

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.5 : Opinion on timing of child's first dental check-up, NHMS 2016, N=15,180

	Before 2 years old			2 - 3 years old			4 - 5 years old			Don't know								
	count	95% CI		Estimated population	Prevalence (%)	count	95% CI		Estimated population	Prevalence (%)	count	95% CI						
		Lower	Upper				Lower	Upper				Lower	Upper					
MALAYSIA	6,464	34.53	42.17	4,613	27.5	3,129	24.67	30.42	630,712	25.3	974	22.89	27.89	223,347	9.0	6.44	12.34	
Locality																		
Urban	3,476	33.20	41.60	2,541	27.6	1,819	24.70	30.80	489,100	25.7	566	23.20	28.40	179,600	9.4	6.60	13.20	
Rural	2,988	37.80	45.30	2,072	27.0	1,310	23.40	30.80	141,600	24.1	408	21.00	27.40	43,790	7.4	5.60	9.90	
Age of mother																		
15-19 Year	71	11,483	43.5	30.56	57.44	69	7,252	27.5	16.66	41.82	29	3,771	14.3	6.98	27.06	14.7	5.80	32.51
20-24 Year	654	106,914	36.6	28.49	45.47	497	84,260	28.8	23.41	34.90	300	72,731	24.9	19.75	30.81	9.8	6.07	15.30
25-29 Year	1,780	287,549	38.1	33.13	43.40	1,309	205,399	27.2	23.30	31.57	899	204,801	27.2	23.76	30.85	7.5	5.35	10.34
30-34 Year	2,388	331,974	38.5	34.28	42.97	1,657	225,656	26.2	22.77	29.93	1,152	222,758	25.9	22.12	29.98	9.4	6.65	13.16
35-39 Year	1,168	159,256	39.0	33.75	44.41	798	121,181	29.6	25.77	33.82	551	87,484	21.4	17.64	25.70	10.0	5.82	16.68
40-44 Year	319	32,747	37.4	30.68	44.57	221	22,054	25.2	19.10	32.38	158	24,936	28.5	22.29	35.53	9.0	6.15	13.05
45-49 Year	35	2,898	30.9	14.90	53.29	19	1,617	17.2	8.56	31.65	16	4,226	45.0	27.35	64.08	6.8	1.42	27.25
50 Years and above	1	303	98.0	74.85	99.88	1	6	2.0	0.12	25.15	0	-	-	-	-	-	-	-
Ethnicity of mother																		
Malay	4,662	603,782	39.9	36.49	43.44	3,259	413,145	27.3	24.75	30.03	2,130	385,586	25.5	22.64	28.57	7.3	5.38	9.78
Chinese	532	118,762	32.7	25.40	40.85	480	98,874	27.2	20.60	34.95	410	93,387	25.7	21.27	30.65	14.5	9.72	21.01
Indians	304	49,532	43.0	32.72	53.88	181	32,977	28.6	21.98	36.32	99	28,399	24.6	17.61	33.33	3.8	2.21	6.36
Other	646	121,634	35.0	25.66	45.72	459	101,232	29.2	22.15	37.31	290	84,397	24.3	18.15	31.74	11.5	5.01	24.28
Bumiputera	272	39,413	38.7	29.02	49.27	193	21,374	21.0	13.96	30.25	176	28,936	28.4	23.24	34.16	12.0	7.44	18.78
Citizenship of mother																		
Malaysian citizen	6,179	892,028	38.3	34.60	42.04	4,395	644,682	27.6	24.86	30.61	2,953	589,497	25.3	22.76	27.97	8.8	6.24	12.35
Permanent Resident	23	2,992	34.4	12.70	65.30	21	2,663	30.6	10.18	63.13	11	1,951	22.4	5.07	60.95	12.7	2.86	41.69
Non-Malaysian	214	38,102	38.1	27.94	49.48	156	20,257	20.3	14.27	27.97	141	29,258	29.3	21.44	38.58	12.3	7.06	20.64
Marital status of mother																		
Married/ Cohabiting	6,303	914,229	38.2	34.45	42.13	4,496	656,925	27.5	24.67	30.44	3,064	612,536	25.6	23.20	28.17	8.7	6.34	11.88
Single/ Separated/ Divorced/ Widowed	113	18,894	39.0	27.10	52.43	76	10,677	22.1	12.81	35.27	41	8,170	16.9	8.70	30.19	22.0	10.97	39.35

	Before 2 years old				2 - 3 years old				4 - 5 years old				Don't know							
	count	Estimated population	Prevalence (%)		count	Estimated population	Prevalence (%)		count	Estimated population	Prevalence (%)		count	Estimated population	Prevalence (%)					
			Lower	Upper			Lower	Upper			Lower	Upper			Lower	Upper				
Education of mother																				
No Formal	81	11,155	25.2	15.96	37.34	75	12,106	27.3	17.88	39.35	56	14,511	32.7	19.97	48.72	67	6,542	14.8	7.95	25.78
Primary	620	100,742	38.9	33.42	44.63	426	65,118	25.1	20.45	30.47	374	74,939	28.9	23.34	35.22	134	18,317	7.1	4.33	11.33
Secondary	3,366	490,841	38.9	34.66	43.23	2,293	340,678	27.0	24.28	29.84	1,550	311,698	24.7	21.95	27.63	506	119,817	9.5	6.36	13.91
Higher	2,332	329,281	37.8	33.48	42.32	1,762	248,335	28.5	24.30	33.12	1,118	218,972	25.1	21.38	29.31	258	74,579	8.6	5.96	12.14
Occupation of mother																				
Public Sector	1,747	209,984	43.7	39.40	48.14	1,190	138,210	28.8	25.08	32.78	693	104,710	21.8	18.81	25.12	125	27,426	5.7	3.23	9.90
Private Sector	1,271	212,565	34.7	29.63	40.21	1,033	174,282	28.5	24.27	33.09	695	156,807	25.6	21.69	29.98	237	68,401	11.2	8.26	14.96
Self-employed	453	67,812	39.0	30.34	48.44	318	40,842	23.5	18.17	29.82	255	43,305	24.9	20.53	29.88	82	21,848	12.6	6.05	24.30
Housewife	2,860	428,803	37.8	33.62	42.19	1,962	304,607	26.9	23.58	30.41	1,421	302,951	26.7	23.45	30.25	508	97,726	8.6	5.99	12.25
Unemployed	50	9,401	40.6	20.73	64.20	43	4,503	19.5	11.12	31.84	28	7,901	34.2	13.40	63.50	9	1,325	5.7	2.16	14.34
Student	17	2,234	15.6	5.67	36.09	17	4,582	31.9	12.08	61.52	12	4,981	34.7	10.78	70.03	5	2,558	17.8	4.48	50.09
Household income																				
Less than RM1000	483	68,968	37.2	31.03	43.81	315	45,754	24.7	20.51	29.37	250	54,075	29.2	22.86	36.38	105	16,630	9.0	4.49	17.13
RM1000 - RM1999	1,219	175,435	39.6	34.52	44.99	810	126,950	28.7	23.81	34.11	602	108,756	24.6	20.40	29.29	206	31,431	7.1	4.87	10.24
RM2000 - RM2999	1,058	145,863	38.1	32.86	43.60	748	106,080	27.7	24.04	31.68	481	95,560	24.9	20.41	30.12	148	35,506	9.3	6.22	13.60
RM3000 - RM3999	928	138,887	41.7	36.23	47.36	628	89,241	26.8	21.80	32.43	363	81,003	24.3	20.47	28.61	121	24,049	7.2	4.56	11.23
RM4000 - RM4999	628	85,804	37.1	30.30	44.48	471	65,577	28.4	23.50	33.79	340	60,144	26.0	22.04	30.43	83	19,659	8.5	4.46	15.61
RM5000 and above	2,109	331,074	37.0	32.07	42.17	1,614	242,803	27.1	23.25	31.37	1,078	228,551	25.5	22.10	29.28	302	92,951	10.4	7.13	14.88

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.6 : Perception of age of a child's first dental visit, NHMS 2016, N=14,206

	Good Perception					Poor Perception				
	count	Estimated population	Prevalence (%)	Lower	Upper	count	Estimated population	Prevalence (%)	Lower	Upper
MALAYSIA	6,464	953,737	42.0	38.18	46.01	7,742	1,314,835	58.0	53.99	61.82
Locality										
Urban	3,476	709,500	37.3	33.20	41.60	4,926	1,194,000	62.7	58.40	66.80
Rural	2,988	244,300	41.5	37.80	45.30	3,790	344,100	58.5	54.70	62.20
Age of mother										
15-19 Year	71	11,483	51.0	35.70	66.15	98	11,022	49.0	33.85	64.30
20-24 Year	654	106,914	40.5	32.18	49.42	797	156,991	59.5	50.58	67.82
25-29 Year	1,780	287,549	41.2	36.06	46.57	2,208	410,200	58.8	53.43	63.94
30-34 Year	2,388	331,974	42.5	38.19	47.00	2,809	448,413	57.5	53.00	61.81
35-39 Year	1,168	159,256	43.3	37.62	49.13	1,349	208,665	56.7	50.87	62.38
40-44 Year	319	32,747	41.1	33.77	48.78	379	46,990	58.9	51.22	66.23
45-49 Year	35	2,898	33.2	17.66	53.43	35	5,843	66.8	46.57	82.34
50 Years and above	1	303	98.0	74.85	99.88	1	6	2.0	0.12	25.15
Ethnicity of mother										
Malay	4,662	603,782	43.1	39.50	46.67	5,389	798,732	56.9	53.33	60.50
Chinese	532	118,762	38.2	29.41	47.81	890	192,261	61.8	52.19	70.59
Indians	304	49,532	44.7	34.07	55.76	280	61,376	55.3	44.24	65.93
Other Bumiputera	646	121,634	39.6	29.64	50.47	749	185,629	60.4	49.53	70.36
Others	272	39,413	43.9	33.90	54.48	369	50,310	56.1	45.52	66.10
Citizenship of mother										
Malaysian citizen	6,179	892,028	42.0	38.15	45.86	7,348	1,234,179	58.0	54.14	61.85
Permanent Resident	23	2,992	39.3	14.23	71.70	32	4,614	60.7	28.30	85.77
Non-Malaysian	214	38,102	43.5	32.53	55.13	297	49,515	56.5	44.87	67.47
Marital status of mother										
Married/ Cohabiting	6,303	914,229	41.9	37.95	45.89	7,560	1,269,461	58.1	54.11	62.05
Single/ Separated/ Divorced/ Widowed	113	18,894	50.1	35.99	64.12	117	18,847	49.9	35.88	64.01
Education of mother										
No Formal	81	11,155	29.5	18.23	44.07	131	26,616	70.5	55.93	81.77
Primary	620	100,742	41.8	35.91	48.01	800	140,057	58.2	51.99	64.09
Secondary	3,366	490,841	42.9	38.78	47.20	3,843	652,376	57.1	52.80	61.22
Higher	2,332	329,281	41.3	36.63	46.21	2,880	467,307	58.7	53.79	63.37

	Good Perception					Poor Perception				
	count	Estimated population	Prevalence (%)	95% CI		count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
Occupation of mother										
Public Sector	1,747	209,984	46.4	41.90	50.89	1,883	242,920	53.6	49.11	58.10
Private Sector	1,271	212,565	39.1	33.54	44.96	1,728	331,089	60.9	55.04	66.46
Self-employed	453	67,812	44.6	36.46	53.09	573	84,147	55.4	46.91	63.54
Housewife	2,860	428,803	41.4	37.04	45.85	3,383	607,568	58.6	54.15	62.96
Unemployed	50	9,401	43.1	21.10	68.24	71	12,403	56.9	31.76	78.90
Student	17	2,234	18.9	6.70	43.19	29	9,564	81.1	56.81	93.30
Household income										
Less than RM1000	483	68,968	40.9	34.61	47.42	565	99,829	59.1	52.58	65.39
RM1000 – RM1999	1,219	175,435	42.7	37.37	48.15	1,412	235,706	57.3	51.85	62.63
RM2000 – RM2999	1,058	145,863	42.0	36.12	48.07	1,229	201,640	58.0	51.93	63.88
RM3000 – RM3999	928	138,887	44.9	39.34	50.65	991	170,244	55.1	49.35	60.66
RM4000 – RM4999	628	85,804	40.6	34.12	47.35	811	125,720	59.4	52.65	65.88
RM5000 and above	2,109	331,074	41.3	35.81	46.93	2,692	471,354	58.7	53.07	64.19

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.7 : Willingness to take child for dental treatment upon advice, NHMS 2016, N=15,174

	Yes, would take child to dentist				No, would not take child to dentist			
	count	Estimated population	Prevalence (%)	95% CI Lower Upper	count	Estimated population	Prevalence (%)	95% CI Lower Upper
MALAYSIA	15,066	2,469,616	99.2	98.74 99.44	108	20,967	0.8	0.56 1.26
Locality								
Urban	8,327	1,885,000	99.1	98.60 99.40	70	17,500	0.9	0.60 1.40
Rural	6,739	584,700	99.4	99.10 99.60	38	3,469	0.6	0.40 0.90
Age of mother								
15-19 Year	187	25,178	95.4	83.99 98.82	5	1,202	4.6	1.18 16.01
20-24 Year	1,575	289,872	99.3	98.13 99.72	14	2,137	0.7	0.28 1.87
25-29 Year	4,198	742,727	98.6	97.66 99.15	40	10,621	1.4	0.85 2.34
30-34 Year	5,513	858,519	99.7	99.29 99.86	18	2,724	0.3	0.14 0.71
35-39 Year	2,655	405,823	99.3	98.32 99.67	23	3,063	0.7	0.33 1.68
40-44 Year	744	87,358	99.7	99.21 99.86	6	288	0.3	0.14 0.79
45-49 Year	72	9,382	100.0	100.00 100.00	0	-	-	- -
50 Years and above	2	309	100.0	100.00 100.00	0	-	-	- -
Ethnicity of mother								
Malay	10,490	1,498,575	99.2	98.57 99.51	60	12,698	0.8	0.49 1.43
Chinese	1,568	358,432	98.6	97.23 99.25	22	5,242	1.4	0.75 2.77
Indians	621	114,798	99.6	98.01 99.92	2	460	0.4	0.08 1.99
Other Bumiputera	1,527	346,124	99.7	99.23 99.87	7	1,099	0.3	0.13 0.77
Others	741	101,415	99.5	98.60 99.80	15	536	0.5	0.20 1.40
Citizenship of mother								
Malaysian citizen	14,315	2,310,853	99.1	98.72 99.43	103	19,880	0.9	0.57 1.28
Permanent Resident	61	8,709	100.0	100.00 100.00	0	-	-	- -
Non-Malaysian	571	99,781	99.8	99.43 99.96	3	154	0.2	0.04 0.57
Marital status of mother								
Married/								
Cohabiting	14,679	2,370,994	99.2	98.74 99.44	105	20,032	0.8	0.56 1.26
Single/								
Separated/								
Divorced/								
Widowed	268	48,349	100.0	99.96 100.00	1	2	0.0	0.00 0.04
Education of mother								
No Formal	270	43,837	98.9	95.99 99.72	9	476	1.1	0.28 4.01
Primary	1,541	257,705	99.6	99.23 99.78	11	1,062	0.4	0.22 0.77
Secondary	7,649	1,249,189	99.0	98.35 99.35	63	13,072	1.0	0.65 1.65
Higher	5,447	865,567	99.4	98.80 99.68	22	5,385	0.6	0.32 1.20

	Yes, would take child to dentist				No, would not take child to dentist			
	count	Estimated population	Prevalence (%)	95% CI Lower Upper	count	Estimated population	Prevalence (%)	95% CI Lower Upper
Occupation of mother								
Public Sector	3,741	476,609	99.2	97.69 99.74	14	3,721	0.8	0.26 2.31
Private Sector	3,216	607,202	99.2	98.36 99.62	20	4,854	0.8	0.38 1.64
Self-employed	1,094	172,758	99.6	99.04 99.81	11	742	0.4	0.19 0.96
Housewife	6,689	1,122,952	99.1	98.61 99.43	59	10,105	0.9	0.57 1.39
Unemployed	129	23,127	100.0	99.92 100.00	1	2	0.0	0.00 0.08
Student	50	13,746	95.7	73.70 99.45	1	611	4.3	0.55 26.30
Household income								
Less than RM1000	1,132	181,228	98.0	95.71 99.04	18	3,789	2.0	0.96 4.29
RM1000 – RM1999	2,807	437,663	98.9	97.89 99.42	30	4,910	1.1	0.58 2.11
RM2000 – RM2999	2,419	380,296	99.3	98.31 99.71	16	2,713	0.7	0.29 1.69
RM3000 – RM3999	2,027	331,052	99.6	98.72 99.86	11	1,416	0.4	0.14 1.28
RM4000 – RM4999	1,513	229,224	99.2	97.61 99.70	9	1,960	0.8	0.30 2.39
RM5000 and above	5,079	889,256	99.3	98.73 99.66	23	5,908	0.7	0.34 1.27

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.8 : Reasons for not bringing child for dental treatment, NHMS 2016, N=95

	My child is too young to get treatment				The dental clinic is too far				My child is afraid of dental treatment				I think dental treatment for milk teeth is not important			
	count	Estimated population	Prevalence (%)	95% CI Lower Upper	count	Estimated population	Prevalence (%)	95% CI Lower Upper	count	Estimated population	Prevalence (%)	95% CI Lower Upper	count	Estimated population	Prevalence (%)	95% CI Lower Upper
MALAYSIA	61	14,609	70.8	54.07 83.28	16	1,421	6.9	3.25 14.00	4	1,686	8.2	2.42 24.21	14	2,322	11.2	3.44 31.07
Age of mother																
15-19 Year	1	353	29.3	2.96 84.98	1	11	0.9	0.08 9.45	1	715	59.5	0.96 94.72	2	123	10.3	0.96 57.56
20-24 Year	7	1,731	81.0	42.04 96.17	5	333	15.6	2.65 55.69	0	-	-	-	1	33	1.6	0.18 12.46
25-29 Year	23	7,284	70.4	42.72 88.33	6	719	6.9	2.14 20.31	1	859	8.3	1.14 41.60	6	1,436	13.9	2.83 47.14
30-34 Year	8	1,469	53.9	21.36 83.46	2	252	9.3	1.97 34.06	2	113	4.1	0.76 19.45	4	715	26.2	4.92 70.98
35-39 Year	15	2,592	86.1	51.03 97.37	2	106	3.5	0.41 24.32	0	-	-	-	1	14	0.5	0.06 4.03
40-44 Year	5	249	86.3	36.05 98.60	0	-	-	-	0	-	-	-	0	-	-	-
45-49 Year	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-
50 Year and above	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-
Ethnicity of mother																
Malay	39	8,936	70.7	47.11 86.70	4	466	3.7	0.93 13.56	1	715	5.7	0.88 28.83	9	2,112	16.7	4.57 45.64
Chinese	16	4,165	79.5	40.47 95.65	0	-	-	-	3	971	18.5	3.36 59.82	1	38	0.7	0.09 5.54
Indians	2	460	100.0	100.00 100.00	0	-	-	-	0	-	-	-	0	-	-	-
Other	0	0	0.0	0.00 0.00	4	721	87.2	41.06 98.52	0	-	-	-	0	-	-	-
Bumiputera	2	116	21.6	4.10 64.01	8	234	43.6	11.54 82.11	0	-	-	-	4	171	31.9	7.32 73.60
Citizenship of mother																
Malaysian citizen	57	13,561	69.3	51.63 82.74	16	1,421	7.3	3.26 15.43	4	1,686	8.6	2.57 25.23	13	2,284	11.7	3.51 32.47
Permanent Resident	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-
Non-Malaysian	2	116	75.2	19.16 97.49	0	-	-	-	0	-	-	-	1	38	24.8	2.51 80.84
Marital status of mother																
Married/ Cohabiting	59	13,676	69.4	51.82 82.70	15	1,419	7.2	3.23 15.27	4	1,686	8.6	2.55 25.07	14	2,322	11.8	3.61 32.26
Single/ Separated/ Divorced/ Widowed	0	-	-	-	1	2	100.0	100.00 100.00	0	-	-	-	0	-	-	-
Education of mother																
No Formal Primary	2	528	50.5	26.43 74.40	2	101	9.7	2.31 32.76	0	-	-	-	1	14	7.1	0.51 53.21
Secondary	39	8,119	62.4	39.30 81.00	6	1,025	7.9	2.82 20.10	3	1,649	12.7	3.43 37.22	8	1,920	14.8	3.79 43.23
Higher	18	5,030	92.9	72.27 98.49	2	106	2.0	0.24 14.15	1	38	0.7	0.08 5.78	0	-	-	-

	My child is too young to get treatment				The dental clinic is too far				My child is afraid of dental treatment				I think dental treatment for milk teeth is not important			
	count	Estimated population	95% CI		count	Estimated population	95% CI		count	Estimated population	95% CI		count	Estimated population	95% CI	
			Prevalence (%)	Lower			Upper	Prevalence (%)			Lower	Upper			Prevalence (%)	Lower
Occupation of mother																
Public Sector	10	3,363	90.4	52.95	98.74	0	-	-	-	-	-	1	76	2.1	0.20	18.23
Private Sector	12	3,691	77.4	32.66	96.03	0	-	-	18.8	3.03	63.12	2	53	1.1	0.20	5.73
Self-employed	9	633	85.3	53.83	96.66	0	-	-	-	-	-	0	-	-	-	-
Housewife	27	5,379	54.5	31.84	75.49	15	1,419	14.4	6.60	28.54	37.21	11	2,193	22.2	7.00	52.06
Unemployed	0	-	-	-	-	1	2	100.0	100.00	100.00	-	0	-	-	-	-
Student	1	611	100.0	100.00	100.00	0	-	-	-	-	-	0	-	-	-	-
Household income																
Less than RM1000	6	2,406	63.5	30.53	87.34	5	441	11.6	3.11	35.04	-	0	-	-	-	65.52
RM1000 – RM1999	16	2,261	46.2	18.92	75.97	6	588	12.0	3.56	33.52	59.08	6	1,329	27.2	5.44	70.73
RM2000 – RM2999	6	1,950	79.9	42.26	95.57	4	385	15.8	2.79	54.96	-	1	14	0.6	0.06	5.17
RM3000 – RM3999	9	1,393	98.4	94.28	99.55	1	8	0.6	0.06	5.16	-	0	-	-	-	-
RM4000 – RM4999	7	1,846	94.2	71.51	99.05	0	-	-	-	-	105.86	0	-	-	-	-
RM5000 and above	16	4,482	76.3	38.63	94.29	0	-	-	-	-	2.42	2	896	15.3	0.16	9.97

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.9 : Prevalence of mothers who had ever received advice from health personnel on looking after child's oral health, NHMS 2016, N=15,174

	Yes, had ever received advice from health personnel				No, had never received advice from health personnel				
	Count	Estimated population	Prevalence (%)	95% CI	count	Estimated population	Prevalence (%)	95% CI	
			Lower	Upper			Lower	Upper	
MALAYSIA	7,446	1,066,811	42.8	37.74	48.08	1,423,961	57.2	51.92	62.26
Locality									
Urban	4,102	785,400	41.3	35.80	47.00	1,117,000	58.7	53.00	64.20
Rural	3,344	281,400	47.8	42.90	52.80	306,900	52.2	47.20	57.10
Age of mother									
15-19 Year	89	14,140	53.6	39.26	67.37	12,241	46.4	32.63	60.74
20-24 Year	741	122,267	41.8	34.87	49.35	169,283	57.8	50.65	65.13
25-29 Year	1,988	302,978	40.2	34.45	46.20	451,014	59.8	53.80	65.55
30-34 Year	2,841	381,035	44.2	38.28	50.37	480,293	55.7	49.63	61.72
35-39 Year	1,339	185,085	45.3	39.25	51.44	223,719	54.7	48.56	60.75
40-44 Year	368	41,425	47.3	38.94	55.75	46,221	52.7	44.25	61.06
45-49 Year	38	4,340	46.3	29.18	64.26	5,042	53.7	35.74	70.82
50 Years and above	1	303	98.0	74.85	99.88	6	2.0	0.12	25.15
Ethnicity of mother									
Malay	5,395	669,419	44.3	38.66	50.01	843,043	55.7	49.99	61.34
Chinese	601	116,077	31.9	25.36	39.30	247,515	68.1	60.70	74.64
Indians	305	45,083	39.1	25.39	54.81	70,174	60.9	45.19	74.61
Other Bumiputera	792	175,753	50.7	42.95	58.49	170,643	49.3	41.51	57.05
Others	312	45,240	44.4	35.93	53.24	56,620	55.6	46.76	64.07
Citizenship of mother									
Malaysian citizen	7,154	1,007,387	43.2	37.98	48.61	1,323,627	56.8	51.39	62.02
Permanent Resident	27	3,631	42.1	21.18	66.35	4,988	57.9	33.65	78.82
Non-Malaysian	224	40,555	40.6	33.37	48.23	59,380	59.4	51.77	66.63
Marital status of mother									
Married/ Cohabiting	7,291	1,027,974	43.0	37.69	48.46	1,363,241	57.0	51.54	62.31
Single/ Separated/ Divorced/ Widowed	114	23,598	48.8	37.23	60.51	24,754	51.2	39.49	62.77
Education of mother									
No Formal	133	21,317	48.1	33.91	62.62	22,996	51.9	37.38	66.09
Primary	667	115,631	44.7	37.68	51.84	143,311	55.3	48.16	62.32
Secondary	3,770	533,794	42.3	37.20	47.56	728,234	57.7	52.44	62.80
Higher	2,819	379,824	43.6	36.28	51.21	491,374	56.4	48.79	63.72

	Yes, had ever received advice from health personnel				No, had never received advice from health personnel			
	count	Estimated population	Prevalence (%)	95% CI Lower Upper	count	Estimated population	Prevalence (%)	95% CI Lower Upper
Occupation of mother								
Public Sector	2,068	243,092	50.6	44.73 56.47	1,687	237,239	49.4	43.53 55.27
Private Sector	1,422	223,673	36.5	29.58 44.13	1,814	388,382	63.5	55.87 70.42
Self-employed	543	69,009	39.7	31.38 48.70	564	104,736	60.3	51.30 68.62
Housewife	3,271	503,440	44.4	39.58 49.40	3,475	629,560	55.5	50.60 60.42
Unemployed	63	9,007	38.9	22.78 57.96	67	14,123	61.1	42.04 77.22
Student	27	2,662	18.5	6.87 41.25	24	11,695	81.5	58.75 93.13
Household income								
Less than RM1000	561	90,179	48.6	40.33 57.08	590	96,118	51.2	42.92 59.67
RM1000 – RM1999	1,389	212,055	47.9	42.85 53.23	1,444	229,539	51.8	46.77 57.15
RM2000 – RM2999	1,216	171,604	44.8	39.65 50.07	1,219	211,405	55.2	49.93 60.35
RM3000 – RM3999	998	139,654	41.9	35.79 48.31	1,041	193,456	58.1	51.69 64.21
RM4000 – RM4999	740	98,471	42.6	34.84 50.73	782	132,712	57.4	49.27 65.16
RM5000 and above	2,519	351,027	39.2	32.31 46.55	2,585	544,384	60.8	53.45 67.69

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.10 : Child's dental visit in relation to perceived importance of child's oral health, NHMS 2016, N=14,886

Perception of importance of child's oral health	Yes, ever brought child for a dental visit					No, had never brought child for a dental visit				
	count	Estimated population	Prevalence (%)	95% CI		count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
MALAYSIA	4,052	618,915	24.8	21.80	28.15	10,834	1,700,720	68.3	64.31	71.96
Not important	8	446	6.1	1.54	21.22	46	5,121	69.9	34.42	91.16
Important	2,912	459,712	25.3	22.03	28.96	7,810	1,231,437	67.9	63.47	71.97
Very important	1,128	158,592	23.8	19.17	29.05	2,948	461,902	69.2	63.76	74.17
Don't know	3	166	6.8	1.33	28.46	28	2,260	93.2	71.54	98.67

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.11 : Last dental visit in relation to perceived importance of child's oral health, NHMS 2016, N=4,021

Perception of importance of child's oral health	Less than one year ago					1 - 2 years ago					More than 2 years ago					Cannot remember				
	count	Estimated population	Prevalence (%)	95% CI		count	Estimated population	Prevalence (%)	95% CI		count	Estimated population	Prevalence (%)	95% CI		count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper				Lower	Upper				Lower	Upper
MALAYSIA	3,422	475,672	76.9	73.74	79.71	486	108,075	17.4	14.93	20.20	108	29,354	4.7	3.75	5.98	5	1,741	0.3	0.06	1.35
Not important	7	166	37.3	7.10	82.20	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Important	2,426	345,216	75.1	71.46	78.40	374	86,941	18.9	15.95	22.27	86	23,572	5.1	3.92	6.68	2	341	0.1	0.02	0.35
Very important	986	130,124	82.0	76.21	86.71	111	20,815	13.1	9.34	18.14	22	5,781	3.6	2.07	6.34	3	1,400	0.9	0.14	5.53
Don't know	3	166	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.12 : Age of child's first dental visit in relation to perceived importance of child's oral health, NHMS 2016, N=15,180

Perception of importance of child's oral health	Before 2 years old						2 - 3 years old						4 - 5 years old						Cannot remember						
	count		Estimated population		95% CI		count		Estimated population		95% CI		count		Estimated population		95% CI		count		Estimated population		95% CI		
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	
MALAYSIA	6,464	953,737	38.3	34.53	42.17	4,613	684,122	27.5	24.67	30.42	3,129	630,712	25.3	22.89	27.89	974	223,347	9.0	6.44	12.34					
Not important	15	3,241	44.5	16.89	75.91	15	748	10.3	3.97	24.03	15	2,296	31.5	12.58	59.48	11	1,005	13.8	3.75	39.65					
Important	4,473	668,110	36.8	32.68	41.16	3,470	505,331	27.9	24.33	31.66	2,190	463,630	25.6	22.64	28.70	807	177,362	9.8	6.59	14.26					
Very important	1,973	281,985	42.3	37.13	47.54	1,124	177,332	26.6	22.07	31.62	923	164,775	24.7	20.33	29.63	130	43,298	6.5	3.53	11.63					
Don't know	3	402	16.6	2.65	59.13	2	359	14.8	1.97	59.96	1	12	0.5	0.08	2.91	25	1,654	68.2	31.68	90.82					

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.13 : Willingness to bring child to see dentist in relation to perceived importance of child's oral health, NHMS 2016, N=15,174

Perception of importance of child's oral health	Yes, would bring child to dentist						No, would not bring child to dentist					
	count		Estimated population		95% CI		count		Estimated population		95% CI	
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
MALAYSIA	15,066	2,469,616	99.2	98.74	99.44	108	20,967	0.8	0.56	1.26		
Not important	56	7,218	98.6	90.74	99.80	1	104	1.4	0.20	9.26		
Important	10,855	1,797,598	99.1	98.61	99.47	79	15,528	0.9	0.53	1.39		
Very important	4,127	662,128	99.2	98.31	99.63	23	5,262	0.8	0.37	1.69		
Don't know	26	2,326	98.4	93.79	99.59	4	38	1.6	0.41	6.21		

Some cells have respondent count <30. Results should be interpreted with caution.

Table 4.5.2.14 : Ever received health personnel's advice on child's oral health in relation to perceived importance of a child's oral health, NHMS 2016, N=15,179

Perception of importance of child's oral health	Not Important				Important				Very Important				Don't Know							
	count	Estimated population	95% CI		Estimated population	Prevalence (%)	95% CI		Estimated population	Prevalence (%)	95% CI		Estimated population	Prevalence (%)	95% CI					
			Upper	Lower			Upper	Lower			Upper	Lower			Upper	Lower				
MALAYSIA	57	7,321	0.3	0.16	0.55	10,941	1,814,633	72.8	66.87	78.06	4,150	667,390	26.8	21.55	32.76	31	2,426	0.1	0.06	0.17
Yes, ever received health personnel's advice	15	718	0.1	0.03	0.16	5,322	782,664	73.4	68.70	77.60	2,100	282,165	26.5	22.24	31.15	8	946	0.1	0.04	0.19
No, had never received health personnel's advice	42	6,603	0.5	0.23	0.91	5,613	1,030,720	72.4	63.96	79.48	2,049	385,157	27.0	19.97	35.52	22	1,418	0.1	0.04	0.24

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.1.2.1 : Mean birth weight among children (below 5 years) by sociodemographic characteristics (N=15,113)

Sociodemographic characteristics	n	Estimated Population	mean birth weight (kg)	95% CI	
				Lower	Upper
MALAYSIA	15,113	2,475,157	3.02	3.01	3.04
State					
Johor	1,066	276,197	3.08	3.04	3.12
Kedah	917	174,031	3.03	2.97	3.08
Kelantan	952	171,978	3.01	2.95	3.07
Melaka	1,202	68,860	3.03	2.99	3.07
N Sembilan	1,068	90,177	2.99	2.94	3.04
Pahang	978	154,525	3.00	2.95	3.04
Pulau Pinang	958	111,275	3.02	2.98	3.07
Perak	854	167,840	2.99	2.95	3.04
Perlis	918	22,623	3.03	2.98	3.09
Selangor	1,003	450,321	3.05	3.00	3.10
Terengganu	936	122,743	3.07	3.03	3.11
Sabah & Labuan	1,260	319,705	3.00	2.96	3.04
Sarawak	861	205,943	2.89	2.84	2.94
WP KL	881	122,757	3.07	3.02	3.12
WP Putrajaya	1,259	16,183	3.01	2.95	3.06
Locality					
Urban	8,954	1,599,267	3.03	3.01	3.05
Rural	6,159	875,890	3.00	2.98	3.01
Sex					
Male	7,856	1,282,792	3.05	3.02	3.07
Female	7,257	1,192,365	2.99	2.97	3.02
Gestation age					
Full term (≥ 37 weeks)	14,066	2,308,318	3.07	3.05	3.08
Pre-term (< 37 weeks)	1,047	166,839	2.39	2.32	2.47
Birth weight classification (Overall)					
Extremely low birth weight (< 1000 g)	16	1,620	0.80	0.72	0.87
Very low birth weight (1000g - < 1500 g)	70	10,723	1.33	1.24	1.41
Low birth weight (1500g - < 2500 g)	1,466	226,995	2.21	2.19	2.24
Normal birth weight (≥ 2500 g)	13,561	2,235,819	3.11	3.10	3.12
Birth weight classification (Full Term)					
Extremely low birth weight (< 1000 g)	1	24	0.64	0.64	0.64
Very low birth weight (1000g - < 1500 g)	5	1,000	1.29	1.20	1.39
Low birth weight (1500g - < 2500 g)	929	145,697	2.28	2.26	2.30
Normal birth weight (≥ 2500 g)	13,131	2,161,597	3.12	3.11	3.13
Birth weight classification (Pre-term)					
Extremely low birth weight (< 1000 g)	15	1,596	0.80	0.72	0.88
Very low birth weight (1000g - < 1500 g)	65	9,723	1.33	1.24	1.42
Low birth weight (1500g - < 2500 g)	537	81,298	2.09	2.04	2.15
Normal birth weight (≥ 2500 g)	430	74,222	2.89	2.82	2.96

Sociodemographic characteristics	n	Estimated Population	mean birth weight (kg)	95% CI	
				Lower	Upper
Age of mother (years)					
<19	612	122,332	2.85	2.78	2.92
20-24	2,489	461,923	2.97	2.93	3.00
25-29	5,567	969,120	3.02	3.00	3.04
30-34	4,194	607,879	3.07	3.04	3.10
35-39	1,725	226,494	3.11	3.04	3.17
40-44	377	32,986	2.95	2.85	3.05
45-49	22	2,255	3.13	2.99	3.27
50 and above	1	6	2.80	2.80	2.80
Ethnicity of mother					
Malay	10,514	1,502,958	3.04	3.02	3.06
Chinese	1,585	361,632	3.03	2.99	3.08
Indians	622	115,191	2.94	2.88	3.00
Other Bumiputera	1,532	344,609	2.93	2.89	2.97
Others	740	100,250	3.07	3.02	3.13
Ethnicity of child					
Malay	10,671	1,541,759	3.04	3.02	3.06
Chinese	1,731	392,722	3.04	2.99	3.08
Indians	641	120,883	2.95	2.88	3.01
Other Bumiputera	1,602	356,942	2.94	2.90	2.98
Others	468	62,851	2.96	2.89	3.03
Citizenship of mother					
Malaysian Citizen	14,363	2,316,626	3.02	3.00	3.03
Permanent Resident	61	8,709	3.12	2.93	3.31
Non-Malaysian	569	99,304	3.05	3.00	3.11
Marital status of mother					
Married/Cohabiting	14,724	2,377,515	3.02	3.01	3.04
Separated/Divorced/Widow/Never married	269	47,124	2.93	2.84	3.02
Education of mother					
None	269	42,931	2.92	2.83	3.01
Primary	1,543	256,918	3.02	2.98	3.05
Secondary	7,684	1,253,676	3.01	2.99	3.03
Higher	5,456	868,030	3.05	3.02	3.07
Occupation of mother					
Public Sector	3,744	477,887	3.05	3.02	3.09
Private Sector	3,217	606,555	3.03	3.00	3.06
Self-employed	1,102	172,764	3.07	2.99	3.15
Housewife	6,721	1,126,997	3.00	2.98	3.02
Unemployed	130	23,130	2.90	2.74	3.05
Student	51	14,356	3.06	2.87	3.26
Household income					
Less than RM1000	1,137	181,523	2.93	2.89	2.98
RM1000 – RM1999	2,828	439,863	3.00	2.97	3.03
RM2000 – RM2999	2,427	380,293	3.00	2.97	3.04
RM3000 – RM3999	2,030	331,681	3.00	2.97	3.04
RM4000 – RM4999	1,516	230,195	3.01	2.96	3.06
RM5000 and above	5,085	890,435	3.06	3.03	3.09

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.1.2.2 : Birth weight status among children (below 5 years) by sociodemographic characteristics (N=15,113)

Sociodemographic characteristics	Low birth weight (< 2500 g)				Normal birth weight (≥ 2500 g)			
	n	Estimated Population	%	95% CI Lower Upper	n	Estimated Population	%	95% CI Lower Upper
MALAYSIA	1,552	239,339	9.7	8.79 10.63	13,561	2,235,819	90.3	89.37 91.21
State								
Johor	77	15,859	5.7	4.15 7.89	989	260,338	94.3	92.11 95.85
Kedah	85	17,204	9.9	6.60 14.55	832	156,827	90.1	85.45 93.40
Kelantan	98	24,562	14.3	10.58 19.01	854	147,416	85.7	80.99 89.42
Melaka	133	6,978	10.1	7.91 12.89	1,069	61,882	89.9	87.11 92.09
N Sembilan	124	10,250	11.4	8.54 14.97	944	79,926	88.6	85.03 91.46
Pahang	118	14,973	9.7	6.86 13.52	860	139,553	90.3	86.48 93.14
Pulau Pinang	72	7,645	6.9	4.61 10.12	886	103,630	93.1	89.88 95.39
Perak	96	16,207	9.7	6.89 13.36	758	151,633	90.3	86.64 93.11
Perlis	92	1,992	8.8	6.17 12.41	826	20,631	91.2	87.59 93.83
Selangor	102	37,465	8.3	5.99 11.45	901	412,856	91.7	88.55 94.01
Terengganu	85	7,930	6.5	4.59 9.03	851	114,813	93.5	90.97 95.41
Sabah & Labuan	128	33,928	10.6	8.40 13.32	1,132	285,776	89.4	86.68 91.60
Sarawak	130	33,352	16.2	12.31 21.02	731	172,591	83.8	78.98 87.69
WP KL	88	8,880	7.2	5.24 9.91	793	113,878	92.8	90.09 94.76
WP Putrajaya	124	2,114	13.1	8.89 18.79	1,135	14,069	86.9	81.21 91.11
Locality								
Urban	896	151,715	9.5	8.34 10.78	8,058	1,447,552	90.5	89.22 91.66
Rural	656	87,624	10.0	8.75 11.41	5,503	788,266	90.0	88.59 91.25
Sex								
Male	750	116,803	9.1	7.99 10.36	7,106	1,165,989	90.9	89.64 92.01
Female	802	122,536	10.3	8.95 11.78	6,455	1,069,829	89.7	88.22 91.05
Gestation age								
Full term (≥37 weeks)	935	146,721	6.4	5.64 7.15	13,131	2,161,597	93.6	92.85 94.36
Pre-term (<37 weeks)	617	92,617	55.5	48.82 62.02	430	74,222	44.5	37.98 51.18
Age of mother (years)								
≤19	119	21,916	17.9	13.43 23.49	493	100,416	82.1	76.51 86.57
20-24	305	56,275	12.2	9.97 14.80	2,184	405,648	87.8	85.20 90.03
25-29	526	76,602	7.9	6.74 9.25	5,041	892,518	92.1	90.75 93.26
30-34	368	54,302	8.9	7.16 11.09	3,826	553,576	91.1	88.91 92.84
35-39	172	20,426	9.0	6.52 12.35	1,553	206,068	91.0	87.65 93.48
40-44	44	4,982	15.1	8.07 26.50	333	28,004	84.9	73.50 91.93
45-49	1	68	3.0	0.38 20.11	21	2,188	97.0	79.89 99.62
50 and above	0	-	-	- -	1	6	100.0	100.00 100.00

Sociodemographic characteristics	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI	
				Lower	Upper				Lower	Upper
Ethnicity of mother										
Malay	1,016	135,652	9.0	7.97	10.21	9,498	1,367,306	91.0	89.79	92.03
Chinese	119	26,133	7.2	5.10	10.14	1,466	335,499	92.8	89.86	94.90
Indian	115	14,105	12.2	8.76	16.87	507	101,086	87.8	83.13	91.24
Other Bumiputera	197	49,924	14.5	11.77	17.71	1,335	294,685	85.5	82.29	88.23
Others	88	8,757	8.7	5.70	13.16	652	91,493	91.3	86.84	94.30
Ethnicity of child										
Malay	1,026	137,128	8.9	7.85	10.06	9,645	1,404,631	91.1	89.94	92.15
Chinese	130	26,865	6.8	4.93	9.41	1,601	365,857	93.2	90.59	95.07
Indians	117	15,515	12.8	9.02	17.95	524	105,368	87.2	82.05	90.98
Other Bumiputera	208	54,036	15.1	12.48	18.24	1,394	302,907	84.9	81.76	87.52
Others	71	5,796	9.2	5.48	15.10	397	57,055	90.8	84.90	94.52
Citizenship of mother										
Malaysian Citizen	1,485	225,909	9.8	8.83	10.75	12,878	2,090,716	90.2	89.25	91.17
Permanent Resident	3	1,028	11.8	2.34	42.83	58	7,681	88.2	57.17	97.66
Non-Malaysian	47	7,633	7.7	4.88	11.89	522	91,671	92.3	88.11	95.12
Marital status of mother										
Married/ Cohabiting	1,491	226,414	9.5	8.63	10.50	13,233	2,151,102	90.5	89.50	91.37
Separated/Divorced/Widow/Never married	44	8,157	17.3	10.52	27.16	225	38,967	82.7	72.84	89.48
Education of mother										
None	37	6,329	14.7	8.35	24.71	232	36,602	85.3	75.29	91.65
Primary	177	23,707	9.2	7.15	11.83	1,366	233,212	90.8	88.17	92.85
Secondary	818	131,829	10.5	9.26	11.92	6,866	1,121,847	89.5	88.08	90.74
Higher	502	72,677	8.4	6.95	10.05	4,954	795,352	91.6	89.95	93.05
Occupation of mother										
Public Sector	335	38,698	8.1	6.47	10.09	3,409	439,190	91.9	89.91	93.53
Private Sector	320	56,657	9.3	7.50	11.58	2,897	549,899	90.7	88.42	92.50
Self-employed	104	17,458	10.1	6.75	14.87	998	155,306	89.9	85.13	93.25
Housewife	755	117,810	10.5	9.19	11.86	5,966	1,009,187	89.5	88.14	90.81
Unemployed	16	3,480	15.0	7.03	29.33	114	19,649	85.0	70.67	92.97
Student	3	256	1.8	0.44	6.96	48	14,100	98.2	93.04	99.56
Household income										
Less than RM1000	139	22,464	12.4	9.42	16.10	998	159,059	87.6	83.90	90.58
RM1000 – RM1999	317	44,681	10.2	8.30	12.38	2,511	395,181	89.8	87.62	91.70
RM2000 – RM2999	271	41,992	11.0	8.86	13.68	2,156	338,300	89.0	86.32	91.14
RM3000 – RM3999	209	30,000	9.0	7.09	11.47	1,821	301,681	91.0	88.53	92.91
RM4000 – RM4999	146	24,093	10.5	7.50	14.42	1,370	206,102	89.5	85.58	92.50
RM5000 and above	459	73,198	8.2	6.79	9.92	4,626	817,237	91.8	90.08	93.21

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.1.2.3 : Low birth weight classification among children (below 5 years) by socio-demographic characteristics (N=1,552)

Sociodemographic characteristics	Extremely low birth weight (< 1000 g)						Very low birth weight (1000g - <1500 g)						Low birth weight (1500g - <2500 g)					
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI				
				Lower	Upper				Lower	Upper				Lower	Upper			
MALAYSIA	16	1,620	0.7	0.34	1.36	70	10,723	4.5	2.72	7.28	1,466	226,995	94.8	92.07	96.68			
State																		
Johor	0	-	-	-	-	2	508	3.2	0.66	14.13	75	15,351	96.8	85.87	99.34			
Kedah	1	101	0.6	0.08	4.29	9	2,005	11.7	2.83	37.41	75	15,097	87.8	62.75	96.82			
Kelantan	0	-	-	-	-	3	196	0.8	0.22	2.84	95	24,366	99.2	97.16	99.78			
Melaka	1	16	0.2	0.03	1.62	5	311	4.5	1.27	14.45	127	6,651	95.3	85.58	98.59			
N Sembilan	0	-	-	-	-	8	1,099	10.7	3.53	28.24	116	9,151	89.3	71.76	96.47			
Pahang	1	24	0.2	0.02	1.17	2	72	0.5	0.11	2.01	115	14,877	99.4	97.87	99.81			
Pulau Pinang	0	-	-	-	-	2	55	0.7	0.17	3.04	70	7,589	99.3	96.96	99.83			
Perak	0	-	-	-	-	2	144	0.9	0.20	3.92	94	16,063	99.1	96.08	99.80			
Perlis	3	91	4.6	1.19	16.03	5	70	3.5	1.00	11.46	84	1,831	91.9	80.78	96.86			
Selangor	1	197	0.5	0.07	3.80	3	370	1.0	0.28	3.39	98	36,898	98.5	95.54	99.50			
Terengganu	0	-	-	-	-	4	179	2.3	0.77	6.42	81	7,751	97.7	93.58	99.23			
Sabah & Labuan	0	-	-	-	-	10	4,516	13.3	5.60	28.43	118	29,412	86.7	71.57	94.40			
Sarawak	1	92	0.3	0.04	2.01	4	762	2.3	0.41	11.70	125	32,498	97.4	88.92	99.45			
WP KL	8	1,098	12.4	4.89	27.94	4	311	3.5	1.02	11.29	76	7,470	84.1	69.08	92.63			
WP Putrajaya	0	-	-	-	-	7	125	5.9	1.59	19.54	117	1,990	94.1	80.46	98.41			
Locality																		
Urban	14	1,580	0.10	0.05	0.20	47	8,908	0.56	0.31	1.01	835	141,226	8.83	7.72	10.08			
Rural	2	40	0.00	0.00	0.02	23	1,815	0.21	0.12	0.37	631	85,769	9.79	8.55	11.19			
Sex																		
Male	9	1,116	1.0	0.38	2.39	38	6,078	5.2	2.77	9.58	703	109,608	93.8	89.52	96.45			
Female	7	504	0.4	0.16	1.06	32	4,645	3.8	1.69	8.26	763	117,387	95.8	91.46	97.98			
Gestation age																		
Full term (≥37 weeks)	1	24	0.0	0.00	0.12	5	1,000	0.7	0.22	2.09	929	145,697	99.3	97.91	99.77			
Pre-term (<37 weeks)	15	1,596	1.7	0.84	3.50	65	9,723	10.5	6.20	17.22	537	81,298	87.8	81.16	92.29			
Age of mother (years)																		
≤19	2	65	0.3	0.07	1.26	6	805	3.7	1.21	10.62	111	21,046	96.0	89.30	98.59			
20-24	2	105	0.2	0.04	0.80	11	852	1.5	0.67	3.41	292	55,317	98.3	96.42	99.20			
25-29	3	551	0.7	0.19	2.65	21	3,508	4.6	1.86	10.81	502	72,543	94.7	88.67	97.61			
30-34	7	827	1.5	0.53	4.28	18	3,960	7.3	2.70	18.21	343	49,516	91.2	80.95	96.18			
35-39	1	5	0.0	0.00	0.17	10	848	4.2	1.31	12.39	161	19,573	95.8	87.62	98.68			
40-44	1	68	1.4	0.17	9.89	2	88	1.8	0.28	10.36	41	4,826	96.9	87.68	99.26			
45-49	0	-	-	-	-	0	-	-	-	-	1	68	100.0	100.00	100.00			
50 and above	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-			

Sociodemographic characteristics	Extremely low birth weight (< 1000 g)						Very low birth weight (1000g - <1500 g)						Low birth weight (1500g - <2500 g)					
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI				
				Lower	Upper				Lower	Upper				Lower	Upper			
Ethnicity of mother																		
Malay	10	1,045	0.8	0.32	1.87	47	4,426	3.3	1.58	6.60	959	130,181	96.0	92.71	97.80			
Chinese	3	445	1.7	0.40	6.94	4	610	2.3	0.48	10.57	112	25,078	96.0	88.39	98.67			
Indian	2	106	0.8	0.11	4.83	6	1,099	7.8	2.37	22.72	107	12,900	91.5	77.09	97.15			
Other Bumiputera	0	-	-	-	-	9	3,797	7.6	2.76	19.27	188	46,126	92.4	80.73	97.24			
Others	1	24	0.3	0.04	2.02	2	129	1.5	0.29	7.07	85	8,604	98.2	93.12	99.57			
Ethnicity of child																		
Malay	10	1,045	0.8	0.31	1.85	50	6,377	4.7	2.25	9.36	966	129,705	94.6	90.04	97.12			
Chinese	3	445	1.7	0.39	6.73	5	1,095	4.1	1.27	12.33	122	25,325	94.3	86.12	97.76			
Indians	2	106	0.7	0.10	4.43	5	1,017	6.6	1.81	21.10	110	14,392	92.8	78.85	97.78			
Other Bumiputera	0	-	-	-	-	7	1,936	3.6	1.33	9.29	201	52,100	96.4	90.71	98.67			
Others	1	24	0.4	0.06	3.10	3	298	5.1	1.27	18.60	67	5,474	94.4	81.37	98.51			
Citizenship of mother																		
Malaysian Citizen	16	1,620	0.7	0.36	1.44	68	10,061	4.5	2.64	7.42	1,401	214,228	94.8	91.91	96.73			
Permanent Resident	0	-	-	-	-	0	-	-	-	-	3	1,028	100.0	100.00	100.00			
Non-Malaysian	0	-	-	-	-	0	-	-	-	-	47	7,633	100.0	0.00	100.00			
Marital status of mother																		
Married/ Cohabiting	16	1,620	0.7	0.35	1.44	67	10,019	4.4	2.62	7.39	1,408	214,774	94.9	91.94	96.76			
Separated/Divorced/	0	-	-	-	-	1	42	99.5	0.07	3.76	43	8,115	100.0	96.24	99.93			
Widowed/Never married	0	-	-	-	-	0	-	-	-	-	37	6,329	100.0	0.00	100.00			
Education of mother																		
None	1	24	0.1	0.01	0.73	9	761	3.2	1.30	7.71	167	22,922	96.7	92.23	98.63			
Primary	7	390	0.3	0.13	0.69	38	5,798	4.4	2.31	8.21	773	125,640	95.3	91.56	97.43			
Secondary	8	1,206	1.7	0.67	4.06	21	3,502	4.8	1.69	12.97	473	67,969	93.5	86.11	97.11			
Higher	0	-	-	-	-	17	1,809	4.7	1.65	12.50	317	36,843	95.2	87.47	98.26			
Occupation of mother																		
Public Sector	6	1,103	1.9	0.72	5.14	14	895	1.6	0.79	3.15	300	54,658	96.5	93.40	98.14			
Private Sector	1	68	0.4	0.05	2.80	5	252	1.4	0.50	4.11	98	17,138	98.2	95.28	99.30			
Self-employed	8	404	0.3	0.15	0.78	31	7,015	6.0	2.99	11.51	716	110,391	93.7	88.25	96.72			
Housewife	0	-	-	-	-	1	90	2.6	0.29	19.20	15	3,391	97.4	80.80	99.71			
Unemployed	0	-	-	-	-	0	-	-	-	-	3	256	100.0	100.00	100.00			
Student	0	-	-	-	-	3	331	1.5	0.30	6.84	136	22,133	98.5	93.16	99.70			
Household income																		
Less than RM1000	4	100	0.2	0.07	0.68	15	4,400	9.8	3.69	23.76	298	40,181	89.9	76.18	96.14			
RM1000 – RM1999	4	227	0.5	0.17	1.68	11	850	2.0	0.73	5.51	256	40,916	97.4	94.12	98.90			
RM2000 – RM2999	2	139	0.5	0.11	2.01	12	1,190	4.0	1.28	11.60	195	28,672	95.6	88.38	98.39			
RM3000 – RM3999	0	-	-	-	-	11	1,684	7.0	2.19	20.11	135	22,409	93.0	79.89	97.81			
RM4000 – RM4999	6	1,155	1.6	0.61	4.01	17	1,783	2.4	1.18	4.96	436	70,260	96.0	92.92	97.76			

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.2.2.1 : Mean Z score (weight for age, height for age, weight for height, BMI for age) among children (below 5 years) by sociodemographic characteristics

Sociodemographic characteristics	Mean weight for age (Z score)			Mean height for age (Z score)			Mean weight for height (Z score)			Mean BMI for age (Z score)		
	Mean	95% CI Lower	Upper	Mean	95% CI Lower	Upper	Mean	95% CI Lower	Upper	Mean	95% CI Lower	Upper
MALAYSIA	-0.79	-0.83	-0.75	-0.89	-0.94	-0.84	-0.37	-0.43	-0.32	-0.35	-0.40	-0.29
State												
Johor	-0.60	-0.73	-0.47	-0.25	-0.46	-0.05	-0.60	-0.81	-0.40	-0.54	-0.73	-0.35
Kedah	-0.79	-0.97	-0.60	-0.71	-0.92	-0.50	-0.54	-0.73	-0.34	-0.59	-0.79	-0.38
Kelantan	-1.02	-1.13	-0.91	-1.42	-1.59	-1.24	-0.30	-0.48	-0.12	-0.30	-0.47	-0.12
Melaka	-0.61	-0.73	-0.49	-0.80	-0.92	-0.68	-0.22	-0.35	-0.08	-0.18	-0.31	-0.04
N Sembilan	-0.75	-0.88	-0.62	-1.00	-1.15	-0.85	-0.27	-0.42	-0.13	-0.24	-0.39	-0.09
Patang	-0.79	-0.91	-0.66	-1.00	-1.18	-0.83	-0.31	-0.46	-0.15	-0.24	-0.41	-0.08
Pulau Pinang	-0.76	-0.88	-0.63	-0.88	-1.05	-0.70	-0.41	-0.57	-0.26	-0.34	-0.52	-0.16
Perak	-0.81	-0.97	-0.64	-0.91	-1.12	-0.70	-0.32	-0.50	-0.13	-0.38	-0.55	-0.21
Perlis	-0.90	-1.05	-0.75	-0.90	-1.09	-0.71	-0.52	-0.73	-0.31	-0.49	-0.68	-0.30
Selangor	-0.81	-0.94	-0.68	-0.96	-1.12	-0.81	-0.29	-0.48	-0.09	-0.29	-0.49	-0.09
Terengganu	-0.73	-0.86	-0.59	-0.84	-1.05	-0.62	-0.30	-0.50	-0.10	-0.28	-0.48	-0.09
Sabah & Labuan	-0.88	-0.97	-0.78	-1.11	-1.21	-1.01	-0.34	-0.44	-0.24	-0.27	-0.36	-0.17
Sarawak	-0.93	-1.09	-0.76	-1.03	-1.20	-0.86	-0.44	-0.65	-0.23	-0.38	-0.58	-0.18
WP KL	-0.52	-0.64	-0.40	-0.52	-0.67	-0.37	-0.46	-0.69	-0.22	-0.34	-0.48	-0.20
WP Putrajaya	-0.87	-0.99	-0.76	-1.09	-1.25	-0.94	-0.30	-0.42	-0.17	-0.27	-0.39	-0.14
Locality												
Urban	-0.73	-0.78	-0.67	-0.82	-0.89	-0.75	-0.34	-0.41	-0.26	-0.32	-0.40	-0.24
Rural	-0.90	-0.95	-0.85	-1.01	-1.08	-0.94	-0.44	-0.51	-0.37	-0.40	-0.47	-0.33
Sex												
Male	-0.83	-0.89	-0.78	-0.92	-0.99	-0.84	-0.42	-0.50	-0.35	-0.39	-0.47	-0.32
Female	-0.74	-0.80	-0.68	-0.86	-0.93	-0.79	-0.32	-0.40	-0.23	-0.30	-0.38	-0.21
Age of children (months)												
0-5	-1.02	-1.14	-0.90	-0.99	-1.15	-0.84	-0.26	-0.44	-0.08	-0.62	-0.77	-0.47
6-11	-0.99	-1.19	-0.79	-0.78	-1.09	-0.48	-0.64	-0.91	-0.37	-0.62	-0.84	-0.40
12-17	-0.79	-0.84	-0.73	-0.87	-0.93	-0.80	-0.51	-0.58	-0.45	-0.38	-0.44	-0.31
18-23	-0.82	-0.86	-0.77	-0.95	-1.01	-0.88	-0.50	-0.56	-0.45	-0.34	-0.40	-0.28
24-35	-0.60	-0.74	-0.46	-0.88	-1.06	-0.70	-0.23	-0.43	-0.04	-0.13	-0.34	0.08
36-47	-0.72	-0.79	-0.65	-0.85	-0.95	-0.75	-0.32	-0.41	-0.22	-0.25	-0.35	-0.15
48-59	-0.81	-0.89	-0.73	-0.88	-0.98	-0.78	-0.41	-0.51	-0.31	-0.37	-0.47	-0.27
Ethnicity of mother												
Malay	-0.83	-0.87	-0.78	-0.91	-0.98	-0.84	-0.40	-0.47	-0.34	-0.39	-0.46	-0.32
Chinese	-0.52	-0.65	-0.38	-0.63	-0.80	-0.46	-0.21	-0.43	0.01	-0.18	-0.40	0.04
Indian	-0.74	-0.99	-0.50	-0.53	-0.83	-0.22	-0.54	-0.77	-0.30	-0.57	-0.80	-0.33
Other Bumiputera	-0.95	-1.06	-0.84	-1.15	-1.26	-1.05	-0.40	-0.52	-0.29	-0.33	-0.44	-0.22
Others	-0.61	-0.82	-0.41	-0.90	-1.08	-0.71	-0.21	-0.43	0.01	-0.12	-0.35	0.10

Sociodemographic characteristics	Mean weight for age (Z score)			Mean height for age (Z score)			Mean weight for height (Z score)			Mean BMI for age (Z score)		
	Mean	95% CI		Mean	95% CI		Mean	95% CI		Mean	95% CI	
		Lower	Upper		Lower	Upper		Lower	Upper		Lower	Upper
Ethnicity of child												
Malay	-0.82	-0.87	-0.78	-0.92	-0.98	-0.85	-0.40	-0.46	-0.34	-0.38	-0.45	-0.32
Chinese	-0.52	-0.65	-0.40	-0.59	-0.75	-0.43	-0.24	-0.45	-0.04	-0.22	-0.42	-0.01
Indians	-0.67	-0.91	-0.42	-0.53	-0.82	-0.24	-0.43	-0.68	-0.19	-0.46	-0.70	-0.22
Other Bumiputera	-0.94	-1.04	-0.84	-1.17	-1.26	-1.07	-0.37	-0.48	-0.26	-0.30	-0.41	-0.19
Others	-0.98	-1.20	-0.76	-1.15	-1.36	-0.93	-0.37	-0.57	-0.17	-0.33	-0.54	-0.12
Citizenship of mother												
Malaysian Citizen	-0.80	-0.84	-0.75	-0.90	-0.95	-0.84	-0.38	-0.43	-0.32	-0.36	-0.41	-0.30
Permanent Resident	-0.41	-1.21	0.39	-0.93	-1.25	-0.60	-0.45	-0.93	0.03	-0.37	-0.86	0.11
Non-Malaysian	-0.60	-0.78	-0.41	-0.60	-0.96	-0.24	-0.34	-0.63	-0.05	-0.16	-0.36	0.05
Marital status of mother												
Married/ Cohabiting	-0.79	-0.83	-0.75	-0.89	-0.94	-0.83	-0.38	-0.44	-0.32	-0.35	-0.41	-0.29
Separated/Divorced/ Widow/Never married	-0.79	-1.09	-0.48	-0.92	-1.28	-0.55	-0.20	-0.51	0.12	-0.26	-0.52	0.00
Education of mother												
None	-1.25	-1.47	-1.04	-1.23	-1.47	-0.99	-0.70	-1.00	-0.40	-0.63	-0.96	-0.31
Primary	-0.92	-1.04	-0.80	-1.06	-1.20	-0.91	-0.40	-0.55	-0.25	-0.36	-0.51	-0.20
Secondary	-0.82	-0.88	-0.77	-0.87	-0.95	-0.80	-0.46	-0.53	-0.39	-0.44	-0.50	-0.37
Higher	-0.67	-0.74	-0.60	-0.83	-0.92	-0.74	-0.23	-0.33	-0.12	-0.20	-0.31	-0.09
Occupation of mother												
Public Sector	-0.80	-0.88	-0.71	-0.88	-1.00	-0.77	-0.33	-0.45	-0.22	-0.32	-0.43	-0.21
Private Sector	-0.74	-0.82	-0.66	-0.88	-0.99	-0.76	-0.29	-0.40	-0.19	-0.31	-0.42	-0.20
Self-employed	-0.60	-0.84	-0.36	-0.87	-1.05	-0.69	-0.17	-0.54	0.20	-0.11	-0.51	0.28
Housewife	-0.84	-0.89	-0.78	-0.89	-0.97	-0.81	-0.46	-0.54	-0.39	-0.41	-0.48	-0.34
Unemployed	-1.07	-1.53	-0.61	-1.41	-1.84	-0.98	-0.38	-0.65	-0.11	-0.44	-0.75	-0.13
Student	-0.58	-1.09	-0.07	-0.59	-0.99	-0.19	-0.26	-0.87	0.34	-0.30	-0.94	0.34
Household income												
Less than RM1000	-1.05	-1.18	-0.91	-1.29	-1.44	-1.15	-0.45	-0.63	-0.27	-0.37	-0.55	-0.19
RM1000 – RM1999	-0.97	-1.05	-0.89	-1.02	-1.12	-0.92	-0.49	-0.58	-0.40	-0.46	-0.56	-0.37
RM2000 – RM2999	-0.93	-1.03	-0.83	-0.94	-1.07	-0.82	-0.50	-0.63	-0.38	-0.49	-0.61	-0.37
RM3000 – RM3999	-0.67	-0.79	-0.55	-0.83	-1.00	-0.66	-0.37	-0.52	-0.21	-0.30	-0.44	-0.15
RM4000 – RM4999	-0.69	-0.82	-0.55	-0.93	-1.10	-0.75	-0.18	-0.38	0.01	-0.16	-0.34	0.01
RM5000 and above	-0.65	-0.72	-0.58	-0.73	-0.82	-0.63	-0.29	-0.40	-0.18	-0.29	-0.40	-0.18

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.2.2 : Weight for age (WAZ) status based on WHO 2006 criteria among children (below 5 years) by sociodemographic characteristics (N=14,983)

Sociodemographic characteristics	Underweight (WAZ < -2SD)						Normal (-2SD - s+2SD)						Overweight (WAZ > +2SD)					
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI				
				Lower	Upper				Lower	Upper				Lower	Upper			
MALAYSIA	2,124	334,267	13.7	12.60	14.85	12,622	2,068,500	84.7	83.47	85.80	237	40,184	1.6	1.33	2.03			
State																		
Johor	104	30,616	11.4	8.20	15.53	922	234,679	87.1	82.88	90.37	14	4,202	1.6	0.83	2.92			
Kedah	147	27,435	15.9	11.61	21.44	744	140,024	81.3	75.54	85.89	20	4,864	2.8	1.36	5.75			
Kelantan	165	28,776	16.8	13.37	20.92	774	140,068	81.8	77.63	85.35	14	2,373	1.4	0.69	2.75			
Melaka	163	9,182	13.4	10.58	16.74	1,012	58,217	84.7	81.28	87.65	23	1,305	1.9	1.14	3.14			
N Sembilan	150	10,987	12.3	9.27	16.12	898	76,798	85.9	81.88	89.13	14	1,629	1.8	0.86	3.81			
Pahang	150	19,861	12.9	9.69	16.86	814	132,320	85.6	81.58	88.92	14	2,332	1.5	0.81	2.79			
Pulau Pinang	125	18,721	16.7	12.84	21.54	815	89,905	80.4	75.54	84.50	21	3,193	2.9	1.68	4.80			
Perak	149	25,306	15.2	11.62	19.56	685	136,500	81.8	76.81	85.96	17	5,002	3.0	1.23	7.12			
Perlis	135	4,147	18.4	12.80	25.64	767	17,953	79.5	72.32	85.20	15	482	2.1	1.09	4.13			
Selangor	144	49,941	11.3	8.54	14.92	843	388,741	88.3	84.69	91.10	10	1,716	0.4	0.20	0.76			
Terengganu	126	12,932	10.8	7.93	14.66	770	103,784	87.0	82.98	90.24	14	2,524	2.1	1.02	4.34			
Sabah & Labuan	177	47,661	15.2	12.22	18.71	1,049	262,507	83.6	80.05	86.64	15	3,797	1.2	0.67	2.16			
Sarawak	143	36,620	17.8	13.54	22.99	697	165,063	80.1	74.76	84.57	13	4,341	2.1	0.95	4.60			
WP KL	85	10,006	8.3	5.73	11.91	757	108,171	89.9	86.18	92.65	15	2,197	1.8	1.00	3.32			
WP Putrajaya	161	2,078	12.9	9.86	16.76	1,075	13,768	85.6	81.75	88.82	18	230	1.4	0.81	2.53			
Locality																		
Urban	1,133	203,047	12.90	11.49	14.46	7,572	1,343,799	85.39	83.78	86.86	154	26,915	1.71	1.29	2.27			
Rural	991	131,220	15.10	13.51	16.84	5,050	724,701	83.38	81.60	85.01	83	13,268	1.53	1.14	2.04			
Sex																		
Male	1,205	187,094	14.9	13.33	16.63	6,430	1,045,925	83.3	81.54	84.94	136	22,429	1.8	1.38	2.30			
Female	919	147,173	12.4	10.95	13.99	6,192	1,022,574	86.1	84.44	87.63	101	17,754	1.5	1.05	2.13			
Age of children (months)																		
0-5	87	56,276	16.6	12.71	21.33	388	283,301	83.4	78.67	87.29	-	-	0.0	0.00	0.00			
6-11	36	23,239	17.3	11.34	25.61	160	110,749	82.7	74.39	88.66	-	-	0.0	0.00	0.00			
12-17	712	34,804	12.3	11.10	13.58	4,236	246,241	86.9	85.58	88.13	43	2,284	0.8	0.55	1.19			
18-23	733	38,220	14.6	13.22	16.19	4,226	218,639	83.8	82.16	85.24	67	4,175	1.6	1.17	2.19			
24-35	95	55,705	12.2	9.42	15.64	614	392,049	85.8	82.15	88.82	15	9,124	2.0	1.01	3.90			
36-47	201	56,925	11.5	9.61	13.74	1,596	424,727	85.9	83.57	87.93	57	12,833	2.6	1.90	3.53			
48-59	260	69,098	14.6	12.42	17.06	1,402	392,794	82.9	80.36	85.22	55	11,768	2.5	1.77	3.48			
Ethnicity of mother																		
Malay	1,553	202,024	13.6	12.30	15.00	8,699	1,263,396	85.0	83.57	86.35	161	20,734	1.4	1.10	1.77			
Chinese	121	30,375	8.7	6.30	11.94	1,432	315,703	90.5	87.31	93.02	20	2,603	0.7	0.40	1.39			
Indian	79	19,256	16.8	11.04	24.64	515	89,143	77.6	69.29	84.18	23	6,468	5.6	2.79	11.05			
Other Bumiputera	233	61,534	17.9	14.67	21.72	1,262	274,946	80.1	76.23	83.46	22	6,796	2.0	1.12	3.48			
Others	121	13,455	13.4	9.46	18.57	616	83,852	83.4	77.50	87.93	10	3,285	3.3	1.29	8.01			

Sociodemographic characteristics	Underweight (WAZ < -2SD)					Normal (-2SD ≤ WAZ ≤ +2SD)					Overweight (WAZ > +2SD)				
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI		Estimated Population	%	95% CI		
				Lower	Upper				Lower	Upper			Lower	Upper	
Ethnicity of child															
Malay	1,572	207,758	13.6	12.30	15.05	8,836	1,294,369	84.8	83.37	86.21	165	23,461	1.5	1.20	1.97
Chinese	129	32,312	8.5	6.25	11.50	1,569	343,855	90.6	87.61	92.95	23	3,302	0.9	0.50	1.52
Indians	75	18,469	15.3	9.91	22.94	536	95,448	79.2	71.12	85.44	25	6,642	5.5	2.77	10.66
Other Bumiputera	247	61,971	17.5	14.62	20.84	1,314	286,308	80.9	77.50	83.90	18	5,597	1.6	0.85	2.94
Others	101	13,757	21.7	15.25	29.87	367	48,521	76.5	68.22	83.09	6	1,181	1.9	0.62	5.44
Citizenship of mother															
Malaysian Citizen	2,045	315,234	13.8	12.66	15.00	11,968	1,933,580	84.6	83.31	85.74	227	37,645	1.6	1.32	2.05
Permanent Resident	8	1,378	15.9	4.05	45.87	50	6,445	74.4	47.01	90.51	2	837	9.7	1.86	37.64
Non-Malaysian	54	10,032	10.2	6.68	15.25	506	87,015	88.4	83.14	92.15	7	1,403	1.4	0.48	4.14
Marital status of mother															
Married/ Cohabiting	2,062	320,472	13.7	12.55	14.86	12,308	1,985,668	84.7	83.42	85.81	234	39,440	1.7	1.36	2.08
Separated/Divorced/ Widow/Never married	45	6,172	12.9	7.39	21.43	216	41,371	86.2	77.60	91.86	2	446	0.9	0.19	4.31
Education of mother															
None	56	9,951	77.3	14.55	33.68	216	33,838	100.0	66.32	85.45	19	4,467	0.0	#REF!	#REF!
Primary	268	42,502	16.7	13.60	20.44	1,241	206,921	81.5	77.67	84.80	129	23,016	1.8	0.89	3.44
Secondary	1,162	187,891	15.1	13.51	16.86	6,335	1,032,724	83.0	81.23	84.71	88	12,403	1.9	1.36	2.51
Higher	616	86,072	10.1	8.59	11.93	4,696	750,700	88.4	86.56	90.02			1.5	1.09	1.96
Occupation of mother															
Public Sector	471	64,636	13.7	11.20	16.63	3,179	400,167	84.8	81.81	87.32	63	7,257	1.5	1.04	2.28
Private Sector	348	73,270	12.4	10.08	15.16	2,772	508,879	86.1	83.30	88.48	63	8,959	1.5	1.07	2.15
Self-employed	155	19,902	11.6	8.39	15.86	919	148,531	86.7	82.33	90.09	21	2,913	1.7	0.96	3.00
Housewife	1,094	160,988	14.4	12.91	16.00	5,491	937,841	83.8	82.11	85.39	86	20,113	1.8	1.26	2.55
Unemployed	29	6,130	26.9	15.79	41.88	95	16,064	70.4	55.47	82.00	2	613	2.7	0.47	13.91
Student	6	1,524	10.6	3.10	30.61	44	12,801	89.2	69.29	96.77	1	32	0.2	0.03	1.72
Household income															
Less than RM1000	242	34,107	18.8	15.05	23.11	884	145,309	79.9	75.42	83.71	10	2,479	1.4	0.59	3.13
RM1000 – RM1999	506	73,124	16.9	14.47	19.55	2,260	354,618	81.8	79.00	84.22	35	6,016	1.4	0.83	2.31
RM2000 – RM2999	358	60,635	15.9	13.13	19.20	2,027	314,867	82.7	79.40	85.62	25	5,086	1.3	0.72	2.47
RM3000 – RM3999	279	45,973	14.1	11.12	17.64	1,685	271,074	82.9	79.10	86.20	50	9,768	3.0	1.72	5.15
RM4000 – RM4999	195	30,786	13.6	10.44	17.56	1,279	190,509	84.2	80.17	87.57	24	4,914	2.2	1.28	3.66
RM5000 and above	528	85,877	9.8	8.15	11.82	4,415	775,261	88.8	86.79	90.54	93	11,920	1.4	1.01	1.84

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.2.2.3 : Height for age (HAZ) status based on WHO 2006 criteria among children (below 5 years) by sociodemographic characteristics (N=14,910)

Sociodemographic characteristics	Stunting (HAZ < -2SD)						Normal (HAZ -2SD -<+2SD)						Tall (HAZ > +2SD)					
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI				
				Lower	Upper				Lower	Upper				Lower	Upper			
MALAYSIA	3,176	503,723	20.7	19.34	22.12	11,311	1,851,188	76.0	74.55	77.48	423	79,328	3.3	2.71	3.91			
State																		
Johor	155	32,246	12.0	9.16	15.53	801	213,400	79.3	74.86	83.17	77	23,384	8.7	6.08	12.29			
Kedah	173	31,048	18.1	13.49	23.84	707	133,280	77.7	71.62	82.73	24	7,283	4.2	2.17	8.13			
Kelantan	274	58,132	34.0	29.11	39.34	654	110,621	64.8	59.47	69.73	22	2,025	1.2	0.65	2.15			
Melaka	169	9,664	14.1	11.09	17.69	1,020	58,711	85.5	81.82	88.47	9	324	0.5	0.18	1.21			
N Sembilan	241	17,057	19.1	15.36	23.59	799	70,728	79.4	74.84	83.24	19	1,340	1.5	0.76	2.94			
Pahang	256	39,651	25.7	21.08	30.93	681	109,930	71.3	65.94	76.04	37	4,700	3.0	1.68	5.46			
Pulau Pinang	176	22,632	20.3	15.97	25.46	740	84,761	76.1	70.88	80.56	40	4,058	3.6	2.33	5.64			
Perak	226	38,845	23.7	19.11	28.91	590	117,641	71.7	65.88	76.79	27	7,700	4.7	2.33	9.21			
Perlis	218	4,687	20.8	15.32	27.65	669	17,088	75.9	69.04	81.67	25	734	3.3	1.65	6.36			
Selangor	192	81,442	18.5	14.30	23.61	791	350,818	79.7	74.48	84.14	12	7,716	1.8	0.71	4.29			
Terengganu	212	30,952	26.1	21.48	31.27	641	78,324	66.0	60.58	71.01	52	9,420	7.9	5.64	11.06			
Sabah & Labuan	269	73,296	23.5	19.98	27.41	950	235,365	75.4	71.49	79.00	15	3,340	1.1	0.54	2.10			
Sarawak	174	47,599	23.1	18.16	28.98	661	155,798	75.7	69.85	80.74	15	2,403	1.2	0.51	2.65			
WP KL	117	12,610	10.5	7.86	13.87	709	102,962	85.7	81.73	88.86	27	4,625	3.8	2.21	6.61			
WP Putrajaya	324	3,862	24.3	19.05	30.42	898	11,762	74.0	67.90	79.25	22	276	1.7	1.00	3.01			
Locality																		
Urban	1,751	301,412	19.23	17.45	21.14	6,808	1,210,823	77.3	75.23	79.16	254	55,089	3.5	2.75	4.48			
Rural	1,425	202,311	23.34	21.38	25.41	4,503	640,365	73.9	71.75	75.88	169	24,239	2.8	2.22	3.52			
Sex																		
Male	1,819	276,824	22.2	20.28	24.14	5,675	924,191	74.0	71.83	75.97	240	48,685	3.9	3.05	4.97			
Female	1,357	226,899	19.2	17.23	21.25	5,636	926,997	78.3	76.10	80.27	183	30,643	2.6	1.97	3.39			
Age of children (months)																		
0-5	112	78,641	23.2	18.23	28.97	356	258,281	76.1	70.29	81.07	6	2,496	0.7	0.30	1.77			
6-11	36	20,749	15.5	10.38	22.48	155	109,266	81.5	73.79	87.40	5	3,973	3.0	0.86	9.72			
12-17	1,045	52,364	18.6	17.02	20.34	3,784	219,812	78.2	76.25	79.98	135	9,010	3.2	2.31	4.43			
18-23	1,152	53,599	20.7	19.03	22.39	3,725	198,713	76.6	74.78	78.31	120	7,135	2.8	2.12	3.56			
24-35	166	107,007	23.5	19.45	28.16	530	328,159	72.2	67.25	76.58	22	19,638	4.3	2.56	7.20			
36-47	348	100,722	20.4	17.94	23.11	1,435	375,542	76.1	73.24	78.68	68	17,451	3.5	2.59	4.80			
48-59	317	90,642	19.2	16.75	21.95	1,326	361,416	76.6	73.72	79.30	67	19,624	4.2	3.05	5.66			
Ethnicity of mother																		
Malay	2,308	314,824	21.3	19.60	23.02	7,764	1,116,272	75.4	73.53	77.15	288	49,675	3.4	2.67	4.21			
Chinese	229	51,837	14.9	11.24	19.52	1,264	281,801	81.1	76.30	85.07	69	13,967	4.0	2.59	6.19			
Indian	87	20,642	18.0	11.45	27.04	501	86,590	75.3	66.07	82.74	29	7,697	6.7	3.39	12.80			
Other Bumiputera	334	83,854	24.5	20.93	28.39	1,160	255,692	74.6	70.68	78.18	18	3,144	0.9	0.46	1.83			
Others	193	21,285	21.3	16.43	27.09	537	76,412	76.4	70.31	81.52	15	2,355	2.4	0.91	5.93			

Table 5.2.4 : Weight for height (WHZ) status based on WHO 2006 criteria among children (below 5 years) by sociodemographic characteristics (N=14,835)

Sociodemographic characteristics	Wasting (WHZ < -2SD)						Normal (HAZ -2SD -<+2SD)						Overweight (WHZ >+2SD)					
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI				
				Lower	Upper				Lower	Upper				Lower	Upper			
MALAYSIA	1,699	278,022	11.5	10.51	12.65	12,497	1,987,049	82.5	81.04	83.79	639	144,738	6.0	5.09	7.07			
State																		
Johor	159	53,115	20.2	16.12	24.95	816	195,471	74.3	69.22	78.73	43	14,641	5.6	3.57	8.57			
Kedah	122	24,527	14.4	10.71	19.14	738	135,452	79.6	74.21	84.13	37	10,148	6.0	3.53	9.91			
Kelantan	131	23,046	13.6	10.26	17.84	760	132,841	78.4	73.49	82.70	54	13,445	7.9	5.32	11.68			
Melaka	99	4,537	6.6	4.83	9.05	1,044	59,150	86.5	82.69	89.62	51	4,671	6.8	4.42	10.42			
N Sembilan	112	9,196	10.4	7.58	14.18	901	73,765	83.7	79.13	87.35	39	5,222	5.9	3.69	9.37			
Pahang	125	16,234	10.6	7.77	14.20	800	125,864	81.9	77.21	85.74	47	11,653	7.6	4.96	11.41			
Pulau Pinang	98	12,017	11.0	8.20	14.52	804	90,854	82.9	78.75	86.44	49	6,676	6.1	4.04	9.10			
Perak	112	18,877	11.5	8.43	15.42	685	135,941	82.6	78.00	86.38	44	9,800	6.0	3.85	9.10			
Perlis	105	2,822	12.5	9.14	16.99	770	18,238	81.1	75.11	85.89	39	1,435	6.4	3.26	12.12			
Selangor	116	43,413	10.0	7.25	13.53	846	370,203	84.9	79.48	89.08	29	22,430	5.1	2.34	10.95			
Terengganu	153	16,059	14.0	10.74	17.95	677	88,003	76.5	71.56	80.83	59	10,954	9.5	6.65	13.45			
Sabah & Labuan	90	17,644	5.7	4.16	7.65	1,105	280,683	90.0	87.48	92.09	41	13,487	4.3	3.00	6.20			
Sarawak	101	24,315	12.0	7.95	17.84	713	162,301	80.4	73.95	85.55	30	15,273	7.6	4.46	12.55			
WP KL	78	10,849	9.1	6.49	12.53	742	104,482	87.3	83.60	90.29	32	4,332	3.6	2.33	5.58			
WP Putrajaya	98	1,370	8.7	6.39	11.75	1,096	13,802	87.7	84.20	90.46	45	571	3.6	2.27	5.74			
Locality																		
Urban	933	177,792	11.4	10.07	12.99	7,437	1,279,317	82.4	80.39	84.17	402	96,265	6.2	4.96	7.72			
Rural	766	100,230	11.7	10.36	13.19	5,060	707,732	82.6	80.79	84.34	237	48,473	5.7	4.56	7.00			
Sex																		
Male	974	164,132	13.3	11.72	15.06	6,377	1,003,320	81.3	79.36	83.11	333	66,575	5.4	4.47	6.49			
Female	725	113,890	9.7	8.47	11.06	6,120	983,728	83.7	81.54	85.59	306	78,163	6.6	5.12	8.58			
Age of children (months)																		
0-5	44	36,303	10.8	7.32	15.67	393	276,329	82.3	76.96	86.58	32	23,233	6.9	4.58	10.32			
6-11	20	14,604	10.9	5.92	19.22	175	118,791	88.7	80.37	93.72	1	593	0.4	0.06	3.09			
12-17	583	29,678	10.5	9.46	11.67	4,268	244,568	86.6	85.07	88.03	114	8,094	2.9	1.97	4.16			
18-23	545	30,431	11.7	10.49	13.10	4,248	217,687	83.9	82.42	85.35	201	11,228	4.3	3.63	5.15			
24-35	79	47,623	10.5	7.95	13.80	599	372,593	82.3	77.17	86.47	38	32,532	7.2	4.04	12.46			
36-47	193	56,897	11.7	9.89	13.89	1,496	393,795	81.3	78.80	83.55	133	33,745	7.0	5.65	8.56			
48-59	235	62,486	13.6	11.47	15.95	1,318	363,286	78.8	75.96	81.37	120	35,315	7.7	6.06	9.63			
Ethnicity of mother																		
Malay	1,255	180,703	12.3	11.04	13.72	8,591	1,198,517	81.7	80.06	83.28	455	87,322	6.0	5.03	7.03			
Chinese	137	39,472	11.4	8.40	15.39	1,342	279,836	81.1	75.04	85.95	77	25,764	7.5	3.86	13.95			
Indian	90	20,385	18.2	12.41	25.88	493	87,539	78.1	70.42	84.25	27	4,141	3.7	2.22	6.09			
Other Bumiputera	137	28,603	8.4	6.41	11.05	1,320	290,930	85.9	82.72	88.53	53	19,257	5.7	4.03	7.97			
Others	69	5,188	5.2	3.16	8.55	653	88,400	89.2	84.07	92.76	22	5,558	5.6	2.95	10.41			

Sociodemographic characteristics	Stunting (HAZ < -2SD)					Normal (HAZ -2SD ≤ +2SD)					Tall (HAZ > +2SD)				
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI	
				Lower	Upper				Lower	Upper				Lower	Upper
Ethnicity of child															
Malay	1,272	182,789	12.1	10.90	13.52	8,726	1,231,579	81.9	80.22	83.38	462	90,189	6.0	5.08	7.07
Chinese	147	43,203	11.5	8.55	15.29	1,481	306,535	81.6	75.92	86.15	77	25,999	6.9	3.59	12.91
Indians	89	20,396	17.3	11.78	24.74	509	92,849	78.9	71.43	84.77	30	4,492	3.8	2.36	6.12
Other Bumiputera	147	29,585	8.5	6.52	10.94	1,369	298,446	85.5	82.41	88.06	56	21,199	6.1	4.37	8.38
Others	44	2,049	3.3	2.06	5.17	412	57,641	92.2	87.30	95.25	14	2,860	4.6	2.06	9.84
Citizenship of mother															
Malaysian Citizen	1,642	266,074	11.8	10.73	12.95	11,842	1,851,856	82.1	80.63	83.51	611	137,272	6.1	5.13	7.21
Permanent Resident	4	1,054	13.2	2.28	49.93	53	6,653	83.6	51.57	96.04	2	255	3.2	0.75	12.57
Non-Malaysian	42	7,223	7.3	3.52	14.66	504	86,712	88.1	81.15	92.69	21	4,516	4.6	2.58	8.03
Marital status of mother															
Married/ Cohabiting	1,661	271,353	11.7	10.67	12.87	12,176	1,903,304	82.2	80.78	83.61	623	139,754	6.0	5.10	7.14
Separated/Divorced/															
Widow/Never married	27	2,999	6.4	3.23	12.13	223	41,917	88.8	81.40	93.49	11	2,289	4.8	1.99	11.32
Education of mother															
None	25	3,679	8.5	3.33	19.87	244	39,161	90.1	78.99	95.64	2	633	1.5	0.29	6.99
Primary	179	27,182	10.9	8.35	14.03	1,283	208,030	83.2	78.97	86.67	52	14,907	6.0	3.61	9.68
Secondary	942	165,254	13.5	11.86	15.23	6,269	992,174	80.8	78.83	82.60	333	70,777	5.8	4.81	6.89
Higher	537	77,959	9.3	7.93	10.92	4,569	703,313	84.1	81.37	86.41	245	55,461	6.6	4.74	9.20
Occupation of mother															
Public Sector	373	49,698	10.7	8.85	12.96	3,135	384,287	83.0	80.23	85.43	163	29,086	6.3	4.76	8.25
Private Sector	309	63,432	10.8	8.66	13.44	2,700	494,775	84.4	81.58	86.84	151	28,110	4.8	3.73	6.15
Self-employed	134	18,777	11.2	7.88	15.73	878	130,889	78.2	68.13	85.80	64	17,639	10.5	4.27	23.74
Housewife	844	139,308	12.6	11.07	14.32	5,520	900,503	81.5	79.46	83.31	250	65,653	5.9	4.83	7.28
Unemployed	15	1,290	5.8	2.69	12.15	103	19,621	88.6	78.38	94.31	3	1,241	5.6	1.72	16.71
Student	7	517	3.6	1.20	10.31	42	13,761	95.8	89.04	98.50	2	79	0.5	0.12	2.51
Household income															
Less than RM1000	154	16,955	9.4	6.81	12.74	937	152,560	84.3	79.25	88.23	38	11,554	6.4	3.52	11.29
RM1000 – RM1999	366	46,632	10.9	9.13	12.92	2,314	359,831	84.0	81.46	86.22	99	22,011	5.1	3.76	6.98
RM2000 – RM2999	297	55,411	14.7	11.71	18.30	2,005	298,848	79.3	75.39	82.72	94	22,637	6.0	4.23	8.46
RM3000 – RM3999	222	44,822	14.0	10.81	17.96	1,673	253,128	79.1	74.84	82.83	89	21,995	6.9	4.96	9.45
RM4000 – RM4999	154	24,085	10.8	7.97	14.38	1,244	183,644	82.1	77.80	85.68	84	16,031	7.2	5.00	10.17
RM5000 and above	495	88,099	10.2	8.64	12.12	4,251	721,503	83.9	81.20	86.35	232	49,921	5.8	4.03	8.31

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.2.5 : BMI for age status based on WHO 2006 criteria among children (below 5 years) by sociodemographic characteristics (N=14,793)

Sociodemographic characteristics	Wasting (BMI for age < -2SD)						Normal (BMI for age -2SD ≤ n ≤ +2SD)						Overweight (BMI for age > +2SD)					
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI				
				Lower	Upper				Lower	Upper				Lower	Upper			
MALAYSIA	1,564	269,117	11.2	10.21	12.27	12,471	1,980,446	82.4	81.01	83.77	758	152,825	6.4	5.40	7.49			
State																		
Johor	156	50,669	19.6	15.70	24.18	802	188,970	73.1	68.00	77.62	53	18,939	7.3	4.81	11.00			
Kedah	116	26,244	15.3	11.22	20.54	734	134,542	78.5	72.76	83.28	47	10,646	6.2	3.81	9.96			
Kelantan	119	21,377	12.7	9.47	16.83	757	133,211	79.2	74.35	83.27	65	13,687	8.1	5.59	11.68			
Melaka	91	4,295	6.3	4.48	8.77	1,045	58,990	86.5	82.58	89.57	57	4,950	7.3	4.80	10.82			
N Sembilan	95	7,865	8.9	6.29	12.49	912	75,504	85.5	81.23	89.01	43	4,890	5.5	3.46	8.76			
Pahang	124	16,554	10.8	8.00	14.32	786	123,060	80.0	75.19	84.09	60	14,194	9.2	6.24	13.45			
Pulau Pinang	92	10,453	9.5	7.06	12.58	801	93,102	84.3	80.24	87.63	54	6,905	6.3	4.04	9.55			
Perak	104	19,247	11.9	8.69	16.04	680	134,457	83.0	78.47	86.72	52	8,311	5.1	3.39	7.69			
Perlis	99	3,628	16.2	11.62	22.22	763	17,647	79.0	72.94	83.99	48	1,066	4.8	3.06	7.38			
Selangor	103	41,741	9.6	6.90	13.18	849	366,577	84.2	78.57	88.63	35	26,805	6.2	3.01	12.20			
Terengganu	152	18,249	16.0	12.35	20.46	665	86,352	75.7	70.62	80.09	66	9,527	8.3	5.84	11.81			
Sabah & Labuan	73	16,431	5.3	3.81	7.25	1,116	282,748	90.8	88.35	92.71	43	12,363	4.0	2.78	5.64			
Sarawak	82	19,782	9.8	6.68	14.06	726	167,415	82.7	77.07	87.11	35	15,346	7.6	4.50	12.48			
WP KL	75	11,202	9.4	6.72	12.90	742	103,952	86.9	83.12	89.93	34	4,474	3.7	2.43	5.70			
WP Putrajaya	83	1,380	8.6	6.20	11.85	1,093	13,918	86.9	83.35	89.75	66	722	4.5	3.18	6.36			
Locality																		
Urban	878	172,080	11.1	9.80	12.58	7,387	1,269,475	82.0	80.03	83.85	485	106,178	6.9	5.52	8.50			
Rural	686	97,037	11.4	10.00	12.86	5,084	710,971	83.2	81.36	84.87	273	46,647	5.5	4.41	6.73			
Sex																		
Male	889	158,529	12.9	11.40	14.60	6,339	994,491	81.0	79.08	82.80	418	74,583	6.1	5.07	7.26			
Female	675	110,588	9.4	8.22	10.76	6,132	985,956	83.9	81.75	85.89	340	78,242	6.7	5.07	8.70			
Age of children (months)																		
0-5	66	45,102	13.3	9.76	17.86	399	286,330	84.4	79.65	88.22	11	7,795	2.3	1.16	4.52			
6-11	27	14,906	11.3	6.58	18.80	168	116,698	88.7	81.20	93.42	-	-	0.0	0.00	0.00			
12-17	518	27,772	9.9	8.82	11.04	4,269	241,436	85.9	83.71	87.79	164	11,937	4.2	2.70	6.61			
18-23	487	27,004	10.5	9.30	11.76	4,221	215,934	83.7	82.10	85.14	262	15,127	5.9	4.93	6.95			
24-35	72	43,192	9.6	7.17	12.83	590	363,550	81.1	75.72	85.56	47	41,398	9.2	5.62	14.82			
36-47	179	54,711	11.4	9.51	13.50	1,489	389,021	80.7	78.18	83.03	144	38,176	7.9	6.50	9.63			
48-59	215	56,430	12.2	10.25	14.48	1,335	367,478	79.5	76.68	82.04	130	38,393	8.3	6.59	10.41			
Ethnicity of mother																		
Malay	1,155	181,134	12.4	11.07	13.83	8,573	1,188,478	81.2	79.48	82.87	544	93,493	6.4	5.35	7.62			
Chinese	135	34,301	10.0	7.59	13.15	1,321	280,838	82.1	76.39	86.74	95	26,747	7.8	4.16	14.23			
Indian	88	18,247	16.3	11.26	23.03	489	89,456	80.0	73.11	85.42	32	4,166	3.7	2.26	6.09			
Other Bumiputera	114	25,954	7.7	5.72	10.24	1,333	292,638	86.6	83.47	89.19	57	19,379	5.7	4.07	8.02			
Others	60	5,305	5.4	3.24	8.76	656	86,183	87.2	80.97	91.54	26	7,399	7.5	3.92	13.81			

Sociodemographic characteristics	Wasting (BMI for age <- 2SD)					Normal (HAZ -2SD -<+2SD)					Overweight (BMI for age >+ 2SD)				
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI	
				Lower	Upper				Lower	Upper				Lower	Upper
Ethnicity of child															
Malay	1,167	180,263	12.0	10.74	13.40	8,709	1,223,801	81.5	79.83	83.14	553	96,796	6.4	5.41	7.67
Chinese	147	38,203	10.2	7.81	13.31	1,459	308,829	82.8	77.41	87.07	96	26,092	7.0	3.67	12.93
Indians	89	18,425	15.7	10.84	22.16	503	92,932	79.1	72.03	84.81	34	6,085	5.2	2.72	9.64
Other Bumiputera	123	29,082	8.3	6.30	10.98	1,384	298,600	85.7	82.52	88.32	60	20,897	6.0	4.31	8.29
Others	38	3,143	5.0	2.73	9.12	416	56,284	90.2	84.48	94.00	15	2,954	4.7	2.17	10.04
Citizenship of mother															
Malaysian Citizen	1,508	259,794	11.5	10.51	12.67	11,819	1,845,356	82.0	80.51	83.42	730	145,004	6.4	5.43	7.63
Permanent Resident	1	32	0.4	0.05	2.93	56	7,675	96.4	87.49	99.03	2	255	3.2	0.75	12.57
Non-Malaysian	43	5,114	5.3	3.00	9.37	497	84,563	88.5	82.42	92.60	22	5,925	6.2	3.11	11.99
Marital status of mother															
Married/ Cohabiting	1,528	262,052	11.4	10.34	12.46	12,153	1,897,454	82.2	80.75	83.60	739	148,300	6.4	5.43	7.59
Separated/Divorced/															
Widow/Never married	24	2,888	6.3	3.12	12.27	219	40,139	87.4	79.70	92.49	15	2,884	6.3	2.95	12.90
Education of mother															
None	21	3,969	9.1	3.63	21.16	248	38,870	89.4	77.75	95.33	2	633	1.5	0.29	6.99
Primary	151	25,315	10.2	7.77	13.33	1,289	207,764	83.9	79.75	87.31	66	14,598	5.9	3.59	9.52
Secondary	855	152,893	12.5	11.00	14.08	6,289	1,005,689	81.9	80.12	83.62	380	68,831	5.6	4.73	6.64
Higher	521	82,521	9.9	8.40	11.68	4,511	682,691	82.0	79.10	84.66	304	66,858	8.0	5.88	10.88
Occupation of mother															
Public Sector	350	52,414	11.4	9.29	13.80	3,097	375,975	81.4	78.46	84.08	214	33,314	7.2	5.55	9.34
Private Sector	310	65,848	11.3	9.00	13.99	2,672	484,337	82.8	79.54	85.62	170	34,822	6.0	4.26	8.25
Self-employed	125	20,085	12.0	8.49	16.58	874	129,893	77.3	67.39	84.90	77	18,024	10.7	4.44	23.71
Housewife	744	122,465	11.1	9.82	12.61	5,561	913,858	83.1	81.31	84.76	285	63,292	5.8	4.71	7.01
Unemployed	10	1,737	7.9	2.86	19.83	105	18,927	85.7	73.01	93.00	5	1,420	6.4	2.26	16.96
Student	8	1,096	7.6	2.19	23.34	41	13,182	91.8	76.36	97.50	2	79	0.5	0.12	2.51
Household income															
Less than RM1000	128	14,916	8.3	5.91	11.66	956	154,230	86.3	81.34	90.10	37	9,572	5.4	2.70	10.34
RM1000 – RM1999	313	45,570	10.6	8.77	12.77	2,347	363,370	84.6	82.08	86.79	113	20,677	4.8	3.61	6.39
RM2000 – RM2999	288	54,351	14.4	11.70	17.67	1,992	302,484	80.3	76.82	83.36	109	19,868	5.3	3.87	7.15
RM3000 – RM3999	201	40,300	12.7	9.77	16.37	1,663	254,813	80.3	76.30	83.84	111	22,053	7.0	5.08	9.44
RM4000 – RM4999	142	20,709	9.4	7.06	12.38	1,239	176,561	80.1	74.62	84.56	96	23,293	10.6	6.74	16.17
RM5000 and above	484	92,183	10.7	9.05	12.67	4,201	711,224	82.8	79.93	85.25	286	56,071	6.5	4.65	9.08

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.1 : Prevalence of early initiation and ever breastfeeding among infants below 6 months by sociodemographic characteristics, NHMS 2016

Socio demographic characteristics	Early initiation of breastfeeding (N=1,139)										Ever breastfed (N=1,123)																
	Within 1 hour					Within 1 day					After 1 day					Never put to the breast after birth											
	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper							
MALAYSIA	815	166,780	65.2	61.42	68.88	226	61,993	24.3	20.84	28.02	59	17,692	6.9	5.19	9.18	39	9,151	3.6	2.55	5.01	1,123	250,520	98.1	96.23	99.04		
Locality																											
Urban	547	101,185	59.8	54.71	64.68	170	49,147	29.0	24.30	34.29	46	13,801	8.2	5.87	11.22	22	5,099	3.0	1.81	4.98	777	165,907	98.0	95.14	99.22		
Rural	268	65,595	75.9	70.79	80.43	56	12,846	14.9	11.57	18.92	13	3,891	4.5	2.44	8.18	17	4,053	4.7	3.08	7.08	346	84,613	98.12	95.73	99.24		
Sex																											
Male	421	77,757	59.2	53.59	64.49	140	37,799	28.8	23.51	34.64	32	9,510	7.2	4.8	10.7	27	6,388	4.9	3.41	6.88	611	29,578	98.6	97.12	99.30		
Female	394	89,023	71.7	66.56	76.33	86	24,194	19.5	15.57	24.10	27	8,181	6.6	4.25	10.09	12	2,763	2.2	1.02	4.79	512	120,942	97.6	93.42	99.13		
Ethnicity of mother																											
Malay	546	106,865	65.4	60.69	69.84	159	40,298	24.7	20.66	29.16	37	10,816	6.6	4.54	9.56	27	5,406	3.3	2.31	4.71	761	161,655	99.1	97.85	99.60		
Chinese	66	14,490	49.0	36.42	61.67	30	10,876	36.8	25.00	50.35	8	2,712	9.2	3.45	22.19	5	1,506	5.1	1.98	12.46	104	28,508	96.4	89.93	98.74		
Indians	19	3,677	52.3	26.57	76.85	14	5,074	9.8	2.18	34.78	5	954	9.8	2.18	34.78	5	954	9.8	2.18	34.78	38	9,705	100.0	100.00	100.00		
Other Bumiputera	127	28,954	88.1	80.62	92.93	8	1,821	5.5	2.36	12.47	4	1,010	3.1	1.12	8.14	4	1,082	3.3	1.17	8.95	142	32,807	99.2	94.54	99.89		
Others	57	12,795	63.7	47.87	77.08	15	3,924	19.5	10.41	33.69	5	2,199	11.0	4.38	24.84	3	1,158	5.8	1.34	21.63	78	18,045	89.9	67.50	97.44		
Citizenship of mother																											
Malaysian Citizen	759	153,760	65.6	61.55	69.38	210	57,342	24.5	20.85	28.46	54	15,492	6.6	4.83	8.97	35	7,893	3.4	2.42	4.67	1,045	230,448	98.4	96.52	99.24		
Permanent Resident	9	1,481	100.0	100.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	
Non-Malaysian	47	11,539	58.7	43.13	72.76	16	4,651	23.7	13.41	38.30	5	2,199	11.2	4.49	25.26	4	1,258	6.4	1.66	21.71	69	18,591	94.6	77.93	98.87		
Age of mother (years)																											
15-19	20	4,736	79.5	58.74	91.31	5	821	13.8	4.87	33.27	1	183	3.1	0.41	19.47	1	221	3.7	0.51	22.53	25	5,604	94.0	75.91	98.74		
20-24	129	26,368	70.2	60.92	78.12	33	7,906	21.1	14.37	29.78	3	833	2.2	0.60	7.81	4	2,441	6.5	3.02	13.45	166	36,062	96.6	86.70	99.19		
25-29	244	53,367	67.8	61.39	73.66	64	17,040	21.6	16.86	27.35	20	5,809	7.4	4.42	12.08	13	2,470	3.1	1.74	5.60	338	77,261	98.2	91.04	99.65		
30-34	275	52,151	62.0	54.69	68.86	78	20,734	24.7	18.33	32.31	26	8,300	9.9	6.21	15.35	15	2,890	3.4	1.89	6.17	390	83,417	99.2	97.68	99.74		
35-39	112	23,357	59.3	47.46	70.08	38	13,411	34.0	23.35	46.61	6	1,516	3.8	1.12	12.40	6	1,129	2.9	1.18	6.78	159	38,661	98.1	93.83	99.43		
40-44	22	4,249	27.1	13.37	47.29	7	1,972	14.4	4.30	38.81	3	1,051	14.4	4.30	38.81	0	-	-	-	-	31	6,873	94.5	69.47	99.24		
45-49	3	829	100.0	0.00	100.00	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	3	829	100.0	0.00	100.00		
Type of delivery																											
Vaginal Delivery																											
Spontaneous vaginal delivery	623	27,360	71.6	67.04	75.68	139	39,263	22.1	18.22	26.45	19	6,506	3.7	2.09	6.31	17	4,847	2.7	1.66	4.43	787	174,778	98.3	96.42	99.22		
Assisted vaginal breech delivery	2	711	99.5	94.52	99.96	1	4	0.50	0.04	5.48	0	-	-	-	-	0	-	-	-	-	3	715	100.0	0.00	100.00		
Delivered via vacuum	26	4,157	35.2	15.09	62.41	7	2,909	14.5	3.79	42.27	2	1,200	14.5	3.79	42.27	0	-	-	-	-	35	8,266	100.0	100.00	100.00		
Delivered via forceps	3	650	18.5	2.23	69.41	-	-	-	-	-	1	198	18.5	2.23	69.41	1	221	20.6	2.53	72.33	5	1,069	100.0	100.00	100.00		
Caesarean section	151	32,199	49.0	41.03	56.93	78	19,708	30.0	22.80	38.26	37	9,788	14.9	10.15	21.29	21	4,083	6.2	3.82	9.93	282	63,879	97.1	90.05	99.21		

Socio demographic characteristics	Early initiation of breastfeeding (N=1,139)										Ever breastfed (N=1,123)														
	Within 1 hour			Within 1 day			After 1 day			Never put to the breast after birth			Ever breastfed												
	n	Estimated Population	%	Lower	Upper	95% CI	n	Estimated Population	%	Lower	Upper	95% CI	n	Estimated Population	%	Lower	Upper	95% CI							
Place of delivery																									
Public health facility	670	137,554	67.4	63.31	71.26	18.93	45	12,796	6.3	4.46	8.75	33	8,154	4.0	2.77	5.73	915	201,004	98.6	96.93	99.37				
Private health facility	127	25,664	54.2	43.92	64.15	24.48	14	4,896	10.3	5.30	19.23	3	450	1.0	0.29	3.08	187	45,592	96.3	86.54	99.08				
Home	5	838	100.0	100.00	100.00	-	-	-	-	-	-	2	237	22.0	3.45	69.08	7	1,075	100.0	100.00	100.00				
Others	3	1,031	100.0	100.00	100.00	-	-	-	-	-	-	1	311	23.2	2.93	75.14	78	18,045	89.9	67.50	97.44				
Marital status of mother																									
Married/ Cohabiting	806	164,685	65.3	61.40	68.92	20.73	224	60,972	24.2	5.20	9.24	39	9,151	3.6	2.58	5.07	1,111	247,266	98.1	96.18	99.03				
Separated/ Divorced/ Widowed/ Never married	9	2,095	31.4	8.04	70.54	2	1,021	4.2	0.54	26.02	1	137	4.2	0.54	26.02	0	-	-	-	12	3,253	100.0	0.00	100.00	
Education of mother																									
None	26	5,425	100.0	100.00	100.00	6.6	2	381	6.6	1.05	31.73	0	-	-	-	-	-	-	-	28	5,806	100.0	0.00	100.00	
Primary	80	21,366	71.2	60.68	79.87	18.0	27	5,412	7.8	3.30	17.42	5	875	2.9	1.17	7.07	116	29,774	99.2	96.98	99.82				
Secondary	409	84,595	66.4	60.85	71.49	22.6	109	28,744	7.2	4.82	10.67	20	4,907	3.9	2.28	6.44	561	123,396	97.0	93.22	98.69				
Higher	299	54,813	59.7	52.84	66.28	29.9	87	27,425	6.7	3.82	11.50	14	3,370	3.7	2.31	5.79	416	90,932	99.1	97.21	99.72				
Occupation of mother																									
Public Sector	193	29,372	65.6	55.81	74.27	24.7	41	11,051	4.7	2.38	8.90	9	2,251	5.0	3.05	8.18	253	44,144	98.6	94.69	99.66				
Private Sector	188	40,044	58.8	50.36	66.80	26.9	52	18,318	12.4	7.64	19.56	5	1,253	1.8	0.75	4.43	261	67,726	99.5	98.09	99.87				
Self-employed	51	9,734	60.9	44.73	75.00	26.1	17	4,165	7.6	1.54	30.27	5	868	5.4	2.01	13.82	77	15,982	100.0	100.00	100.00				
Housewife	375	85,490	68.7	63.74	73.32	22.7	115	28,180	4.8	3.04	7.43	20	4,779	3.8	2.25	6.50	523	120,250	96.8	93.01	98.60				
Unemployed	4	1,120	100.0	100.00	100.00	20.0	1	279	-	-	-	0	-	-	-	-	5	1,399	100.0	100.00	100.00				
Student	3	986	100.0	100.00	100.00	-	-	-	-	-	-	0	-	-	-	-	3	986	100.0	100.00	100.00				
Household Income																									
Less than RM1000	66	15,704	13.1	6.14	25.93	5.3	11	2,531	5.3	1.98	13.39	4	1,019	5.3	1.98	13.39	0	-	-	-	80	18,993	98.6	91.00	99.81
RM1000 - RM1999	144	33,952	71.9	63.89	78.69	23.2	40	10,957	2.2	0.91	5.08	9	1,303	2.8	1.33	5.65	198	47,101	99.7	97.99	99.96				
RM2000 - RM3000	108	22,584	69.9	60.50	77.86	21.3	38	6,890	5.4	2.09	13.10	6	1,105	3.4	1.47	7.75	157	32,279	99.9	99.23	99.98				
RM3000 - RM4000	119	24,822	72.2	63.60	79.45	18.3	37	6,291	5.4	2.40	11.88	6	1,388	4.0	1.61	9.79	166	33,591	98.3	92.19	99.66				
RM4000 - RM4999	99	18,685	57.9	44.75	70.00	26.6	24	8,599	13.4	6.42	25.78	3	678	2.1	0.63	6.80	133	31,878	98.8	91.69	99.83				
RM5000 and above	271	49,368	56.4	49.18	63.31	29.9	74	26,157	8.4	5.11	13.53	15	4,677	5.3	3.21	8.77	377	84,082	96.0	90.74	98.34				

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.2 : Prevalence of exclusive breastfeeding practices among infants below 6 months by sociodemographic characteristics, NHMS 2016

Sociodemographic characteristics	Exclusive breastfeeding (0-2 months) (N=529)				Exclusive breastfeeding (0-4 months) (N=922)				Exclusive breastfeeding (0-6 months) (N=954)			
	n	Estimated Population	%	95% CI Lower Upper	n	Estimated Population	%	95% CI Lower Upper	n	Estimated Population	%	95% CI Lower Upper
MALAYSIA	274	58,810	52.9	47.24 58.55	439	96,855	47.4	43.28 51.47	453	98,963	47.1	43.13 51.18
Locality												
Urban	195	38,982	53.1	45.53 60.50	306	63,365	48.5	42.97 54.05	319	65,376	48.3	42.88 53.68
Rural	79	19,828	52.6	44.60 60.51	133	33,491	45.4	39.78 51.04	134	33,587	45.1	39.56 50.76
Sex												
Male	142	29,042	49.9	41.85 57.87	230	47,915	46.6	40.89 52.46	235	48,347	45.9	40.25 51.62
Female	132	29,768	56.3	47.94 64.35	209	48,941	48.1	42.01 54.23	218	50,616	48.4	42.44 54.43
Ethnicity of mother												
Malay	191	39,594	55.5	48.38 62.45	321	68,993	49.4	44.54 54.23	333	70,864	48.9	44.19 53.66
Chinese	11	3,879	42.5	21.64 66.42	19	4,953	29.2	16.08 46.95	20	5,049	29.6	16.48 47.19
Indians	5	963	51.0	21.11 80.20	8	1,547	41.8	20.32 66.88	8	1,547	41.8	20.32 66.88
Other Bumiputera	43	10,164	51.0	38.69 63.11	57	13,157	46.0	35.90 56.44	57	13,157	46.0	35.90 56.44
Others	24	4,210	47.6	28.35 67.63	34	8,206	52.9	35.87 69.20	35	8,346	53.2	36.33 69.36
Citizenship of mother												
Malaysian Citizen	250	54,066	53.5	47.43 59.39	404	87,570	46.7	42.52 51.03	417	89,537	46.5	42.34 50.70
Permanent Resident	5	928	100.0	100.00 100.00	7	1,346	98.1	86.07 99.78	7	1,346	98.1	86.07 99.78
Non-Malaysian	19	3,816	42.2	24.39 62.21	28	7,940	50.1	33.53 66.70	29	8,080	50.5	34.01 66.87
Age of mother (years)												
19 and below	8	2,869	79.1	48.77 93.80	9	3,052	73.8	46.29 90.18	9	3,052	73.8	46.29 90.18
20-24	40	8,407	55.8	41.25 69.49	64	13,921	47.1	37.10 57.38	70	15,089	48.2	38.39 58.23
25-29	78	16,627	52.6	42.41 62.55	126	29,415	47.0	39.83 54.27	128	29,670	46.5	39.42 53.75
30-34	98	19,017	50.8	41.27 60.19	165	33,603	50.5	43.27 57.65	170	34,255	50.4	43.30 57.48
35-39	41	10,517	54.9	38.13 70.64	61	14,613	43.9	32.30 56.31	62	14,646	42.7	31.35 54.84
40-44	8	1,337	36.8	16.80 62.65	10	1,792	28.0	13.25 49.76	10	1,792	27.9	13.19 49.52
45-49	0	-	-	- -	1	271	42.6	4.42 92.26	1	271	42.6	4.42 92.26
Type of delivery												
Vaginal Delivery												
Spontaneous vaginal delivery	190	40,551	51.5	45.08 57.81	305	67,264	46.7	41.94 51.54	315	68,936	46.3	41.67 51.07
Assisted vaginal breach delivery	1	476	99.3	89.25 99.95	2	711	99.5	94.52 99.96	2	711	99.5	94.52 99.96
Delivered via vacuum	10	868	25.4	8.96 53.97	13	1,355	20.7	9.24 40.03	13	1,355	20.7	9.24 40.03
Delivered via forceps	1	454	72.6	14.15 97.72	1	454	55.2	9.99 93.17	1	454	55.2	9.99 93.17
Caesarean section	71	16,426	59.5	47.27 70.65	115	26,882	52.7	43.79 61.39	119	27,318	52.8	43.99 61.53

Sociodemographic characteristics	Exclusive breastfeeding (0-2 months) (N=529)				Exclusive breastfeeding (0-4 months) (N=922)				Exclusive breastfeeding (0-6 months) (N=954)						
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI	
				Lower	Upper				Lower	Upper				Lower	Upper
Place of delivery															
Public health facility	229	48,318	53.1	46.85	59.19	368	81,435	48.4	43.99	52.93	379	83,159	48.1	43.71	52.48
Private health facility	40	9,407	50.7	36.10	65.09	64	14,181	42.1	31.49	53.44	67	14,565	42.5	32.04	53.70
Home	3	780	75.9	25.75	96.62	3	780	73.5	26.53	95.51	3	780	73.5	26.53	95.51
Others	1	270	100.0	100.00	100.00	1	270	100.0	100.00	100.00	1	270	100.0	100.00	100.00
Marital status of mother															
Married/ Cohabiting	273	58,764	53.5	47.74	59.09	437	96,507	47.7	43.57	51.79	450	98,418	47.4	43.36	51.45
Separated/Divorced/ Widow/Never married	1	46	3.9	0.45	26.36	2	348	17.0	2.94	58.06	3	546	24.3	6.38	60.15
Education of mother															
None	9	2,132	63.9	28.68	88.62	12	2,497	49.1	25.56	73.06	13	2,638	50.2	26.89	73.49
Primary	25	5,764	48.5	32.88	64.35	46	11,858	52.2	39.42	64.79	47	12,080	50.7	38.18	63.15
Secondary	124	27,015	51.6	43.06	60.05	201	44,351	44.0	38.06	50.20	210	45,995	44.5	38.60	50.56
Higher	115	23,868	54.9	45.57	63.84	179	38,118	50.1	43.31	56.98	182	38,220	49.3	42.62	56.07
Occupation of mother															
Public Sector	76	12,575	57.5	43.29	70.59	106	18,282	47.0	37.15	57.11	108	18,600	46.0	36.42	55.98
Private Sector	38	11,210	42.1	30.44	54.77	68	19,175	36.7	28.43	45.81	73	19,707	37.1	28.95	46.11
Self-employed	16	2,686	42.5	24.75	62.47	31	5,524	43.5	28.02	60.27	32	5,671	43.0	27.96	59.42
Housewife	143	32,293	58.2	50.90	65.08	231	53,144	53.8	48.08	59.47	236	54,057	53.4	47.79	58.99
Unemployed	1	46	6.1	0.57	42.20	1	46	3.8	0.41	27.97	2	243	17.4	2.77	60.91
Student	0	-	-	-	-	2	684	100.0	100.00	100.00	2	684	100.0	100.00	100.00
Household income															
Less than RM1000	17	4,287	59.9	39.78	77.22	37	8,962	52.1	39.36	64.64	38	9,159	51.0	38.38	63.52
RM1000 – RM1999	47	10,678	49.5	38.26	60.79	77	19,255	49.9	40.60	59.21	81	19,997	50.8	41.65	59.98
RM2000 – RM2999	38	5,923	41.0	28.86	54.26	59	11,169	42.0	31.96	52.83	61	11,563	41.0	31.16	51.53
RM3000 – RM3999	42	8,208	56.1	41.83	69.48	69	13,472	49.9	39.15	60.65	71	13,654	49.2	38.74	59.76
RM4000 – RM4999	27	7,721	61.5	41.61	78.13	46	12,241	50.4	36.52	64.19	48	12,308	50.4	36.60	64.10
RM5000 and above	102	21,598	55.9	45.62	65.74	148	30,997	45.3	37.90	52.94	151	31,523	45.2	37.87	52.70

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.3 : Prevalence of predominant breastfeeding practices among infants below 6 months by sociodemographic characteristics, NHMS 2016 (N=1,139)

Sociodemographic characteristics	n	Estimated Population	%	95% CI	
				Lower	Upper
MALAYSIA	188	43,754	17.1	14.33	20.31
Locality					
Urban	135	30,806	18.2	14.52	22.57
Rural	53	12,948	15.0	11.40	19.46
Sex					
Male	104	24,234	18.4	14.41	23.28
Female	84	19,520	15.7	12.00	20.33
Ethnicity of mother					
Malay	138	29,870	18.3	14.94	22.17
Chinese	15	5,253	17.8	8.92	32.24
Indians	5	1,309	13.5	4.84	32.34
Other Bumiputera	19	3,565	10.8	6.02	18.76
Others	11	3,757	18.7	8.52	36.27
Citizenship of mother					
Malaysian Citizen	178	39,852	17.0	14.14	20.29
Permanent Resident	0	-	-	-	-
Non-Malaysian	10	3,903	19.9	9.32	37.41
Marital status of mother					
Married/ Cohabiting	186	43,145	17.1	14.29	20.32
Separated/Divorced/Widow/Never married	2	609	18.7	4.22	54.61
Education of mother					
None	4	1,055	18.2	5.35	46.59
Primary	12	4,416	14.7	7.45	27.01
Secondary	0	-	-	-	-
Higher	85	19,634	21.4	16.17	27.76
Occupation of mother					
Public Sector	59	7,803	17.4	11.87	24.87
Private Sector	47	15,034	22.1	15.75	30.06
Self-employed	9	1,932	12.1	5.67	23.95
Housewife	72	18,788	15.1	11.47	19.63
Unemployed	1	197	14.1	1.69	61.06
Student	0	-	-	-	-
Household income					
Less than RM1000	8	2,232	11.6	5.34	23.34
RM1000 – RM1999	23	5,748	12.2	6.81	20.81
RM2000 – RM2999	27	5,286	16.4	10.49	24.61
RM3000 – RM3999	35	7,020	20.4	13.74	29.25
RM4000 – RM4999	18	4,262	13.2	7.23	22.90
RM5000 and above	75	18,486	21.1	15.70	27.77

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.4 : Prevalence of continued breastfeeding practices at 2 years among children at 20-23 months by sociodemographic characteristics, NHMS 2016 (N=2,405)

Sociodemographic characteristics	n	Estimated Population	%	95% CI	
				Lower	Upper
MALAYSIA	985	49,668	39.4	36.36	42.46
State					
Johor	71	5,014	40.2	31.97	49.01
Kedah	82	4,317	39.8	30.40	49.96
Kelantan	74	4,197	38.5	30.41	47.36
Melaka	67	1,137	32.9	26.31	40.23
N Sembilan	70	1,918	41.7	33.90	50.03
Pahang	78	5,168	52.7	37.78	67.08
Pulau Pinang	42	1,936	31.4	20.05	45.48
Perak	60	4,017	41.8	30.43	54.04
Perlis	56	393	35.7	28.44	43.73
Selangor	71	8,326	37.5	29.27	46.61
Terengganu	80	3,250	45.6	37.17	54.29
Sabah & Labuan	72	6,097	43.3	34.68	52.25
Sarawak	26	1,592	25.4	17.79	34.89
WP KL	45	1,966	28.8	21.08	37.93
WP Putrajaya	91	339	49.3	42.09	56.45
Locality					
Urban	544	29,758	35.9	31.82	40.09
Rural	441	19,910	46.1	42.05	50.27
Sex					
Male	480	25,544	38.4	33.95	42.97
Female	505	24,123	40.5	36.51	44.62
Ethnicity of mother					
Malay	803	35,685	44.9	41.54	48.30
Chinese	36	3,318	18.8	11.15	29.97
Indian	14	703	10.4	5.45	19.11
Other Bumiputera	76	6,870	43.2	31.81	55.33
Others	52	2,861	49.9	36.39	63.38
Citizenship of mother					
Malaysian Citizen	944	46,965	39.2	36.13	42.39
Permanent Resident	5	378	45.8	18.53	75.79
Non-Malaysian	32	2,094	42.7	28.54	58.26
Marital status of mother					
Married/ Cohabiting	966	48,627	39.4	36.36	42.56
Separated/Divorced/Widowed /Never married	15	810	38.0	21.93	57.28
Education of mother					
None	26	1,433	62.4	44.00	77.80
Primary	93	4,922	41.7	34.20	49.56
Secondary	510	25,914	41.4	37.07	45.92
Higher	351	17,120	35.4	30.57	40.54
Occupation of mother					
Public Sector	269	10,985	37.1	31.35	43.17
Private Sector	132	8,502	26.0	20.43	32.54
Self-employed	81	3,404	34.8	26.83	43.67
Housewife	489	26,051	50.4	45.62	55.08
Unemployed	6	297	32.5	14.01	58.80
Student	3	149	32.2	5.83	78.43
Household income					
Less than RM1000	101	5,152	56.8	48.75	64.59
RM1000 – RM1999	205	10,980	53.4	45.09	61.50
RM2000 – RM2999	172	7,921	43.3	36.56	50.31
RM3000 – RM3999	114	5,407	36.5	29.67	43.84
RM4000 – RM4999	83	4,163	31.2	23.31	40.30
RM5000 and above	307	15,849	32.1	27.35	37.18

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.5 : Median duration of breastfeeding among children 0-35 month by sociodemographic characteristics, NHMS 2016 (N=6,201)

Sociodemographic characteristics	n	Estimated Population	Duration of breast feeding (month)		
			Median	25th	75th
MALAYSIA	6,201	831,719	24	16	32
State					
Johor	452	95,860	20	15	32
Kedah	366	48,585	25	18	31
Kelantan	314	51,970	31	20	34
Melaka	536	25,408	21	15	31
N Sembilan	418	28,346	21	16	32
Pahang	321	49,446	27	16	32
Pulau Pinang	495	42,916	20	14	32
Perak	370	58,119	20	14	31
Perlis	437	8,584	20	16	31
Selangor	402	152,853	21	15	32
Terengganu	318	36,539	29	19	33
Sabah & Labuan	467	104,043	28	17	33
Sarawak	475	81,535	20	15	31
WP KL	402	42,344	22	16	32
WP Putrajaya	428	5,170	30	20	33
Locality					
Urban	3,870	546,040	21	16	32
Rural	2,331	285,679	27	17	33
Sex					
Male	3,361	439,038	22	16	32
Female	2,840	392,681	24	16	32
Ethnicity of mother					
Malay	3,941	470,628	27	17	33
Chinese	944	154,943	19	14	30
Indians	357	42,453	18	14	25
Other Bumiputera	650	113,428	24	16	32
Others	265	30,770	21	17	32
Citizenship of mother					
Malaysian Citizen	5,897	775,056	24	16	32
Permanent Resident	28	2,633	21	18	35
Non-Malaysian	232	34,532	20	15	32
Marital status of mother					
Married/ Cohabiting	6,030	791,246	22	16	32
Separated/Divorced/Widowed/ Never married	127	20,975	29	17	33
Education of mother					
None	93	15,928	32	19	33
Primary	579	92,777	24	16	31
Secondary	3,226	422,885	21	16	32
Higher	2,236	279,133	26	17	32
Occupation of mother					
Public Sector	1,469	153,848	25	17	33
Private Sector	1,750	245,754	20	15	31
Self-employed	462	66,002	26	17	32
Housewife	2,397	338,843	26	17	32
Unemployed	49	4,425	17	13	20
Student	16	1,651	17	7	22
Household income					
Less than RM1000	373	64,669	28	19	32
RM1000 – RM1999	1,018	135,875	24	16	32
RM2000 – RM2999	942	113,559	25	17	33
RM3000 – RM3999	855	103,931	22	16	32
RM4000 – RM4999	704	85,742	22	16	30
RM5000 and above	2,266	318,873	21	16	32

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.6 : Prevalence of bottle feeding practices among children aged 0-23 months by socio-demographic characteristics, NHMS 2016 (N=10,761)

Sociodemographic characteristics	n	Estimated Population	%	95% CI	
				Lower	Upper
MALAYSIA	7,956	650,570	63.7	60.88	66.37
State					
Johor	612	85,699	74.9	67.29	81.29
Kedah	529	52,086	67.0	56.84	75.80
Kelantan	365	36,408	50.9	42.43	59.32
Melaka	721	21,694	75.4	68.53	81.11
N Sembilan	632	30,492	80.7	72.86	86.75
Pahang	526	43,040	66.6	58.58	73.73
Pulau Pinang	608	35,222	78.5	69.88	85.24
Perak	422	40,314	55.1	45.45	64.29
Perlis	562	7,051	71.6	57.41	82.52
Selangor	541	114,225	61.8	51.47	71.14
Terengganu	322	17,685	34.5	27.62	42.11
Sabah & Labuan	548	73,582	60.0	53.71	65.90
Sarawak	458	51,904	61.5	51.06	70.97
WP KL	511	37,817	75.5	67.00	82.32
WP Putrajaya	599	3,351	58.5	49.46	66.97
Locality					
Urban	4,866	439,123	64.9	61.00	68.57
Rural	3,090	211,448	61.3	57.86	64.61
Sex					
Male	4,143	344,644	64.3	60.11	68.22
Female	3,813	305,926	63.0	59.28	66.59
Ethnicity of mother					
Malay	5,440	387,866	61.7	58.39	64.99
Chinese	1,011	107,335	72.2	60.20	81.70
Indians	377	36,498	68.9	54.79	80.19
Other Bumiputera	724	81,067	61.4	55.05	67.34
Others	370	25,970	65.6	57.95	72.47
Citizenship of mother					
Malaysian Citizen	7,593	609,118	63.6	60.67	66.44
Permanent Resident	33	2,853	64.1	39.35	83.13
Non-Malaysian	296	26,764	67.9	58.57	75.98
Marital status of mother					
Married/ Cohabiting	7,773	624,828	63.5	60.65	66.29
Separated/Divorced/Widowed/ Never married	149	13,908	78.1	63.55	87.96
Education of mother					
None	110	8,013	51.8	39.95	63.40
Primary	778	63,645	66.3	59.81	72.17
Secondary	4,027	341,394	62.3	58.65	65.78
Higher	2,979	224,414	66.0	60.16	71.36
Occupation of mother					
Public Sector	2,042	122,684	67.7	61.26	73.57
Private Sector	2,019	202,617	75.3	68.32	81.22
Self-employed	563	39,703	66.1	57.30	73.98
Housewife	3,195	261,862	56.1	52.31	59.81
Unemployed	59	5,368	44.5	27.93	62.45
Student	26	5,524	51.6	19.05	82.82
Household income					
Less than RM1000	487	38,750	54.5	46.77	62.07
RM1000 – RM1999	1,338	101,063	54.0	48.48	59.35
RM2000 – RM2999	1,250	98,545	59.0	51.98	65.63
RM3000 – RM3999	1,111	89,141	66.3	59.02	72.90
RM4000 – RM4999	834	61,276	68.3	61.18	74.67
RM5000 and above	2,879	253,987	70.1	64.38	75.32

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.7 : Prevalence of age-appropriate breastfeeding practices among children aged 0-23 months by socio-demographic characteristics, NHMS 2016 (N=10,759)

Sociodemographic characteristics	n	Estimated Population	%	95% CI	
				Lower	Upper
MALAYSIA	10,525	950,601	93.1	91.23	94.53
State					
Johor	753	104,648	91.6	83.07	96.00
Kedah	685	70,583	90.8	80.59	95.92
Kelantan	652	62,739	86.2	76.89	92.16
Melaka	840	28,091	97.6	93.51	99.12
N Sembilan	731	36,984	98.0	92.97	99.46
Pahang	689	61,880	96.2	92.06	98.23
Pulau Pinang	694	44,675	99.6	98.86	99.87
Perak	581	65,189	89.1	82.48	93.35
Perlis	677	9,401	95.5	84.00	98.83
Selangor	707	174,235	94.9	85.81	98.25
Terengganu	643	44,432	86.5	76.99	92.51
Sabah & Labuan	796	114,590	93.4	89.15	96.00
Sarawak	639	81,656	96.7	92.19	98.68
WP KL	621	46,044	91.9	85.30	95.73
WP Putrajaya	817	5,455	95.2	86.76	98.35
Locality					
Urban	6,258	632,833	93.3	90.78	95.20
Rural	4,267	317,768	92.5	89.91	94.52
Sex					
Male	5,459	499,312	93.3	90.43	95.37
Female	5,066	451,289	92.8	90.28	94.67
Ethnicity of mother					
Malay	7,277	570,646	90.9	88.08	93.08
Chinese	1,174	147,157	99.0	97.65	99.58
Indians	442	51,444	97.1	87.65	99.37
Other Bumiputera	1,037	126,349	95.6	92.39	97.54
Others	539	36,183	91.4	83.60	95.69
Citizenship of mother					
Malaysian Citizen	10,010	890,230	93.0	91.06	94.53
Permanent Resident	47	3,833	86.2	45.57	97.88
Non-Malaysian	412	37,717	95.7	88.88	98.40
Marital status of mother					
Married/ Cohabiting	10,281	914,134	93.0	91.07	94.47
Separated/Divorced/Widowed/ Never married	188	17,646	99.1	96.81	99.75
Education of mother					
None	193	13,703	88.5	74.01	95.43
Primary	1,079	92,400	96.2	92.88	97.97
Secondary	5,435	499,399	91.4	88.54	93.53
Higher	3,729	324,674	95.1	91.66	97.20
Occupation of mother					
Public Sector	2,517	174,780	95.8	92.85	97.58
Private Sector	2,379	258,147	96.4	91.96	98.44
Self-employed	771	55,300	92.1	84.56	96.09
Housewife	4,646	422,771	90.6	87.76	92.89
Unemployed	92	11,864	98.4	95.26	99.48
Student	39	7,207	67.3	21.06	94.07
Household income					
Less than RM1000	800	68,195	95.9	90.99	98.17
RM1000 – RM1999	1,953	168,568	90.0	85.45	93.28
RM2000 – RM2999	1,713	150,786	90.9	85.49	94.41
RM3000 – RM3999	1,416	122,767	91.3	84.97	95.15
RM4000 – RM4999	1,053	84,613	94.7	89.77	97.30
RM5000 and above	3,523	345,655	95.1	91.18	97.37

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.8 : Prevalence of milk feeding frequency within 24 hours among children aged 6-23 months by socio-demographic characteristics, NHMS 2016 (N=5,447)

Sociodemographic characteristics	Milk feeding frequency within 24 hours															
	1 milk feeding					≥2 milk feedings					No milk feeding					
	n	Estimated Population	%	95% CI Lower Upper	n	Estimated Population	%	95% CI Lower Upper	n	Estimated Population	%	95% CI Lower Upper	n	Estimated Population	%	95% CI Lower Upper
MALAYSIA	25	1,219	0.4	0.21 0.57	5,237	332,719	95.5	94.50 96.40	185	14,280	4.1	3.27 5.14				
State																
Johor	0	-	-	-	393	41,302	98.7	96.92 99.46	6	541	1.3	0.54 3.08				
Kedah	4	249	1.1	0.38 3.17	327	21,551	95.3	85.10 98.64	5	811	3.6	0.73 15.82				
Kelantan	3	163	0.9	0.27 2.88	239	16,069	88.5	78.30 94.22	24	1,932	10.6	5.04 21.05				
Melaka	5	318	2.8	0.88 8.68	467	10,801	96.0	90.78 98.32	5	132	1.2	0.45 3.04				
N Sembilan	0	-	-	-	367	14,139	99.3	98.03 99.76	5	98	0.7	0.24 1.97				
Pahang	2	82	0.4	0.07 2.99	267	17,661	96.3	93.05 98.02	10	604	3.3	1.69 6.31				
Pulau Pinang	1	39	0.2	0.03 1.44	444	18,781	99.1	97.73 99.66	4	129	0.7	0.23 1.99				
Perak	2	176	0.7	0.16 2.65	309	25,015	93.1	82.85 97.42	15	1,676	6.2	2.12 16.95				
Perlis	0	-	-	-	393	4,147	99.2	97.86 99.67	5	35	0.8	0.33 2.14				
Selangor	2	75	0.1	0.03 0.45	351	62,582	97.2	94.83 98.51	12	1,721	2.7	1.39 5.07				
Terengganu	2	73	0.6	0.12 2.61	265	12,434	96.7	93.87 98.25	9	350	2.7	1.36 5.38				
Sabah & Labuan	0	-	-	-	302	34,224	87.1	83.77 89.84	65	5,066	12.9	10.16 16.23				
Sarawak	0	-	-	-	410	33,847	97.2	95.04 98.46	13	968	2.8	1.54 4.96				
WP KL	1	35	0.2	0.03 1.32	349	18,696	98.7	96.79 99.50	4	205	1.1	0.38 3.04				
WP Putrajaya	3	10	0.7	0.22 2.16	354	1,469	98.6	96.77 99.36	3	11	0.8	0.24 2.34				
Locality																
Urban	16	819	0.3	0.18 0.64	3,304	228,112	95.4	93.93 96.58	106	10,101	4.2	3.11 5.73				
Rural	9	401	0.4	0.16 0.82	1,933	104,607	95.8	94.78 96.64	79	4,180	3.8	3.04 4.80				
Sex																
Male	12	684	0.4	0.19 0.74	2,833	174,421	95.4	94.07 96.47	107	7,696	4.2	3.19 5.53				
Female	13	535	0.3	0.16 0.66	2,404	158,298	95.7	93.87 96.99	78	6,584	4.0	2.71 5.81				
Ethnicity of mother																
Malay	12	571	0.3	0.15 0.64	3,362	177,682	95.9	94.01 97.19	90	7,062	3.8	2.53 5.69				
Chinese	5	236	0.4	0.12 1.05	836	66,128	98.2	96.86 98.98	13	970	1.4	0.75 2.74				
Indian	3	292	1.1	0.35 3.47	315	25,927	98.3	95.98 99.32	3	149	0.6	0.15 2.04				
Other Bumiputera	0	-	-	-	491	43,115	89.3	86.30 91.65	67	5,187	10.7	8.35 13.70				
Others	5	120	0.8	0.30 2.24	212	13,667	93.6	87.93 96.66	11	822	5.6	2.70 11.35				
Citizenship of mother																
Malaysian Citizen	21	1,047	0.3	0.19 0.56	5,002	308,171	95.5	94.36 96.38	176	13,545	4.2	3.31 5.30				
Permanent Resident	0	-	-	-	24	1,437	100.0	0.00 100.00	0	-	-	-				
Non-Malaysian	4	173	1.0	0.31 3.05	190	16,911	95.4	90.35 97.86	8	644	3.6	1.49 8.60				

Some cells have respondent count <30. Results should be interpreted with caution.

Sociodemographic characteristics	Milk feeding frequency within 24 hours															
	1 milk feeding					≥2 milk feedings					No milk feeding					
	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper	
Marital status of mother																
Married/ Cohabiting	23	1,180	0.4	0.21	0.59	5,113	319,154	95.4	94.32	96.29	184	14,190	4.2	3.38	5.32	
Separated/Divorced/ Widow/Never married	2	39	0.5	0.08	3.43	103	7,366	99.5	96.57	99.92	0	-	-	-	-	
Education of mother																
None	0	-	-	-	-	67	4,639	89.4	75.88	95.78	6	549	10.6	4.22	24.12	
Primary	4	187	0.5	0.15	1.56	478	36,951	95.9	93.63	97.44	20	1,375	3.6	2.19	5.78	
Secondary	14	881	0.5	0.26	0.90	2,722	173,036	95.0	93.32	96.31	105	8,179	4.5	3.25	6.19	
Higher	7	152	0.1	0.05	0.32	1,928	111,018	96.4	94.54	97.66	52	3,974	3.5	2.22	5.34	
Occupation of mother																
Public Sector	1	4	0.0	0.00	0.04	1,267	62,091	95.9	92.73	97.78	31	2,618	4.0	2.22	7.26	
Private Sector	5	244	0.2	0.06	0.78	1,543	107,376	96.8	94.81	98.01	38	3,339	3.0	1.81	4.96	
Self-employed	6	265	1.0	0.38	2.76	387	24,401	94.5	90.71	96.75	18	1,166	4.5	2.48	8.08	
Housewife	11	668	0.5	0.25	0.97	1,950	126,897	94.4	92.47	95.90	94	6,818	5.1	3.64	7.02	
Unemployed	2	39	1.0	0.15	6.68	41	3,494	92.4	79.68	97.42	3	248	6.6	1.99	19.54	
Student	0	-	-	-	-	15	1,533	100.0	0.00	100.00	0	-	-	-	-	
Household income																
Less than RM1000	4	245	1.3	0.40	3.88	283	17,974	92.2	87.07	95.35	18	1,285	6.6	3.73	11.38	
RM1000 – RM1999	6	293	0.5	0.19	1.36	823	54,384	94.3	90.01	96.85	39	2,973	5.2	2.72	9.56	
RM2000 – RM2999	6	418	0.9	0.35	2.21	798	44,168	92.6	88.28	95.43	34	3,104	6.5	3.82	10.87	
RM3000 – RM3999	1	38	0.1	0.01	0.61	736	42,848	95.5	91.05	97.80	22	1,977	4.4	2.13	8.89	
RM4000 – RM4999	2	29	0.1	0.01	0.44	602	36,245	96.3	92.88	98.08	19	1,376	3.7	1.86	7.06	
RM5000 and above	6	195	0.1	0.05	0.43	1,959	132,960	97.3	96.35	98.04	52	3,466	2.5	1.84	3.49	

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.9 : Prevalence of minimum meal frequency, minimum dietary diversity, minimum acceptable diversity among children aged 6-23 months by socio-demographic characteristics, NHMS 2016

Sociodemographic characteristics	Milk feeding frequency within 24 hours										Minimum acceptable diversity (Children who breastfed who at least the minimum dietary diversity and minimum meal frequency during the previous day for breastfed and non-breastfed) (N=9,182)									
	Minimum meal frequency (Children who received solid, semi-solid, and soft foods for breastfed and non-breastfed) (N=9,087)					Minimum dietary diversity (Children who received foods from 4 or more food groups during the previous day) (N=9,360)					Estimated Population					Estimated Population				
	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper
MALAYSIA	7,653	449,314	80.8	78.73	82.68	6,865	383,890	66.4	63.94	68.70	5,549	299,588	53.1	50.80	55.35					
State																				
Johor	415	39,083	66.5	59.74	72.66	532	48,391	74.1	64.53	81.83	334	28,229	47.1	39.79	54.58					
Kedah	526	33,983	82.1	74.34	87.92	331	20,171	47.4	40.38	54.60	295	18,003	43.1	36.33	50.16					
Kelantan	529	32,392	87.6	80.86	92.21	187	10,302	27.5	23.01	32.43	168	9,430	25.1	20.76	30.09					
Melaka	660	14,093	84.8	80.21	88.48	709	15,021	86.8	81.11	90.97	593	12,065	72.5	66.52	77.79					
N Sembilan	536	16,714	74.9	60.31	85.46	496	15,218	66.5	54.08	76.99	387	12,030	53.3	43.15	63.11					
Pahang	525	33,917	88.4	83.84	91.85	477	27,049	68.2	59.26	76.04	407	23,658	60.9	52.28	68.98					
Pulau Pinang	528	24,461	85.4	79.33	89.97	529	23,475	79.8	72.66	85.51	437	19,529	67.8	60.05	74.76					
Perak	236	17,486	56.5	47.02	65.54	385	29,143	88.8	75.64	95.33	228	16,281	50.1	40.81	59.33					
Perlis	593	5,950	93.7	91.18	95.55	498	4,856	75.4	65.61	83.10	444	4,425	69.4	59.62	77.71					
Selangor	543	82,541	80.6	72.30	86.82	365	50,589	48.4	41.41	55.46	309	42,313	40.9	34.66	47.52					
Terengganu	373	17,501	74.6	69.59	79.09	469	21,209	89.6	83.84	93.46	343	15,708	66.7	60.48	72.38					
Sabah & Labuan	647	72,848	93.0	89.30	95.51	561	63,803	80.1	75.45	84.03	485	56,183	71.2	66.10	75.76					
Sarawak	400	32,947	83.1	77.87	87.24	413	33,613	76.4	70.43	81.41	311	25,879	62.5	55.72	68.79					
WP KL	399	22,078	77.1	68.52	83.95	325	18,591	63.3	54.72	71.12	244	13,483	46.8	37.91	55.84					
WP Putrajaya	743	3,321	98.0	96.81	98.76	588	2,459	72.0	64.22	78.71	564	2,371	69.9	62.20	76.64					
Locality																				
Urban	4,534	282,658	78.5	75.66	81.10	4,119	244,726	65.1	61.80	68.29	3,287	183,514	50.3	47.27	53.26					
Rural	3,119	166,656	85.0	82.29	87.28	2,746	139,163	68.7	65.58	71.63	2,262	116,074	58.2	55.09	61.32					
Sex																				
Male	3,915	236,087	80.8	77.95	83.39	3,552	202,295	66.6	63.15	69.95	2,826	158,015	53.4	50.16	56.68					
Female	3,738	213,227	80.7	77.66	83.49	3,313	181,595	66.1	62.59	69.38	2,723	141,573	52.7	49.49	55.87					
Ethnicity of mother																				
Malay	5,509	274,099	82.5	79.68	85.03	4,645	206,266	61.0	57.69	64.19	3,927	169,323	50.5	47.48	53.42					
Chinese	643	51,981	66.5	60.37	72.21	810	64,378	74.0	67.69	79.53	503	38,889	48.8	42.75	54.81					
Indian	265	15,611	60.8	50.18	70.44	292	18,220	64.9	54.97	73.72	199	10,779	40.6	32.48	49.33					
Other Bumiputera	784	73,955	91.5	88.91	93.51	741	68,563	81.0	76.86	84.60	602	57,833	69.8	65.03	74.21					
Others	416	23,377	84.9	78.91	89.47	349	19,256	67.2	60.08	73.58	292	16,176	58.4	51.14	65.34					
Citizenship of mother																				
Malaysian Citizen	7,279	416,478	80.8	78.70	82.72	6,546	357,525	66.7	64.23	69.17	5,284	277,976	53.1	50.75	55.45					
Permanent Resident	33	2,207	89.8	68.27	97.29	24	1,779	72.3	50.59	86.99	22	1,613	65.6	42.54	83.10					
Non-Malaysian	305	20,338	77.2	63.21	86.92	267	17,378	61.2	50.46	70.94	217	13,411	50.5	41.09	59.95					

Sociodemographic characteristics	Milk feeding frequency within 24 hours												
	Minimum meal frequency (Children who received solid, semi-solid, and soft foods for breastfed and non-breastfed) (N=9,087)				Minimum dietary diversity (Children who received foods from 4 or more food groups during the previous day) (N=9,360)				Minimum acceptable diversity (Children who breastfed who at least the minimum dietary diversity and minimum meal frequency during the previous day for breastfed and non-breastfed) (N=9,182)				
	n	Estimated Population	%	95% CI Lower Upper	n	Estimated Population	%	95% CI Lower Upper	n	Estimated Population	%	95% CI Lower Upper	
Marital status of mother													
Married/ Cohabiting	7,490	429,716	80.7	78.63 82.67	6,708	368,167	66.5	64.02 68.86	5,422	286,741	53.1	50.78 55.37	
Separated/Divorced/ Widow/Never married	127	9,307	77.2	61.54 87.74	129	8,516	67.0	49.97 80.45	101	6,259	51.1	35.54 66.46	
Education of mother													
None	139	8,183	84.1	72.74 91.31	112	6,202	61.6	49.92 72.05	92	4,962	50.5	38.81 62.05	
Primary	767	49,321	83.1	76.10 88.36	695	44,206	68.7	61.66 74.99	555	34,176	55.8	49.37 62.13	
Secondary	3,954	232,640	80.5	77.61 83.10	3,518	200,363	66.6	63.37 69.63	2,822	153,292	52.3	49.28 55.28	
Higher	2,726	147,326	79.8	75.99 83.08	2,491	124,956	65.9	61.10 70.45	2,035	99,742	53.4	49.04 57.77	
Occupation of mother													
Public Sector	1,971	83,157	79.0	73.02 83.88	1,741	73,439	68.7	63.29 73.67	1,486	59,412	56.2	51.16 61.07	
Private Sector	1,609	109,991	77.2	72.42 81.43	1,510	98,354	65.1	59.26 70.52	1,134	70,531	48.9	43.86 54.02	
Self-employed	558	31,691	85.6	81.41 89.03	473	26,166	68.5	62.40 73.95	371	20,894	55.8	48.67 62.61	
Housewife	3,367	204,677	82.5	79.75 84.87	3,025	172,818	66.8	63.39 70.04	2,457	137,087	54.1	50.87 57.29	
Unemployed	67	5,862	88.4	73.89 95.34	53	3,394	50.8	31.16 70.18	44	2,888	42.8	26.10 61.35	
Student	26	2,349	73.2	38.24 92.31	22	1,583	47.2	19.77 76.49	20	1,351	40.3	16.88 69.19	
Household income													
Less than RM1000	587	37,372	87.8	82.55 91.58	499	32,661	71.9	65.56 77.42	410	26,076	60.1	52.91 66.79	
RM1000 – RM1999	1,411	84,928	84.7	80.16 88.28	1,227	68,447	66.4	61.53 70.93	993	57,543	56.3	51.50 61.02	
RM2000 – RM2999	1,262	75,372	83.7	79.24 87.32	1,082	56,432	60.3	53.51 66.78	876	44,388	47.9	41.86 54.03	
RM3000 – RM3999	1,042	54,391	78.8	70.08 85.50	931	50,824	69.3	61.76 75.89	1,239	69,679	55.6	49.04 62.04	
RM4000 – RM4999	785	40,397	80.1	75.56 83.99	712	37,369	71.9	67.30 76.17	576	28,077	55.2	50.04 60.30	
RM5000 and above	2,513	151,945	76.7	72.79 80.16	2,379	135,128	65.8	61.16 70.21	1,897	102,093	51.1	46.91 55.21	

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.10 : Factors that influence the decision to stop breastfeeding among children 0-23 months, NHMS 2016

	n	Estimated Population	%	95% CI	
				Lower	Upper
Barriers in practicing breastfeeding or factors that influence the decision to stop breastfeeding					
- Baby had trouble suckling or latching on	496	34,925	8.6	7.21	10.23
- Not enough milk	2,901	239,708	59.0	55.43	62.38
- Breastfeeding was too painful	203	27,692	6.8	3.63	12.48
- Tiredness due to work	873	66,741	16.4	14.25	18.83
- Do not prefer to breastfeed	50	4,305	1.1	0.68	1.66
- Fear of distorted breast shape by breastfeeding	22	1,952	0.5	0.27	0.85
- Pregnant or wanted to become pregnant	437	24,170	5.9	5.11	6.91
Family or others who influenced the decision to stop breastfeeding					
- Not influenced by husband/ mother/ mother in law/ grandmother/ other family member & employer	5,162	379,146	93.2	91.13	94.86
- Husband only	78	6,063	1.5	0.77	2.85
- Mother only	171	12,371	3.0	2.03	4.53
- Employer only	27	1,375	0.3	0.19	0.59
- Husband and mother	28	2,239	0.6	0.27	1.10
- Husband, mother and mother in law	17	1,884	0.5	0.20	1.08
- Other combination of the above	36	3,600	0.9	0.31	2.47
Factors that influenced the decision to stop breastfeed while working					
- It was hard to allocate time for breastfeeding for breastfeeding or expressing breastmilk	32	1,723	89.1	59.53	97.84
- Employer or supervisor made negative comments or complained about breastfeeding	0	-	-	-	-
- It was hard to find a place to breastfeed or express breastmilk	13	864	44.7	23.82	67.62
- It was difficult to store expressed breastmilk	14	901	46.6	25.25	69.26

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.11 : Milk feeding practice among children 0 - 23 months, NHMS 2016

Sociodemographic characteristics	Breastfeed or bottle feed just before sleep or during sleep (N=10,820)									
	Yes					No				
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI	
				Lower	Upper				Lower	Upper
MALAYSIA	9,732	913,788	88.3	86.42	90.01	1,088	120,683	11.7	9.99	13.58
State										
Johor	703	108,441	93.6	90.08	95.99	63	7,358	6.4	4.01	9.92
Kedah	639	75,036	94.5	91.54	96.43	63	4,390	5.5	3.57	8.46
Kelantan	589	65,379	89.7	84.43	93.36	83	7,488	10.3	6.64	15.57
Melaka	827	27,507	95.4	90.93	97.73	22	1,325	4.6	2.27	9.07
N Sembilan	704	37,101	97.8	96.41	98.66	35	835	2.2	1.34	3.59
Pahang	558	52,419	81.1	75.06	85.91	156	12,234	18.9	14.09	24.94
Pulau Pinang	673	43,290	96.5	92.67	98.39	25	1,557	3.5	1.61	7.33
Perak	564	64,371	85.6	74.24	92.51	91	10,791	14.4	7.49	25.76
Perlis	650	8,979	91.1	76.52	97.01	31	874	8.9	2.99	23.48
Selangor	660	156,978	84.0	75.47	89.97	61	29,880	16.0	10.03	24.53
Terengganu	540	36,761	70.2	61.04	78.05	128	15,574	29.8	21.95	38.96
Sabah & Labuan	754	113,497	91.9	88.87	94.15	79	10,014	8.1	5.85	11.13
Sarawak	583	76,873	89.8	83.79	93.73	73	8,744	10.2	6.27	16.21
WP KL	521	41,579	81.6	73.90	87.36	119	9,400	18.4	12.64	26.10
WP Putrajaya	767	5,577	96.3	94.96	97.22	59	217	3.7	2.78	5.04
Locality										
Urban	5,757	602,326	88.0	85.30	90.24	655	82,228	12.0	9.76	14.70
Rural	655	311,462	89.0	86.67	90.98	433	38,455	11.0	9.02	13.33
Sex										
Male	5,020	479,313	88.5	85.74	90.71	589	62,561	11.5	9.29	14.26
Female	4,712	434,475	88.2	85.33	90.57	499	58,122	11.8	9.43	14.67
Age of mother (year)										
19 and below	76	9,331	91.6	76.92	97.24	8	861	8.4	2.76	23.08
20-24	764	86,735	84.8	77.08	90.22	105	15,570	15.2	9.78	22.92
25-29	2,065	238,186	89.5	84.70	92.94	217	27,905	10.5	7.06	15.30
30-34	2,802	226,156	88.1	84.40	91.08	293	30,415	11.9	8.92	15.60
35-39	1,496	109,923	89.2	85.73	91.89	173	13,323	10.8	8.11	14.27
40-44	482	27,906	87.9	82.40	91.79	50	3,858	12.1	8.21	17.60
45-49	52	3,813	82.0	55.74	94.25	8	839	18.0	5.75	44.26
50 and above	1	6	100.0	100.00	100.00	0	-	-	-	-
Ethnicity of mother										
Malay	6,706	558,994	87.8	85.28	89.90	770	77,832	12.2	10.10	14.72
Chinese	1,089	134,148	89.7	82.96	93.93	104	15,458	10.3	6.07	17.04
Indian	415	45,178	83.4	69.00	91.92	38	8,976	16.6	8.08	31.00
Other Bumiputera	982	121,644	90.9	87.16	93.69	95	12,120	9.1	6.31	12.84
Others	487	36,020	90.6	86.72	93.37	76	3,757	9.4	6.63	13.28
Citizenship of mother										
Malaysian Citizen	9,257	855,671	88.2	86.19	89.96	1,033	114,416	11.8	10.04	13.81
Permanent Resident	45	4,153	93.3	68.74	98.89	3	297	6.7	1.11	31.26
Non-Malaysian	377	36,161	91.3	86.23	94.66	47	3,431	8.7	5.34	13.77
Marital status of mother										
Married/Cohabiting	9,501	880,153	88.4	86.46	90.11	1,065	115,375	11.6	9.89	13.54
Single/Separated/Divorced/Widowed	178	15,832	85.1	65.12	94.60	18	2,768	14.9	5.40	34.88
Education of mother										
None	175	14,100	91.0	85.27	85.27	29	1,390	9.0	5.33	14.73
Primary	993	86,511	88.3	84.31	84.31	120	11,463	11.7	8.62	15.69
Secondary	5,028	490,057	88.5	85.77	85.77	574	63,971	11.5	9.31	14.23
Higher	3,452	303,913	88.1	84.16	84.16	357	41,033	11.9	8.83	15.84
Occupation of mother										
Public Sector	2,352	169,853	91.8	88.34	94.23	208	15,268	8.2	5.77	11.66
Private Sector	2,206	238,082	87.6	82.71	91.30	215	33,598	12.4	8.70	17.29
Self-employed	706	52,760	86.9	80.59	91.38	91	7,953	13.1	8.62	19.41
Housewife	4,271	411,925	87.3	84.35	89.79	549	59,832	12.7	10.21	15.65
Unemployed	85	11,427	92.1	81.30	96.92	12	977	7.9	3.08	18.70
Student	39	10,561	98.6	90.54	99.81	2	150	1.4	0.19	9.46
Household income										
Less than RM1000	730	60,576	83.6	76.44	88.96	99	11,847	16.4	11.04	23.56
RM1000 – RM1999	1,789	164,895	87.1	82.15	90.81	232	24,444	12.9	9.19	17.85
RM2000 – RM2999	1,592	147,584	87.6	81.94	91.69	185	20,864	12.4	8.31	18.06
RM3000 – RM3999	1,328	123,698	91.8	88.60	94.21	126	10,996	8.2	5.79	11.40
RM4000 – RM4999	988	85,535	92.6	89.72	94.79	96	6,786	7.4	5.21	10.28
RM5000 and above	3,249	323,063	88.0	84.00	91.11	337	44,045	12.0	8.89	16.00

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.11 : Milk feeding practice among children 0 - 23 months, NHMS 2016

Sociodemographic characteristics	Giving plain water after breastfeeding or bottle feeding (N=9,721)									
	Yes					Yes				
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI	
Lower				Upper	Lower				Upper	
MALAYSIA	5,499	419,526	45.9	43.22	48.67	4,222	493,802	54.1	51.33	56.78
State										
Johor	494	69,829	64.4	55.91	72.06	209	38,611	35.6	27.94	44.09
Kedah	350	30,439	40.6	32.04	49.75	287	44,555	59.4	50.25	67.96
Kelantan	296	25,784	39.5	31.31	48.35	291	39,467	60.5	51.65	68.69
Melaka	438	10,634	38.7	32.71	45.01	388	16,859	61.3	54.99	67.29
N Sembilan	473	18,587	50.1	41.18	59.10	230	18,483	49.9	40.90	58.82
Pahang	276	17,345	33.1	26.25	40.72	282	35,074	66.9	59.28	73.75
Pulau Pinang	338	17,444	40.3	32.57	48.53	335	25,845	59.7	51.47	67.43
Perak	351	30,876	48.1	39.60	56.69	211	33,333	51.9	43.31	60.40
Perlis	376	4,832	53.9	41.08	66.16	273	4,139	46.1	33.84	58.92
Selangor	344	67,422	43.0	33.23	53.29	315	89,485	57.0	46.71	66.77
Terengganu	350	20,732	56.4	46.93	65.42	190	16,029	43.6	34.58	53.07
Sabah & Labuan	436	53,708	47.3	41.36	53.36	318	59,790	52.7	46.64	58.64
Sarawak	352	33,418	43.5	34.64	52.74	231	43,455	56.5	47.26	65.36
WP KL	268	16,733	40.2	31.74	49.38	253	24,846	59.8	50.62	68.26
WP Putrajaya	357	1,742	31.3	24.79	38.55	409	3,831	68.7	61.45	75.21
Locality										
Urban	3,231	278,283	46.2	42.49	49.99	2,519	323,778	53.8	50.01	57.51
Rural	2,519	141,243	45.4	42.04	48.76	1,703	170,025	54.6	51.24	57.96
Sex										
Male	2,832	225,603	47.1	43.03	51.18	2,183	253,554	52.9	48.82	56.97
Female	2,667	193,923	44.7	41.19	48.20	2,039	240,248	55.3	51.80	58.81
Age of mother (year)										
19 and below	42	2,920	31.3	16.17	51.82	34	6,411	68.7	48.18	83.83
20-24	424	40,522	46.8	38.76	54.92	339	46,146	53.2	45.08	61.24
25-29	1,174	106,215	44.6	37.95	51.45	890	131,939	55.4	48.55	62.05
30-34	1,568	100,501	44.5	39.99	49.03	1,230	125,548	55.5	50.97	60.01
35-39	862	53,581	48.8	42.96	54.59	633	56,311	51.2	45.41	57.04
40-44	275	15,607	55.9	47.94	63.62	207	12,298	44.1	36.38	52.06
45-49	38	2,596	68.1	42.61	85.96	14	1,217	31.9	14.04	57.39
50 and above	0	-	-	-	-	1	6	0.0	100.00	100.00
Ethnicity of mother										
Malay	3,691	238,634	42.7	39.48	46.02	3,007	320,006	57.3	53.98	60.52
Chinese	672	68,296	50.9	41.39	60.43	416	65,771	49.1	39.57	58.61
Indian	250	24,422	54.1	41.65	65.98	165	20,756	45.9	34.02	58.35
Other Bumiputera	566	56,089	46.1	40.20	52.14	415	65,541	53.9	47.86	59.80
Others	294	22,829	63.4	54.99	71.05	192	13,182	36.6	28.95	45.01
Citizenship of mother										
Malaysian Citizen	5,227	386,848	45.2	42.41	48.09	4,019	468,363	54.8	51.91	57.59
Permanent Resident	26	2,143	51.6	29.22	73.37	19	2,009	48.4	26.63	70.78
Non-Malaysian	220	21,279	58.8	47.63	69.21	157	14,882	41.2	30.79	52.37
Marital status of mother										
Married/Cohabiting	5,367	402,310	45.7	42.95	48.54	4,123	477,383	54.3	51.46	57.05
Single/Separated/Divorced/ Widowed	106	7,961	50.3	36.02	64.50	72	7,872	49.7	35.50	63.98
Education of mother										
None	106	7,989	56.7	43.52	68.92	69	6,111	43.3	31.08	56.48
Primary	601	49,644	57.4	50.47	64.02	392	36,867	42.6	35.98	49.53
Secondary	2,900	219,313	44.8	41.35	48.25	2,122	270,476	55.2	51.75	58.65
Higher	1,848	132,495	43.6	38.18	49.23	1,599	171,227	56.4	50.77	61.82
Occupation of mother										
Public Sector	1,273	73,605	43.4	37.98	48.88	1,077	96,183	56.6	51.12	62.02
Private Sector	1,277	117,389	49.3	42.81	55.86	928	120,613	50.7	44.14	57.19
Self-employed	407	27,105	51.5	41.70	61.15	297	25,543	48.5	38.85	58.30
Housewife	2,442	183,121	44.5	40.90	48.11	1,823	228,602	55.5	51.89	59.10
Unemployed	43	2,862	25.0	14.87	38.98	42	8,565	75.0	61.02	85.13
Student	21	5,578	52.8	19.77	83.56	18	4,983	47.2	16.44	80.23
Household income										
Less than RM1000	421	30,684	50.7	42.61	58.68	308	29,882	49.3	41.32	57.39
RM1000 – RM1999	1,019	79,897	48.5	43.16	53.93	765	84,740	51.5	46.07	56.84
RM2000 – RM2999	919	61,652	41.8	35.91	47.88	673	85,932	58.2	52.12	64.09
RM3000 – RM3999	756	57,485	46.5	39.46	53.64	571	66,199	53.5	46.36	60.54
RM4000 – RM4999	563	37,656	44.0	37.00	51.30	425	47,879	56.0	48.70	63.00
RM5000 and above	1,795	149,919	46.4	41.00	51.94	1,450	172,967	53.6	48.06	59.00

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.11 : Milk feeding practice among children 0 - 23 months, NHMS 2016

Sociodemographic characteristics	Children sleep with a milk bottle in his/her mouth (N=10,801)									
	Yes					Yes				
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI	
				Lower	Upper				Lower	Upper
MALAYSIA	1,655	132,694	12.8	11.51	14.29	9,146	901,146	87.2	85.71	88.49
State										
Johor	88	10,419	9.0	6.41	12.52	676	105,259	91.0	87.48	93.59
Kedah	155	16,220	20.5	14.22	28.54	544	63,038	79.5	71.46	85.78
Kelantan	90	6,834	9.4	6.03	14.34	580	65,935	90.6	85.66	93.97
Melaka	140	3,733	12.9	9.68	17.11	709	25,098	87.1	82.89	90.32
N Sembilan	51	1,202	3.2	2.24	4.46	687	36,727	96.8	95.54	97.76
Pahang	97	9,048	14.0	8.72	21.69	617	55,605	86.0	78.31	91.28
Pulau Pinang	64	2,877	6.4	4.13	9.86	632	41,909	93.6	90.14	95.87
Perak	208	21,605	28.8	21.70	37.04	446	53,517	71.2	62.96	78.30
Perlis	62	1,510	15.4	7.57	28.70	616	8,320	84.6	71.30	92.43
Selangor	81	14,829	7.9	5.18	11.97	639	171,968	92.1	88.03	94.82
Terengganu	63	3,263	6.2	3.96	9.68	605	49,072	93.8	90.32	96.04
Sabah & Labuan	184	23,460	19.0	15.31	23.31	649	100,052	81.0	76.69	84.69
Sarawak	163	15,000	17.5	12.82	23.50	492	70,577	82.5	76.50	87.18
WP KL	32	1,765	3.5	1.90	6.22	608	49,213	96.5	93.78	98.10
WP Putrajaya	177	929	16.1	11.61	21.78	646	4,854	83.9	78.22	88.39
Locality										
Urban	981	93,002	13.6	11.75	15.68	5,419	591,236	86.4	84.32	88.25
Rural	674	39,692	11.4	9.95	12.93	3,727	309,909	88.6	87.07	90.05
Sex										
Male	916	70,865	13.1	11.32	15.07	4,685	470,837	86.9	84.93	88.68
Female	739	61,830	12.6	10.62	14.80	4,461	430,309	87.4	85.20	89.38
Age of mother (year)										
19 and below	24	1,961	19.2	8.74	37.19	60	8,231	80.8	62.81	91.26
20-24	159	17,462	17.1	11.61	24.42	708	84,774	82.9	75.58	88.39
25-29	337	29,051	10.9	8.42	14.07	1,939	236,808	89.1	85.93	91.58
30-34	462	28,366	11.1	9.14	13.32	2,631	228,217	88.9	86.68	90.86
35-39	266	18,494	15.0	12.04	18.56	1,401	104,672	85.0	81.44	87.96
40-44	62	3,321	10.5	7.53	14.39	469	28,392	89.5	85.61	92.47
45-49	13	691	14.9	7.13	28.39	47	3,961	85.1	71.61	92.87
50 and above	0	-	-	-	-	1	6	0.0	100.00	100.00
Ethnicity of mother										
Malay	1,076	73,346	11.5	9.92	13.36	6,383	562,835	88.5	86.64	90.08
Chinese	174	20,919	14.0	10.30	18.69	1,019	128,750	86.0	81.31	89.70
Indian	72	6,744	12.5	6.60	22.26	380	47,402	87.5	77.74	93.40
Other Bumiputera	220	22,995	17.2	13.72	21.34	856	110,730	82.8	78.66	86.28
Others	100	5,727	14.4	10.91	18.77	463	34,050	85.6	81.23	89.09
Citizenship of mother										
Malaysian Citizen	1,562	122,725	12.7	11.29	14.17	8,709	846,730	87.3	85.83	88.71
Permanent Resident	8	588	13.2	5.95	26.80	40	3,861	86.8	73.20	94.05
Non-Malaysian	72	6,417	16.2	10.81	23.58	352	33,175	83.8	76.42	89.19
Marital status of mother										
Married/Cohabiting	1,610	126,361	12.7	11.36	14.18	8,939	868,580	87.3	85.82	88.64
Single/Separated/Divorced/Widowed	32	3,369	18.2	9.06	33.05	162	15,188	81.8	66.95	90.94
Education of mother										
None	38	2,438	15.8	10.33	23.36	165	13,011	84.2	76.64	89.67
Primary	219	21,035	21.5	16.39	27.62	893	76,907	78.5	72.38	83.61
Secondary	828	71,262	12.9	11.02	14.97	4,764	482,531	87.1	85.03	88.98
Higher	551	34,832	10.1	8.32	12.23	3,251	309,790	89.9	87.77	91.68
Occupation of mother										
Public Sector	437	25,188	13.6	10.84	16.96	2,118	159,835	86.4	83.04	89.16
Private Sector	358	35,694	13.1	10.47	16.37	2,060	235,880	86.9	83.63	89.53
Self-employed	117	10,002	16.5	9.87	26.28	677	50,613	83.5	73.72	90.13
Housewife	700	56,076	11.9	10.13	13.91	4,113	415,425	88.1	86.09	89.87
Unemployed	21	2,250	18.1	8.88	33.50	76	10,154	81.9	66.50	91.12
Student	7	431	4.0	1.27	12.07	34	10,280	96.0	87.93	98.73
Household income										
Less than RM1000	159	11,002	15.2	11.30	20.14	669	61,381	84.8	79.86	88.70
RM1000 – RM1999	316	28,971	15.3	11.86	19.55	1,702	160,244	84.7	80.45	88.14
RM2000 – RM2999	266	19,670	11.7	9.41	14.43	1,507	148,602	88.3	85.57	90.59
RM3000 – RM3999	218	19,251	14.3	10.62	18.98	1,233	115,390	85.7	81.02	89.38
RM4000 – RM4999	167	14,553	15.8	10.40	23.22	914	77,679	84.2	76.78	89.60
RM5000 and above	506	35,435	9.7	7.93	11.70	3,075	331,524	90.3	88.30	92.07

Some cells have respondent count <30. Results should be interpreted with caution.

Table 5.3.2.11 : Milk feeding practice among children 0 - 23 months, NHMS 2016

Sociodemographic characteristics	Sugar added to milk (N=10,793)									
	Yes					Yes				
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI	
Lower				Upper	Lower				Upper	
MALAYSIA	143	11,735	1.1	0.82	1.57	10,650	1,020,632	98.9	98.43	99.18
State										
Johor	14	1,673	1.4	0.58	3.58	752	114,126	98.6	96.42	99.42
Kedah	7	471	0.6	27.77	126.93	692	78,759	99.4	98.69	99.73
Kelantan	4	970	1.3	22.21	759.89	664	71,669	98.7	93.47	99.74
Melaka	4	70	0.2	21.30	28.17	843	28,701	99.8	99.30	99.91
N Sembilan	12	238	0.6	21.47	182.60	725	37,653	99.4	98.78	99.68
Pahang	5	250	0.4	16.51	90.30	709	64,403	99.6	98.96	99.86
Pulau Pinang	5	990	2.2	48.39	949.21	692	43,825	97.8	89.57	99.56
Perak	16	1,582	2.1	70.00	616.44	638	73,507	97.9	94.85	99.16
Perlis	10	76	0.8	77.64	77.64	667	9,749	99.2	98.48	99.60
Selangor	12	1,583	0.9	48.36	150.02	703	184,003	99.1	98.29	99.58
Terengganu	2	64	0.1	2.33	64.06	666	52,271	99.9	99.45	99.97
Sabah & Labuan	16	2,269	1.8	87.46	382.40	816	121,156	98.2	96.10	99.14
Sarawak	20	1,248	1.5	77.61	272.54	635	84,294	98.5	97.59	99.12
WP KL	4	205	0.4	40.25	40.25	636	50,773	99.6	98.86	99.86
WP Putrajaya	12	45	0.8	78.18	78.18	812	5,741	99.2	98.60	99.57
Locality										
Urban	74	5,636	0.8	0.54	1.26	6,319	677,148	99.2	98.74	99.46
Rural	69	6,099	1.7	1.08	2.81	4,331	343,484	98.3	97.19	98.92
Sex										
Male	73	5,965	1.1	0.74	1.64	5,525	534,711	98.9	98.36	99.26
Female	70	5,770	1.2	0.70	1.95	5,125	485,921	98.8	98.05	99.30
Age of mother (year)										
19 and below	3	187	1.8	0.54	6.06	81	10,005	98.2	93.94	99.46
20-24	21	2,711	2.7	1.15	6.00	843	99,345	97.3	94.00	98.85
25-29	25	2,369	0.9	0.34	2.32	2,251	263,099	99.1	97.68	99.66
30-34	28	1,401	0.5	0.32	0.94	3,057	254,434	99.5	99.06	99.68
35-39	29	1,327	1.1	0.67	1.73	1,639	121,861	98.9	98.27	99.33
40-44	8	843	2.7	1.16	6.06	522	30,609	97.3	93.94	98.84
45-49	2	195	4.2	0.96	16.72	57	4,417	95.8	83.28	99.04
50 and above	0	-	-	-	-	1	6	0.0	100.00	100.00
Ethnicity of mother										
Malay	85	5,839	0.9	0.58	1.45	7,369	629,392	99.1	98.55	99.42
Chinese	13	1,347	0.9	0.36	2.23	1,176	147,837	99.1	97.77	99.64
Indian	9	1,298	2.4	0.73	7.62	444	52,856	97.6	92.38	99.27
Other Bumiputera	25	2,265	1.7	0.89	3.21	1,052	131,499	98.3	96.79	99.11
Others	9	289	0.7	0.32	1.63	553	39,401	99.3	98.37	99.68
Citizenship of mother										
Malaysian Citizen	137	10,885	1.1	0.80	1.57	10,126	957,098	98.9	98.43	99.20
Permanent Resident	0	-	-	-	-	48	4,449	100.0	0.00	100.00
Non-Malaysian	4	154	0.4	0.13	1.18	420	39,439	99.6	98.82	99.87
Marital status of mother										
Married/Cohabiting	137	10,709	1.1	0.77	1.51	10,402	982,716	98.9	98.49	99.23
Single/Separated/Divorced/ Widowed	4	330	1.8	0.60	5.10	192	18,270	98.2	94.90	99.40
Education of mother										
None	6	433	2.8	1.20	6.38	198	15,057	97.2	93.62	98.80
Primary	17	1,301	1.3	0.47	3.67	1,094	96,583	98.7	96.33	99.53
Secondary	82	7,708	1.4	0.91	2.12	5,506	545,570	98.6	97.88	99.09
Higher	34	1,476	0.4	0.26	0.71	3,764	342,207	99.6	99.29	99.74
Occupation of mother										
Public Sector	28	1,025	0.6	0.31	1.00	2,527	183,445	99.4	99.00	99.69
Private Sector	31	3,000	1.1	0.55	2.20	2,383	268,199	98.9	97.80	99.45
Self-employed	6	809	1.3	0.33	5.24	790	59,897	98.7	94.76	99.67
Housewife	71	5,803	1.2	0.78	1.95	4,736	465,028	98.8	98.05	99.22
Unemployed	4	369	3.0	1.04	8.25	92	11,995	97.0	91.75	98.96
Student	1	33	0.3	0.04	2.50	40	10,678	99.7	97.50	99.96
Household income										
Less than RM1000	19	1,772	2.4	0.96	6.08	809	70,611	97.6	93.92	99.04
RM1000 – RM1999	29	2,946	1.6	0.75	3.20	1,988	186,214	98.4	96.80	99.25
RM2000 – RM2999	27	2,553	1.5	0.69	3.28	1,744	165,684	98.5	96.72	99.31
RM3000 – RM3999	12	415	0.3	0.16	0.61	1,437	134,011	99.7	99.39	99.84
RM4000 – RM4999	15	1,140	1.2	0.59	2.61	1,066	90,723	98.8	97.39	99.41
RM5000 and above	39	2,708	0.7	0.43	1.27	3,540	363,527	99.3	98.73	99.57

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.1.2.1 : Percentage of children aged 6-59 months who were developmentally delayed, NHMS 2016, N=15,191

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	538	70,634	2.8	2.22	3.61
Locality					
Urban	323	40,679	3.0	2.44	3.59
Rural	214	29,936	3.9	3.01	5.01
Sex					
Male	319	43,183	3.3	2.49	4.46
Female	219	27,451	2.3	1.72	3.04
Age					
6-11 months	11	6,399	1.3	0.57	3.09
12-23 months	397	22,482	4.0	2.80	5.81
24-59 months	130	41,753	2.9	2.25	3.66
Ethnicity					
Malay	348	39,842	2.6	2.05	3.24
Chinese	70	10,738	2.7	1.67	4.40
Indians	14	1,768	1.5	0.74	2.87
Other Bumiputera	92	13,115	3.6	1.84	6.86
Others	12	5,145	9.3	4.62	17.70
Citizenship					
Malaysian citizen	525	64,859	2.7	2.09	3.39
Permanent Resident	0	-	-	-	-
Non-Malaysian	13	5,775	13.1	8.25	20.16
Marital status of mother					
Never married/ Separated/ Divorced/ Widowed	14	987	2.0	0.90	4.54
Married/Cohabiting	517	67,164	2.8	2.23	3.54
Mother's education					
None	15	1,978	4.4	2.13	9.04
Primary	71	15,226	5.9	3.82	8.93
Secondary	255	30,293	2.4	1.91	3.02
Tertiary	190	20,654	2.4	1.68	3.34
Father's education					
None	13	1,294	3.2	1.25	7.73
Primary	81	14,494	5.0	3.62	7.00
Secondary	255	34,681	2.8	2.09	3.67
Tertiary	156	15,471	2.1	1.46	3.05
Occupation of mother					
Public Sector	141	11,221	2.3	1.60	3.41
Private Sector	103	13,807	2.3	1.60	3.17
Self-employed	30	2,384	1.4	0.76	2.48
Unemployed	257	40,739	3.5	2.67	4.52
Occupation of father					
Public Sector	118	12,045	2.6	1.81	3.82
Private Sector	241	32,649	2.7	2.06	3.63
Self-employed	137	20,151	3.1	2.23	4.32
Unemployed	9	1,094	5.1	1.75	13.77
Household income					
Less than RM1000	49	6,909	3.7	1.93	7.09
RM1000 – RM1999	107	16,850	3.8	2.62	5.52
RM2000 – RM2999	70	10,768	2.8	1.81	4.35
RM3000 – RM3999	74	6,921	2.1	1.36	3.15
RM4000 – RM4999	45	5,556	2.4	1.29	4.46
RM5000 and above	188	22,500	2.5	1.81	3.47

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.1.2.2 : Percentage of children aged 6-59 months had gross motor developmental delay, NHMS 2016, N=14,702

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	108	12,843	0.6	0.41	0.87
Locality					
Urban	62	6,933	0.5	0.32	0.80
Rural	46	5,910	0.8	0.43	1.37
Sex					
Male	51	7,345	0.7	0.40	1.09
Female	57	5,498	0.5	0.34	0.83
Age					
6-11 months	3	1,499	1.1	0.30	4.02
12-23 months	84	3,512	0.6	0.50	0.80
24-59 months	21	7,833	0.5	0.34	0.86
Ethnicity					
Malay	78	7,293	0.6	0.32	0.93
Chinese	12	1,162	0.3	0.26	0.47
Indians	2	97	0.1	0.03	0.28
Other Bumiputera	13	2,784	0.9	0.41	1.77
Others	2	1,500	3.0	0.96	8.80
Citizenship					
Malaysian citizen	105	11,300	0.5	0.36	0.80
Permanent Resident	0	-	-	-	-
Non-Malaysian	3	1,543	1.8	1.35	10.32
Marital status of mother					
Nevermarried/Separated/ Divorced/Widowed	4	233	0.5	0.11	2.52
Married/Cohabiting	104	12,610	0.6	0.42	0.89
Mother's education					
None	2	342	0.8	0.12	5.70
Primary	13	1,550	0.6	0.23	1.80
Secondary	61	8,519	0.8	0.53	1.23
Tertiary	32	2,432	0.3	0.15	0.68
Father's education					
None	2	55	0.1	0.03	0.61
Primary	20	3,386	1.3	0.72	2.37
Secondary	57	5,691	0.5	0.33	0.86
Tertiary	21	3,169	0.5	0.20	1.24
Occupation of mother					
Public Sector	19	2,111	0.5	0.22	1.16
Private Sector	26	3,583	0.7	0.31	1.57
Self-employed	7	267	0.2	0.08	0.34
Unemployed	56	6,883	0.7	0.42	1.14
Occupation of father					
Public Sector	17	1,673	0.4	0.12	1.56
Private Sector	50	7,278	0.7	0.45	1.12
Self-employed	30	2,732	0.5	0.31	0.79
Unemployed	3	618	3.0	0.49	15.89
Household income					
Less than RM1000	12	602	0.4	0.15	0.86
RM1000 – RM1999	19	2,892	0.8	0.35	1.65
RM2000 – RM2999	19	2,795	0.9	0.40	1.87
RM3000 – RM3999	15	1,209	0.4	0.31	0.57
RM4000 – RM4999	14	1,708	0.8	0.29	2.49
RM5000 and above	28	3,543	0.5	0.21	1.02

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.1.2.3 : Percentage of children aged 6-59 months who had fine motor developmental delay, NHMS 2016, N=14,702

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	103	15,570	0.7	0.52	1.01
Locality					
Urban	61	8,302	0.6	0.40	0.92
Rural	42	7,268	0.9	0.57	1.56
Sex					
Male	56	9,566	0.9	0.55	1.34
Female	47	6,005	0.6	0.34	1.00
Age					
6-11 months	1	534	0.4	0.05	2.89
12-23 months	62	6,279	0.5	0.33	0.70
24-59 months	40	12,357	0.8	0.58	1.24
Ethnicity					
Malay	74	8,553	0.6	0.41	1.01
Chinese	10	2,112	0.6	0.47	0.85
Indians	2	333	0.3	0.06	1.89
Other Bumiputera	15	3,370	1.0	0.54	1.97
Others	2	1,202	2.4	0.44	11.71
Citizenship					
Malaysian citizen	100	13,727	0.7	0.47	0.91
Permanent Resident	0	-	-	-	-
Non-Malaysian	3	1,843	4.6	1.27	15.03
Marital status of mother					
Nevermarried/Separated/ Divorced/Widowed	2	204	0.5	0.07	2.77
Married/Cohabiting	101	15,367	0.7	0.53	1.05
Mother's education					
None	1	336	0.8	0.11	5.79
Primary	13	3,661	1.5	0.63	3.66
Secondary	52	6,733	0.6	0.41	0.97
Tertiary	37	4,840	0.6	0.38	1.08
Father's education					
None	0	-	-	-	-
Primary	16	4,584	1.8	0.92	3.40
Secondary	55	7,384	0.7	0.41	1.17
Tertiary	28	3,207	0.5	0.29	0.90
Occupation of mother					
Public Sector	29	2,931	0.7	0.38	1.30
Private Sector	21	2,173	0.4	0.29	0.62
Self-employed	4	535	0.3	0.08	1.27
Unemployed	49	9,932	1.0	0.64	1.55
Occupation of father					
Public Sector	21	2,097	0.5	0.26	1.09
Private Sector	47	6,806	0.7	0.38	1.15
Self-employed	28	5,576	1.0	0.59	1.69
Unemployed	3	696	3.3	0.66	15.26
Household income					
Less than RM1000	10	2,767	1.7	0.58	4.80
RM1000 – RM1999	17	3,702	1.0	0.42	2.24
RM2000 – RM2999	19	1,877	0.6	0.31	1.08
RM3000 – RM3999	11	922	0.3	0.21	0.48
RM4000 – RM4999	10	1,608	0.8	0.33	1.94
RM5000 and above	34	4,579	0.6	0.38	0.94

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.1.2.4 : Percentage of children aged 6-59 months who had speech/hearing developmental delay, NHMS 2016, N=14,702

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	376	37,009	1.7	1.22	2.44
Locality					
Urban	226	24,031	1.8	1.39	2.20
Rural	149	12,960	1.7	1.22	2.31
Sex					
Male	233	24,332	2.2	1.46	3.27
Female	143	12,677	1.2	0.84	1.80
Age					
6-11 months	3	869	0.6	0.18	2.26
12-23 months	325	19,433	3.5	2.29	5.30
24-59 months	48	16,707	1.1	0.77	1.72
Ethnicity					
Malay	237	21,382	1.6	1.19	2.19
Chinese	45	4,250	1.3	0.76	2.11
Indians	12	1,240	1.2	0.64	2.33
Other Bumiputera	75	9,611	2.8	1.20	6.51
Others	6	906	1.8	0.81	3.93
Citizenship					
Malaysian citizen	370	35,517	1.7	1.18	2.42
Permanent Resident	0	-	-	-	-
Non-Malaysian	6	1,492	3.7	1.38	9.49
Marital status of mother					
Never married/ Separated/ Divorced/ Widowed	11	874	2.0	0.87	4.41
Married/ Cohabiting	361	35,854	1.7	1.23	2.48
Mother's education					
None	14	1,637	4.0	1.82	8.47
Primary	57	9,065	3.8	2.17	6.51
Secondary	177	14,332	1.4	0.94	1.95
Tertiary	124	11,694	1.6	1.00	2.40
Father's education					
None	10	898	2.4	0.63	8.46
Primary	61	9,719	3.8	2.48	5.65
Secondary	179	16,333	1.5	0.98	2.38
Tertiary	106	8,379	1.3	0.89	2.01
Occupation of mother					
Public Sector	98	6,149	1.5	0.87	2.46
Private Sector	64	5,693	1.1	0.60	2.05
Self-employed	20	1,353	0.8	0.40	1.72
Unemployed	190	23,533	2.4	1.67	3.31
Occupation of father					
Public Sector	83	6,602	1.7	1.04	2.69
Private Sector	170	17,332	1.7	1.04	2.74
Self-employed	97	10,602	1.9	1.30	2.79
Unemployed	6	794	3.8	0.93	14.30
Household income					
Less than RM1000	35	3,240	2.0	0.98	3.91
RM1000 – RM1999	80	8,697	2.3	1.46	3.50
RM2000 – RM2999	53	8,339	2.0	1.15	3.33
RM3000 – RM3999	54	4,039	1.4	0.87	2.26
RM4000 – RM4999	32	4,038	2.0	0.92	4.34
RM5000 and above	120	10,527	1.4	0.79	2.39

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.1.2.5 : Percentage of children aged 6-59 months who had social skills developmental delay, NHMS 2016, N=14,574

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	97	23,805	1.2	0.85	1.57
Locality					
Urban	60	12,070	0.9	0.62	1.38
Rural	37	11,735	1.6	0.98	2.56
Sex					
Male	62	14,794	1.4	0.96	2.00
Female	35	9,011	0.9	0.52	1.59
Age					
6-11 months	7	4,628	11.2	4.44	25.48
12-23 months	32	1,280	0.2	0.15	0.35
24-59 months	58	17,897	1.2	0.89	1.70
Ethnicity					
Malay	71	14,042	1.1	0.81	1.53
Chinese	8	3,617	1.1	0.38	3.18
Indians	2	293	0.3	0.05	1.66
Other Bumiputera	13	4,117	1.3	0.59	2.94
Others	3	1,737	3.5	1.19	10.02
Citizenship					
Malaysian citizen	93	21,427	1.1	0.79	1.44
Permanent Resident	0	-	-	-	-
Non-Malaysian	4	2,379	5.9	2.69	12.64
Marital status of mother					
Never married/Separated/Divorced/Widowed	3	260	0.6	0.09	3.77
Married/Cohabiting	91	21,345	1.1	0.80	1.47
Mother's education					
None	2	677	1.7	0.42	6.54
Primary	8	3,674	1.6	0.54	4.45
Secondary	43	10,843	1.1	0.70	1.63
Tertiary	41	6,409	0.9	0.56	1.41
Father's education					
None	1	341	0.9	0.13	6.06
Primary	13	3,825	1.5	0.88	2.65
Secondary	49	11,059	1.1	0.66	1.75
Tertiary	26	5,827	1.0	0.57	1.69
Occupation of mother					
Public Sector	33	4,911	1.2	0.64	2.31
Private Sector	15	4,514	0.9	0.52	1.57
Self-employed	3	979	0.6	0.20	2.01
Unemployed	43	11,199	1.2	0.73	1.86
Occupation of father					
Public Sector	25	5,623	1.5	0.79	2.87
Private Sector	41	8,630	0.9	0.60	1.27
Self-employed	21	6,059	1.1	0.55	2.28
Unemployed	2	740	3.7	0.82	15.23
Household income					
Less than RM1000	9	2,445	1.5	0.39	5.88
RM1000 – RM1999	17	4,999	1.4	0.62	3.03
RM2000 – RM2999	12	2,933	1.0	0.41	2.23
RM3000 – RM3999	8	2,020	0.7	0.32	1.74
RM4000 – RM4999	12	2,458	1.2	0.52	2.97
RM5000 and above	37	8,116	1.1	0.69	1.75

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.2.2.1 : Prevalence of suspected autism among children aged 18-35 months, NHMS 2016, N= 5,846

Sociodemographic characteristics	Being told Fail MCHAT						Fail MCHAT during screening						Suspected autism					
	n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI		n	Estimated Population	%	95% CI				
				Lower	Upper				Lower	Upper				Lower	Upper			
MALAYSIA	45	4,645	0.9	0.45	1.70	51	7,053	3.6	2.06	6.22	96	11,698	1.6	1.03	2.50			
Locality																		
Urban	19	2,440	0.8	0.32	1.81	30	4,521	3.3	1.71	6.14	49	6,962	1.5	0.92	2.51			
Rural	25	2,170	1.0	0.48	2.13	21	2,531	4.4	2.23	8.54	46	4,701	1.7	1.05	2.85			
Sex																		
Male	29	2,866	1.1	0.49	2.30	23	3,835	3.7	0.02	6.8%	52	6,702	1.8	1.17	2.78			
Female	16	1,779	0.7	0.26	1.75	28	3,218	3.5	1.31	8.9	44	4,997	1.4	0.68	2.87			
Age of respondents																		
18 - 23 months	39	1,931	1	0.52	1.88	40	2,347	3.5	1.00	6.04	79	4,278	1.6	1.06	2.49			
24 - 35 months	6	2,714	0.8	0.33	1.98	11	4,706	3.7	1.98	7.76	17	7,420	1.6	0.85	2.97			
Ethnicity																		
Malay	35	2,761	0.8	0.35	1.93	36	3,877	3.2	1.46	6.89	71	6,638	1.5	0.82	2.59			
Chinese	1	71	0.1	0.01	0.71	4	1,041	2.5	1.07	5.71	5	1,112	1.0	0.52	1.78			
Indians	0	-	-	-	-	1	49	1.10	0.14	8.60	1	49	0.2	0.02	1.38			
Others Bumiputera	9	1,813	1.9	0.7	5.31	6	1,618	7.8	2.46	22.06	15	3,430	3.0	1.18	7.50			
Others	0	-	-	-	-	4	469	6	2.75	12.48	4	469	3.1	1.81	5.19			
Citizenship																		
Malaysian citizen	45	4,645	0.9	0.45	1.73	47	6,585	3.5	1.95	6.21	92	11,230	1.6	1.00	2.49			
Permanent Resident	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-			
Non-Malaysian	0	-	-	-	-	4	469	6.9	2.91	15.31	4	469	3.3	1.86	5.79			
Mother's education																		
None	2	238	2.6	0.54	11.59	1	9	0.1	0.02	1.15	3	247	1.6	0.36	6.88			
Primary	7	769	1.1	0.12	8.84	2	664	3.4	0.46	20.87	8	865	1.0	0.22	4.72			
Secondary	25	3,551	1.2	0.59	2.59	30	3,044	4.3	2.24	8.1	55	6,595	1.8	1.02	3.30			
Higher	11	619	0.4	0.11	1.39	18	3,337	3.5	1.35	8.82	29	3,956	1.6	0.71	3.47			
Father's education																		
None	1	34	0.5	0.06	3.22	2	191	3.9	0.76	17.34	3	225	1.8	0.49	6.57			
Primary	7	769	1.1	0.26	4.64	4	1,133	7.3	2.64	18.7	11	1,902	2.2	0.98	5.02			
Secondary	26	3,136	1.1	0.51	2.35	28	2,709	3.5	1.68	7.2	54	5,845	1.6	0.86	3.01			
Higher	7	525	0.4	0.1	1.77	16	2,920	3.5	1.17	9.82	23	3,445	1.6	0.69	3.84			
Mother's Occupation																		
Public Sector	9	1,627	1.7	0.5	5.00	10	1,777	4.6	1.57	12.5	19	3,404	2.5	1.18	5.21			
Private Sector	3	193	0.1	0.04	5.38	9	686	1.3	0.47	3.78	12	879	0.5	0.21	1.05			
Self-employed	1	62	0.2	0.02	1.36	5	313	1.2	0.37	3.89	6	375	0.6	0.26	1.54			
Unemployed	31	2,728	1.1	0.53	2.26	27	4,277	5.6	3.04	10.19	58	7,005	2.2	1.35	3.43			
Father's Occupation																		
Public Sector	10	1,456	1.4	0.36	5.56	11	758	2.5	0.85	6.88	21	2,215	1.7	0.66	4.18			
Private Sector	16	2,057	0.8	0.17	2.08	22	3,407	3.6	1.40	8.89	38	5,465	1.6	0.80	3.05			
Self-employed	14	404	0.3	0.17	0.59	17	2,788	5	2.35	10.51	31	3,192	1.7	0.94	3.18			
Unemployed	1	546	11.4	1.57	51.09	0	-	-	-	-	1	546	9.6	1.33	45.82			
Household income																		
Less than RM1000	8	354	0.7	0.28	1.68	2	90	0.6	0.14	2.72	10	444	0.7	0.31	1.46			
RM1000 - RM1999	13	948	1	0.3	3.18	11	1,367	5.1	1.78	13.73	24	2,315	1.9	0.87	4.04			
RM2000 - RM2999	6	1,169	1.3	0.36	4.36	11	509	2.9	1.55	5.34	17	1,678	1.5	0.62	3.75			
RM3000 - RM3999	4	772	1	0.33	3.06	5	1,396	7.2	2.22	20.69	13	2,168	2.3	0.98	5.18			
RM4000 - RM4999	8	893	1.8	0.28	10.30	2	93	0.5	0.10	2.04	6	986	1.4	0.26	7.13			
RM5000 and above	6	509	0.3	0.07	1.40	20	3,597	3.7	1.47	9.21	26	4,107	1.6	0.75	3.37			

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.3.2.1 : Prevalence of any exposure to screen time for children aged 0-23 months and exposure more than 2 hours for children aged 24-59 months, NHMS 2016, N=15,091

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	11,723	1,284,387	52.2	49.65	54.69
Locality					
Urban	7,044	854,451	53.5	49.93	57.01
Rural	4,679	429,936	49.8	46.04	53.49
Sex					
Male	6,106	681,739	53.4	50.28	56.48
Female	5,617	602,648	50.9	48.19	53.54
Ethnicity					
Malay	8,313	787,652	51.3	48.50	54.07
Chinese	1,335	184,236	47.6	40.59	54.68
Indians	511	72,339	61.1	54.80	67.09
Other Bumiputera	1,298	200,900	55.9	50.17	61.50
Others	230	35,369	63.7	53.43	72.91
Citizenship					
Malaysian citizen	11,518	1,249,336	51.8	49.32	54.36
Permanent Resident	19	3,573	88.5	57.61	97.74
Non-Malaysian	164	28,494	64.7	55.00	73.29
Mother's education					
None	182	19,561	45.3	37.22	53.71
Primary	1,160	127,011	50.8	45.08	56.55
Secondary	6,036	666,232	53.3	50.59	56.01
Higher	4,233	440,736	50.9	47.12	54.70
Father's education					
None	191	22,054	56.8	42.53	70.08
Primary	1,306	144,469	51.2	46.90	55.56
Secondary	6,117	658,468	53.1	50.18	56.05
Higher	3,542	372,627	51.1	46.15	56.04
Occupation of mother					
Public Sector	2,872	236,432	49.5	44.81	54.14
Private Sector	2,587	323,134	53.3	48.50	57.97
Self-employed	862	82,324	48.1	39.03	57.26
Unemployed	5,302	612,680	53.1	49.91	56.36
Occupation of father					
Public Sector	2,783	238,122	52.4	47.91	56.78
Private Sector	5,338	642,573	54.4	51.48	57.23
Self-employed	2,965	309,623	48.3	44.33	52.38
Unemployed	98	10,160	54.1	40.93	66.67
Household income					
Less than RM1000	830	86,103	48.1	41.62	54.65
RM1000 – RM1999	2,139	222,772	51.1	47.92	54.34
RM2000 – RM2999	1,920	211,249	55.6	50.43	60.69
RM3000 – RM3999	1,608	177,066	53.7	48.43	58.92
RM4000 – RM4999	1,196	127,320	55.6	49.82	61.15
RM5000 and above	3,966	448,723	50.6	46.54	54.57

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.3.2.2 : Prevalence of any exposure to television in children aged 0-23 months, NHMS 2016, N=10,783

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	9,896	754,046	73.3	69.64	76.67
Locality					
Urban	5,941	508,693	74.5	69.18	79.17
Rural	3,955	535,324	70.9	67.37	74.59
Sex					
Male	5,112	396,879	73.4	66.87	78.98
Female	4,784	357,167	73.2	69.84	76.40
Ethnicity					
Malay	7,005	464,272	72.4	68.20	76.26
Chinese	1,176	119,078	73.2	63.00	81.45
Indians	431	41,555	78.2	67.29	86.26
Other Bumiputera	1,059	107,926	74.5	69.46	78.92
Others	192	19,327	79.3	61.76	90.14
Citizenship					
Malaysian citizen	9,727	737,799	73.2	69.49	76.56
Permanent Resident	17	1,931	93.3	52.07	99.44
Non-Malaysian	133	13,335	79.8	66.74	88.63
Mother's education					
None	163	13,102	80.2	65.98	89.39
Primary	984	74,924	77.9	70.66	83.76
Secondary	5,146	399,020	72.3	68.90	75.51
Higher	3,525	250,938	73.3	66.12	79.41
Father's education					
None	161	12,760	81.3	61.63	92.15
Primary	1,112	84,749	76.1	69.56	81.58
Secondary	5,197	385,808	73.2	69.71	76.36
Higher	2,968	222,138	73.9	62.35	82.83
Occupation of mother					
Public Sector	2,387	132,752	72.0	66.08	77.20
Private Sector	2,238	192,341	71.3	60.80	79.95
Self-employed	736	51,625	85.7	76.53	91.63
Unemployed	4,464	361,182	73.4	69.37	77.05
Occupation of father					
Public Sector	2,298	138,125	73.5	66.64	79.36
Private Sector	4,549	375,712	75.7	70.45	80.34
Self-employed	2,532	187,077	70.6	65.80	75.05
Unemployed	83	6,590	79.4	58.22	91.43
Household income					
Less than RM1000	695	49,136	69.0	60.09	76.69
RM1000 – RM1999	1,816	135,058	71.8	66.49	76.64
RM2000 – RM2999	1,648	123,829	73.7	67.18	79.40
RM3000 – RM3999	1,346	101,759	75.7	68.45	81.71
RM4000 – RM4999	1,006	70,676	78.2	69.62	84.94
RM5000 and above	3,330	265,854	72.7	65.53	78.84

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.3.2.3 : Prevalence of any exposure to computer/tablet/smartphone in children aged 0-23 months, NHMS 2016, N=10783

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	7,221	456,863	44.4	41.71	47.16
Locality					
Urban	4,410	303,989	44.5	40.81	48.29
Rural	2,811	152,877	44.2	39.81	48.70
Sex					
Male	3,683	240,602	44.5	40.95	48.05
Female	3,538	216,261	44.4	40.76	48.00
Ethnicity					
Malay	5,280	286,953	44.8	41.96	47.59
Chinese	734	61,460	37.8	31.92	44.04
Indians	247	16,855	31.7	22.33	42.90
Other Bumiputera	801	76,618	52.9	45.48	60.14
Others	132	13,556	55.7	47.85	63.20
Citizenship					
Malaysian citizen	7,110	446,166	44.2	41.51	47.02
Permanent Resident	9	1,474	71.2	39.52	90.34
Non-Malaysian	85	8,409	50.3	41.26	59.38
Mother's education					
None	101	7,843	48.0	39.53	56.57
Primary	659	47,018	48.9	42.53	55.27
Secondary	3,768	244,297	44.3	40.89	47.73
Higher	2,629	145,873	42.6	38.46	46.85
Father's education					
None	103	8,892	56.6	37.19	74.24
Primary	742	52,701	47.3	41.03	53.68
Secondary	3,832	235,697	44.7	40.80	48.66
Higher	2,193	123,785	41.2	35.82	46.72
Occupation of mother					
Public Sector	1,824	82,571	44.8	40.12	49.51
Private Sector	1,588	113,622	42.1	36.91	47.54
Self-employed	544	34,227	56.8	46.53	66.51
Unemployed	3,209	214,945	43.7	40.52	46.89
Occupation of father					
Public Sector	1,731	89,156	47.4	41.37	53.57
Private Sector	3,254	208,469	42.0	39.11	45.00
Self-employed	1,847	120,424	45.5	41.43	49.57
Unemployed	56	4,079	49.2	32.54	65.95
Household income					
Less than RM1000	516	32,514	45.7	38.19	53.33
RM1000 – RM1999	1,285	80,923	43.0	38.12	48.12
RM2000 – RM2999	1,217	76,466	45.5	40.21	50.97
RM3000 – RM3999	959	62,507	46.5	39.89	53.22
RM4000 – RM4999	754	43,760	48.4	41.93	55.00
RM5000 and above	2,443	155,393	42.5	38.01	47.10

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.3.2.4 : Prevalence of any exposure to screen time (either television/other than television) in children aged 0-23 months, NHMS 2016, N=10,783

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	10,045	765,153	74.4	70.76	77.70
Locality					
Urban	6,016	515,077	75.4	70.18	80.03
Rural	4,029	250,076	72.3	68.66	75.69
Sex					
Male	5,197	404,445	74.8	68.25	80.32
Female	4,848	360,708	74.0	70.56	77.11
Ethnicity					
Malay	7,090	469,045	73.2	68.89	77.03
Chinese	1,194	121,349	74.6	64.47	82.65
Indians	435	41,695	78.5	67.41	86.56
Other Bumiputera	1,094	111,364	76.8	72.24	80.89
Others	198	19,798	81.3	64.36	91.26
Citizenship					
Malaysian citizen	9,871	748,709	74.3	70.61	77.59
Permanent Resident	17	1,931	93.3	52.07	99.44
Non-Malaysian	137	13,517	80.9	67.33	89.71
Mother's education					
None	164	13,149	80.5	66.22	89.64
Primary	1,008	76,367	79.4	72.36	85.02
Secondary	5,214	403,809	73.2	69.82	76.32
Higher	3,576	253,792	74.1	67.04	80.13
Father's education					
None	165	12,998	82.8	62.14	93.38
Primary	1,135	86,344	77.5	71.08	82.86
Secondary	5,275	390,812	74.1	70.70	77.26
Higher	2,996	223,525	74.3	62.79	83.25
Occupation of mother					
Public Sector	2,417	133,886	72.6	66.68	77.80
Private Sector	2,263	194,399	72.1	61.58	80.62
Self-employed	750	52,225	86.7	77.57	92.42
Unemployed	4,539	366,525	74.5	70.52	78.06
Occupation of father					
Public Sector	2,325	139,259	74.1	67.36	79.85
Private Sector	4,601	379,424	76.5	71.09	81.14
Self-employed	2,582	190,065	71.8	67.25	75.88
Unemployed	86	6,918	83.4	58.32	94.72
Household income					
Less than RM1000	720	50,624	71.1	62.52	78.37
RM1000 – RM1999	1,844	137,265	73.0	67.68	77.76
RM2000 – RM2999	1,672	126,828	75.5	68.82	81.19
RM3000 – RM3999	1,367	103,224	76.8	69.47	82.77
RM4000 – RM4999	1,018	71,379	79.0	70.31	85.68
RM5000 and above	3,367	267,905	73.3	66.14	79.34

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.3.2.5 : Prevalence of exposure to television more than 2 hours a day in children aged 24-59 months, NHMS 2016, N=4,401

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	1,515	477,773	32.6	29.26	36.21
Locality					
Urban	939	314,496	33.8	29.06	38.97
Rural	576	163,277	30.6	25.72	5.86
Sex					
Male	827	255,819	34.0	30.06	38.16
Female	688	221,954	31.2	27.22	35.48
Ethnicity					
Malay	1,104	294,205	32.4	28.91	36.08
Chinese	134	60,788	26.2	20.10	33.34
Indians	72	29,416	43.4	32.66	54.74
Other Bumiputera	173	77,284	34.9	26.84	43.88
Others	30	14,091	45.2	30.38	60.89
Citizenship					
Malaysian citizen	1,486	460,646	32.2	28.84	35.67
Permanent Resident	2	1,642	83.4	44.12	96.98
Non-Malaysian	25	13,496	49.3	32.61	66.10
Mother's education					
None	17	6,372	22.6	14.99	32.64
Primary	136	45,849	28.1	21.41	36.01
Secondary	762	244,157	34.3	30.69	38.11
Higher	576	170,738	32.3	27.93	36.98
Father's education					
None	23	8,425	33.2	18.99	51.25
Primary	159	54,253	30.8	25.21	37.09
Secondary	771	246,031	33.9	29.88	38.14
Higher	482	138,492	32.0	27.53	36.75
Occupation of mother					
Public Sector	398	91,710	31.0	25.04	37.65
Private Sector	297	121,689	35.5	29.60	41.91
Self-employed	93	25,811	22.7	15.62	31.86
Unemployed	707	228,941	33.7	30.15	37.41
Occupation of father					
Public Sector	405	90,202	33.5	27.50	40.03
Private Sector	685	248,928	35.7	31.02	40.74
Self-employed	339	106,680	27.7	23.31	32.54
Unemployed	10	2,186	16.4	8.07	30.56
Household income					
Less than RM1000	103	33,676	29.4	21.27	39.18
RM1000 – RM1999	268	77,935	30.6	26.72	34.80
RM2000 – RM2999	229	77,863	36.2	29.94	42.86
RM3000 – RM3999	212	66,920	33.7	26.70	41.42
RM4000 – RM4999	159	53,086	37.7	30.26	45.75
RM5000 and above	540	166,265	31.4	26.73	36.46

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.3.2.6 : Prevalence of exposure to screen time other than television more than 2 hours a day in children aged 24-59 months, NHMS 2016, N=4,401

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	480	142,311	9.7	7.93	11.86
Locality					
Urban	281	87,475	9.4	7.08	12.41
Rural	199	54,836	10.3	7.26	14.32
Sex					
Male	270	76,485	10.2	7.95	12.91
Female	210	65,827	9.3	7.23	11.77
Ethnicity					
Malay	356	93,727	10.3	8.13	13.01
Chinese	37	11,062	4.8	3.14	7.16
Indians	10	3,620	5.3	2.21	12.33
Other Bumiputera	67	28,023	12.6	8.94	17.59
Others	9	5,499	17.6	10.06	29.07
Citizenship					
Malaysian citizen	469	136,096	9.5	7.64	11.75
Permanent Resident	0	-	-	-	-
Non-Malaysian	10	5,835	21.3	12.23	34.46
Mother's education					
None	3	239	0.8	0.18	3.90
Primary	51	16,865	10.4	6.75	15.56
Secondary	218	66,772	9.4	7.28	12.01
Higher	197	53,395	10.1	7.49	13.48
Father's education					
None	9	3,239	12.8	4.37	31.85
Primary	43	12,498	7.1	5.05	9.91
Secondary	235	71,262	9.8	7.72	12.40
Higher	160	42,417	9.8	7.10	13.36
Occupation of mother					
Public Sector	138	39,235	13.3	8.98	19.16
Private Sector	83	27,887	8.1	6.12	10.75
Self-employed	41	8,910	7.8	4.84	12.49
Unemployed	210	62,054	9.1	7.26	11.43
Occupation of father					
Public Sector	129	30,558	11.3	7.36	17.07
Private Sector	192	61,025	8.8	6.70	11.39
Self-employed	125	36,932	9.6	7.23	12.60
Unemployed	5	1,966	14.8	6.21	31.24
Household income					
Less than RM1000	28	8,337	7.3	4.26	12.19
RM1000 – RM1999	91	27,820	10.9	8.18	14.46
RM2000 – RM2999	63	18,787	8.7	6.29	11.98
RM3000 – RM3999	71	18,161	9.1	6.73	12.29
RM4000 – RM4999	45	11,129	7.9	4.34	13.96
RM5000 and above	177	55,785	10.5	7.70	14.24

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.3.2.7 : Prevalence of exposure to screen time (either television/other than television) more than 2 hours a day in children aged 24-59 months, NHMS 2016, N=4,401

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	1,678	519,234	36.2	32.63	40.00
Locality					
Urban	1,028	339,375	37.1	32.07	42.43
Rural	650	179,859	34.7	29.50	40.32
Sex					
Male	909	277,294	37.7	33.41	42.17
Female	769	241,940	34.7	30.52	39.13
Ethnicity					
Malay	1,223	318,608	35.6	31.93	39.48
Chinese	141	62,887	28.0	21.58	35.47
Indians	76	30,644	47.0	35.98	58.26
Other Bumiputera	204	89,535	41.8	33.27	50.76
Others	32	15,571	50.0	38.67	61.35
Citizenship					
Malaysian citizen	1,647	500,627	35.7	32.13	39.48
Permanent Resident	2	1,642	83.4	44.12	96.98
Non-Malaysian	27	14,976	54.8	42.04	66.90
Mother's education					
None	18	6,412	23.9	15.99	34.18
Primary	152	50,644	32.9	25.94	40.81
Secondary	822	262,423	37.6	33.61	41.75
Higher	657	186,944	35.7	31.18	40.55
Father's education					
None	26	9,056	39.2	22.00	59.57
Primary	171	58,126	34.1	28.30	40.37
Secondary	842	267,655	37.6	33.25	42.12
Higher	546	149,102	34.8	30.18	39.73
Occupation of mother					
Public Sector	455	102,546	34.9	28.71	41.73
Private Sector	324	128,735	38.2	32.11	44.70
Self-employed	112	30,099	27.1	18.70	37.60
Unemployed	763	246,155	37.3	33.57	41.11
Occupation of father					
Public Sector	458	98,862	37.1	30.71	43.89
Private Sector	737	263,149	38.4	33.64	43.33
Self-employed	383	119,558	31.8	27.22	36.83
Unemployed	12	3,242	30.9	20.19	44.16
Household income					
Less than RM1000	110	35,479	32.9	24.29	42.86
RM1000 – RM1999	295	85,507	34.5	30.38	38.92
RM2000 – RM2999	248	84,421	39.8	33.18	46.90
RM3000 – RM3999	241	73,842	37.8	30.72	45.51
RM4000 – RM4999	178	55,941	40.3	32.87	48.18
RM5000 and above	599	180,818	34.6	29.77	39.87

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.4.2.1 : Prevalence of children aged 36-59 months who attend an organized early childhood education programme, NHMS 2016 (N=3,630)

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	1,962	522,918	53.1	50.44	55.67
Locality					
Urban	1,181	340,395	53.7	50.60	56.80
Rural	781	182,521	51.9	48.60	55.20
Sex					
Male	1,031	265,362	51.8	48.48	55.02
Female	931	257,555	54.5	51.48	57.46
Age of child					
36-47 months	681	174,036	34.6	30.53	38.88
48-59 months	1,281	348,881	72.3	69.58	74.95
Ethnicity					
Malay	1,449	310,547	51.4	48.42	54.41
Chinese	253	116,184	73.6	66.15	79.87
Indians	82	31,661	59.6	47.85	70.42
Other Bumiputera	156	54,549	37.5	31.72	43.68
Others	20	9,584	42.3	32.47	52.78
Citizenship					
Malaysian citizen	1,947	515,569	53.5	50.82	56.13
Permanent Resident	2	797	41.5	5.86	89.03
Non-Malaysian	13	6,552	37.4	27.14	48.97
Marital status of mother					
Never married/Separated/ Divorced/Widowed	27	7,664	49.8	35.08	64.54
Married/Cohabiting	1,926	511,468	53.5	50.82	56.16
Mother's education					
None	27	10,038	54.0	36.16	70.84
Primary	125	35,343	32.9	27.36	38.90
Secondary	912	247,289	51.4	48.57	54.13
Higher	884	225,656	62.2	58.06	66.17
Father's education					
None	17	5,530	31.0	17.18	49.40
Primary	178	54,195	44.6	36.82	52.68
Secondary	947	252,547	51.3	48.66	53.98
Higher	748	186,837	62.9	58.63	66.91
Occupation of mother					
Public Sector	672	137,418	64.4	58.44	69.88
Private Sector	403	133,917	61.7	55.56	67.53
Self-employed	147	40,974	54.9	47.74	61.85
Unemployed	730	206,588	44.3	41.77	46.92
Occupation of father					
Public Sector	564	106,616	56.9	52.44	61.31
Private Sector	816	246,811	52.8	48.95	56.55
Self-employed	503	143,535	53.8	49.42	58.09
Unemployed	13	3,822	35.8	20.42	54.89
Household income					
Less than RM1000	158	40,420	38.7	32.45	45.43
RM1000 – RM1999	245	58,787	40.9	35.53	46.40
RM2000 – RM2999	266	67,670	47.0	41.36	52.69
RM3000 – RM3999	258	73,642	54.7	47.15	62.04
RM4000 – RM4999	216	50,634	53.8	47.54	60.03
RM5000 and above	818	231,381	63.6	59.04	67.83

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.4.2.2 : Support for learning as seen by percentage of children age 36-59 months with whom adult household members have engaged in four or more activities that promote learning and school readiness during the last 3 days, NHMS 2016 (N=3,630)

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	837	242,096	24.6	21.03	28.47
Locality					
Urban	483	153,995	24.3	21.60	27.20
Rural	354	88,102	25.1	22.40	27.90
Sex					
Male	429	127,534	24.9	20.88	29.32
Female	408	114,562	24.2	19.84	29.24
Age of child					
36-47 months	415	116,785	23.2	19.97	26.77
48-59 months	422	125,312	26.0	21.27	31.33
Ethnicity					
Malay	613	152,184	25.2	21.01	29.88
Chinese	66	35,467	22.5	15.50	31.39
Indians	34	9,215	17.3	11.63	25.06
Other Bumiputera	111	38,155	26.2	20.23	33.29
Others	13	7,076	31.2	20.39	44.60
Citizenship					
Malaysian citizen	828	236,655	24.5	20.94	28.54
Permanent Resident	1	78	4.1	0.40	30.98
Non-Malaysian	8	5,363	30.6	17.28	48.27
Marital status of mother					
Never married/Separated/ Divorced/Widowed	21	5,362	34.8	21.47	51.11
Married/Cohabiting	801	231,587	24.2	20.62	28.22
Mother's education					
None	17	5,553	29.9	14.42	51.83
Primary	91	32,270	30.0	23.92	36.90
Secondary	393	111,109	23.1	20.28	26.10
Higher	320	87,940	24.2	18.02	31.76
Father's education					
None	11	3,871	21.7	11.42	37.42
Primary	91	31,819	26.1	19.16	34.56
Secondary	399	114,719	23.3	20.31	26.61
Higher	268	71,524	24.1	17.88	31.55
Occupation of mother					
Public Sector	236	49,338	23.1	16.56	31.27
Private Sector	128	44,724	20.6	14.97	27.63
Self-employed	58	18,566	24.9	17.78	33.63
Unemployed	400	124,320	26.7	23.25	30.41
Occupation of father					
Public Sector	208	36,443	19.5	14.31	25.91
Private Sector	344	116,561	24.9	20.66	29.69
Self-employed	217	67,084	25.1	20.95	29.84
Unemployed	3	2,429	22.8	5.89	58.17
Household income					
Less than RM1000	97	27,236	26.1	20.55	32.54
RM1000 – RM1999	144	40,437	28.1	22.36	34.66
RM2000 – RM2999	128	34,905	24.2	17.94	31.78
RM3000 – RM3999	105	35,789	26.6	19.81	34.67
RM4000 – RM4999	78	18,683	19.9	13.64	28.01
RM5000 and above	285	85,047	23.4	18.49	29.04

Some cells have respondent count <30. Results should be interpreted with caution.

Table 6.4.2.3 : Learning materials as seen by percentage of children under age 5 by numbers of children's books present in the household, and by playthings that child plays

Sociodemographic characteristics	Percentage of children living in households that have books for the child : N=15,113						Percentage of children living in households that have toys from a shop/manufactured toy playthings for the child : N=15,188											
	3 or more children's books ¹			10 or more children's books ¹			Toys from a shop/manufactured toy			Toys from a shop/manufactured toy								
	n	Estimated Population	%	Lower	Upper	95% CI	n	Estimated Population	%	Lower	Upper	95% CI	n	Estimated Population	%	Lower	Upper	95% CI
MALAYSIA	7,901	1,377,776	55.5	50.49	60.31	2,342	453,806	18.3	15.79	21.03	14,580	2,276,541	91.4	89.78	92.73			
Locality																		
Urban	5,184	964,826	60.0	57.70	62.30	1619	331,620	20.6	18.7	22.7	8,710	1,480,395	91.9	90	93.4			
Rural	2,717	412,950	47.1	44.70	49.40	723	122,186	13.9	12.3	15.8	5,870	796,147	90.5	88.8	91.9			
Sex																		
Male	3,970	708,807	54.9	48.68	61.07	1,184	232,146	18.0	15.04	21.39	7,572	1,188,864	92	89.58	93.83			
Female	3,931	668,969	56	51.85	60.08	1,158	221,660	18.6	16.05	21.36	7,008	1,087,677	90.7	89.00	92.23			
Age of child																		
0-11 months	68	53,479	11.2	6.05	19.74	12	8,924	1.9	0.77	4.45	422	305,853	63.7	56.33	70.44			
12-23 months	4,524	247,320	45.6	40.07	51.17	1,138	61,482	11.3	9.26	13.78	9,859	535,435	97.7	97.17	98.18			
24-59 months	3,309	1,076,976	73.6	69.05	77.69	1,192	383,400	26.2	22.88	29.81	4,299	1,435,253	98.1	97.35	98.61			
Ethnicity																		
Malay	5,837	881,721	57.1	52.00	62.03	1,664	276,422	17.9	15.50	20.57	10,309	1,412,343	91.2	89.67	92.47			
Chinese	1,007	237,871	60.5	51.89	68.51	405	110,160	28.0	22.53	34.25	1,694	363,848	92.3	86.76	95.59			
Indians	324	73,260	61	52.57	68.87	104	20,829	17.4	12.18	24.12	625	116,291	96.2	92.24	98.18			
Other Bumiputera	615	162,624	44.42	36.68	52.44	150	42,902	11.7	7.75	17.34	1,642	329,719	90.02	87.06	92.36			
Others	94	18,859	34.00	26.85	41.97	18	3,490	6.3	3.49	11.09	271	49,513	89.15	85.58	91.91			
Citizenship																		
Malaysian citizen	7,810	1,359,248	55.9	50.88	60.75	2,328	450,189	18.5	16.01	21.29	14,340	2,229,114	91.4	89.73	92.75			
Permanent Resident	11	1,199	29.7	7.07	70.11	2	126	3.1	0.29	25.96	21	3,749	92.8	86.02	96.44			
Non-Malaysian	63	14,573	33.1	23.53	44.33	11	3,487	7.9	4.79	12.83	197	40,695	92.3	88.65	94.82			
Marital status of mother																		
Never married/Separated/Divorced/Widowed	114	23,860	49.6	36.45	62.77	36	6,955	14.5	7.59	25.78	255	43,978	90.8	82.38	95.46			
Married/Cohabiting	7,738	1,333,279	55.9	50.82	60.85	2,290	439,109	18.4	15.92	21.19	14,215	2,187,814	91.5	89.80	92.88			
Mother's education																		
None	43	9,566	21.7	13.95	32.08	9	1,012	2.3	0.66	7.61	231	38,582	87.1	80.29	91.75			
Primary	496	100,383	38.9	32.04	46.14	87	18,968	7.3	4.09	12.85	1,459	243,328	93.9	91.24	95.80			
Secondary	3,650	644,082	51.1	46.71	55.51	879	168,955	13.4	11.48	15.61	7,430	1,143,448	90.6	88.90	91.99			
Higher	3,636	600,741	69.2	63.84	74.15	1,346	256,341	29.5	26.02	33.32	5,309	803,350	92.2	89.27	94.40			
Father's education																		
None	52	11,262	27.4	18.06	39.26	9	2,316	5.6	2.85	10.85	221	36,211	88.1	79.70	93.33			
Primary	585	106,330	37.2	32.38	42.22	109	21,493	7.5	4.62	11.99	1,625	262,388	91.4	88.50	93.63			
Secondary	3,825	675,572	54	49.80	58.23	938	192,175	15.4	13.48	17.48	7,328	1,150,725	91.8	90.18	93.24			
Higher	3,083	499,899	68.4	60.89	75.02	1,179	212,956	29.1	25.27	33.31	4,467	671,941	91.6	87.12	94.56			
Occupation of mother																		
Public Sector	2,447	316,847	66.3	61.77	70.55	933	139,643	29.2	24.81	34.07	3,660	447,908	93.3	91.16	94.99			
Private Sector	1,846	378,954	62.2	53.45	70.19	543	116,871	19.2	16.07	22.72	3,132	552,506	90.3	84.67	93.97			
Self-employed	531	101,075	58.3	50.12	66.07	149	39,504	22.8	13.95	34.96	1,063	163,952	94.3	91.72	96.15			
Unemployed	3,014	558,406	47.7	42.96	52.55	700	149,812	12.8	10.42	15.65	6,587	1,064,477	90.9	89.12	92.34			
Occupation of father																		
Public Sector	2,163	281,232	61.8	56.67	66.66	729	107,312	23.6	19.31	28.46	3,472	425,260	93	90.37	94.91			
Private Sector	3,549	683,451	57.5	50.41	64.29	1,019	211,072	17.8	14.91	21.91	6,528	1,091,588	91.6	88.85	93.65			
Self-employed	1,793	320,889	49.4	45.31	53.53	472	107,542	16.6	12.96	20.92	3,751	589,877	90.8	88.80	92.46			
Unemployed	62	11,662	55.3	40.00	69.58	21	4,547	21.5	10.63	38.79	124	19,962	92.4	83.04	96.79			
Household income																		
Less than RM1000	524	96,782	35.2	30.26	40.38	87	17,939	6.5	3.91	10.66	1,550	242,677	88.1	85.10	90.52			
RM1000 - RM1999	932	154,646	41.7	36.78	46.79	169	33,053	8.9	6.58	11.96	2,269	332,689	89.6	86.72	91.94			
RM2000 - RM2999	1,120	187,395	49.2	44.27	54.12	250	47,181	12.4	9.88	15.41	2,357	353,867	92.4	89.85	94.34			
RM3000 - RM3999	1,041	190,937	57.4	50.77	63.81	270	51,489	15.5	11.96	19.81	1,960	306,681	92.0	89.34	94.10			
RM4000 - RM4999	873	143,234	62.5	56.70	68.04	265	52,664	23.0	18.07	28.79	1,472	211,067	91.5	87.50	94.25			
RM5000 and above	3,402	603,920	67.6	62.02	72.72	1,291	251,097	28.1	24.76	31.71	4,958	827,172	92.4	88.53	95.01			

Some cells have respondent count <30. Results should be interpreted with caution.

Sociodemographic characteristics	Percentage of children living in households that have playthings for the child : N=15,188														
	Homemade toys					Household objects/objects found outside					Two or more types of playthings ²				
	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper
MALAYSIA	4,314	645,353	25.9	22.60	29.50	10,591	1,394,306	56.0	49.7	62.0	11,423	1,555,532	62.4	56.63	67.84
Locality															
Urban	2,807	428,787	26.6	24.80	28.50	6,271	855,582	53.1	50.7	55.5	6,904	982,601	60.9	58.5	63.4
Rural	1,507	216,566	24.6	22.70	26.70	4,320	538,724	61.2	58.9	63.5	4,519	572,932	65.1	62.8	67.3
Sex															
Male	2,254	334,331	25.9	22.01	30.14	5,385	694,714	53.7	46.71	60.58	5,845	785,512	60.7	54.38	66.70
Female	2,060	311,022	26.0	22.82	29.37	5,206	699,591	58.4	52.46	64.04	5,578	770,021	64.2	58.61	69.47
Age of child															
0-11 months	37	22,020	4.6	2.99	6.97	108	58,460	12.2	8.92	16.36	125	68,980	14.3	10.68	18.99
12-23 months	2,742	149,365	27.3	23.55	31.37	7,339	364,747	66.6	60.10	72.50	7,881	403,174	73.6	68.11	78.40
24-59 months	1,535	473,968	32.4	28.21	36.89	3,144	971,099	66.4	58.27	73.60	3,417	1,083,378	74.0	66.29	80.48
Ethnicity															
Malay	3,109	392,891	25.4	21.61	29.55	7,625	855,273	55.2	48.87	61.40	8,157	939,417	60.6	54.22	66.67
Chinese	446	102,758	26.0	20.81	32.03	1,085	213,993	54.2	46.20	62.00	1,243	252,839	64.0	57.50	70.11
Indians	146	26,906	22.3	17.10	28.44	435	62,360	51.6	35.41	67.44	475	71,645	59.2	43.35	73.40
Other Bumiputera	515	106,218	29.0	19.39	41.06	1,229	226,753	61.9	51.53	71.30	1,300	248,118	67.7	59.93	74.60
Others	83	15,271	27.5	16.38	42.34	187	32,197	58.0	50.87	64.75	217	39,239	70.6	62.17	77.90
Citizenship															
Malaysian citizen	4,237	630,533	25.9	22.55	29.46	10,422	1,362,745	55.8	49.52	61.99	11,230	1,517,845	62.2	56.34	67.68
Permanent Resident	6	193	4.8	0.74	25.15	13	3,604	89.2	57.09	98.10	15	3,476	86.1	65.91	95.18
Non-Malaysian	62	14,191	32.2	20.05	47.31	136	25,078	56.9	49.75	63.72	158	31,333	71.1	61.39	79.12
Marital status of mother															
Never married/Separated/Divorced/Widowed	71	10,136	20.9	14.08	29.97	184	31,040	64.1	51.48	75.05	193	32,087	66.2	52.41	77.72
Married/Cohabiting	4,211	622,028	26.0	22.70	29.64	10,339	1,335,140	55.8	49.41	62.03	11,151	1,490,950	62.3	56.35	67.90
Mother's education															
None	60	13,192	29.8	19.62	42.40	189	25,962	58.6	46.88	69.40	178	30,011	67.4	55.50	77.44
Primary	367	66,689	25.8	20.31	32.07	1,102	158,519	61.2	53.14	68.70	1,147	172,563	66.6	60.83	71.90
Secondary	2,083	324,111	25.7	21.74	30.05	5,369	714,387	56.6	51.67	61.32	5,773	765,188	62.1	57.35	66.69
Higher	1,756	226,665	26.0	22.72	29.65	3,829	465,241	53.4	44.17	62.41	4,211	532,693	61.1	51.82	69.71
Father's education															
None	52	8,998	21.9	13.86	32.82	201	27,178	66.1	53.78	76.62	180	27,803	67.7	56.74	76.93
Primary	385	71,037	24.8	19.70	30.60	1,181	170,467	59.4	49.22	65.31	1,246	188,939	65.7	60.07	71.00
Secondary	2,181	336,172	26.8	22.66	31.49	5,422	700,781	55.9	49.82	61.83	5,864	777,281	62.0	56.21	67.46
Higher	1,501	189,555	25.8	22.23	29.82	3,252	392,827	53.5	44.13	62.67	3,571	450,724	61.4	52.07	69.98
Occupation of mother															
Public Sector	1,253	124,031	25.8	21.41	30.79	2,783	270,043	56.2	49.34	62.87	2,995	302,752	63.0	55.95	69.59
Private Sector	907	162,354	26.5	23.19	30.19	2,156	320,080	52.3	44.17	60.32	2,388	360,025	58.8	50.77	66.37
Self-employed	288	39,848	23.0	17.66	29.28	752	101,101	58.2	47.70	67.95	816	109,998	63.3	52.74	72.70
Unemployed	1,821	304,360	26.0	22.18	30.21	4,809	673,529	57.5	51.50	63.26	5,121	747,864	63.8	58.65	68.65
Occupation of father															
Public Sector	1,153	114,914	25.1	20.42	30.50	2,628	264,746	57.9	51.74	63.79	2,818	293,548	64.2	58.89	69.14
Private Sector	1,901	325,301	27.3	23.50	31.46	4,605	632,877	54.8	47.05	62.24	5,050	740,485	62.1	54.65	68.97
Self-employed	1,027	158,123	24.4	20.65	28.48	2,754	364,112	56.0	49.28	62.54	2,915	398,520	61.3	54.63	67.55
Unemployed	43	6,822	31.6	21.39	43.90	88	11,337	52.5	33.89	70.40	99	14,641	67.8	55.29	78.14
Household income															
Less than RM1000	447	72,839	26.4	19.80	34.35	1,197	176,656	64.1	57.90	69.89	1,225	187,207	67.9	61.50	73.68
RM1000 - RM1999	591	96,282	26.0	21.61	30.89	1,670	214,743	57.8	52.83	62.70	1,746	231,919	62.4	57.89	66.72
RM2000 - RM2999	587	93,602	24.4	19.78	29.79	1,700	219,827	57.4	51.78	62.83	1,810	240,570	62.8	57.26	67.96
RM3000 - RM3999	537	74,358	22.4	18.05	27.35	1,379	182,692	54.8	47.22	62.22	1,504	202,500	60.8	53.40	67.69
RM4000 - RM4999	442	61,652	26.7	21.66	32.39	1,094	135,266	58.5	47.96	68.33	1,175	146,483	63.4	52.28	73.19
RM5000 and above	1,702	246,273	27.5	23.90	31.44	3,538	464,056	51.8	43.18	60.38	3,950	545,789	60.9	52.32	68.94

Some cells have respondent count <30. Results should be interpreted with caution.

Table 7.1.2.1 : Inadequate care as seen by percentage of children under age 5 left alone or left in the care of another child younger than 10 years of age for more than one hour at least once during the past week, NHMS 2016 (N=15,178)

Sociodemographic characteristics	Left alone in the past week					Left in the care of another child younger than 10 years of age in the past week					Left with inadequate care in the past week				
	Unweighted count	Estimated Population	%	95% CI		Unweighted count	Estimated Population	%	95% CI		Unweighted count	Estimated Population	%	95% CI	
				Lower	Upper				Lower	Upper				Lower	Upper
MALAYSIA	37	5,278	0.2	0.10	0.44	504	67,116	2.7	1.87	3.86	531	71,036	2.9	2.01	4.03
Locality															
Urban	1,181	340,395	34.5	50.60	56.80	332	50,885	3.2	2.60	3.80	345	53,900	3.3	2.80	4.00
Rural	781	182,521	51.9	48.60	55.20	172	16,232	1.8	1.40	2.40	186	17,137	1.9	1.50	2.50
Sex															
Male	18	1,456	0.1	0.06	0.22	258	32,614	2.5	1.63	3.87	273	33,589	2.6	1.70	3.96
Female	19	3,823	0.3	0.12	0.83	246	34,502	2.9	2.04	4.05	258	37,447	3.1	2.24	4.34
Age of child															
0-11 months	0	-	-	-	-	11	7,587	1.6	0.66	3.75	11	7,587	1.6	0.66	3.75
12-23 months	28	1,982	0.4	0.20	0.66	340	18,392	3.4	2.56	4.39	362	19,964	3.6	2.79	4.74
24-59 months	9	3,296	0.2	0.08	0.64	153	41,138	2.8	1.84	4.27	158	43,486	3.0	1.98	4.44
Ethnicity															
Malay	25	4,005	0.3	0.10	0.64	393	49,073	3.2	2.27	4.40	411	52,259	3.4	2.47	4.61
Chinese	3	468	0.1	0.04	0.35	53	8,120	2.1	1.11	3.77	55	8,407	2.1	1.17	3.84
Indians	1	113	0.1	0.01	0.69	13	928	0.8	0.31	1.87	14	1,042	0.9	0.37	1.97
Other Bumiputera	8	692	0.2	0.09	0.42	41	8,609	2.4	0.90	6.26	47	8,944	2.4	0.94	6.20
Others	0	-	-	-	-	2	151	0.3	0.06	1.24	2	151	0.3	0.06	1.24
Citizenship															
Malaysian citizen	37	5,278	0.2	0.10	0.45	503	67,059	2.7	1.91	3.94	530	70,980	2.9	2.05	4.11
Permanent Resident	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Non-Malaysian	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
Marital status of mother															
Never married/ Separated/ Divorced/ Widowed	0	0	0	0.00	0.00	8	1,833	3.8	1.30	10.53	8	1,833	3.8	1.30	10.53
Married/Cohabiting	37	5,278	0.2	0.11	0.46	495	64,668	2.7	1.88	3.88	522	68,588	2.9	2.02	4.05
Mother's education															
None	2	40	0.1	0.02	0.47	3	409	0.9	0.27	3.06	5	449	1.0	0.33	3.05
Primary	5	552	0.2	0.08	0.57	28	3,851	1.5	0.82	2.67	32	4,137	1.6	0.93	2.73
Secondary	23	2,406	0.2	0.10	0.37	231	29,490	2.3	1.67	3.25	250	29,066	2.3	1.77	3.36
Higher	7	2,281	0.3	0.06	1.22	240	32,710	3.8	2.31	6.04	246	34,946	4.0	2.54	6.30
Father's education															
None	2	40	0.1	0.02	0.49	0	0	0	0.00	0.00	2	40	0.1	0.02	0.49
Primary	5	669	0.2	0.09	0.63	42	6,141	2.1	1.27	3.59	46	6,545	2.3	1.35	3.82
Secondary	22	1,908	0.2	0.07	0.33	235	27,866	2.2	1.59	3.10	250	29,067	2.3	1.68	3.19
Higher	8	2,662	0.4	0.10	1.36	201	28,152	3.8	2.28	6.38	207	30,429	4.1	2.56	6.65

Sociodemographic characteristics	Left alone in the past week				Left in the care of another child younger than 10 years of age in the past week				Left with inadequate care in the past week						
	Unweighted count	Estimated Population	95% CI		Unweighted count	Estimated Population	95% CI		Unweighted count	Estimated Population	95% CI				
			Lower	Upper			Lower	Upper			Lower	Upper			
	%		%		%		%		%		%				
Occupation of mother															
Public Sector	12	1,188	0.2	0.09	0.68	217	26,944	5.6	3.65	8.53	224	27,529	5.7	3.76	8.65
Private Sector	3	345	0.1	0.02	0.16	170	21,670	3.5	2.29	5.43	173	22,015	3.6	2.33	5.50
Self-employed	7	453	0.3	0.10	0.70	25	4,067	2.3	1.05	5.11	30	4,416	2.5	1.21	5.25
Unemployed	15	3,293	0.3	0.10	0.77	90	13,792	1.2	0.83	1.67	102	16,435	1.4	0.91	2.15
Occupation of father															
Public Sector	6	702	0.2	0.04	0.54	176	21,294	4.7	3.04	7.08	180	21,594	4.7	3.09	7.16
Private Sector	13	2,756	0.2	0.07	0.79	211	30,393	2.5	1.78	3.64	221	32,889	2.8	1.93	3.92
Self-employed	18	1,821	0.3	0.16	0.50	89	10,334	1.6	1.04	2.42	102	11,458	1.8	1.19	2.60
Unemployed	0	-	-	-	-	3	269	1.2	0.29	5.20	3	269	1.2	0.29	5.20
Household income															
Less than RM1000	5	432	0.2	0.04	0.54	31	4,260	1.5	0.75	3.15	34	4,414	1.6	0.80	3.19
RM1000 – RM1999	4	165	0.04	0.01	0.15	36	4,181	1.1	0.73	1.75	40	4,345	1.2	0.77	1.78
RM2000 – RM2999	6	472	0.1	0.04	0.34	57	10,109	2.6	1.66	4.18	62	10,378	2.7	1.71	4.28
RM3000 – RM3999	6	933	0.30	0.09	0.86	61	7,439	2.23	1.33	3.71	64	7,879	2.4	1.44	3.85
RM4000 – RM4999	3	290	0.13	0.03	0.48	68	6,629	2.87	1.92	4.25	71	6,919	3.0	2.02	4.42
RM5000 and above	13	2,986	0.33	0.11	1.05	251	34,499	3.85	2.36	6.24	260	37,101	4.1	2.61	6.52

Some cells have respondent count <30. Results should be interpreted with caution.

Table 7.2.2.1 : Child disciplining methods experienced during the last one month among children aged 12-59 months, NHMS 2016

	Only non-violent discipline (N=13,665)										Psychological aggression (N=13,674)										Physical punishment (N=13,667)										Any violent discipline method ¹ (N=13,667)									
	Any					Severe					Any					Severe					Any					Severe														
	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper	n	Estimated Population	%	95% CI Lower	95% CI Upper										
MALAYSIA	5,028	515,014	27.3	23.76	31.25	6,753	1,089,151	57.8	53.48	61.99	6,109	1,036,772	55.0	50.80	59.22	512	98,908	5.2	4.00	6.85	8,415	1,334,060	70.8	66.46	74.87															
Locality																																								
Urban	2,986	326,374	27.0	25.15	28.98	4,082	704,080	58	55.91	60.57	3,597	669,089	55.4	52.9	57.8	293	55,208	4.6	3.79	5.50	5,061	866,952	71.8	69.75	73.73															
Rural	2,042	188,640	27.9	25.91	30.03	2,671	385,070	57	54.56	59.33	2,512	367,683	54.4	52.0	56.8	219	43,700	6.5	5.38	7.76	3,354	467,109	69.2	66.99	71.24															
Sex																																								
Male	2,491	236,826	24.4	20.41	28.89	3,612	596,148	61.3	56.02	66.38	3,334	555,923	57.3	52.38	62.04	306	62,262	6.4	4.78	8.54	4,497	719,003	74.1	69.13	78.48															
Female	2,537	278,189	30.5	27.00	34.20	3,141	493,002	54.0	50.19	57.80	2,775	480,848	52.7	48.47	56.82	206	36,646	4.0	3.05	5.27	3,918	615,057	67.4	63.21	71.32															
Age of child																																								
12-23 months	4,007	194,300	38.0	34.30	41.84	4,128	236,829	46.3	41.61	51.02	3,705	220,100	43.0	38.88	47.20	214	11,564	2.3	1.78	2.86	5,325	306,823	60.0	55.77	64.13															
24-35 months	213	111,813	25.2	19.90	31.34	396	247,988	55.8	49.51	61.86	390	249,947	56.3	49.83	62.58	37	20,241	4.6	2.64	7.75	497	319,800	72.1	65.60	77.72															
36-47 months	418	104,260	22.1	18.81	25.87	1,148	306,898	65.1	60.70	69.31	1,041	288,874	61.1	56.44	65.49	135	32,037	6.8	5.10	9.05	1,343	330,528	76.6	72.45	80.22															
48-59 months	390	104,641	22.9	18.29	28.24	1,081	297,436	65.1	59.75	70.05	973	279,851	61.1	55.91	66.09	126	35,065	7.7	5.39	10.80	1,250	346,910	75.9	70.17	80.77															
Ethnicity																																								
Malay	3,667	328,286	28.2	24.59	32.20	4,737	648,085	55.7	51.60	59.72	4,216	635,085	54.7	50.67	58.62	356	58,441	5.0	3.62	6.94	5,928	816,801	70.3	66.23	74.04															
Chinese	606	81,806	27.3	22.44	32.73	720	179,746	60.0	52.82	66.77	696	165,538	55.1	48.62	61.42	45	11,844	3.9	2.31	6.66	916	216,688	72.3	66.78	77.16															
Indians	186	22,642	24.2	15.05	36.47	338	62,647	66.9	53.45	78.05	313	53,186	56.8	45.43	67.49	22	3,505	3.7	1.48	9.16	403	70,863	75.7	63.40	84.82															
Other	465	73,226	26.2	18.59	35.53	813	166,599	59.5	47.77	70.23	753	151,529	54.1	40.51	67.10	77	20,100	7.2	4.26	11.82	987	192,026	68.7	55.40	79.45															
Others	98	8,809	20.0	13.31	29.00	128	29,271	66.5	56.30	75.45	107	28,369	64.6	51.63	75.74	10	4,885	11.1	4.17	26.45	153	34,000	77.4	65.71	85.91															
Citizenship																																								
Malaysian citizen	4,949	506,103	27.5	23.91	31.42	6,641	1,061,429	57.6	53.34	61.84	6,009	1,009,075	54.8	50.63	58.97	501	94,214	5.1	3.90	6.69	8,271	1,300,602	70.7	66.33	74.70															
Permanent Resident	6	1,259	33.9	17.69	54.98	10	14,146	38.1	9.92	77.47	9	2,406	64.8	44.47	80.83	1	50	1.3	0.12	13.45	12	2,457	66.1	45.02	82.31															
Non-Malaysian	69	7,468	20.3	12.31	31.51	94	24,013	65.2	51.98	76.48	78	23,186	63.0	49.98	74.42	8	4,511	12.3	5.42	25.42	116	28,351	77.0	63.21	86.72															
Marital status of mother																																								
Never married/ Separated/ Divorced/ Widowed/ Married/ Cohabiting	97	15,413	42.7	31.08	55.12	91	14,975	41.3	30.59	52.84	96	15,801	43.7	32.05	56.18	10	1,171	3.2	1.31	7.71	128	20,140	55.8	43.10	67.70															
Education of mother																																								
None	60	7,422	21.0	13.50	31.23	138	22,794	64.4	50.84	76.04	132	21,788	61.7	47.83	73.95	12	1,894	5.4	2.20	12.47	172	27,190	77.0	65.87	85.36															
Primary	470	56,127	27.5	22.97	32.51	735	121,088	59.2	52.25	65.76	675	111,053	54.4	46.90	61.62	86	18,295	8.9	6.18	12.76	888	141,307	69.2	62.51	75.15															
Secondary	2,434	247,007	26.4	22.26	31.10	3,392	534,660	57.2	52.94	61.40	3,203	529,068	56.6	51.73	61.44	280	58,469	6.3	4.58	8.51	4,331	669,484	71.7	66.70	76.18															
Higher	2,035	199,972	29.7	25.14	34.61	2,416	387,321	57.4	51.09	63.47	2,027	351,146	52.1	48.04	56.05	123	16,952	2.5	1.84	3.41	2,935	467,268	69.3	64.13	74.03															

Table 7.2.2.2 : Attitudes toward physical punishment as seen by percentage of respondents to the child discipline module who believe that physical punishment is needed to bring up, raise, or educate a child properly, NHMS 2016, N=14,492

Sociodemographic characteristics	Unweighted count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
MALAYSIA	7,220	1,100,760	54.8	50.63	58.82
Locality					
Urban	4,147	715,684	55.5	53.16	57.77
Rural	3,073	385,077	53.5	51.11	55.81
Respondent Ethnicity					
Malay	5,065	659,433	53.3	48.90	57.60
Chinese	770	179,124	55.9	48.82	62.72
Indians	288	52,629	54.4	44.14	64.28
Other Bumiputera	932	181,577	59.9	50.61	68.51
Others	134	23,607	49.8	38.00	61.69
Respondent Citizenship					
Malaysian citizen	7,097	1,076,443	54.8	50.74	58.80
Permanent Resident	18	2,910	73.9	28.25	95.31
Non-Malaysian	85	18,585	47.5	34.49	60.77
Marital status of mother					
Never married/ Separated/ Divorced / Widowed	125	20,641	50.0	37.68	62.36
Married/ Cohabiting	7,035	1,056,439	54.6	50.49	58.69
Education of mother					
None	131	20,569	51.5	40.11	62.82
Primary	801	123,222	54.4	47.49	61.12
Secondary	3,849	567,061	56.9	51.83	61.91
Higher	2,359	365,168	51.4	46.99	55.83
Education of father					
None	132	17,582	48.8	38.91	58.86
Primary	918	145,058	59.5	52.93	65.79
Secondary	3,870	566,401	56.2	51.97	60.35
Higher	1,948	301,626	51.4	44.89	57.77
Occupation of mother					
Public Sector	1,787	224,986	56.5	50.44	62.39
Private Sector	1,402	239,075	49.2	43.76	54.71
Self-employed	505	85,759	55.9	46.85	64.61
Unemployed	3,447	525,351	56.2	52.02	60.25
Occupation of father					
Public Sector	1,710	203,832	55.4	49.73	61.00
Private Sector	3,246	532,220	55.0	50.47	59.51
Self-employed	1,865	288,098	54.7	49.97	59.38
Unemployed	63	10,350	55.1	42.12	67.41
Household income					
Less than RM1000	856	138,065	60.0	53.76	65.98
RM1000 – RM1999	1,178	155,535	53.7	48.91	58.34
RM2000 – RM2999	1,253	171,797	57.3	51.69	62.76
RM3000 – RM3999	1,024	152,711	56.6	49.91	63.05
RM4000 – RM4999	705	99,051	51.1	42.98	59.09
RM5000 and above	2,194	381,786	52.7	46.65	58.68

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.1.2.1 : Prevalence of mothers who attended antenatal care by number of visits during pregnancy of last child birth, NHMS 2016, N=10,260

Sociodemographic characteristics	Mothers who attended the antenatal care											
	No antenatal care				Three visits or below				Four or more visits ¹			
	Unweighted count	%	95% CI		Unweighted count	%	95% CI		Unweighted count	%	95% CI	
		Lower	Upper			Lower	Upper			Lower	Upper	
MALAYSIA	38	0.6	0.38	1.04	245	2.0	1.71	2.39	9,977	97.4	96.85	97.77
Locality												
Urban	21	0.7	0.38	1.19	175	2.0	1.12	3.60	5,863	97.3	95.80	98.29
Rural	17	0.5	0.24	1.23	70	2.0	1.20	3.40	4,114	97.4	95.96	98.37
Age												
15-19	4	2.0	0.50	7.53	16	4.1	2.15	7.54	424	94.0	89.14	96.71
20-24	14	1.3	0.61	2.58	54	2.6	1.87	3.66	1,622	96.1	94.66	97.20
25-29	8	0.3	0.12	0.58	85	1.8	1.34	2.36	3,505	98.0	97.33	98.44
30-34	8	0.5	0.14	1.69	61	1.6	1.14	2.28	2,904	97.9	96.89	98.57
35-39	3	0.2	0.04	0.57	24	1.3	0.71	2.29	1,251	98.6	97.55	99.17
40-44	1	0.1	0.01	0.42	5	1.9	0.62	5.45	256	98.1	94.55	99.34
45-49	0	-	-	-	0	0.0	0.00	0.00	15	100.0	0.00	100.00
Ethnicity												
Malay	24	0.6	0.30	1.14	168	1.6	1.33	2.03	6,918	97.8	97.18	98.24
Chinese	5	0.3	0.12	1.03	33	2.9	1.96	4.20	1,089	96.8	95.39	97.75
Indians	1	0.1	0.02	0.86	11	3.0	1.51	6.03	418	96.8	93.87	98.39
Other Bumiputera	3	0.4	0.10	1.61	21	1.7	1.02	2.72	1,157	97.9	96.66	98.70
Others	5	2.7	0.89	7.92	12	4.0	1.94	8.21	395	93.3	87.86	96.37
Citizenship												
Malaysian citizen	32	0.5	0.28	0.88	230	1.9	1.62	2.27	9,498	97.6	97.12	97.98
Permanent Resident	0	-	-	-	0	0.0	0.00	0.00	46	100.0	0.00	100.00
Non-Malaysian	6	2.8	1.00	7.81	15	4.0	2.00	7.69	392	93.2	88.11	96.19
Marital status												
Single (Unmarried)	3	22.6	5.11	61.26	3	7.1	1.85	23.38	34	70.3	38.01	90.17
Married/cohabiting	34	0.5	0.32	0.89	229	1.9	1.57	2.23	9,753	97.6	97.13	97.98
Separated/divorced/widowed	1	0.1	0.01	0.46	9	9.6	4.63	18.79	126	90.3	81.17	95.31
Mother's education												
None	0	-	-	-	1	4.3	0.62	24.44	77	95.7	75.56	99.38
Primary	5	0.7	0.20	2.32	28	3.4	2.17	5.39	1,038	95.9	93.72	97.31
Secondary	24	0.9	0.47	1.64	137	1.9	1.48	2.34	5,146	97.3	96.48	97.88
Higher	7	0.2	0.07	0.41	68	1.6	1.13	2.21	3,515	98.2	97.60	98.72
Occupation												
Public Sector	5	0.2	0.08	0.62	34	1.8	1.17	2.82	2,387	98.0	96.94	98.65
Private Sector	8	0.7	0.23	1.94	60	2.0	1.40	2.74	2,224	97.4	96.21	98.18
Self-employed	17	1.3	0.28	5.80	17	1.1	0.55	2.07	746	97.6	94.36	99.03
Housewife	17	0.6	0.32	1.25	124	2.1	1.62	2.61	4,406	97.3	96.58	97.88
Unemployed	1	0.1	0.02	1.05	2	6.4	1.35	25.76	83	93.4	74.43	98.57
Student	1	1.8	0.25	11.94	3	8.9	2.12	30.63	39	89.3	69.05	96.89
Household income												
Less than RM1000	5	0.7	0.16	2.69	22	3.6	2.15	6.06	773	95.7	93.07	97.37
RM1000 – RM1999	8	0.4	0.14	0.98	50	2.3	1.57	3.26	1,852	97.4	96.29	98.13
RM2000 – RM2999	6	0.5	0.18	1.29	60	3.1	2.12	4.46	1,623	96.4	94.98	97.49
RM3000 – RM3999	6	0.5	0.18	1.29	35	2.7	1.78	4.09	1,334	96.8	95.37	97.83
RM4000 – RM4999	6	1.3	0.37	4.24	24	1.1	0.61	2.01	999	97.6	95.23	98.83
RM5000 and above	5	0.6	0.19	1.81	50	1.0	0.69	1.52	3,335	98.4	97.39	99.00

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.1.2.2 : Prevalence of mothers who attended antenatal care by timing of first antenatal visit, during pregnancy of last child birth, NHMS 2016, N=10,260

Sociodemographic characteristics	Mothers who had first antenatal care by trimester												Median period of gestation during first ANC visit
	First trimester (0-12 weeks)				Second trimester (13-28 weeks)				Third trimester (more than 28 weeks)				
	Unweighted count	%	Lower	Upper	Unweighted count	%	Lower	Upper	Unweighted count	%	Lower	Upper	
MALAYSIA	7,341	69.1	67.78	70.39	2,671	28.5	27.27	29.81	139	1.7	1.40	2.17	11
Locality													
Urban	4,289	68.2	65.60	70.70	1,639	29.6	27.28	31.99	75	1.6	0.99	2.41	10
Rural	3,052	71.0	67.80	73.93	1,032	26.3	23.79	29.04	64	2.2	1.52	3.07	10
Age													
15-19	238	48.3	42.06	54.65	161	39.7	33.76	46.00	33	9.9	6.65	14.62	12
20-24	1,191	67.4	64.22	70.35	451	29.7	26.81	32.79	25	1.7	1.03	2.67	11
25-29	2,688	71.8	69.55	73.89	849	27.0	24.90	29.21	38	1.0	0.63	1.46	10
30-34	2,195	73.3	70.92	75.59	728	25.4	23.19	27.74	23	0.8	0.46	1.33	10
35-39	874	68.5	64.91	71.95	370	29.5	26.21	33.06	16	1.8	0.93	3.41	11
40-44	148	55.0	47.05	62.69	104	43.9	36.28	51.88	4	1.0	0.34	3.00	12
45-49	7	43.1	19.29	70.57	8	56.9	29.43	80.71	0	-	-	-	13
Ethnicity													
Malay	5,372	73.7	72.08	75.26	1,601	24.8	23.25	26.34	63	0.9	0.66	1.35	10
Chinese	736	66.2	62.48	69.66	361	32.2	28.75	35.86	18	1.3	0.73	2.24	10
Indians	320	70.8	63.18	77.49	98	27.8	21.24	35.51	6	1.2	0.42	3.40	10
Other Bumiputera	699	59.1	55.78	62.28	440	37.0	33.92	40.22	32	3.5	2.32	5.24	11
Others	214	46.1	39.24	53.17	171	42.9	36.22	49.79	20	8.3	5.04	13.34	13
Citizenship													
Malaysian citizen	7,068	70.5	69.17	71.80	2,476	27.6	26.30	28.87	118	1.4	1.13	1.82	10
Permanent Resident	29	58.8	38.08	76.79	15	41.2	23.21	61.92	0	-	-	-	9
Non-Malaysian	214	47.8	40.87	54.75	170	42.3	35.67	49.24	21	7.1	4.23	11.61	12
Marital status													
Single (Unmarried)	11	17.3	7.63	34.64	16	38.7	20.53	60.64	9	21.2	9.04	42.26	16
Married/cohabiting	7,213	69.8	68.46	71.08	2,583	28.1	26.88	29.45	118	1.5	1.21	1.95	11
Separated/divorced/widowed	72	46.1	35.90	56.57	52	47.2	36.70	57.88	9	6.7	3.24	13.35	13
Mother's education													
None	41	57.1	43.97	69.25	35	42.9	30.75	56.03	0	-	-	-	12
Primary	631	54.1	49.93	58.16	390	40.6	36.57	44.77	33	4.6	3.04	6.99	12
Secondary	3,784	68.0	66.13	69.72	1,392	29.5	27.83	31.31	71	1.6	1.19	2.22	11
Higher	2,771	77.1	74.90	79.19	773	22.1	20.06	24.31	22	0.6	0.34	1.07	10
Occupation													
Public Sector	1,915	78.4	75.59	80.97	488	21.0	18.40	23.75	10	0.4	0.18	1.03	10
Private Sector	1,643	69.5	66.72	72.20	589	28.1	25.48	30.81	36	1.7	1.16	2.58	10
Self-employed	538	68.9	64.12	73.24	215	28.7	24.54	33.24	9	1.1	0.49	2.68	11
Housewife	3,097	65.8	67.74	73.24	1,320	31.6	29.74	33.49	70	1.9	1.42	2.63	11
Unemployed	47	48.0	33.22	63.21	31	40.6	26.33	56.73	6	11.2	3.88	28.20	12
Student	29	62.8	42.28	79.59	8	19.2	8.15	39.01	5	16.1	5.35	39.56	9
Household income													
Less than RM1000	501	61.6	57.17	65.78	262	34.5	30.43	38.79	20	3.3	1.81	5.88	11
RM1000 - RM1999	1,311	66.5	63.53	69.32	537	30.9	28.14	33.80	33	2.2	1.41	3.52	11
RM2000 - RM2999	1,187	65.1	61.73	68.25	446	31.0	27.91	34.26	37	3.5	2.31	5.17	11
RM3000 - RM3999	999	70.3	66.78	73.63	344	27.6	24.38	31.07	14	1.6	0.82	3.15	10
RM4000 - RM4999	754	71.0	66.43	75.17	255	27.1	23.09	31.57	9	0.6	0.28	1.34	11
RM5000 and above	2,548	73.4	71.01	75.65	808	25.5	23.28	27.80	21	0.5	0.29	0.97	10

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.1.2.3 : Antenatal care provider during pregnancy of last child birth, NHMS 2016

	Reported provider of care among mothers who received antenatal care																			
	Medical doctor				Nurse				Traditional birth attendant				Doula				Others			
	Unweighted count	%	95% CI Lower	95% CI Upper	Unweighted count	%	95% CI Lower	95% CI Upper	Unweighted count	%	95% CI Lower	95% CI Upper	Unweighted count	%	95% CI Lower	95% CI Upper	Unweighted count	%	95% CI Lower	95% CI Upper
MALAYSIA	10,177	99.6	99.40	99.68	9,492	89.1	88.12	90.04	78	0.7	0.50	0.87	4	0.1	0.02	0.23	8	0.1	0.04	0.18
Locality																				
Urban	6,012	98.9	98.04	99.39	5,426	84.8	79.96	88.57	37	0.5	0.28	0.80	1	0.1	0.01	0.34	5	0.1	0.01	0.45
Rural	4,165	99.0	98.17	99.43	4,066	96.4	95.20	97.36	41	1.0	0.62	1.54	3	0.1	0.03	0.51	3	0.1	0.03	0.36
Age																				
15-19	437	99.4	98.03	99.81	423	92.0	86.45	95.39	3	0.3	0.10	1.17	0	-	-	-	1	0.2	0.03	1.69
20-24	1,655	98.2	98.77	99.65	1,596	93.0	90.77	94.67	15	0.9	0.55	1.59	1	0.1	0.02	0.95	4	0.1	0.01	0.42
25-29	3,573	99.5	99.24	99.73	3,366	99.9	99.12	92.34	22	0.6	0.35	0.94	2	0.1	0.02	0.53	4	0.1	0.04	0.31
30-34	2,955	99.7	99.42	99.85	2,667	84.7	82.38	86.72	25	0.6	0.37	0.96	1	0.0	-	-	1	0.0	0.00	0.20
35-39	1,271	99.8	99.30	99.92	1,145	83.2	79.41	86.44	12	0.9	0.39	2.02	0	-	-	-	1	0.1	0.01	0.74
40-44	261	100.0	100.00	100.00	241	90.8	84.87	94.60	1	0.2	0.03	1.43	0	-	-	-	0	-	-	-
45-49	15	100.0	0.00	100.00	14	93.0	62.98	99.04	0	-	-	-	0	-	-	-	0	-	-	-
Ethnicity																				
Malay	7,053	99.5	99.29	99.66	6,746	92.1	90.95	93.14	56	0.7	0.50	0.98	3	0.1	0.01	0.30	2	0.0	0.01	0.16
Chinese	1,117	99.5	98.96	99.80	853	71.7	67.86	75.29	4	0.3	0.08	0.95	0	-	-	-	1	0.1	0.01	0.49
Indians	428	99.9	98.94	99.98	398	88.5	81.74	92.92	1	0.3	0.05	2.37	0	-	-	-	0	-	-	-
Other	1,173	99.6	98.75	99.85	1,129	95.5	93.97	96.64	16	1.2	0.72	1.93	0	-	-	-	5	0.4	0.17	1.06
Bumiputera	406	99.9	99.32	99.99	366	85.3	79.33	89.76	1	0.3	0.05	2.30	1	0.5	0.07	3.42	0	-	-	-
Citizenship																				
Malaysian citizen	9,683	99.5	99.36	99.66	9,052	89.4	88.38	90.34	76	0.7	0.51	0.89	3	0.0	0.01	0.20	8	0.1	0.04	0.19
Permanent Resident	46	100.0	0.00	100.00	45	97.6	84.50	99.67	0	-	-	-	0	-	-	-	0	-	-	-
Non-Malaysian	407	99.9	99.34	99.99	356	83.2	77.28	87.86	2	0.6	0.14	2.27	1	0.5	0.07	3.35	0	-	-	-
Marital status																				
Single (Unmarried)	36	99.7	97.67	99.96	33	89.4	72.19	96.51	0	-	-	-	0	-	-	-	0	-	-	-
Married/cohabiting	9,941	99.6	99.43	99.70	9,263	89.0	87.96	89.92	78	0.7	0.52	0.89	4	0.1	0.02	0.23	8	0.1	0.04	0.18
Separated/divorced/widowed	132	97.4	92.14	99.20	132	94.9	81.70	98.73	0	-	-	-	0	-	-	-	0	-	-	-
Mother's education																				
None	77	99.3	95.11	99.90	77	98.4	89.73	97.78	1	2.4	0.34	15.29	0	-	-	-	0	-	-	-
Primary	1,063	99.7	99.21	99.92	1,028	95.9	93.92	97.19	7	0.5	0.22	1.10	2	0.3	0.06	1.54	2	0.1	0.03	0.55
Secondary	5,257	99.5	99.25	99.68	5,024	93.1	91.99	94.12	39	0.6	0.43	0.94	1	0.0	0.00	0.06	6	0.1	0.06	0.32
Higher	3,569	99.7	99.42	99.80	3,160	80.2	77.87	82.33	29	0.7	0.43	1.07	1	0.1	0.01	0.66	0	-	-	-
Occupation																				
Public Sector	2,413	99.7	99.28	99.84	2,287	90.4	87.97	92.45	23	0.9	0.48	1.51	1	0.2	0.03	1.26	0	-	-	-
Private Sector	2,272	99.6	99.28	99.78	1,979	82.1	79.54	84.41	19	0.7	0.43	1.17	0	-	-	-	4	0.2	0.06	0.47
Self-employed	4,760	99.8	99.22	99.94	4,694	88.6	84.96	91.45	0	0.2	0.07	0.83	0	-	-	-	0	-	-	-
Housewife	4,508	99.4	99.12	99.64	4,330	93.0	91.66	94.13	29	0.6	0.37	0.88	3	0.1	0.02	0.36	4	0.1	0.03	0.25
Unemployed	85	100.0	0.00	100.00	79	88.8	72.93	95.87	2	2.7	0.66	10.25	0	-	-	-	0	-	-	-
Student	42	100.0	0.00	100.00	32	69.4	48.08	84.74	1	1.8	0.25	12.15	0	-	-	-	0	-	-	-
Household income																				
Less than RM1000	792	99.6	98.87	99.89	787	97.3	93.13	98.99	6	0.7	0.28	1.56	1	0.1	0.01	0.40	1	0.0	0.01	0.35
RM1000 - RM1999	1,887	99.1	98.40	99.48	1,876	98.0	96.65	98.80	18	0.9	0.54	1.64	1	0.2	0.02	1.10	0	-	-	-
RM2000 - RM2999	1,672	99.3	98.76	99.65	1,635	95.1	92.94	96.59	9	0.6	0.26	1.23	1	0.0	0.01	0.30	4	0.3	0.11	0.78
RM3000 - RM3999	1,363	99.5	98.66	99.77	1,293	92.2	89.65	94.17	9	0.7	0.32	1.33	0	-	-	-	2	0.2	0.05	0.88
RM4000 - RM4999	1,022	99.9	99.44	99.97	955	91.6	88.46	93.99	8	0.5	0.25	1.13	0	-	-	-	1	0.1	0.01	0.51
RM5000 and above	3,376	99.8	99.62	99.92	2,885	78.1	75.81	80.27	28	0.6	0.38	1.02	1	0.1	0.01	0.63	0	-	-	-

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.1.2.4 : Prevalence of mothers aged 15-49 years who received antenatal care in public and private health facilities during pregnancy of last child birth, NHMS 2016.

Sociodemographic characteristics	ANC at the most visited facility											
	Public health facility				Private health facility				No ANC			
	Unweighted count	%	95% CI Lower	Upper	Unweighted count	%	95% CI Lower	Upper	Unweighted count	%	95% CI Lower	Upper
MALAYSIA	9,169	85.0	83.91	86.07	1,046	14.4	13.33	15.43	38	0.6	0.38	1.04
Locality												
Urban	5,197	80.6	75.28	84.99	839	18.7	14.40	24.01	21	0.7	0.38	1.19
Rural	3,972	94.2	92.75	95.43	207	5.2	4.09	6.64	17	0.6	0.24	1.23
Age												
15-19	419	88.5	82.33	92.66	21	9.6	5.89	15.14	4	2.0	0.50	7.53
20-24	1,573	90.5	88.17	92.46	102	8.2	6.44	10.41	14	1.3	0.61	2.58
25-29	3,267	86.7	84.79	88.45	319	13.0	11.29	14.95	8	0.3	0.12	0.58
30-34	2,568	79.9	77.38	82.11	395	19.7	17.43	22.08	8	0.5	0.14	1.69
35-39	1,094	76.8	72.72	80.45	182	23.0	19.39	27.12	3	0.2	0.04	0.57
40-44	234	88.0	80.97	92.69	26	11.9	7.26	18.98	1	0.1	0.01	0.42
45-49	14	93.0	62.98	99.04	1	7.0	0.96	37.02	0	-	-	-
Ethnicity												
Malay	6,601	89.1	87.81	90.32	480	10.3	9.14	11.56	24	0.6	0.30	1.15
Chinese	711	60.2	56.23	63.95	412	39.5	35.70	43.42	5	0.3	0.12	1.02
Indians	392	88.3	82.44	92.44	36	11.5	7.45	17.44	1	0.1	0.02	0.86
Other Bumiputera	1,110	93.1	91.18	94.59	66	6.5	5.07	8.33	3	0.4	0.10	1.61
Others	355	80.7	74.15	85.85	52	16.6	11.96	22.67	5	2.7	0.89	7.92
Citizenship												
Malaysian citizen	8,745	85.4	84.24	86.44	975	14.1	13.08	15.24	32	0.5	0.28	0.88
Permanent Resident	45	97.6	84.50	99.67	1	2.4	0.33	15.50	0	-	-	-
Non-Malaysian	341	77.7	71.18	83.06	67	19.5	14.57	25.55	6	2.8	1.00	7.80
Marital status												
Single (Unmarried)	31	67.2	37.12	87.63	6	10.2	3.76	24.99	3	22.6	5.11	61.26
Married/cohabiting	8,950	85.0	83.86	86.04	1,026	14.5	13.45	15.58	34	0.5	0.32	0.89
Separated/divorced/widowed	127	91.9	80.64	96.88	7	8.0	3.08	19.34	1	0.1	0.01	0.46
Mother's education												
None	76	94.2	77.34	98.70	2	5.8	1.30	22.66	0	-	-	-
Primary	1,009	92.6	90.04	94.56	57	6.7	4.87	9.14	5	0.7	0.20	2.32
Secondary	4,910	89.9	88.53	91.09	369	9.2	8.13	10.49	24	0.9	0.47	1.64
Higher	2,974	74.3	71.88	76.62	605	25.5	23.21	27.95	7	0.2	0.07	0.41
Occupation												
Public Sector	2,232	88.1	85.53	90.24	188	11.7	9.55	14.24	5	0.2	0.08	0.63
Private Sector	1,853	75.7	72.93	78.30	429	23.6	21.08	26.35	8	0.7	0.23	1.94
Self-employed	651	80.0	75.29	84.03	111	18.7	14.91	23.15	5	1.3	0.28	5.81
Housewife	4,238	90.3	88.81	91.56	290	9.1	7.86	10.50	17	0.6	0.32	1.25
Unemployed	75	85.7	70.61	93.77	9	14.1	6.12	29.30	1	0.1	0.02	1.06
Student	30	64.3	44.06	80.51	12	33.9	18.03	54.39	1	1.8	0.25	11.94
Household income												
Less than RM1000	784	96.4	92.27	98.34	9	3.0	1.19	7.15	5	0.7	0.16	2.70
RM1000 – RM1999	1,863	96.7	95.28	97.75	38	2.9	1.93	4.31	8	0.4	0.14	0.98
RM2000 – RM2999	1,611	93.2	90.92	94.88	71	6.4	4.70	8.57	6	0.5	0.18	1.29
RM3000 – RM3999	1,260	88.9	86.12	91.10	109	10.7	8.46	13.39	6	0.5	0.18	1.20
RM4000 – RM4999	923	87.0	83.44	89.94	101	11.7	9.06	14.97	6	1.3	0.37	4.24
RM5000 and above	2,669	70.8	68.32	73.19	712	28.6	26.25	31.04	5	0.6	0.19	1.81

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.1.2.5 : Prevalence of mothers aged 15-49 years who had undergone blood sample test, health education, and ultrasound scan examination at least once as part of antenatal care, during the pregnancy of last child birth, NHMS 2016

Sociodemographic characteristics	Percentage of mothers who underwent assessments during antenatal visit of last child birth :														
	Blood sample test			Health education			Ultrasound Scan examination			ATT Vaccination					
	Unweighted count	%	95% CI	Unweighted count	%	95% CI	Unweighted count	%	95% CI	Unweighted count	%	95% CI			
MALAYSIA	7,796	99.4	99.15	7,763	98.8	98.39	99.12	7,803	99.4	99.13	99.61	7,679	96.4	95.69	97.08
State															
Johor	533	99.4	98.16	533	99.4	98.21	99.82	534	99.7	99.01	99.92	527	97.6	95.53	98.77
Kedah	573	98.8	97.32	574	98.8	97.15	99.53	574	99.1	97.79	99.61	576	98.2	95.90	99.22
Kelantan	457	99.6	98.53	458	99.5	97.78	99.91	458	99.1	98.69	99.96	457	98.8	95.99	99.63
Melaka	563	99.8	98.74	563	99.9	99.20	99.98	564	100.0	0.00	100.00	561	99.6	98.66	99.87
Negeri Sembilan	536	98.5	97.00	539	99.1	97.71	99.64	540	99.3	97.89	99.74	532	97.9	96.26	98.80
Pahang	471	100.0	0.00	471	100.0	0.00	100.00	470	99.9	99.21	99.98	466	99.0	97.54	99.59
P.Pinang	432	98.5	96.52	421	96.3	94.08	97.71	434	99.1	97.48	99.66	418	94.3	90.79	96.51
Perak	472	99.6	98.23	472	99.6	98.23	99.89	472	99.6	98.23	99.89	462	97.8	96.04	98.84
Perlis	508	99.6	98.84	505	99.0	97.62	99.54	508	99.4	98.40	99.85	511	99.5	98.30	99.83
Selangor	467	99.7	97.93	459	98.2	95.92	99.22	465	99.4	97.72	99.86	441	91.8	88.00	94.42
Terengganu	524	100.0	0.00	517	98.6	97.01	99.32	524	100.0	0.00	100.00	521	98.8	96.46	99.49
Sabah & WP Labuan	666	99.6	98.88	665	99.2	97.30	99.77	665	99.2	97.46	99.77	664	98.7	96.46	99.53
Sarawak	569	99.7	98.86	564	98.6	97.12	99.35	570	99.8	98.41	99.97	559	97.6	95.71	98.62
WP Kuala Lumpur	371	97.2	94.55	370	96.9	94.55	98.40	371	97.2	94.55	98.60	338	88.0	83.66	91.25
WP Putrajaya	654	99.7	99.04	652	99.4	98.35	99.80	654	99.5	98.37	99.87	646	98.6	97.45	99.29
Locality															
Urban	5,992	99.2	98.89	5,930	98.0	97.16	98.59	6,000	99.3	99.06	99.60	5,653	90.9	86.45	93.95
Rural	4,161	99.5	99.17	4,148	99.0	98.40	99.36	4,162	99.5	99.22	99.71	4,115	97.9	96.94	98.57
Age															
15-19	337	98.9	97.03	337	98.6	95.31	99.56	338	98.9	95.57	99.72	335	96.8	92.47	98.65
20-24	1,313	99.5	98.98	1,307	98.8	97.20	99.49	1,313	99.6	99.09	99.80	1,303	98.2	96.94	98.93
25-29	2,761	99.4	98.90	2,752	99.0	98.32	99.43	2,759	99.4	98.72	99.67	2,704	95.0	93.35	96.28
30-34	2,222	99.4	98.93	2,209	98.5	97.74	99.04	2,230	99.6	99.14	99.83	2,188	97.5	96.29	98.28
35-39	954	99.5	98.44	947	98.9	97.74	99.44	952	99.2	98.20	99.69	944	95.7	92.22	97.70
40-44	196	98.6	93.65	198	98.9	92.78	99.85	198	98.9	92.78	99.85	192	94.1	86.96	97.45
45-49	13	100.0	100.00	13	100.0	100.00	100.00	13	100.0	100.00	100.00	13	100.0	100.00	100.00
Ethnicity															
Malay	5,437	99.5	99.14	5,423	99.1	98.52	99.45	5,444	99.6	99.23	99.79	5,381	97.2	96.31	97.90
Chinese	673	99.2	98.16	654	97.0	95.47	98.02	670	98.9	97.80	99.43	629	90.6	86.84	93.40
Indians	328	98.8	97.34	331	99.3	97.74	99.77	332	99.4	97.79	99.85	324	94.8	87.57	97.95
Other Bumiputera	1,019	99.3	98.44	1,020	99.3	98.35	99.69	1,020	99.4	98.53	99.74	1,015	99.0	98.14	99.45
Others	339	99.6	98.31	335	97.6	93.76	99.13	337	98.6	95.16	99.60	330	94.3	89.43	96.96
Citizenship															
Malaysian citizen	7,398	99.4	99.11	7,368	98.8	98.38	99.14	7,408	99.5	99.19	99.65	7,292	96.5	95.76	97.19
Permanent Resident	39	98.8	91.95	39	98.8	91.95	99.84	39	98.8	91.95	99.84	40	100.0	0.00	100.00
Non-Malaysian	329	99.7	98.11	326	98.6	95.73	99.53	326	98.7	95.15	99.64	317	94.5	90.06	96.99

Percentage of mothers who underwent assessments during antenatal visit of last child birth :

Sociodemographic characteristics	Blood sample test				Health education				Ultrasound Scan examination				ATT Vaccination			
	Unweighted count	%	95% CI		Unweighted count	%	95% CI		Unweighted count	%	95% CI		Unweighted count	%	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper			Lower	Upper
Marital status																
Single (Unmarried)	26	100.0	0.00	100.00	26	100.0	0.00	100.00	26	100.0	0.00	100.00	26	93.5	76.61	98.43
Married / Cohabiting	7,614	99.4	99.16	99.58	7,584	98.8	98.42	99.16	7,621	99.4	99.13	99.62	7,499	96.5	95.69	97.10
Separated / Divorcee / Widowed	105	98.5	93.83	99.64	103	97.4	92.45	99.12	105	98.5	93.83	99.64	103	94.5	85.40	98.03
Mother's education																
None	75	96.7	79.97	99.52	74	94.0	76.89	98.67	76	100.0	0.00	100.00	75	95.6	75.10	99.37
Primary	871	99.3	98.51	99.68	869	99.3	98.61	99.65	872	99.1	97.44	99.66	867	98.2	96.45	99.14
Secondary	4,071	99.4	99.13	99.65	4,061	98.9	98.40	99.31	4,077	99.4	98.95	99.67	4,041	97.4	96.44	98.07
Higher	2,607	99.5	98.85	99.75	2,587	98.5	97.48	99.14	2,608	99.6	99.28	99.81	2,523	93.9	91.94	95.34
Occupation																
Public Sector	1,867	99.8	99.52	99.92	1,864	99.4	97.85	99.81	1,870	99.8	99.40	99.95	1,848	98.2	96.91	98.97
Private Sector	1,591	99.0	98.31	99.37	1,572	97.9	96.79	98.66	1,591	98.9	98.10	99.37	1,539	93.3	90.99	95.05
Self-employed	524	99.7	98.30	99.95	521	99.2	97.91	99.71	525	99.7	98.17	99.96	518	97.2	93.65	98.75
Housewife	3,645	99.4	98.98	99.66	3,639	99.1	98.56	99.46	3,648	99.5	98.97	99.71	3,606	97.3	96.32	98.05
Unemployed	68	100.0	0.00	100.00	68	100.0	0.00	100.00	68	100.0	0.00	100.00	68	100.0	0.00	100.00
Student	28	100.0	100.00	100.00	27	88.9	51.51	98.38	28	100.0	100.00	100.00	26	79.0	46.22	94.31
Household income																
Less than RM1000	670	99.6	98.63	99.90	672	100.0	99.88	100.00	670	99.6	98.62	99.90	672	99.7	98.95	99.93
RM1000 – RM1999	1,541	99.2	98.41	99.55	1,543	99.2	98.52	99.58	1,542	99.3	98.67	99.63	1,546	98.9	97.96	99.45
RM2000 – RM2999	1,337	99.8	99.55	99.93	1,333	99.2	98.03	99.70	1,338	99.5	98.21	99.88	1,331	98.4	96.81	99.16
RM3000 – RM3999	1,050	99.4	98.40	99.74	1,047	98.3	95.82	99.29	1,051	99.2	97.07	99.76	1,038	96.5	94.01	97.98
RM4000 – RM4999	781	99.5	98.57	99.82	774	98.6	97.18	99.33	780	99.3	98.32	99.73	762	96.8	94.57	98.19
RM5000 and above	2,366	99.2	98.59	99.58	2,343	98.3	97.34	98.87	2,371	99.5	99.05	99.72	2,281	92.8	90.74	94.46

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.1.2.6 : Prevalence of mothers aged 15-49 years who had undergone blood pressure measurement, urine sample test, and abdominal examination at least once as part of antenatal care during the pregnancy of last child birth, NHMS 2016

Sociodemographic characteristics	Percentage of mothers who underwent assessments during antenatal visit of last child birth :															
	Blood pressure measurement (a)				Urine sample test (b)				Abdominal examination (c)				Minimum content of ANC (a+b+c)			
	Unweighted count	%	95% CI Lower	95% CI Upper	Unweighted count	%	95% CI Lower	95% CI Upper	Unweighted count	%	95% CI Lower	95% CI Upper	Unweighted count	%	95% CI Lower	95% CI Upper
MALAYSIA	7,796	99.2	98.84	99.47	7,801	99.3	98.90	99.55	7,811	99.6	99.36	99.72	7,795	99.0	98.53	99.28
State																
Johor	533	99.6	98.91	99.87	533	99.3	97.63	99.81	534	99.7	99.01	99.92	533	99.6	98.91	99.87
Kedah	576	99.5	98.40	99.82	574	99.1	97.66	99.64	577	99.5	98.41	99.86	576	99.6	96.86	99.40
Kelantan	458	99.4	97.39	99.87	458	99.4	97.39	99.87	459	99.8	98.79	99.98	458	99.2	97.40	99.78
Melaka	564	100.0	0.00	100.00	564	100.0	0.00	100.00	563	99.9	99.05	99.98	564	100.0	100.00	100.00
Negeri Sembilan	539	99.1	97.71	99.64	539	99.1	97.71	99.64	539	99.1	97.71	99.64	545	100.0	100.00	100.00
Pahang	469	99.2	94.80	99.88	469	99.7	98.03	99.95	471	100.0	0.00	100.00	471	100.0	100.00	100.00
P.Pinang	436	99.6	98.26	99.89	435	99.4	98.13	99.81	434	98.9	96.98	99.64	439	100.0	100.00	100.00
Perak	472	99.6	98.23	99.89	472	99.6	98.23	99.89	473	99.8	98.54	99.97	474	100.0	100.00	100.00
Perlis	508	99.5	98.40	99.85	509	99.7	98.90	99.94	508	99.6	98.63	99.87	514	100.0	100.00	100.00
Selangor	461	98.4	96.22	99.32	465	99.2	96.23	99.83	465	99.6	98.25	99.89	469	100.0	100.00	100.00
Terengganu	523	99.8	98.38	99.97	523	99.8	98.38	99.97	524	100.0	0.00	100.00	527	100.0	100.00	100.00
Sabah & WP Labuan	666	99.6	98.78	99.88	667	99.4	97.13	99.88	667	99.8	99.13	99.95	669	100.0	100.00	100.00
Sarawak	570	99.8	98.86	99.98	570	99.8	98.84	99.98	571	100.0	0.00	100.00	572	100.0	100.00	100.00
WP Kuala Lumpur	369	96.7	94.03	98.25	369	96.7	94.03	98.25	371	97.2	94.55	98.60	381	100.0	100.00	100.00
WP Putrajaya	652	99.1	97.63	99.66	654	99.7	98.93	99.90	655	99.8	99.15	99.96	657	100.0	100.00	100.00
Locality																
Urban	5,994	99.2	98.78	99.42	5,999	99.2	98.83	99.44	6,005	99.4	99.18	99.61	5,994	98.5	97.83	98.97
Rural	4,165	99.5	98.92	99.72	4,165	99.5	99.05	99.75	4,169	99.7	99.49	99.85	4,164	98.9	98.18	99.33
Age																
15-19	338	98.9	96.32	99.70	337	98.1	94.38	99.37	338	99.5	98.05	99.88	338	98.9	96.32	99.70
20-24	1,311	99.1	97.89	99.58	1,313	99.0	97.08	99.69	1,314	99.6	99.10	99.81	1,311	98.9	97.80	99.49
25-29	2,759	99.4	98.66	99.75	2,762	99.6	99.33	99.80	2,766	99.8	99.53	99.89	2,759	99.2	98.45	99.61
30-34	2,225	99.1	98.26	99.56	2,225	99.3	98.68	99.65	2,227	99.3	98.51	99.70	2,224	98.6	97.19	99.34
35-39	953	99.3	98.24	99.73	953	99.4	98.41	99.77	954	99.4	98.25	99.77	953	99.1	98.02	99.58
40-44	198	98.9	92.78	99.85	198	98.9	92.78	99.85	199	100.0	0.00	100.00	198	98.9	93.14	99.82
45-49	12	84.9	41.80	97.78	13	100.0	100.00	100.00	13	100.0	100.00	100.00	12	84.9	41.80	97.78
Ethnicity																
Malay	5,434	99.2	98.63	99.53	5,438	99.3	98.75	99.64	5,447	99.7	99.36	99.82	5,433	99.0	98.42	99.35
Chinese	672	99.0	97.84	99.50	672	98.9	97.75	99.49	674	99.3	98.39	99.71	672	98.9	97.74	99.42
Indians	331	99.3	97.74	99.77	331	99.3	97.74	99.77	329	99.0	97.38	99.62	331	99.3	97.74	99.77
Other Bumiputera	1,022	99.6	98.77	99.88	1,022	99.6	98.84	99.89	1,022	99.6	98.78	99.85	1,022	99.6	98.77	99.88
Others	337	98.9	96.53	99.64	338	98.7	94.73	99.71	339	99.6	98.31	99.92	337	97.3	91.25	99.22
Citizenship																
Malaysian citizen	7,400	99.2	98.83	99.49	7,403	99.3	98.84	99.53	7,413	99.6	99.34	99.72	7,399	99.1	98.67	99.35
Permanent Resident	39	98.8	91.95	99.84	39	98.8	91.95	99.84	39	98.8	91.95	99.84	39	98.8	91.95	99.84
Non-Malaysian	327	99.0	96.53	99.70	329	99.7	98.11	99.96	329	99.7	98.11	99.96	327	97.4	91.23	99.28

Percentage of mothers who underwent assessments during antenatal visit of last child birth :																
Sociodemographic characteristics	Blood sample test				Health education				Ultrasound Scan examination				ATT Vaccination			
	Unweighted count	%	95% CI		Unweighted count	%	95% CI		Unweighted count	%	95% CI		Unweighted count	%	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper			Lower	Upper
Marital status																
Single (Unmarried)	25	88.2	49.98	98.25	26	100.0	0.00	100.00	26	100.0	0.00	100.00	25	82.5	53.35	95.08
Married / Cohabiting	7,615	99.3	98.89	99.51	7,620	99.3	98.96	99.59	7,629	99.6	99.37	99.73	7,614	99.0	98.59	99.34
Separated / Divorcee / Widowed	105	98.5	93.83	99.64	105	98.5	93.83	99.64	105	98.5	93.83	99.64	105	98.4	93.92	99.60
Mother's education																
None	76	100.0	0.00	100.00	76	100.0	0.00	100.00	76	100.0	0.00	100.00	76	100.0	0.00	100.00
Primary	871	99.2	98.22	99.66	872	99.3	98.31	99.72	872	99.5	98.86	99.81	871	99.2	98.22	99.65
Secondary	4,070	99.1	98.56	99.48	4,074	99.2	98.53	99.60	4,079	99.6	99.32	99.75	4,069	98.8	98.03	99.22
Higher	2,608	99.3	98.42	99.71	2,608	99.5	99.05	99.72	2,610	99.5	98.89	99.79	2,608	99.2	98.33	99.62
Occupation																
Public Sector	1,867	99.1	97.41	99.72	1,869	99.8	99.25	99.92	1,870	99.6	98.21	99.92	1,867	99.0	97.34	99.61
Private Sector	1,592	99.1	98.51	99.45	1,589	98.5	97.06	99.25	1,592	99.1	98.51	99.46	1,591	98.9	98.35	99.33
Self-employed	524	99.6	98.23	99.89	524	99.5	98.10	99.88	525	99.7	98.17	99.96	524	99.1	97.77	99.66
Housewife	3,645	99.3	98.70	99.63	3,652	99.7	99.39	99.83	3,654	99.8	99.53	99.87	3,645	99.0	98.19	99.45
Unemployed	67	96.3	78.22	99.48	68	100.0	0.00	100.00	68	100.0	0.00	100.00	67	96.3	78.22	99.48
Student	28	100.0	100.00	100.00	27	88.9	51.51	98.38	28	100.0	100.00	100.00	28	100.0	100.00	100.00
Household income																
Less than RM1000	668	99.2	97.67	99.72	670	99.6	97.94	99.92	672	100.0	99.88	100.00	668	99.2	97.67	99.70
RM1000 – RM1999	1,545	99.5	98.89	99.74	1,545	99.5	98.89	99.74	1,545	99.4	98.80	99.69	1,545	99.3	98.75	99.64
RM2000 – RM2999	1,336	99.5	98.67	99.82	1,335	98.8	96.03	99.66	1,336	99.8	99.44	99.91	1,336	99.4	98.59	99.74
RM3000 – RM3999	1,048	98.5	95.72	99.48	1,052	99.7	99.07	99.88	1,054	99.8	99.15	99.95	1,048	98.1	95.46	99.20
RM4000 – RM4999	780	99.3	98.17	99.71	780	99.3	98.32	99.73	781	99.5	98.57	99.82	780	99.1	98.03	99.60
RM5000 and above	2,369	99.3	98.66	99.64	2,368	99.2	98.55	99.53	2,372	99.4	98.75	99.70	2,368	98.9	97.79	99.46

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.1.2.7 : Prevalence of mothers aged 15-49 years who had hypertensive disease, diabetes/ gestational diabetes mellitus or maternal obesity during pregnancy of last child birth, NHMS 2016

Sociodemographic characteristics	Common co-morbidities during pregnancy													
	Hypertensive diseases					Diabetes mellitus/ Gestational diabetes mellitus					Maternal obesity			
	Unweighted count	%	Lower	Upper	95% CI	Unweighted count	%	Lower	Upper	95% CI	Lower	Upper		
MALAYSIA	478	5.8	5.07	6.63		1,201	13.5	12.47	14.52		1,321	14.6	13.54	15.67
State														
Johor	42	6.7	4.84	9.32		89	14.5	11.58	17.91		85	14.3	11.39	17.81
Kedah	35	5.4	3.62	8.06		72	11.2	8.63	14.36		109	17.4	14.11	21.36
Kelantan	25	5.5	3.31	9.04		48	8.9	6.23	12.63		81	14.5	11.11	18.72
Melaka	25	4.2	2.80	6.35		107	18.1	14.96	21.73		109	18.7	15.49	22.37
Negeri Sembilan	33	5.8	3.92	8.54		104	15.7	12.81	19.17		109	17.6	14.34	21.44
Pahang	20	3.1	1.87	5.17		102	19.8	16.26	23.92		81	16.9	13.43	21.00
P.Pinang	22	4.5	2.89	6.82		45	9.0	6.72	12.05		50	9.7	7.17	12.89
Perak	27	4.4	2.89	6.63		65	12.8	9.87	16.52		83	14.5	11.52	18.03
Perlis	26	4.7	3.13	6.88		74	13.0	10.38	16.18		94	17.3	14.22	20.85
Selangor	30	7.0	4.38	10.91		79	14.6	11.23	18.80		83	14.7	11.21	19.16
Terengganu	38	7.3	5.18	10.24		89	14.3	11.50	17.69		89	15.4	12.43	19.02
Sabah & WP Labuan	55	6.4	4.82	8.40		87	11.6	9.07	14.61		74	9.2	7.21	11.75
Sarawak	35	6.3	4.46	8.89		83	13.9	11.14	17.13		108	16.8	13.88	20.17
Sarawak	12	3.1	1.71	5.52		59	13.4	10.34	17.25		59	14.4	11.12	18.37
WP Kuala Lumpur	53	7.7	5.76	10.14		98	13.9	11.35	16.93		107	14.5	11.99	17.51
Localities														
Urban	352	5.4	4.75	6.10		896	12.5	11.08	14.08		868	12.3	11.03	13.64
Rural	242	5.1	4.33	6.03		598	12.4	11.03	13.99		690	15.0	13.58	16.44
Age														
15-19	14	3.5	1.94	6.21		11	2.3	1.17	4.47		20	5.8	3.17	10.45
20-24	48	3.7	2.44	5.63		101	6.4	5.10	7.99		135	8.9	7.15	10.93
25-29	133	5.0	3.96	6.26		361	12.8	11.10	14.74		423	14.0	12.35	15.77
30-34	146	6.9	5.15	9.08		395	17.1	15.01	19.51		453	19.2	16.83	21.87
35-39	96	10.2	7.84	13.29		259	28.4	24.57	32.62		236	22.6	19.18	26.36
40-44	38	21.8	15.24	30.20		68	32.6	24.71	41.72		47	27.6	20.25	36.30
45-49	3	23.6	7.25	55.08		6	48.2	21.61	75.90		7	69.2	38.95	88.81
Ethnicity														
Malay	339	5.8	4.91	6.79		886	14.3	13.04	15.66		1,029	16.8	15.45	18.25
Chinese	34	5.3	3.46	8.02		83	12.0	9.17	15.57		50	5.8	4.27	7.94
Indians	14	2.9	1.50	5.46		66	17.5	12.35	24.21		64	15.6	10.87	21.80
Other Bumiputera	78	8.4	6.00	11.56		128	11.5	9.61	13.75		147	14.3	11.61	17.55
Others	13	3.1	1.67	5.52		38	9.2	5.72	14.44		31	7.2	4.58	11.01
Citizenship														
Malaysian citizen	459	6.0	5.23	6.88		1,159	13.8	12.82	14.95		1,283	15.2	14.11	16.36
Permanent Resident	3	5.3	1.49	17.27		5	7.2	2.32	20.37		6	8.4	3.11	20.98
Non-Malaysian	14	3.0	1.65	5.50		32	8.3	4.99	13.56		25	5.7	3.54	9.09
Marital status														
Single (Unmarried)	0	-	-	-		2	2.9	0.46	16.42		4	23.7	8.17	52.02
Married/cohabiting	464	5.8	5.03	6.61		1,174	13.5	12.50	14.58		1,279	14.5	13.41	15.57
Separated/divorced/widowed	12	9.7	4.57	19.53		17	13.2	6.50	25.03		26	16.6	10.26	25.82

Sociodemographic characteristics	Common co-morbidities during pregnancy											
	Hypertensive diseases				Diabetes mellitus/ Gestational diabetes mellitus				Maternal obesity			
	Unweighted count	%	95% CI Lower	Upper	Unweighted count	%	95% CI Lower	Upper	Unweighted count	%	95% CI Lower	Upper
Mother's education												
None	7	8.1	3.34	18.28	8	11.1	4.61	24.35	12	17.7	8.64	32.92
Primary	63	6.6	4.96	8.74	131	11.1	9.04	13.60	160	14.7	12.04	17.80
Secondary	249	5.8	4.86	6.86	643	13.8	12.44	15.22	735	15.3	13.94	16.76
Higher	147	5.6	4.12	7.46	397	14.3	12.35	16.45	382	13.1	11.17	15.33
Occupation												
Public Sector	114	4.2	3.20	5.44	276	15.6	13.04	18.50	299	13.7	11.60	16.22
Private Sector	86	6.5	4.65	9.15	250	14.3	12.08	16.84	269	15.2	12.76	17.95
Self-employed	42	7.9	5.42	11.29	84	13.3	10.38	16.84	118	18.2	14.72	22.27
Housewife	230	5.9	5.03	6.99	572	12.7	11.41	14.05	599	13.9	12.56	15.38
Unemployed	3	2.0	0.56	7.20	9	8.7	3.96	18.10	15	19.0	9.89	33.33
Student	0	-	-	-	1	0.3	0.04	2.50	2	6.2	1.45	22.70
Household income												
Less than RM1000	47	6.4	4.55	8.92	86	10.6	8.25	13.41	129	16.5	13.60	19.97
RM1000 – RM1999	96	5.5	4.28	6.94	239	12.8	10.96	15.00	292	15.0	13.05	17.12
RM2000 – RM2999	87	6.6	4.97	8.60	226	12.9	10.92	15.29	249	17.1	14.53	19.98
RM3000 – RM3999	59	5.3	3.60	7.65	164	14.6	11.73	17.92	177	16.1	13.04	19.62
RM4000 – RM4999	48	7.6	4.40	12.94	118	14.6	11.26	18.83	149	17.1	13.13	21.97
RM5000 and above	137	4.9	3.82	6.39	358	14.0	12.11	16.15	317	11.0	9.43	12.86

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.1.2.8 : Prevalence of mothers aged 15-49 who had anaemia or heart disease during pregnancy of last child birth, NHMS 2016

Sociodemographic characteristics	Common co-morbidities during pregnancy							
	Anaemia				Heart Diseases			
	Unweighted count	%	95% CI		Unweighted count	%	95% CI	
			Lower	Upper			Lower	Upper
MALAYSIA	2,236	29.3	27.86	30.74	37	0.5	0.30	0.78
State								
Johor	191	34.3	29.90	38.88	3	0.6	0.17	2.17
Kedah	121	20.3	16.74	24.29	1	0.2	0.02	1.17
Kelantan	123	24.3	19.53	29.82	3	0.6	0.15	2.47
Melaka	252	43.5	39.16	47.93	2	0.3	0.08	1.23
Negeri Sembilan	88	15.1	12.15	18.50	0	-	-	-
Pahang	61	13.0	9.93	16.91	1	0.2	0.03	1.28
P.Pinang	92	20.5	16.85	24.75	4	1.1	0.42	2.97
Perak	91	19.7	15.99	24.12	3	0.7	0.21	2.06
Perlis	155	29.7	25.75	33.93	6	1.4	0.61	3.13
Selangor	175	33.3	28.30	38.62	4	0.7	0.19	2.76
Terengganu	160	31.3	27.07	35.81	3	0.7	0.21	2.06
Sabah & WP Labuan	310	46.8	42.30	51.36	2	0.3	0.07	1.07
Sarawak	168	30.2	26.23	34.60	2	0.4	0.09	1.76
WP Kuala Lumpur	70	19.6	15.37	24.59	0	-	-	-
WP Putrajaya	179	28.6	24.98	32.56	3	0.4	0.12	1.15
Locality								
Urban	1,497	24.3	21.91	26.79	28	0.4	0.24	0.72
Rural	1,188	30.4	27.36	33.62	13	0.3	0.18	0.58
Age								
15-19	137	41.1	34.32	48.22	1	0.2	0.03	1.29
20-24	421	33.5	30.09	37.01	8	0.8	0.26	2.29
25-29	784	27.1	24.83	29.45	16	0.6	0.33	1.07
30-34	586	27.1	24.39	29.91	6	0.2	0.06	0.50
35-39	243	24.8	21.20	28.71	6	0.4	0.15	1.28
40-44	58	30.7	23.02	39.63	0	-	-	-
45-49	7	51.7	24.06	78.33	0	-	-	-
Ethnicity								
Malay	1,489	27.6	25.89	29.46	29	0.6	0.32	1.03
Chinese	136	19.6	16.16	23.67	4	0.5	0.16	1.76
Indians	116	32.8	25.45	41.00	0	-	-	-
Other Bumiputera	396	40.0	36.59	43.43	4	0.4	0.15	1.09
Others	99	35.7	28.57	43.58	0	-	-	-
Citizenship								
Malaysian citizen	2,117	28.9	27.51	30.43	37	0.5	0.32	0.84
Permanent Resident	13	53.4	33.67	72.15	0	-	-	-
Non-Malaysian	95	31.7	24.89	39.39	0	-	-	-
Marital status								
Single (Unmarried)	13	43.2	23.72	65.03	0	-	-	-
Married/cohabiting	2,174	29.2	27.74	30.65	36	0.5	0.29	0.79
Separated/divorced/ widowed	34	32.0	22.29	43.59	1	0.9	0.13	6.23
Mother's education								
None	26	41.1	28.51	54.90	0	-	-	-
Primary	303	36.2	31.98	40.57	0	-	-	-
Secondary	1,179	29.6	27.71	31.58	24	0.6	0.33	1.16
Higher	669	25.2	22.69	27.96	12	0.4	0.21	0.89
Occupation								
Public Sector	498	26.7	23.61	30.12	8	0.4	0.16	0.99
Private Sector	425	25.5	22.56	28.58	6	0.2	0.09	0.56
Self-employed	148	29.0	23.96	34.58	2	0.2	0.04	1.35
Housewife	1,102	31.8	29.75	33.91	20	0.7	0.37	1.31
Unemployed	26	34.6	21.53	50.54	1	0.2	0.02	1.29
Student	11	45.2	23.20	69.28	0	-	-	-
	0	0.0	0.00	0.00	0	-	-	-
Household income								
Less than RM1000	242	38.3	33.86	42.95	2	0.3	0.07	1.09
RM1000 – RM1999	483	33.2	30.04	36.50	8	0.3	0.12	0.69
RM2000 – RM2999	379	30.5	27.07	34.12	6	0.8	0.22	2.82
RM3000 – RM3999	295	27.8	24.22	31.65	4	0.4	0.12	1.29
RM4000 – RM4999	210	27.0	22.39	32.24	4	0.3	0.09	1.30
RM5000 and above	609	25.0	22.46	27.82	12	0.5	0.25	1.03

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.1.2.9 : Prevalence of mothers aged 15-19 years who had childbearing and mothers who had their first pregnancy before age 20 years, NHMS 2016

Sociodemographic characteristics	Percentage of mothers aged 15-19 years who had childbearing *		Percentage of mothers aged 15-19 years who had childbearing *	
	n	%	n	%
MALAYSIA	444	6.8	1,398	16.7
State				
Johor	26	5.5	92	14.1
Kedah	30	5.8	84	12.3
Kelantan	26	6.5	127	19.2
Melaka	25	3.9	79	10.8
Negeri Sembilan	26	6.8	85	15.6
Pahang	38	7.6	125	19.7
P.Pinang	21	3.9	49	8.3
Perak	29	6.0	75	13.3
Perlis	32	7.4	94	16.7
Selangor	22	4.7	70	13.3
Terengganu	27	6.3	82	14.1
Sabah & WP Labuan	57	11.1	211	28.9
Sarawak	69	15.0	174	32.0
WP Kuala Lumpur	14	4.8	42	10.0
WP Putrajaya	2	0.5	9	1.8
Locality				
Urban	223	5.9	664	14.6
Rural	221	8.7	734	21.2
Age				
15-19	444	6.8	444	100.0
20-24	0	-	353	21.7
25-29	0	-	273	8.1
30-34	0	-	177	6.1
35-39	0	-	119	8.4
40-44	0	-	29	10.6
45-49	0	-	3	13.5
Ethnicity				
Malay	210	4.7	739	12.9
Chinese	42	5.3	101	11.3
Indians	22	4.8	63	12.9
Other Bumiputera	129	14.6	395	36.4
Others	41	18.2	100	32.8
Citizenship				
Malaysian citizen	405	6.2	1,283	15.7
Permanent Resident	2	3.3	6	7.8
Non-Malaysian	35	17.0	102	33.6
Marital status				
Single (Unmarried)	18	62.8	23	76.5
Married/cohabiting	396	6.2	1,315	16.0
Separated/divorced/ widowed	19	19.7	40	35.1
Mother's education				
None	7	8.2	40	50.9
Primary	161	22.4	449	47.2
Secondary	238	6.8	790	17.8
Higher	14	0.6	37	2.3
Occupation				
Public Sector	1	0.2	23	1.8
Private Sector	95	6.3	234	12.6
Self-employed	23	4.2	124	16.4
Housewife	296	9.1	958	23.8
Unemployed	10	26.1	26	42.7
Student	10	26.7	13	31.0
Household income				
Less than RM1000	93	18.1	294	40.9
RM1000 – RM1999	147	11.7	466	29.6
RM2000 – RM2999	87	7.2	274	19.4
RM3000 – RM3999	39	4.0	146	11.7
RM4000 – RM4999	16	3.3	55	8.8
RM5000 and above	50	3.2	139	7.2

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.1.2.10 : Prevalence of pre-pregnancy care among mothers aged 15-49 years who had associated medical conditions, NHMS 2016, N=847

Sociodemographic characteristics	Unweighted count	Estimated Population	%	95% CI	
				Lower	Upper
MALAYSIA	798	34,353	94.4	90.76	96.61
State					
Johor	47	3,367	100.0	0.00	100.00
Kedah	46	2,050	100.0	100.00	100.00
Kelantan	40	2,075	93.5	80.30	98.09
Melaka	70	1,192	88.5	80.30	93.52
Negeri Sembilan	63	1,377	97.0	88.37	99.28
Pahang	40	1,526	100.0	0.00	100.00
P.Pinang	47	1,410	95.7	84.32	98.94
Perak	60	3,235	100.0	0.00	100.00
Perlis	84	559	100.0	100.00	100.00
Selangor	56	7,314	87.6	71.96	95.12
Terengganu	67	2,511	99.5	96.46	99.93
Sabah & WP Labuan	64	4,017	100.0	0.00	100.00
Sarawak	32	2,008	91.8	76.63	97.43
WP Kuala Lumpur	33	1,534	80.5	63.74	90.64
WP Putrajaya	49	180	78.9	65.78	87.97
Locality					
Urban	450	21,964	93.7	88.89	96.50
Rural	348	1,238	95.6	91.93	97.62
Age					
15-19	25	1,357	90.0	67.38	97.54
20-24	108	5,300	96.6	90.32	98.83
25-29	240	12,615	93.2	84.01	97.25
30-34	251	9,296	92.8	85.29	96.64
35-39	129	4,537	98.5	95.93	99.48
40-44	43	1,216	100.0	0.00	100.00
45-49	2	33	100.0	100.00	100.00
Ethnicity					
Malay	597	23,251	94.0	89.21	96.69
Chinese	67	3,371	87.5	69.02	95.63
Indians	33	2,182	99.7	97.89	99.96
Other Bumiputera	92	4,992	98.7	91.29	99.82
Others	9	557	100.0	100.00	100.00
Citizenship					
Malaysian citizen	787	33,881	94.9	91.63	96.99
Permanent Resident	1	72	22.5	1.78	82.28
Non-Malaysian	6	313	100.0	100.00	100.00
Marital status					
Single (Unmarried)	1	36	100.0	100.00	100.00
Married/cohabiting	775	33,510	94.2	90.55	96.53
Separated/divorced/ widowed	19	656	100.0	0.00	100.00
Mother's education					
None	6	214	100.0	100.00	100.00
Primary	87	3,242	90.2	67.59	97.60
Secondary	432	18,742	96.1	90.70	98.39
Higher	253	11,450	92.5	85.82	96.15
Occupation					
Public Sector	171	5,372	97.9	96.32	98.83
Private Sector	167	9,234	96.7	93.02	98.50
Self-employed	74	2,719	87.5	61.69	96.83
Housewife	370	16,432	93.8	87.20	97.14
Unemployed	5	137	46.7	13.06	83.59
Student	2	101	100.0	100.00	100.00
Household income					
Less than RM1000	77	3,239	94.2	85.82	97.78
RM1000 – RM1999	177	6,771	98.2	93.71	99.53
RM2000 – RM2999	128	5,288	93.8	77.40	98.54
RM3000 – RM3999	114	5,101	91.1	72.67	97.50
RM4000 – RM4999	70	2,728	99.0	95.94	99.78
RM5000 and above	228	10,871	92.7	85.57	96.44

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.2.2.1 : Prevalence of safe and unsafe deliveries among mothers aged 15-49 years during their last pregnancy, NHMS 2016.

Sociodemographic characteristics	Safe delivery					Unsafe delivery				
	Unweighted count	Estimated Population	%	95% CI		Unweighted count	Estimated Population	%	95% CI	
				Lower	Upper				Lower	Upper
MALAYSIA	10,221	505,176	99.5	99.24	99.67	41	2,524	0.5	0.33	0.76
Locality										
Urban	6,041	341,232	67.2	56.00	76.80	20	1,692	0.3	0.10	1.00
Rural	4,180	163,944	32.3	22.80	43.50	21	832	0.2	0.10	0.40
State										
Johor	718	58,360	99.7	99.20	99.92	3	152	0.3	0.08	0.80
Kedah	683	35,936	99.9	99.41	99.99	1	30	0.1	0.01	0.59
Kelantan	637	37,117	99.5	98.68	99.79	6	196	0.5	0.21	1.32
Melaka	786	14,087	99.8	99.05	99.95	2	32	0.2	0.05	0.95
Negeri Sembilan	694	18,019	99.8	99.22	99.94	3	39	0.2	0.06	0.78
Pahang	657	27,353	99.8	99.13	99.95	2	58	0.2	0.05	0.87
P.Pinang	666	22,149	99.6	98.50	99.90	2	84	0.4	0.10	1.50
Perak	618	35,600	100.0	99.72	99.99	1	14	0.0	0.01	0.28
Perlis	665	4,329	100.0	0.00	100.00	0	-	-	-	-
Selangor	680	102,899	100.0	99.76	100.00	1	35	0.0	0.00	0.24
Terengganu	635	25,938	100.0	0.00	100.00	0	-	-	-	-
Sabah & WP Labuan	767	50,902	96.8	94.35	98.26	15	1,659	3.2	1.74	5.65
Sarawak	621	38,943	99.7	98.64	99.94	2	116	0.3	0.06	1.36
WP Kuala Lumpur	601	30,551	99.7	98.64	99.91	2	105	0.3	0.09	1.36
WP Putrajaya	793	2,992	99.9	99.22	99.98	1	3	0.1	0.02	0.78
Age										
15-19	441	33,909	98.0	94.12	99.37	3	677	2.0	0.63	5.88
20-24	1,681	103,631	99.4	98.51	99.74	8	653	0.6	0.26	1.49
25-29	3,584	186,736	99.6	99.30	99.76	15	763	0.4	0.24	0.70
30-34	2,963	126,282	99.7	99.46	99.87	11	338	0.3	0.13	0.54
35-39	1,276	46,753	99.8	99.30	99.95	3	88	0.2	0.05	0.70
40-44	261	7,580	99.9	99.58	99.99	1	5	0.1	0.01	0.42
45-49	15	284	100.0	0.00	100.00	0	-	-	-	-
Ethnicity										
Malay	7,097	320,207	99.9	99.73	99.92	14	458	0.1	0.08	0.27
Chinese	1,127	71,536	99.9	99.58	99.99	1	42	0.1	0.01	0.42
Indians	428	22,535	99.6	98.47	99.90	2	87	0.4	0.10	1.53
Other Bumiputera	1,165	63,102	98.7	97.66	99.27	16	837	1.3	0.73	2.34
Others	404	27,796	96.2	91.65	98.31	8	1,100	3.8	1.69	8.35
Citizenship										
Malaysian citizen	9,730	472,136	99.7	99.58	99.82	31	1,304	0.3	0.18	0.42
Permanent Resident	46	2,459	100.0	0.00	100.00	0	-	-	-	-
Non-Malaysian	404	28,279	95.9	91.52	98.03	10	1,220	4.1	1.97	8.48
Marital status										
Single (Unmarried)	40	2,405	100.0	0.00	100.00	0	-	-	-	-
Married/cohabiting	9,977	491,411	99.5	99.23	99.67	40	2,489	0.5	0.33	0.77
Separated/divorced/ widowed	136	7,059	99.5	96.50	99.93	1	36	0.5	0.07	3.50
Mother's education										
None	75	3,614	95.4	85.02	98.69	3	175	4.6	1.31	14.98
Primary	1,060	55,725	98.3	96.44	99.21	11	955	1.7	0.79	3.56
Secondary	5,296	265,656	99.8	99.70	99.92	11	410	0.2	0.08	0.30
Higher	3,585	169,379	99.9	99.72	99.96	6	175	0.1	0.04	0.28
Occupation										
Public Sector	2,423	87,946	99.9	99.64	99.98	4	74	0.1	0.02	0.36
Private Sector	2,286	136,973	99.7	99.18	99.88	6	422	0.3	0.12	0.82
Self-employed	765	36,174	99.7	98.96	99.88	4	126	0.3	0.12	1.04
Housewife	4,523	230,425	99.3	98.85	99.60	24	1,571	0.7	0.40	1.15
Unemployed	83	4,694	93.4	74.43	98.57	3	331	6.6	1.43	25.57
Student	43	3,439	100.0	0.00	100.00	0	-	-	-	-
Household income										
Less than RM1000	787	36,488	97.2	94.26	98.63	13	1,063	2.8	1.37	5.74
RM1000 – RM1999	1,904	88,866	99.4	98.35	99.80	7	517	0.6	0.20	1.65
RM2000 – RM2999	1,681	80,750	99.6	99.17	99.81	8	322	0.4	0.19	0.83
RM3000 – RM3999	1,370	66,292	99.8	99.33	99.94	4	132	0.2	0.06	0.67
RM4000 – RM4999	1,026	50,747	99.4	97.99	99.81	4	321	0.6	0.19	2.01
RM5000 and above	3,387	176,446	100.0	99.82	99.99	4	85	0.0	0.01	0.18

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.2.2.2 : Prevalence of mothers who received assistance during delivery of last child birth, by types of attendant, NHMS 2016.

Sociodemographic characteristics	Birth attendant															
	Health Staff (skilled attendant)				Traditional birth attendant				No birth attendant				Others			
	Unweighted count	%	95% CI Lower	95% CI Upper	Unweighted count	%	95% CI Lower	95% CI Upper	Unweighted count	%	95% CI Lower	95% CI Upper	Unweighted count	%	95% CI Lower	95% CI Upper
MALAYSIA	10,222	99.5	99.24	99.67	16	0.2	0.10	0.37	9	0.1	0.02	0.11	16	0.2	0.13	0.48
State																
Johor	718	99.7	99.20	99.92	0	-	-	-	2	0.2	0.04	0.70	1	0.1	0.01	0.60
Kedah	683	99.9	99.41	99.99	0	-	-	-	0	-	-	-	1	0.1	0.01	0.59
Kelantan	637	99.5	98.68	99.79	2	0.2	0.06	1.00	2	0.1	0.02	0.64	2	0.2	0.03	0.93
Melaka	786	99.8	99.05	99.95	0	-	-	-	1	0.1	0.01	0.58	1	0.1	0.02	1.02
Negeri Sembilan	694	99.8	99.22	99.94	1	0.0	0.00	0.18	1	0.1	0.02	0.83	1	0.1	0.01	0.54
Pahang	658	99.8	99.13	99.95	2	0.2	0.05	0.87	0	-	-	-	0	-	-	-
P.Pinang	666	99.6	98.50	99.90	2	0.4	0.10	1.50	0	-	-	-	0	-	-	-
Perak	618	100.0	99.72	99.99	0	-	-	-	0	-	-	-	1	0.0	0.01	0.28
Perlis	665	100.0	0.00	100.00	0	-	-	-	0	-	-	-	0	-	-	-
Selangor	880	100.0	99.76	100.00	0	-	-	-	0	-	-	-	1	0.0	0.00	0.24
Terengganu	635	100.0	0.00	100.00	0	-	-	-	0	-	-	-	0	-	-	-
Sabah & WP Labuan	767	96.8	94.35	98.26	9	1.5	0.65	3.18	0	-	-	-	6	1.7	0.70	4.10
Sarawak	621	99.7	98.64	99.94	0	-	-	-	1	0.1	0.01	0.57	1	0.2	0.03	1.53
WP Kuala Lumpur	601	99.7	98.64	99.91	0	-	-	-	1	0.2	0.02	1.21	1	0.2	0.02	1.21
WP Putrajaya	793	99.9	99.22	99.98	0	-	-	-	1	0.1	0.02	0.78	0	-	-	-
Locality																
Urban	6,041	67.2	56.00	76.80	8	0.1	0.00	0.50	5	0.0	-	-	7	0.2	0.10	0.50
Rural	4,181	3.2	22.80	43.50	8	0.1	0.00	0.20	4	0.0	-	-	9	0.1	0.00	0.20
Age																
15-19	441	98.0	94.12	99.37	1	0.7	0.10	4.99	0	-	-	-	2	1.2	0.30	4.84
20-24	1,682	99.4	98.51	99.74	3	0.1	0.04	0.48	2	0.1	0.02	0.34	3	0.4	0.12	1.40
25-29	3,584	99.6	99.30	99.76	7	0.2	0.10	0.46	3	0.1	0.02	0.22	5	0.1	0.05	0.35
30-34	2,963	99.7	99.46	99.87	4	0.2	0.06	0.43	4	0.1	0.01	0.19	3	0.1	0.01	0.22
35-39	1,276	99.8	99.30	99.95	0	-	-	-	0	-	-	-	3	0.2	0.05	0.70
40-44	261	99.9	99.58	99.99	1	0.1	0.01	0.42	0	-	-	-	0	-	-	-
45-49	15	100.0	0.00	100.00	0	-	-	-	0	-	-	-	0	-	-	-
Ethnicity																
Malay	7,098	99.9	99.73	99.92	2	0.0	0.00	0.08	5	0.1	0.02	0.15	7	0.1	0.03	0.19
Chinese	1,127	99.9	99.58	99.99	1	0.1	0.01	0.42	0	-	-	-	0	-	-	-
Indians	428	99.6	98.47	99.90	1	0.2	0.03	1.33	1	0.2	0.02	1.38	0	-	-	-
Other Bumiputera	1,165	98.7	97.66	99.27	8	0.6	0.31	1.30	2	0.1	0.00	0.34	6	0.6	0.21	1.64
Others	404	96.2	91.65	98.31	4	1.6	0.50	5.13	1	0.0	0.02	0.18	3	2.2	0.69	6.58
Citizenship																
Malaysian citizen	9,731	99.7	99.58	99.82	11	0.1	0.05	0.18	8	0.1	0.02	0.12	12	0.1	0.06	0.26
Permanent Resident	46	100.0	0.00	100.00	0	-	-	-	0	-	-	-	0	-	-	-
Non-Malaysian	404	95.9	91.52	98.03	5	1.8	0.63	5.11	1	0.0	0.00	0.18	4	2.3	0.79	6.48

Sociodemographic characteristics	Birth attendant															
	Health Staff (skilled attendant)				Traditional birth attendant				No birth attendant				Others			
	Unweighted count	%	95% CI Lower	95% CI Upper	Unweighted count	%	95% CI Lower	95% CI Upper	Unweighted count	%	95% CI Lower	95% CI Upper	Unweighted count	%	95% CI Lower	95% CI Upper
Marital status																
Single (Unmarried)	40	100.0	0.00	100.00	0	-	0.10	0.38	0	0	-	0.03	0.12	0	-	0.50
Married / Cohabiting	9,978	99.5	99.23	99.67	15	0.2	0.10	0.38	9	0.1	0.03	0.12	0.12	16	0.3	0.13
Separated / Divorcee / Widowed	136	99.5	96.50	99.93	1	0.5	0.07	3.50	0	-	-	-	-	0	-	-
Mother's education																
None	75	95.4	85.02	98.69	3	4.6	1.31	14.98	0	-	-	-	-	0	-	-
Primary	1,061	98.3	96.44	99.21	3	0.3	0.09	0.84	3	0.2	0.05	0.67	0.67	5	1.2	0.46
Secondary	5,296	99.8	99.70	99.92	3	0.1	0.02	0.17	3	0.0	0.01	0.10	0.10	5	0.1	0.02
Higher	3,585	99.9	99.72	99.96	2	0.0	0.00	0.16	2	0.0	0.01	0.23	0.23	2	0.0	0.01
Occupation																
Public Sector	2,423	99.9	99.64	99.98	1	0.0	0.00	0.04	1	0.0	0.00	0.03	0.03	2	0.1	0.02
Private Sector	2,286	99.7	99.18	99.88	3	0.1	0.04	0.45	1	0.0	0.00	0.06	0.06	2	0.2	0.03
Self-employed	765	99.7	98.96	99.88	2	0.3	0.06	1.04	0	-	-	-	-	2	0.1	0.02
Housewife	4,524	99.3	98.85	99.60	9	0.3	0.12	0.67	6	0.1	0.05	0.24	0.24	9	0.3	0.12
Unemployed	83	93.4	74.43	98.57	1	1.4	0.20	9.47	1	0.1	0.02	1.05	1.05	1	5.0	0.68
Student	43	100.0	0.00	100.00	0	-	-	-	0	-	-	-	-	0	-	27.86
Household income																
Less than RM1000	787	97.2	94.26	98.63	5	0.7	0.30	1.76	2	0.2	0.03	0.90	0.90	6	1.9	0.72
RM1000 – RM1999	1,904	99.4	98.35	99.80	4	0.5	0.14	1.66	3	0.1	0.03	0.32	0.32	0	-	0.00
RM2000 – RM2999	1,681	99.6	99.17	99.81	2	0.1	0.03	0.53	3	0.1	0.04	0.50	0.50	3	0.1	0.04
RM3000 – RM3999	1,371	99.8	99.33	99.94	2	0.1	0.03	0.67	1	0.0	0.00	0.04	0.04	1	0.1	0.01
RM4000 – RM4999	1,026	99.4	97.99	99.81	2	0.2	0.05	0.75	0	-	-	-	-	2	-	0.38
RM5000 and above	3,387	100.0	99.82	99.99	1	0.0	0.00	0.02	0	-	-	-	-	3	0.0	0.01

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.2.2.3 : Prevalence of various types of persons cutting the cord

Sociodemographic characteristics	Person cutting the cord															
	Health staff					Traditional birth attendant					Husband @ partner					
	Unweighted count	%	Lower	Upper	95% CI	Unweighted count	%	Lower	Upper	95% CI	Unweighted count	%	Lower	Upper	95% CI	
MALAYSIA	10,219	99.5	99.20	99.65	99.65	16	0.2	0.13	0.47	0.13	22	0.2	0.08	0.30		
State																
Johor	719	99.7	98.92	99.93	99.93	0	-	-	-	-	1	0.1	0.02	0.78		
Kedah	683	99.6	98.80	99.87	99.87	1	0.3	0.04	1.93	0.04	3	0.3	0.07	0.99		
Kelantan	630	99.6	98.80	99.87	99.87	1	0.1	0.02	1.00	0.02	3	0.2	0.06	0.84		
Melaka	789	99.8	99.16	99.94	99.94	0	-	-	-	-	5	0.5	0.30	1.92		
Negeri Sembilan	692	99.2	98.08	99.70	99.70	0	-	-	-	-	0	-	-	-		
Pahang	657	99.6	98.96	99.89	99.89	3	0.4	0.11	1.14	0.11	0	-	-	-		
Perlis	668	100.0	100.00	100.00	100.00	0	-	-	-	-	0	-	-	-		
Pinarang	616	100.0	100.00	100.00	100.00	0	-	-	-	-	0	-	-	-		
Perak	669	100.0	100.00	100.00	100.00	0	-	-	-	-	0	-	-	-		
Perlis	678	99.7	98.84	99.91	99.91	0	-	-	-	-	2	0.3	0.07	1.18		
Selangor	633	99.6	98.37	99.84	99.84	0	-	-	-	-	0	-	-	-		
Seremban	720	99.4	98.91	99.65	99.65	10	1.9	0.90	4.09	0.90	0	-	-	-		
Sabah & WP Labuan	623	100.0	100.00	100.00	100.00	0	-	-	-	-	0	-	-	-		
Sarawak	623	99.5	98.06	99.89	99.89	0	-	-	-	-	2	0.5	0.11	1.94		
Kuala Lumpur	787	99.5	97.95	99.58	99.58	1	0.1	0.02	0.78	0.02	6	0.8	0.34	1.93		
WP Putrajaya																
Locality																
Urban	6,030	67.1	55.90	76.70	76.70	10	0.2	0.00	0.80	0.00	18	0.0	0.10	0.30		
Rural	4,189	32.3	22.80	43.60	43.60	6	0.1	0.00	0.20	0.00	4	0.0	-	-		
Age																
15-19	442	98.5	94.42	99.63	99.63	2	1.5	0.37	5.58	0.37	0	-	-	-		
20-24	1,652	99.3	98.44	99.72	99.72	4	0.2	0.08	0.69	0.08	12	0.0	0.00	0.94		
25-29	3,579	99.5	99.25	99.72	99.72	6	0.2	0.08	0.44	0.08	1	0.2	0.10	0.39		
30-34	2,963	99.7	99.16	99.66	99.66	3	0.1	0.01	0.36	0.01	7	0.3	0.06	0.77		
35-39	1,276	99.6	98.00	99.91	99.91	1	0.1	0.02	0.61	0.02	2	0.3	0.05	2.23		
40-44	262	100.0	100.00	100.00	100.00	0	-	-	-	-	0	-	-	-		
45-49	15	100.0	100.00	100.00	100.00	0	-	-	-	-	0	-	-	-		
Ethnicity																
Malay	7,092	99.7	99.51	99.87	99.87	3	0.0	0.01	0.19	0.01	14	0.2	0.07	0.39		
Chinese	1,126	99.9	99.74	99.98	99.98	0	-	-	-	-	2	0.1	0.02	0.26		
Indians	0	-	-	-	-	0	-	-	-	-	0	-	-	-		
Other Bumiputera	0	-	-	-	-	0	-	-	-	-	0	-	-	-		
Citizenship																
Malaysian citizen	426	99.3	97.30	99.80	99.80	0	-	-	-	-	3	0.3	0.06	1.77		
Permanent Resident	1,171	99.3	98.59	99.63	99.63	5	0.6	0.31	1.30	0.31	2	0.1	0.02	0.55		
Non-Malaysian	404	99.9	91.39	99.10	99.10	8	2.5	0.90	6.70	0.90	1	0.3	0.04	2.20		
Marital status																
Single (Unmarried)	40	100.0	0.00	100.00	100.00	0	-	-	-	-	0	-	-	-		
Married/cohabiting	9,975	99.5	99.18	99.65	99.65	15	0.2	0.13	0.48	0.13	22	0.2	0.09	0.31		
Separated/divorced/widowed	136	99.5	96.50	99.93	99.93	1	0.5	0.07	3.50	0.07	0	-	-	-		
Mother's education																
None	75	95.4	85.02	98.69	98.69	3	4.6	1.31	14.98	1.31	0	-	-	-		
Primary	1,068	99.1	97.08	99.70	99.70	3	0.6	0.15	2.62	0.15	0	-	-	-		
Secondary	5,297	99.8	99.59	99.90	99.90	5	0.1	0.03	0.26	0.03	0	-	-	-		
Higher	3,572	99.6	99.17	99.80	99.80	18	0.4	0.18	0.81	0.18	0	-	-	-		
Occupation																
Public Sector	2,414	99.4	98.60	99.77	99.77	1	0.0	0.00	0.03	0.00	10	0.5	0.17	1.35		
Private Sector	2,285	99.8	99.43	99.91	99.91	2	0.1	0.03	0.44	0.03	5	0.1	0.04	0.39		
Self-employed	764	99.3	98.17	99.77	99.77	3	0.5	0.15	1.77	0.15	2	0.1	0.02	0.70		
Housewife	4,531	99.4	98.95	99.70	99.70	8	0.3	0.10	0.66	0.10	5	0.1	0.03	0.22		
Unemployed	84	93.6	74.24	98.65	98.65	2	6.4	1.35	25.76	1.35	0	-	-	-		
Student	43	100.0	0.00	100.00	100.00	0	-	-	-	-	0	-	-	-		
Household income																
Less than RM1000	790	97.4	94.48	98.84	98.84	6	1.4	0.49	3.91	0.49	2	0.2	0.03	0.93		
RM1000 - RM1999	1,908	99.5	98.30	99.88	99.88	2	0.4	0.08	1.75	0.08	1	0.1	0.01	0.51		
RM2000 - RM2999	1,663	99.7	99.24	99.87	99.87	4	0.2	0.06	0.57	0.06	1	0.0	0.01	0.35		
RM3000 - RM3999	1,372	99.8	99.29	99.94	99.94	2	0.1	0.03	0.67	0.03	1	0.1	0.01	0.48		
RM4000 - RM4999	1,027	99.8	99.15	99.95	99.95	1	0.1	0.01	0.74	0.01	1	0.0	0.00	0.03		
RM5000 and above	3,373	99.6	99.28	99.80	99.80	1	0.1	0.01	0.40	0.01	15	0.3	0.12	0.69		

Sociodemographic characteristics	Person cutting the cord						Self					
	Relatives			Shaman			Self			Self		
	Unweighted count	%	95% CI	Unweighted count	%	95% CI	Unweighted count	%	95% CI	Lower	Upper	
MALAYSIA	2	2	0.02	3	0.0	0.01	1	0.0	0.00	0.00	0.06	
State												
Johor	0	-	-	1	0.2	0.02	0	-	-	-	-	
Kedah	0	-	-	0	-	-	0	-	-	-	-	
Kelantan	0	-	-	0	-	-	0	-	-	-	-	
Malaka	0	-	-	0	-	-	0	-	-	-	-	
Negeri Sembilan	0	-	-	0	-	-	0	-	-	-	-	
Paang	0	-	-	0	-	-	0	-	-	-	-	
Pinang	0	-	-	0	-	-	0	-	-	-	-	
Perak	0	-	-	0	-	-	0	-	-	-	-	
Perlis	0	-	-	0	-	-	0	-	-	-	-	
Selangor	0	-	-	0	-	-	0	-	-	-	-	
Terengganu	0	-	-	2	0.4	0.09	0	0.0	0.01	0.01	0.29	
Sabah & WP Labuan	2	0.7	0.18	0	-	-	0	-	-	-	-	
Sarawak	0	-	-	0	-	-	0	-	-	-	-	
WP Kuala Lumpur	0	-	-	0	-	-	0	-	-	-	-	
WP Putrajaya	0	-	-	0	-	-	0	-	-	-	-	
Locality												
Urban	1	1	-	2	0.0	-	0	0.0	-	-	-	
Rural	1	1	-	1	0.0	-	0	0.0	-	-	-	
Age												
15-19	0	-	-	0	-	-	0	-	-	-	-	
20-24	2	2	0.09	1	0.1	0.01	1	0.0	0.01	0.00	0.16	
25-29	0	-	-	1	0.0	0.00	0	-	-	-	-	
30-34	0	-	-	0	-	-	0	-	-	-	-	
35-39	0	-	-	0	-	-	0	-	-	-	-	
40-44	0	-	-	0	-	-	0	-	-	-	-	
45-49	0	-	-	0	-	-	0	-	-	-	-	
Ethnicity												
Malay	0	-	-	2	0.0	0.01	1	0.0	0.00	0.00	0.09	
Chinese	0	-	-	0	-	-	0	-	-	-	-	
Indians	0	-	-	0	-	-	0	-	-	-	-	
Other Bumiputera	0	-	-	0	-	-	0	-	-	-	-	
Others	0	-	-	0	-	-	0	-	-	-	-	
Citizenship												
Malaysian citizen	0	-	-	1	0.4	0.06	0	0.0	0.00	-	-	
Permanent Resident	2	2	0.32	0	-	-	0	-	-	-	-	
Non-Malaysian	0	-	-	0	-	-	0	-	-	-	-	
Marital status												
Single (Unmarried)	0	-	-	0	-	-	0	-	-	-	-	
Married/cohabiting	2	2	0.02	3	0.0	0.01	0	0.0	0.01	0.00	0.06	
Separated/divorced/widowed	0	-	-	0	-	-	0	-	-	-	-	
Mother's education												
None	0	-	-	0	-	-	0	-	-	-	-	
Primary	1	1	0.04	0	0.1	0.02	0	-	-	-	-	
Secondary	0	-	-	3	-	-	1	0.0	0.00	0.00	0.17	
Higher	0	-	-	0	-	-	0	-	-	-	-	
Occupation												
Public Sector	0	-	-	1	0.0	0.01	1	0.0	0.01	0.01	0.34	
Private Sector	0	-	-	0	-	-	0	-	-	-	-	
Self-employed	2	2	0.04	2	0.1	0.02	0	-	-	-	-	
Housewife	0	-	-	0	-	-	0	-	-	-	-	
Unemployed	0	-	-	0	-	-	0	-	-	-	-	
Student	0	-	-	0	-	-	0	-	-	-	-	
Household income												
Less than RM1000	2	2	0.25	0	-	-	0	-	-	-	-	
RM1000 - RM1999	0	-	-	0	0.1	0.01	0	-	-	-	-	
RM2000 - RM2999	0	-	-	0	0.1	0.01	0	-	-	-	-	
RM3000 - RM3999	0	-	-	0	0.1	0.01	0	-	-	-	-	
RM4000 - RM4999	0	-	-	1	0.1	0.01	1	0.0	0.00	0.00	0.17	
RM5000 and above	0	-	-	0	-	-	0	-	-	-	-	

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.2.2.4 : Percentage of unsafe delivery by birth attendants and place of delivery, during their last child birth, NHMS 2016

	DELIVERY																			
	BIRTH ATTENDANT						Home						Others							
	Traditional birth attendant			No Birth attendant			Others			Home			Others							
Unweighted Count	%	95% CI Lower	95% CI Upper	Unweighted Count	%	95% CI Lower	95% CI Upper	Unweighted Count	%	95% CI Lower	95% CI Upper	Unweighted Count	%	95% CI Lower	95% CI Upper					
MALAYSIA	16	39.7	21.71	60.92	9	10.6	4.60	22.62	16	49.7	29.43	70.10	31	86.0	63.22	95.63	5	14.0	4.37	36.78
State																				
Johor	0	-	-	-	2	67.6	15.60	95.94	1	32.4	4.06	84.40	2	61.5	12.45	94.72	1	38.5	5.28	87.55
Kedah	0	-	-	-	0	-	-	-	1	100.0	100.00	100.00	0	95.3	68.20	99.48	0	4.7	0.52	31.80
Kelantan	2	47.4	11.99	85.60	0	23.0	3.88	68.74	2	29.7	4.85	77.78	4	63.8	9.92	96.57	1	36.2	3.43	90.08
Melaka	0	-	-	-	1	36.2	3.43	90.08	1	63.8	9.92	96.57	1	36.2	3.43	90.08	0	-	-	-
Negeri Sembilan	1	11.4	1.13	59.15	1	53.8	8.71	93.42	1	34.8	3.95	87.40	2	100.0	100.00	100.00	0	-	-	-
Pahang	2	100.0	100.00	100.00	0	-	-	-	0	100.0	100.00	100.00	2	100.0	100.00	100.00	0	-	-	-
P.Pinang	2	100.0	100.00	100.00	0	-	-	-	0	100.0	100.00	100.00	1	100.0	100.00	100.00	0	-	-	-
Perak	0	-	-	-	0	-	-	-	0	100.0	100.00	100.00	0	-	-	-	0	-	-	-
Perlis	0	-	-	-	0	-	-	-	0	100.0	100.00	100.00	0	-	-	-	0	-	-	-
Selangor	0	-	-	-	0	-	-	-	0	100.0	100.00	100.00	0	-	-	-	0	-	-	-
Terengganu	0	-	-	-	0	-	-	-	0	100.0	100.00	100.00	0	-	-	-	0	-	-	-
Sabah	0	-	-	-	0	-	-	-	0	100.0	100.00	100.00	0	-	-	-	0	-	-	-
Sarawak	9	45.9	20.21	74.04	0	-	-	-	6	54.1	25.96	79.79	14	89.8	52.79	98.57	1	10.2	1.43	47.21
WP Labuan	0	-	-	-	1	27.0	2.26	85.52	1	73.0	14.48	97.74	1	27.0	2.26	85.52	0	73.0	14.48	97.74
WP Kuala Lumpur	0	-	-	-	1	50.0	5.87	94.13	2	50.0	5.87	94.13	2	100.0	100.00	100.00	0	-	-	-
WP Putrajaya	0	-	-	-	1	100.0	100.00	100.00	0	-	-	-	1	100.0	100.00	100.00	0	-	-	-
Locality																				
Urban	8	25.8	10.90	49.80	5	4.4	1.80	22.60	7	10.8	16.90	57.60	15	61.4	24.90	88.40	3	6.5	1.50	24.20
Rural	8	13.8	4.00	37.90	4	3.9	1.00	13.20	9	15.3	4.80	39.30	16	24.6	8.40	53.70	2	7.5	1.00	38.70
Age																				
15-19	1	37.3	4.97	87.12	0	-	-	-	2	62.7	12.88	95.03	3	100.0	100.00	100.00	0	-	-	-
20-24	3	22.4	5.36	59.46	2	12.8	2.54	45.51	3	64.8	27.82	89.78	7	74.0	24.32	96.20	1	26.0	3.80	75.68
25-29	7	52.1	26.86	76.25	3	14.5	3.87	41.46	5	33.5	13.76	61.37	10	78.3	44.84	94.12	3	21.7	5.88	55.16
30-34	4	59.4	27.35	85.02	4	21.8	6.13	54.32	3	18.8	4.24	54.89	8	95.4	71.23	99.44	1	4.6	0.56	28.77
35-39	0	-	-	-	0	-	-	-	3	100.0	100.00	100.00	3	100.0	100.00	100.00	0	-	-	-
40-44	1	100.0	100.00	100.00	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-
45-49	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-
Ethnicity																				
Malay	2	9.6	1.57	41.46	5	35.7	12.87	67.61	7	54.7	25.26	81.17	8	59.7	24.11	87.39	3	40.3	12.61	75.89
Chinese	1	100.0	100.00	100.00	0	-	-	-	0	-	-	-	1	100.0	100.00	100.00	0	-	-	-
Indians	1	48.9	5.65	93.87	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-
Other	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-
Bumiputera	8	48.6	22.64	75.28	2	6.3	1.41	23.78	6	45.2	19.48	73.72	16	100.0	0.00	100.00	0	-	-	-
Others	4	42.4	12.42	79.27	1	0.7	0.08	5.33	3	56.9	20.35	87.24	6	83.9	39.30	97.68	2	16.1	2.32	60.70
Citizenship																				
Malaysian citizen	11	35.6	19.05	56.44	8	20.0	8.90	38.96	12	44.4	24.49	66.37	23	86.5	61.02	96.32	3	13.5	3.68	38.98
Permanent Resident	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-
Non-Malaysian	5	44.0	14.87	78.01	1	0.6	0.07	4.71	4	55.4	21.60	84.80	8	85.5	43.18	97.87	2	14.5	2.13	56.82
Marital status																				
Single	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-
Married/cohabiting	15	38.8	20.86	60.41	9	10.8	4.66	22.96	16	50.4	29.86	70.86	30	85.8	62.74	95.57	5	14.2	4.43	37.26
Separated/divorced/widowed	1	100.0	100.00	100.00	0	-	-	-	0	-	-	-	1	100.0	100.00	100.00	0	-	-	-

	Birth Attendant																						
	Traditional birth attendant						No Birth attendant						Others										
	Unweighted Count	%	Lower	Upper	95% CI	Unweighted Count	%	Lower	Upper	95% CI	Unweighted Count	%	Lower	Upper	95% CI	Unweighted Count	%	Lower	Upper	95% CI			
Mother's education																							
None	3	100.0	100.00	100.00	-	0	73.0	41.93	90.99	-	3	100.0	100.00	100.00	-	0	19.4	2.92	65.75	-	0	-	
Primary	3	16.1	4.34	44.83	36.57	5	44.9	17.31	76.10	30.98	8	80.6	34.25	97.08	34.25	2	28.2	5.49	72.72	34.25	2	65.75	
Secondary	3	35.4	11.83	69.20	50.98	5	38.0	7.16	82.93	83.35	7	71.8	27.28	94.51	27.28	2	45.7	6.53	91.02	27.28	2	72.72	
Higher	2	26.6	4.01	75.84	83.35	2					3	54.3	8.98	93.47	8.98	1					1		
Occupation																							
Public Sector	1	6.1	0.53	43.80	35.65	1	89.5	50.16	98.62	35.65	3	100.0	100.00	100.00	100.00	0	3.0	0.33	22.80	100.00	0	-	
Private Sector	3	43.8	10.18	84.22	20.39	1	53.5	14.14	88.93	20.39	4	97.0	77.20	99.67	77.20	1	0.0	0.00	0.00	99.67	1	22.80	
Self-employed	2	72.6	26.39	95.14	48.66	2	27.4	4.86	73.61	48.66	4	100.0	100.00	100.00	100.00	0	0.0	0.00	0.00	100.00	0	0.00	
Housewife	9	41.4	18.97	68.00	34.29	9	43.0	20.19	69.23	34.29	18	78.5	47.46	93.68	47.46	3	21.5	6.32	52.54	93.68	3	52.54	
Unemployed	1	21.4	1.71	81.06	21.98	1	76.3	18.27	97.90	21.98	2	97.8	78.02	99.82	78.02	1	2.2	0.16	21.98	99.82	1	21.98	
Student	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	
Household income																							
Less than RM1000	5	25.7	8.69	55.81	28.52	6	68.6	37.80	88.72	28.52	11	83.4	39.39	97.48	39.39	2	16.6	2.52	60.61	97.48	2	60.61	
RM1000 - RM1999	4	82.6	46.13	96.33	53.87	3	-	-	-	53.87	5	100.0	100.00	100.00	100.00	0	-	-	-	100.00	0	-	
RM2000 - RM2999	2	33.6	9.04	72.07	72.63	3	30.8	8.80	67.34	72.63	5	76.0	31.98	95.53	31.98	2	24.0	4.47	68.02	95.53	2	68.02	
RM3000 - RM3999	2	70.5	18.02	96.31	20.92	1	27.0	3.00	81.47	20.92	4	100.0	100.00	100.00	100.00	0	-	-	-	100.00	0	-	
RM4000 - RM4999	2	29.6	4.94	77.35	-	2	70.4	22.65	95.06	-	3	100.0	100.00	100.00	100.00	0	-	-	-	100.00	0	-	
RM5000 and above	1	5.3	0.51	37.96	-	3	94.7	62.04	99.49	-	3	100.0	0.00	100.00	0.00	0	-	-	-	100.00	0	-	

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.2.2.5 : Prevalence of mothers who delivered their last child by place of delivery, NHMS 2016.

Sociodemographic characteristics	Public health facility						Private health facility						Home						Others					
	Unweighted count	%	95% CI		Unweighted count	%	Unweighted count	%	95% CI		Unweighted count	%	Unweighted count	%	95% CI		Unweighted count	%	95% CI					
			Lower	Upper					Lower	Upper					Lower	Upper			Lower	Upper				
MALAYSIA	8,540	80.5	77.06	83.61	1,648	18.6	15.50	22.19	44	0.5	0.23	1.00	28	0.4	0.17	0.76								
Locality																								
Urban	4,828	51.7	43.70	59.66	1,197	15.3	11.50	20.10	15	0.3	0.10	1.00	20	0.3	0.10	0.70								
Rural	3,712	28.9	20.50	39.00	451	3.3	2.10	5.10	29	0.2	0.10	0.30	8	0.1	0.00	0.20								
Age																								
15-19	418	91.4	86.04	94.86	20	6.4	4.07	9.79	5	2.1	0.34	12.12	1	0.1	0.01	0.67								
20-24	1,523	88.9	86.44	90.96	151	10.1	8.09	12.49	10	0.6	0.25	1.26	5	0.5	0.17	1.24								
25-29	2,965	79.3	75.37	82.75	607	20.0	16.53	24.04	16	0.4	0.21	0.72	11	0.3	0.16	0.57								
30-34	2,368	74.6	69.49	79.06	588	24.7	20.31	29.76	8	0.2	0.07	0.55	8	0.5	0.14	1.80								
35-39	1,025	74.3	67.46	80.13	247	25.2	19.24	32.17	4	0.3	0.08	0.77	3	0.3	0.08	0.97								
40-44	227	84.6	77.83	89.57	34	15.2	10.25	21.99	1	0.2	0.03	1.41	0	-	-	-								
45-49	14	93.0	88.05	95.95	1	7.0	4.05	11.95	0	-	-	-	0	-	-	-								
Ethnicity																								
Malay	6,264	86.2	83.10	88.81	818	13.4	10.79	16.59	13	0.1	0.07	0.21	15	0.2	0.14	0.44								
Chinese	483	44.6	38.83	50.51	638	54.5	48.58	60.28	0	-	-	-	6	0.9	0.22	3.74								
Indians	340	73.9	64.97	81.29	87	25.4	17.94	34.53	1	0.2	0.03	1.48	2	0.5	0.14	1.85								
Other Bumiputera	1,101	93.6	89.78	96.10	54	4.6	2.24	9.12	23	1.6	0.78	3.33	3	0.2	0.05	0.55								
Others	352	83.0	78.82	86.44	51	13.2	9.65	17.72	7	3.3	1.03	9.80	2	0.6	0.09	4.02								
Citizenship																								
Malaysian citizen	8,128	80.6	76.87	83.82	1,570	18.8	15.52	22.54	35	0.3	0.17	0.48	26	0.4	0.16	0.78								
Permanent Resident	43	94.9	83.66	98.56	3	5.1	1.44	16.34	0	-	-	-	0	-	-	-								
Non-Malaysian	336	79.5	75.23	83.25	67	16.3	12.46	20.97	9	3.6	1.15	10.73	2	0.6	0.09	3.93								
Marital status																								
Never married/separated/divorced/widowed	160	91.2	83.97	95.34	15	7.9	4.00	15.14	2	0.9	0.20	3.61	0	-	-	-								
Married/cohabiting	8,324	80.3	76.83	83.44	1,622	18.8	15.67	22.42	42	0.5	0.22	1.02	27	0.4	0.17	0.77								
Mother's education																								
None	71	89.4	74.93	95.94	1	4.3	0.59	25.33	5	5.8	2.11	15.10	1	0.5	0.08	3.44								
Primary	1,004	93.3	90.37	95.39	55	4.8	3.17	7.32	10	1.4	0.44	4.55	3	0.4	0.09	1.91								
Secondary	4,713	86.9	84.65	88.84	563	12.5	10.68	14.63	14	0.2	0.09	0.32	15	0.4	0.17	1.02								
Higher	2,564	66.0	60.36	71.19	1,015	33.7	28.48	39.39	3	0.0	0.03	0.07	8	0.3	0.10	0.64								
Occupation																								
Public Sector	1,988	78.9	75.10	82.34	434	20.9	17.49	24.78	3	0.1	0.05	0.12	2	0.1	0.01	0.49								
Private Sector	1,698	71.4	67.10	75.42	580	27.8	23.84	32.17	5	0.3	0.07	1.41	8	0.4	0.13	1.51								
Self-employed	607	76.9	69.94	82.57	158	22.8	17.10	29.72	4	0.3	0.11	1.08	0	-	-	-								
Housewife	4,054	87.4	84.67	89.67	447	11.5	9.21	14.32	30	0.6	0.39	1.04	30	0.5	0.24	0.89								
Unemployed	76	80.0	65.25	89.52	7	13.4	5.24	30.22	2	6.4	1.09	30.15	1	0.1	0.02	1.12								
Student	32	62.2	42.08	78.87	11	37.8	21.13	57.92	0	-	-	-	0	-	-	-								
Household income																								
Less than RM1000	772	95.9	93.13	97.61	8	0.7	0.27	1.85	18	2.9	1.59	5.21	2	0.5	0.07	3.08								
RM1000 – RM1999	1,848	96.2	94.37	97.43	49	3.0	1.85	4.75	10	0.6	0.19	2.14	3	0.2	0.06	0.73								
RM2000 – RM2999	1,553	90.3	88.20	92.14	122	9.0	7.26	11.19	6	0.3	0.11	1.01	7	0.3	0.12	0.70								
RM3000 – RM3999	1,196	85.6	82.56	88.19	172	13.6	11.22	16.46	4	0.2	0.06	0.70	3	0.6	0.14	2.31								
RM4000 – RM4999	859	84.8	81.21	87.86	166	14.5	11.59	18.00	3	0.5	0.10	2.85	1	0.1	0.02	0.89								
RM5000 and above	2,253	61.6	56.49	66.47	1,124	37.9	32.98	43.17	3	0.0	0.03	0.08	11	0.4	0.13	1.26								

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.2.6.6 : Prevalence of mothers who delivered their last child by mode of delivery, NHMS 2016.

Sociodemographic characteristics	Vaginal Delivery												Instrumental						Caesarean section									
	Spontaneous Vaginal Delivery				Assisted vaginal breech delivery				Delivered via Vacuum				Delivered via forceps				Delivered via Vacuum				Delivered via forceps				Caesarean section			
	Unweighted Count	Estimated population	%	95% CI Lower	95% CI Upper	Unweighted Count	Estimated population	%	95% CI Lower	95% CI Upper	Unweighted Count	Estimated population	%	95% CI Lower	95% CI Upper	Unweighted Count	Estimated population	%	95% CI Lower	95% CI Upper	Unweighted Count	Estimated population	%	95% CI Lower	95% CI Upper			
MALAYSIA	7,654	383,249	75.5	74.26	76.67	26	1,675	0.3	0.21	0.53	255	15,898	3.1	2.59	3.78	43	1,877	0.4	0.24	0.57	2,284	104,987	20.7	19.59	21.82			
State																												
Johor	564	45,459	77.7	74.09	80.92	2	294	0.5	0.12	2.02	17	1,284	2.2	1.28	3.72	3	343	0.6	0.17	1.99	135	11,133	19.0	16.03	22.43			
Kedah	503	25,905	72.0	67.84	75.86	4	144	0.4	0.10	1.53	5	1,056	2.9	1.55	5.50	5	339	0.9	0.37	2.36	157	8,521	23.7	20.19	27.60			
Kelantan	554	32,240	86.4	82.69	89.43	1	43	0.1	0.02	0.82	10	308	0.8	0.30	2.28	2	85	0.2	0.06	0.93	81	4,636	12.4	9.52	16.06			
Melaka	554	9,987	70.7	67.17	74.06	0	-	-	-	-	10	183	1.3	0.68	2.44	2	64	0.5	0.11	1.78	222	3,885	27.5	24.27	31.02			
Negeri Sembilan	542	14,458	80.1	76.62	83.11	0	-	-	-	-	17	488	2.7	1.59	4.57	3	67	0.4	0.11	1.18	135	3,046	16.9	14.08	20.08			
Pahang	498	20,885	76.1	72.31	79.46	0	-	-	-	-	17	814	3.0	1.79	4.86	3	119	0.4	0.14	1.36	142	5,637	20.5	17.38	24.09			
Pipang	500	17,074	76.8	73.35	79.92	2	56	0.3	0.06	1.04	17	533	2.4	1.44	3.97	3	103	0.5	0.14	1.49	146	4,467	20.1	17.18	23.37			
Perak	457	26,209	73.6	69.56	77.26	1	95	0.3	0.04	1.88	11	777	2.2	1.18	4.00	1	65	0.2	0.03	1.29	149	8,468	23.8	20.25	27.70			
Perlis	452	2,657	68.3	64.81	71.88	2	15	0.3	0.08	1.41	19	130	3.2	1.89	4.78	9	72	1.7	0.82	3.32	183	1,159	26.7	23.35	30.29			
Selangor	476	7,095	69.1	64.59	73.13	2	152	0.1	0.02	1.04	35	6,362	3.2	4.17	9.07	3	323	0.3	0.07	1.46	164	25,002	24.3	20.63	29.57			
Terengganu	531	21,942	84.6	81.30	87.40	0	-	-	-	-	7	290	1.1	0.53	2.36	0	-	-	-	-	97	3,706	14.3	11.58	17.51			
Sabah & Sarawak																												
WP Labuan	622	42,557	81.0	77.70	83.86	7	511	1.0	0.41	2.27	18	1,279	2.4	1.37	4.27	1	60	0.1	0.02	0.81	134	8,153	15.5	12.94	18.48			
Sarawak	480	30,293	77.7	73.96	80.99	6	365	0.9	0.40	2.17	15	1,148	2.9	1.72	4.99	2	149	0.4	0.09	1.56	119	7,046	18.1	15.10	21.46			
WP Kuala Lumpur	381	20,131	65.7	61.52	69.58	0	-	-	-	-	24	1,125	3.7	2.42	5.54	2	72	0.2	0.06	0.94	196	9,328	30.4	26.68	34.45			
WP Putrajaya	538	2,055	68.6	65.05	71.98	0	-	-	-	-	28	119	4.0	2.69	5.87	4	16	0.5	0.19	1.52	224	804	26.8	23.69	30.26			
Locality																												
Urban	4,356	251,888	49.6	41.80	57.40	13	1,003	0.2	0.10	0.40	186	13,032	2.6	1.90	3.50	29	1,388	0.3	0.1	0.5	1,476	7,556	14.9	12.40	17.80			
Rural	3,298	131,361	25.9	18.40	35.00	13	672	0.1	0.10	0.30	69	2,866	0.6	0.30	1.00	14	490	0.1	0.1	0.2	808	29,432	5.8	4.10	8.10			
Age																												
15-19	387	29,885	86.4	81.21	90.34	0	-	-	-	-	10	833	2.4	1.13	5.08	3	118	0.3	0.07	1.59	44	3,751	10.8	7.28	15.86			
20-24	1,362	85,926	82.4	79.95	84.54	6	642	0.6	0.25	1.50	37	2,087	2.0	1.33	2.99	6	312	0.3	0.09	0.95	279	15,361	14.7	12.73	16.97			
25-29	2,707	141,035	75.2	73.14	77.23	9	427	0.2	0.10	0.51	123	8,722	4.7	3.62	5.96	15	857	0.5	0.22	0.97	746	36,401	19.4	17.66	21.31			
30-34	2,138	89,362	70.6	67.94	73.08	9	484	0.4	0.17	0.88	52	3,086	2.4	1.43	4.11	16	553	0.4	0.25	0.76	753	33,135	26.2	23.82	28.66			
35-39	873	31,267	66.8	62.83	70.45	4	122	0.3	0.09	0.79	22	1,033	2.2	1.19	4.05	3	37	0.1	0.02	0.35	377	14,383	30.7	27.09	34.57			
40-44	179	5,626	74.2	67.11	80.17	0	-	-	-	-	4	127	1.7	0.47	5.82	0	-	-	-	79	1,831	24.1	18.37	31.05				
45-49	8	148	52.2	25.61	77.55	0	-	-	-	-	1	11	3.7	0.50	23.08	0	-	-	-	6	125	44.1	19.68	71.76				
Ethnicity																												
Malay	5,368	248,074	77.4	75.89	78.75	14	920	0.3	0.15	0.57	162	9,551	3.0	2.37	3.74	28	1,106	0.3	0.21	0.58	1,540	61,060	19.0	17.77	20.38			
Chinese	734	46,852	65.5	61.82	69.11	1	35	0.0	0.01	0.34	45	2,684	3.8	2.54	5.50	8	457	0.5	0.20	1.99	340	21,550	30.1	26.59	33.87			
Indians	277	14,454	63.9	56.50	70.69	0	-	-	-	-	13	784	3.5	1.43	8.19	3	117	0.9	0.15	1.73	137	7,266	32.1	25.64	39.37			
Other	955	51,050	79.9	76.74	82.75	7	404	0.6	0.29	1.36	28	2,347	3.7	1.94	6.85	3	182	0.3	0.09	0.95	187	9,898	15.5	13.34	17.92			
Bumiputera Others	320	22,818	79.0	72.55	84.21	4	317	1.1	0.34	3.49	7	531	1.8	0.58	5.72	1	15	0.1	0.01	0.37	80	5,214	18.0	13.17	24.21			
Citizenship																												
Malaysian citizen	7,264	357,308	75.5	74.22	76.68	22	1,358	0.3	0.17	0.48	246	15,134	3.2	2.64	3.87	41	1,678	0.4	0.23	0.55	2,188	97,950	20.7	19.58	21.85			
Permanent Resident	39	2,098	85.3	68.84	93.86	0	-	-	-	-	0	669	2.3	0.79	6.31	2	200	0.7	0.12	3.59	7	361	14.7	6.14	31.16			
Non-Malaysian	323	22,379	75.9	69.15	81.51	4	317	1.1	0.33	3.41	8	669	2.3	0.79	6.31	0	-	-	-	77	5,935	20.1	14.91	26.57				
Marital status																												
Single	31	2,084	86.6	72.03	94.23	0	-	-	-	-	1	74	3.1	0.42	19.29	0	-	-	-	-	8	247	10.3	4.29	22.69			
Married/cohabiting	7,471	372,551	75.4	74.19	76.64	25	1,618	0.3	0.20	0.53	248	15,287	3.1	2.55	3.75	43	1,877	0.4	0.25	0.59	2,230	102,553	20.8	19.65	21.92			
Separated/divorced/widowed	106	5,655	79.7	69.75	86.99	0	-	-	-	-	3	332	4.7	1.07	18.21	0	-	-	-	-	28	1,108	15.6	10.17	23.22			

Some cells have respondent count <30. Results should be interpreted with caution.

Sociodemographic characteristics	Vaginal Delivery												Instrumental						Caesarean section						
	Spontaneous Vaginal Delivery				Assisted vaginal breech delivery				Delivered via Vacuum				Delivered via forceps				Caesarean section								
	Unweighted Count	Estimated population	%	95% CI Lower	95% CI Upper	Unweighted Count	Estimated population	%	95% CI Lower	95% CI Upper	Unweighted Count	Estimated population	%	95% CI Lower	95% CI Upper	Unweighted Count	Estimated population	%	95% CI Lower	95% CI Upper					
Mother's education																									
None	61	3,061	80.8	69.24	88.71	0	-	-	0.28	2.10	1	50	1.3	0.18	8.73	0	-	-	0.08	0.99	16	678	17.9	10.27	29.35
Primary	887	47,121	83.1	79.75	85.94	5	439	0.3	0.17	0.62	11	706	1.2	0.54	2.85	3	156	0.2	0.11	0.47	166	8,303	14.6	11.99	17.76
Secondary	4,069	206,358	77.6	75.99	79.09	14	874	0.1	0.03	0.54	104	6,274	2.4	1.82	3.06	17	620	0.2	0.11	0.47	1,102	57,882	19.5	18.08	21.01
Higher	2,478	118,272	69.8	67.35	72.06	4	207	0.1	0.03	0.54	135	8,733	5.2	3.90	6.77	23	1,101	0.6	0.35	1.19	951	41,240	24.3	22.25	26.52
Occupation																									
Public Sector	1,716	63,605	72.3	69.36	74.98	2	204	0.2	0.05	1.08	75	3,430	3.9	2.69	5.62	11	563	0.6	0.24	1.71	623	20,218	23.0	20.51	25.63
Private Sector	1,643	100,270	73.0	70.30	75.50	6	260	0.2	0.07	0.50	64	3,483	4.0	2.74	5.79	13	567	0.4	0.22	0.78	566	30,813	22.4	20.17	24.96
Self-employed	564	26,927	74.2	69.65	78.24	1	43	0.1	0.02	0.84	23	1,441	4.0	2.21	7.01	1	60	0.2	0.02	1.17	180	7,829	21.6	17.88	25.78
Housewife	3,566	182,039	78.5	76.72	80.12	15	1,101	0.5	0.26	0.87	86	5,141	2.2	1.65	2.97	17	680	0.3	0.15	0.59	863	43,021	18.5	17.00	20.20
Unemployed	69	4,163	82.8	71.33	90.36	0	-	-	-	-	3	161	3.2	0.78	12.26	0	-	-	-	14	701	14.0	7.45	24.62	
Student	34	2,802	81.5	61.68	92.33	0	-	-	-	-	0	-	-	-	-	1	6	0.2	0.03	1.37	8	630	18.3	7.53	38.20
Household income																									
Less than RM1000	670	31,520	83.9	80.17	87.11	7	437	1.2	0.47	2.88	5	211	0.6	0.18	1.76	3	73	0.2	0.05	0.71	115	5,311	14.1	11.15	17.78
RM1000 - RM1999	1,546	73,816	82.6	80.38	84.68	8	387	0.4	0.20	0.93	23	1,179	1.3	0.73	2.39	7	292	0.3	0.13	0.85	326	13,651	15.3	13.38	17.40
RM2000 - RM2999	1,307	63,642	78.5	75.69	81.07	3	208	0.3	0.07	0.96	33	2,160	2.7	1.68	4.21	7	235	0.3	0.12	0.72	339	14,828	18.3	15.94	20.90
RM3000 - RM3999	1,018	49,859	75.0	71.68	78.07	4	311	0.5	0.12	1.74	33	2,089	3.1	1.92	5.11	9	460	0.7	0.28	1.71	311	13,750	20.7	17.93	23.74
RM4000 - RM4999	750	37,731	73.9	69.36	77.96	0	-	-	-	-	27	1,444	2.8	1.13	6.90	1	8	0.0	0.00	0.11	252	11,885	23.3	19.61	27.39
RM5000 and above	2,312	122,419	69.3	66.94	71.66	4	333	0.2	0.06	0.57	131	8,461	4.8	3.73	6.14	16	810	0.5	0.22	0.97	928	44,508	25.2	23.07	27.48

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.3.2.1 : Awareness and practice of natural birthing as seen by percentage of mothers who were aware of natural birth in this survey, NHMS 2016.

Sociodemographic characteristics	Ever heard (N=10181)				Understand (n=1713)				Ever Practiced (n=969)			
	Unweighted count	%	95% CI		Unweighted count	%	95% CI		Unweighted count	%	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
MALAYSIA	1,713	16.1	15.08	17.21	969	65.5	62.08	68.85	6	0.6	0.22	1.52
State												
Johor	101	15.3	12.51	18.55	81	83.3	74.32	89.55	0	-	-	-
Kedah	80	12.8	10.15	16.04	51	60.7	48.20	71.89	0	-	-	-
Kelantan	44	9.0	6.39	12.48	38	91.2	75.43	97.19	0	-	-	-
Melaka	187	22.4	19.53	25.65	38	20.4	15.04	27.03	0	-	-	-
Negeri Sembilan	110	14.7	12.04	17.84	85	78.5	67.45	86.57	0	-	-	-
Pahang	70	10.2	7.98	12.92	48	70.8	58.90	80.33	0	-	-	-
P.Pinang	145	21.1	18.03	24.43	26	19.5	13.49	27.28	0	-	-	-
Perak	71	11.6	9.15	14.64	68	96.8	90.53	98.97	0	-	-	-
Perlis	69	9.6	7.54	12.02	23	31.1	21.15	43.13	0	-	-	-
Selangor	194	28.8	24.87	33.02	145	74.0	65.86	80.82	1	0.7	0.09	4.60
Terengganu	52	8.7	6.58	11.37	49	93.8	81.74	98.07	4	10.0	3.81	23.80
Sabah & WP												
Labuan	62	7.6	5.75	9.97	30	53.2	39.24	66.70	0	-	-	-
Sarawak	45	7.5	5.58	10.09	17	42.3	27.95	58.07	0	-	-	-
WP Kuala Lumpur	143	23.6	20.15	27.45	46	31.1	23.91	39.24	1	0.7	0.10	5.10
WP Putrajaya	340	43.5	39.77	47.23	224	64.4	58.72	69.77	0	-	-	-
Locality												
Urban	1,250	12.7	10.00	15.90	691	8.2	6.10	11.00	6	0.1	0.00	0.30
Rural	463	0.7	2.30	5.20	278	2.3	1.50	3.40	0	-	-	-
Age												
15-19	9	1.5	0.65	3.58	4	78.1	40.71	94.87	0	-	-	-
20-24	141	8.6	6.89	10.77	73	64.2	53.18	73.88	0	-	-	-
25-29	713	20.0	18.06	22.05	413	69.0	63.76	73.84	3	0.5	0.15	1.46
30-34	629	20.9	18.72	23.33	358	61.0	54.68	66.97	2	0.9	0.19	4.59
35-39	188	15.4	12.53	18.83	103	65.8	55.01	75.19	1	0.7	0.09	4.57
40-44	32	14.4	9.32	21.62	17	60.8	38.21	79.54	0	-	-	-
45-49	1	2.1	0.28	14.38	1	100.0	100.00	100.00	0	-	-	-
Ethnicity												
Malay	1,363	18.9	17.51	20.32	845	74.5	71.08	77.55	5	0.7	0.24	2.00
Chinese	207	18.6	15.58	22.16	67	38.3	29.11	48.48	0	-	-	-
Indians	46	10.0	6.01	16.24	20	46.1	23.07	70.85	0	-	-	-
Other Bumiputera	80	6.9	5.41	8.65	36	48.6	36.73	60.65	1	1.1	0.15	7.35
Others	17	4.3	2.01	9.01	1	17.8	2.50	64.56	0	-	-	-
Citizenship												
Malaysian citizen	1,686	16.9	15.79	18.02	962	66.2	62.71	69.45	6	0.6	0.22	1.55
Permanent Resident	4	7.0	2.00	21.91	1	58.2	12.64	93.05	0	-	-	-
Non-Malaysian	18	4.7	2.24	9.51	3	31.7	8.43	70.07	0	-	-	-
Marital status												
Single (Unmarried)	2	1.8	0.27	10.50	1	92.0	41.87	99.46	0	-	-	-
Married/cohabiting	1,692	16.3	15.28	17.45	957	65.4	61.89	68.73	6	0.6	0.22	1.54
Separated/divorced/widowed	12	10.0	4.58	20.42	7	70.7	36.30	91.07	0	-	-	-
Mother's education												
None	1	2.1	0.30	13.67	0	-	-	-	0	-	-	-
Primary	22	1.7	1.06	2.86	6	40.9	19.32	66.68	0	-	-	-
Secondary	386	6.7	5.80	7.69	173	53.2	45.89	60.32	2	0.6	0.15	2.36
Higher	1,292	36.8	34.30	39.29	785	69.5	65.57	73.22	4	0.6	0.18	1.91
Occupation												
Public Sector	828	33.6	30.64	36.69	536	75.7	71.18	79.65	1	0.7	0.09	4.59
Private Sector	439	21.3	18.88	23.98	209	57.7	50.83	64.25	1	0.2	0.02	1.16
Self-employed	74	11.2	8.20	15.17	34	56.5	39.80	71.81	0	-	-	-
Housewife	347	7.4	6.40	8.62	178	62.8	55.33	69.70	3	0.9	0.29	2.80
Unemployed	1	0.3	0.04	2.18	0	0.0	0.00	0.00	0	0.0	0.00	0.00
Student	12	26.9	12.51	48.77	6	78.9	47.12	93.98	1	7.7	0.96	41.62
Household income												
Less than RM1000	16	1.4	0.78	2.40	6	42.7	19.46	69.68	0	-	-	-
RM1000 – RM1999	76	3.0	2.28	3.94	27	45.6	32.34	59.47	1	2.0	0.29	13.07
RM2000 – RM2999	121	6.3	4.90	8.09	59	63.9	52.21	74.21	0	0.0	0.00	0.00
RM3000 – RM3999	178	10.7	8.56	13.38	101	68.5	57.93	77.43	1	0.7	0.10	4.96
RM4000 – RM4999	207	20.0	16.50	24.14	116	62.3	51.58	71.97	0	0.0	0.00	0.00
RM5000 and above	1,112	31.7	29.32	34.14	659	67.2	62.87	71.33	4	0.7	0.20	2.13

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.4.2.1 : Prevalence of mothers who had notified their delivery of last child to the nearest government health facility

Sociodemographic characteristics	Birth notification											
	Within 24 hours				After 24 hours				No notification			
	Unweighted count	%	95% CI		Unweighted count	%	95% CI		Unweighted count	%	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
MALAYSIA	622	62.9	54.91	70.23	292	31.4	25.11	38.42	36	5.7	3.89	8.36
Locality												
Urban	410	60.1	48.98	70.33	208	32.5	23.71	42.73	28	7.4	4.84	11.03
Rural	212	68.2	60.20	75.26	84	29.2	22.58	36.88	8	2.6	1.17	5.58
Age												
15-19	20	59.5	35.59	79.62	15	35.4	15.69	61.68	2	5.1	1.19	19.48
20-24	117	66.3	56.31	74.95	47	28.7	20.54	38.60	7	5.0	2.28	10.67
25-29	221	69.9	61.43	77.15	87	23.0	17.29	29.93	14	7.1	3.45	14.10
30-34	182	56.6	44.16	68.31	91	38.6	27.77	50.74	8	4.7	1.99	10.88
35-39	71	58.1	42.04	72.53	42	36.1	21.84	53.37	4	5.8	1.62	18.84
40-44	11	46.6	24.98	69.57	8	49.4	27.12	71.94	1	4.0	0.53	24.38
45-49	0	-	-	-	2	100.0	100.00	100.00	0	-	-	-
Ethnicity												
Malay	460	69.3	59.87	77.37	180	28.0	20.62	36.73	8	2.7	1.44	5.07
Chinese	39	52.5	38.63	65.96	24	32.9	22.08	45.79	11	14.7	7.86	25.73
Indians	21	54.3	35.25	72.16	10	45.7	27.84	64.75	0	-	-	-
Other Bumiputera	70	50.1	37.34	62.77	57	42.0	31.20	53.68	10	7.9	4.17	14.50
Others	32	51.3	26.68	75.35	21	27.4	14.31	45.98	7	21.3	7.38	47.86
Citizenship												
Malaysian citizen	582	63.5	55.24	70.97	269	31.8	25.27	39.14	28	4.7	3.03	7.33
Permanent Resident	4	45.7	8.53	88.41	4	54.3	11.59	91.47	0	-	-	-
Non-Malaysian	35	55.6	32.89	76.22	19	23.8	12.79	40.00	8	20.6	7.72	44.45
Marital status												
Single	2	25.3	3.77	74.49	1	2.3	0.22	19.66	2	72.5	24.01	95.64
Married / Cohabiting	614	62.6	54.71	69.90	289	32.2	25.85	39.37	34	5.1	3.45	7.61
Separated / Divorced / Widowed	2	73.5	25.08	95.83	2	26.5	4.17	74.92	0	-	-	-
Mother's education												
None	6	87.0	53.75	97.49	1	5.8	0.62	37.37	1	7.2	0.89	40.22
Primary	64	62.6	51.49	72.51	30	29.2	18.83	42.40	5	8.2	2.67	22.35
Secondary	337	65.6	57.14	73.24	140	31.3	25.04	38.22	12	3.1	1.22	7.71
Higher	204	58.3	47.61	68.26	112	33.0	23.46	44.19	16	8.7	5.57	13.33
Occupation												
Public Sector	143	68.8	58.13	77.80	68	27.5	19.01	38.09	5	3.7	1.39	9.30
Private Sector	131	57.6	45.76	68.58	61	35.6	23.87	49.35	10	6.8	3.63	12.49
Self-employed	45	58.5	37.31	76.93	16	29.9	17.87	45.45	3	11.7	2.27	42.82
Housewife	296	63.5	56.35	70.09	143	31.3	25.12	38.31	17	5.2	2.78	9.41
Unemployed	2	53.2	9.63	92.39	2	46.8	7.61	90.37	0	-	-	-
Student	0	-	-	-	1	100.0	100.00	100.00	0	-	-	-
Household income												
Less than RM1000	44	64.4	47.85	78.11	23	29.9	16.43	47.98	4	5.7	2.13	14.50
RM1000 – RM1999	131	75.3	63.80	84.00	42	23.8	15.19	35.31	2	0.9	0.31	2.75
RM2000 – RM2999	92	60.2	48.49	70.77	48	34.8	24.66	46.44	2	5.1	0.94	23.20
RM3000 – RM3999	97	65.1	53.67	75.08	40	31.8	22.30	43.04	5	3.1	1.32	7.03
RM4000 – RM4999	73	63.8	50.18	75.55	31	24.7	16.19	35.77	7	11.5	4.10	28.21
RM5000 and above	176	54.0	43.56	64.16	103	37.7	27.73	48.80	16	8.3	5.11	13.14

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.4.2.2 : Response to birth notification as seen by prevalence of mothers who received postnatal home visits within 24 hours of birth notification, after the last child birth

Sociodemographic characteristics	Postnatal home visit within 24 hours of birth notification			
	Unweighted count	%	95% CI	
			Lower	Upper
MALAYSIA	568	91.2	87.24	93.98
State				
Johor	30	100.0	100.00	100.00
Kedah	56	100.0	0.00	100.00
Kelantan	28	96.1	77.78	99.42
Melaka	37	92.7	59.14	99.10
Negeri Sembilan	65	98.7	88.77	99.87
Pahang	38	97.2	82.90	99.59
Penang	37	100.0	100.00	100.00
Perak	40	98.5	88.95	99.82
Perlis	38	92.7	92.70	92.70
Selangor	28	94.0	84.35	97.86
Terengganu	44	98.6	86.37	99.88
Sabah & WP Labuan	40	53.7	28.52	77.08
WP Kuala Lumpur	33	97.6	97.61	97.61
WP Putrajaya	41	83.7	83.67	83.67
Sarawak	13	45.3	22.83	69.91
Locality				
Urban	377	92.2	85.99	95.76
Rural	191	89.5	80.95	94.44
Age				
15-19	20	100.0	0.00	100.00
20-24	105	91.5	84.87	95.40
25-29	206	94.0	87.79	97.16
30-34	163	88.7	80.40	93.75
35-39	65	84.5	71.68	92.11
40-44	9	89.0	52.14	98.37
45-49	0	-	-	-
Ethnicity				
Malay	432	94.9	90.70	97.21
Chinese	36	94.8	79.85	98.83
Indians	21	100.0	0.00	100.00
Other Bumiputera	50	61.8	44.07	76.81
Others	29	93.1	78.24	98.04
Citizenship				
Malaysian citizen	532	91.2	86.79	94.22
Permanent Resident	3	41.8	26.42	58.87
Non-Malaysian	32	94.3	82.35	98.30
Marital status				
Single	2	100.0	100.00	100.00
Married/cohabiting	560	90.8	86.64	93.80
Separated/divorced/widowed	2	100.0	100.00	100.00
Mother's education				
None	6	100.0	0.00	100.00
Primary	57	89.3	79.25	94.83
Secondary	306	90.4	84.02	94.34
Higher	188	92.0	84.23	96.16
Occupation				
Public Sector	132	92.3	79.23	97.44
Private Sector	118	89.1	76.57	95.36
Self-employed	42	95.0	83.01	98.65
Housewife	269	90.7	85.16	94.31
Unemployed	2	100.0	0.00	100.00
Student	0	-	-	-
Household income				
Less than RM1000	40	90.5	77.62	96.35
RM1000 – RM1999	117	88.7	78.34	94.50
RM2000 – RM2999	82	90.0	80.80	95.06
RM3000 – RM3999	91	94.4	87.63	97.58
RM4000 – RM4999	71	94.6	69.92	99.24
RM5000 and above	160	90.7	80.63	95.81

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.4.2.3 : Prevalence of mothers aged 15-49 years who received scheduled home visits during the first, second, and third to fourth weeks postnatal

Sociodemographic characteristics	Mothers who received scheduled post natal home visit (at least one visit per week)															
	Received all three (3) scheduled home visits				Received two(2) of three (3) scheduled home visits				Received one (1) of three (3) scheduled home visits				No postnatal home visit			
	Unweighted Count	%	Lower	Upper	Unweighted Count	%	Lower	Upper	Unweighted Count	%	Lower	Upper	Unweighted Count	%	Lower	Upper
MALAYSIA	747	78.2	72.04	83.32	58	7.4	4.48	12.05	44	6.7	4.39	10.02	63	7.7	5.13	11.42
State																
Johor	42	73.7	41.59	91.68	12	18.8	6.91	41.98	4	5.9	1.65	18.89	1	1.6	0.46	5.42
Kedah	57	97.7	85.43	99.68	1	2.3	0.32	14.57	0	-	-	-	0	-	-	-
Kelantan	59	93.0	76.13	98.25	5	7.0	1.75	23.87	0	-	-	-	0	-	-	-
Malaka	60	97.5	86.13	99.60	1	2.5	0.40	13.87	0	-	-	-	0	-	-	-
Negeri Sembilan	64	97.1	93.40	98.77	0	-	-	-	2	2.9	1.23	6.60	0	-	-	-
Pahang	61	95.1	83.30	98.72	1	1.2	0.16	8.78	2	2.3	0.51	9.69	1	1.3	0.15	10.88
P.Penang	41	98.5	89.66	99.80	0	-	-	-	1	1.5	0.20	10.34	0	0.0	0.00	0.00
Perak	47	94.4	87.85	97.49	3	4.5	1.57	12.06	0	-	-	-	1	1.2	0.14	8.88
Perlis	50	92.6	92.62	92.62	4	7.4	7.38	7.38	0	-	-	-	0	-	-	-
Selangor	41	82.5	63.88	92.60	4	3.8	1.26	11.07	4	10.9	3.83	27.37	2	2.8	0.46	15.06
Terengganu	45	92.7	89.34	95.02	2	5.5	2.96	9.84	1	1.9	0.19	15.66	0	0.0	0.00	0.00
Sabah & Sarawak	50	26.1	16.00	39.67	11	15.9	7.49	30.63	14	18.2	12.28	26.14	32	39.8	23.27	58.95
WP.Kuala Lumpur	25	37.0	19.31	58.99	4	6.4	1.91	19.12	13	20.0	10.77	34.24	26	36.6	23.38	52.26
WP.Putrajaya	38	83.1	83.07	83.07	7	13.4	13.42	13.42	2	3.5	3.51	3.51	0	-	-	-
	67	91.8	91.78	91.78	5	6.8	6.85	6.85	1	1.4	1.37	1.37	0	-	-	-
Locality																
Urban	509	76.9	66.71	84.62	43	8.9	4.82	15.79	28	7.2	4.15	12.32	37	7.0	3.34	14.18
Rural	238	80.7	72.11	87.05	15	4.8	2.51	8.85	16	5.7	3.14	9.96	26	8.9	5.31	14.67
Age																
15-19	25	69.9	47.79	85.53	5	17.2	6.70	37.55	3	6.9	1.03	34.32	2	6.0	1.28	23.82
20-24	133	81.4	71.28	88.59	9	4.9	2.56	9.29	6	3.4	1.57	7.18	16	10.2	4.27	22.55
25-29	246	75.5	62.97	84.82	24	8.5	4.68	15.07	11	7.0	2.43	18.68	26	8.9	5.78	13.53
30-34	228	79.3	69.27	86.66	17	8.3	4.09	16.10	14	5.9	3.06	11.18	14	6.5	3.53	11.62
35-39	96	78.6	66.57	87.16	3	5.1	1.44	16.30	9	11.9	5.62	23.42	4	4.4	1.42	12.88
40-44	17	84.6	53.28	96.37	0	-	-	-	1	10.4	1.47	47.29	1	5.0	0.67	29.08
45-49	2	100.0	100.00	100.00	0	-	-	-	0	-	-	-	0	-	-	-
Ethnicity																
Malay	567	86.7	79.32	91.70	38	7.3	4.08	12.76	18	3.2	1.48	6.77	15	2.8	1.17	6.57
Chinese	50	83.9	69.83	92.10	3	4.6	1.74	11.80	3	4.1	1.20	13.00	7	7.4	2.24	21.93
Indians	30	94.7	89.26	99.30	1	5.3	0.70	30.74	0	-	-	-	0	-	-	-
Other	63	39.1	27.52	52.11	13	11.8	5.69	22.75	18	18.0	12.34	25.49	33	31.1	19.88	45.13
Bumiputera	37	47.8	23.75	72.92	3	4.2	1.79	9.70	5	33.3	9.21	71.13	8	14.6	4.92	36.24
Others																
Citizenship																
Malaysian citizen	703	79.8	73.83	84.77	54	7.6	4.55	12.48	37	5.1	3.38	7.56	55	7.5	5.02	10.94
Permanent Resident	7	73.4	29.38	94.80	0	-	-	-	1	26.6	5.20	70.62	0	-	-	-
Non-Malaysian	36	49.9	26.46	73.36	4	5.0	2.19	11.11	6	32.1	9.82	67.28	8	13.0	4.42	32.43

Sociodemographic characteristics	Mothers who received scheduled post natal home visit (at least one visit per week)															
	Received all three (3) scheduled home visits				Received two(2) of three (3) scheduled home visits				Received one (1) of three (3) scheduled home visits				No postnatal home visit			
	Unweighted Count	%	Lower	Upper	Unweighted Count	%	Lower	Upper	Unweighted Count	%	Lower	Upper	Unweighted Count	%	Lower	Upper
Marital status																
Single	3	100.0	100.00	100.00	0	-	-	-	0	-	-	-	0	-	-	-
Married/ cohabiting	739	79.1	73.05	84.03	58	7.6	4.59	12.42	43	5.6	3.81	8.16	61	7.7	5.15	11.39
Separated/ divorced/ widowed	2	73.5	25.08	95.83	0	-	-	-	0	-	-	-	2	26.5	4.17	74.92
Mother's education																
None	2	34.9	8.40	75.77	3	45.2	10.75	84.99	1	13.7	1.52	61.92	1	6.2	0.65	39.98
Primary	73	78.7	71.31	84.55	6	5.9	2.87	11.81	6	8.1	3.79	16.48	9	7.3	3.59	14.30
Secondary	390	77.5	69.76	83.67	33	9.2	4.94	16.55	20	4.9	3.17	7.58	33	8.4	5.41	12.79
Higher	271	84.8	76.66	90.45	15	4.5	2.43	8.11	13	5.0	2.22	10.88	16	5.7	2.86	11.14
Occupation																
Public Sector	179	76.9	61.98	87.23	14	11.0	5.32	21.34	9	5.5	2.62	11.32	9	6.5	2.97	13.74
Private Sector	159	81.3	70.37	88.78	9	4.4	1.75	10.52	11	6.8	3.34	13.33	13	7.6	3.79	14.56
Self-employed	52	87.1	73.54	94.27	1	1.9	0.25	12.93	3	4.3	1.30	13.40	4	6.7	2.59	16.01
Housewife	348	77.4	70.90	82.77	33	8.8	5.29	14.21	20	5.1	3.15	8.21	37	8.7	5.27	14.11
Unemployed	4	100.0	0.00	100.00	0	-	-	-	0	-	-	-	0	-	-	-
Student	1	100.0	100.00	100.00	0	-	-	-	0	-	-	-	0	-	-	-
Household income																
Less than RM1000	50	74.1	59.83	84.61	3	5.1	1.72	14.07	7	9.7	4.71	18.80	7	11.2	4.29	26.05
RM1000 - RM1999	141	74.8	58.95	86.04	11	7.1	3.65	13.31	7	10.1	3.37	26.59	13	8.0	4.10	14.92
RM2000 - RM2999	112	78.3	67.55	86.24	10	8.7	3.14	21.67	8	6.4	3.21	12.53	9	6.6	3.57	11.81
RM3000 - RM3999	114	81.5	73.22	87.69	9	6.5	3.32	12.30	7	5.6	2.85	10.87	7	6.3	2.84	13.57
RM4000 - RM4999	87	82.7	69.26	91.01	8	9.6	3.91	21.72	3	1.7	0.38	7.34	6	6.0	2.09	15.99
RM5000 and above	236	79.9	69.01	87.61	15	6.2	3.13	11.91	11	6.2	2.47	14.52	17	7.8	4.03	14.43

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.4.2.4 : Prevalence of mothers aged 15-49 years who received at least one postnatal home visit, by week

Sociodemographic characteristics	Mothers who received post natal home visit (at least one visit per week)											
	During 1st week				During 2nd week				During 3-4th week			
	Unweighted count	%	95% CI		Unweighted count	%	95% CI		Unweighted count	%	95% CI	
		Lower	Upper			Lower	Upper			Lower	Upper	
MALAYSIA	827	97.4	95.76	98.36	803	92.8	89.43	95.14	771	87.3	80.21	92.16
States												
Johor	56	97.2	87.52	99.44	54	94.0	80.49	98.35	44	77.7	40.79	94.60
Kedah	58	100.0	100.00	100.00	58	100.0	100.00	100.00	57	97.7	85.43	99.68
Kelantan	62	96.9	87.94	99.26	64	100.0	0.00	100.00	61	96.1	84.30	99.14
Melaka	61	100.0	100.00	100.00	61	100.0	100.00	100.00	60	97.5	86.13	99.60
Negeri Sembilan	65	98.7	88.77	99.87	64	97.1	93.40	98.77	65	98.4	94.99	99.48
Pahang	64	100.0	0.00	100.00	61	96.4	84.24	99.27	62	97.7	90.16	99.48
Penang	42	100.0	0.00	100.00	41	98.5	89.66	99.80	41	98.5	89.66	99.80
Perak	49	98.3	91.95	99.66	50	100.0	100.00	100.00	48	97.2	83.47	99.58
Perlis	52	96.3	96.31	96.31	53	98.2	98.16	98.16	53	98.2	98.16	98.16
Selangor	45	97.2	92.12	99.05	44	90.2	72.65	96.96	42	86.2	63.63	95.69
Terengganu	47	98.5	87.06	99.84	46	94.2	89.42	96.89	47	98.1	84.34	99.81
Sabah & Labuan	71	91.9	71.87	98.07	60	68.4	52.47	80.87	55	52.9	41.21	64.21
Sarawak	39	93.6	84.04	97.56	31	72.5	51.10	86.97	26	60.6	38.22	79.33
WP Kuala Lumpur	45	95.4	95.35	95.35	44	94.7	94.74	94.74	41	89.5	89.47	89.47
WP Putrajaya	71	97.3	97.26	97.26	72	98.6	98.63	98.63	69	94.5	94.52	94.52
Locality												
Urban	563	96.9	94.57	98.25	552	92.6	87.48	95.75	526	85.4	74.44	92.11
Rural	264	98.2	95.70	99.26	251	93.1	88.21	96.06	245	91.1	85.62	94.58
Age												
15-19	33	100.0	0.00	100.00	29	89.3	65.47	97.35	26	77.8	54.04	91.22
20-24	147	99.1	93.59	99.88	141	95.7	91.73	97.83	135	92.1	86.92	95.38
25-29	270	97.1	93.92	98.63	268	91.5	79.21	96.85	259	86.5	70.07	94.64
30-34	252	96.8	93.69	98.43	244	93.3	87.61	96.44	236	88.4	75.83	94.84
35-39	106	97.5	90.22	99.39	101	90.1	77.38	96.01	96	82.3	70.88	89.82
40-44	17	89.1	51.18	98.45	18	100.0	0.00	100.00	17	89.1	51.18	98.45
45-49	2	100.0	100.00	100.00	2	100.0	100.00	100.00	2	100.0	100.00	100.00
Ethnicity												
Malay	607	97.4	95.34	98.51	604	96.8	94.39	98.24	584	91.7	84.77	95.63
Chinese	55	98.5	97.73	98.96	53	95.6	86.25	98.68	51	92.1	75.28	97.82
Indians	31	100.0	0.00	100.00	31	100.0	0.00	100.00	30	94.7	69.26	99.30
Other Bumiputera	90	93.9	81.13	98.20	75	73.2	59.57	83.52	68	63.6	51.95	73.85
Others	44	99.8	99.61	99.89	40	61.0	24.16	88.44	38	56.2	23.60	84.20
Citizenship												
Malaysian citizen	774	97.4	95.93	98.33	754	94.3	92.17	95.95	726	89.1	82.50	93.36
Permanent Resident	7	73.4	29.38	94.80	8	100.0	100.00	100.00	7	73.4	29.38	94.80
Non-Malaysian	45	99.8	99.68	99.90	40	63.1	28.33	88.09	37	57.5	26.94	83.23
Marital status												
Single	3	100.0	100.00	100.00	3	100.0	100.00	100.00	3	100.0	100.00	100.00
Married/cohabiting	818	97.3	95.66	98.31	795	94.0	91.63	95.67	763	88.4	81.69	92.82
Separated/divorced/widowed	2	100.0	100.00	100.00	2	100.0	100.00	100.00	2	100.0	100.00	100.00
Mother's education												
None	6	100.0	0.00	100.00	5	85.4	35.65	98.41	2	37.2	8.54	78.95
Primary	85	100.0	0.00	100.00	78	90.2	81.78	94.99	74	85.9	77.66	91.45
Secondary	432	97.2	94.24	98.63	420	94.4	91.54	96.31	404	87.6	78.69	93.15
Higher	288	96.4	93.37	98.08	288	95.5	89.54	98.13	280	92.7	84.45	96.77
Occupation												
Public Sector	195	95.1	88.49	97.96	193	94.3	87.30	97.51	186	87.1	72.85	94.42
Private Sector	175	97.6	93.37	99.18	169	93.7	87.68	96.90	162	89.2	78.45	94.95
Self-employed	55	98.0	86.22	99.73	53	95.4	85.37	98.64	53	95.4	85.37	98.64
Housewife	391	97.8	95.69	98.92	378	93.8	90.29	96.09	361	87.5	81.16	91.98
Unemployed	4	100.0	0.00	100.00	4	100.0	0.00	100.00	4	100.0	0.00	100.00
Student	1	100.0	100.00	100.00	1	100.0	100.00	100.00	1	100.0	100.00	100.00
Household income												
Less than RM1000	58	96.1	85.01	99.08	54	91.4	80.49	96.48	51	85.0	69.78	93.31
RM1000 – RM1999	156	98.5	95.56	99.53	152	89.4	71.46	96.57	144	82.5	62.29	93.05
RM2000 – RM2999	129	98.8	91.82	99.84	120	92.0	85.56	95.67	115	86.2	73.76	93.24
RM3000 – RM3999	127	98.7	92.83	99.76	122	92.6	86.40	96.05	118	89.8	82.96	94.08
RM4000 – RM4999	96	97.5	93.13	99.09	94	97.0	90.95	99.06	90	91.6	77.27	97.25
RM5000 and above	251	95.3	91.68	97.37	252	94.3	87.01	97.65	246	90.3	76.63	96.34

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.4.2.5 : Prevalence of mothers aged 15-49 years who attended clinics for postnatal care at one month postpartum

CARD (N=946)								
Sociodemographic characteristics	Mothers who attended clinic for postnatal care at one month				Mothers with no postnatal care clinic visit			
	Unweighted count	%	95% CI		Unweighted count	%	95% CI	
			Lower	Upper			Lower	Upper
MALAYSIA	927	98.2	97.12	98.94	19	1.8	1.06	2.88
States								
Johor	59	96.0	90.98	98.30	2	4.0	1.70	9.02
Kedah	58	100.0	100.00	100.00	0	-	-	-
Kelantan	63	98.3	87.33	99.80	1	1.7	0.20	12.67
Melaka	60	99.1	93.51	99.89	1	0.9	0.11	6.49
Negeri Sembilan	67	100.0	100.00	100.00	0	-	-	-
Pahang	65	100.0	0.00	100.00	0	-	-	-
Penang	42	94.0	80.92	98.32	2	6.0	1.68	19.08
Perak	52	100.0	100.00	100.00	0	-	-	-
Perlis	53	98.2	98.16	98.16	1	1.8	1.84	1.84
Selangor	55	98.8	93.31	99.79	1	1.2	0.21	6.69
Terengganu	48	100.0	0.00	100.00	0	-	-	-
Sabah & Labuan	112	98.4	89.92	99.76	2	1.6	0.24	10.08
Sarawak	76	96.9	92.86	98.67	3	3.1	1.33	7.14
WP Kuala Lumpur	48	96.7	96.70	96.70	2	3.3	3.30	3.30
WP Putrajaya	69	94.5	94.52	94.52	4	5.5	5.48	5.48
Locality								
Urban	627	97.8	96.24	98.74	16	2.1	1.26	3.76
Rural	300	99.1	97.08	99.71	3	0.9	0.29	2.92
Age								
15-19	37	100.0	0.00	100.00	0	-	-	-
20-24	169	98.9	92.24	99.84	1	1.1	0.16	7.76
25-29	314	98.0	95.28	99.16	6	2.0	0.84	4.72
30-34	274	98.6	95.07	99.62	7	1.4	0.38	4.93
35-39	112	97.1	91.55	99.02	4	2.9	0.98	8.45
40-44	19	96.0	75.62	99.47	1	4.0	0.53	24.38
45-49	2	100.0	100.00	100.00	0	-	-	-
Ethnicity								
Malay	632	98.6	97.25	99.29	13	1.4	0.71	2.75
Chinese	72	97.2	87.90	99.39	2	2.8	0.61	12.10
Indians	30	94.7	69.26	99.30	1	5.3	0.70	30.74
Other Bumiputera	134	98.9	92.84	99.84	2	1.1	0.16	7.16
Others	59	97.9	85.45	99.72	1	2.1	0.28	14.55
Citizenship								
Malaysian citizen	858	98.4	97.28	99.08	17	1.6	0.92	2.72
Permanent Resident	7	73.4	29.38	94.80	1	26.6	5.20	70.62
Non-Malaysian	61	98.1	87.22	99.74	1	1.9	0.26	12.78
Marital status								
Married/ cohabiting	3	89.0	42.57	98.89	1	11.0	1.11	57.43
Separated/ divorced/ widowed	916	98.3	97.12	98.97	18	1.7	1.03	2.88
Mother's education								
None	8	100.0	100.00	100.00	0	-	-	-
Primary	97	98.2	92.36	99.59	2	1.8	0.41	7.64
Secondary	478	98.7	96.82	99.51	8	1.3	0.49	3.18
Higher	322	97.3	94.12	98.79	9	2.7	1.21	5.88
Occupation								
Public Sector	210	99.3	99.06	99.41	6	0.7	0.59	0.94
Private Sector	197	99.1	96.95	99.74	4	0.9	0.26	3.05
Self-employed	61	95.0	81.00	98.84	2	5.0	1.16	19.00
Housewife	448	97.9	95.54	99.07	6	2.1	0.93	4.46
Unemployed	4	100.0	0.00	100.00	0	-	-	-
Student	1	100.0	100.00	100.00	0	-	-	-
Household income								
Less than RM1000	69	98.1	86.90	99.74	1	1.9	0.26	13.10
RM1000 – RM1999	171	98.9	95.95	99.68	2	1.1	0.32	4.05
RM2000 – RM2999	139	98.7	95.27	99.65	2	1.3	0.35	4.73
RM3000 – RM3999	140	99.8	99.79	99.87	2	0.2	0.13	0.21
RM4000 – RM4999	109	98.1	89.21	99.69	2	1.9	0.31	10.79
RM5000 and above	286	97.8	95.12	99.00	9	2.2	1.00	4.88

Some cells have respondent count <30. Results should be interpreted with caution.

Table 8.5.2.1 : Postnatal depression screening by positive Edinburgh Postnatal Depression Scale (EPDS) screening test among mothers aged 15-49 who have a child aged 6-16 weeks

Sociodemographic characteristics	Positive EPDS screening test				
	Unweighted count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
MALAYSIA	92	23,674	12.7	8.82	17.85
States					
Johor	4	1,788	8.9	4.42	17.21
Kedah	4	1,025	9.4	5.13	16.45
Kelantan	1	302	2.3	0.28	16.37
Melaka	5	609	10.8	3.89	26.74
Negeri Sembilan	8	709	11.2	7.61	16.29
Pahang	7	1,058	10.8	4.15	25.14
Penang	4	620	7.5	1.14	36.30
Perak	4	1,453	11.1	4.91	23.23
Perlis	5	177	10.8	10.82	10.82
Selangor	10	8,993	21.2	10.62	37.72
Terengganu	3	443	7.3	1.88	24.51
Sabah & WP Labuan	16	2,610	12.9	5.83	26.11
Sarawak	6	1,250	7.6	2.66	20.01
WP Kuala Lumpur	11	2,573	21.9	21.89	21.89
WP Putrajaya	4	62	5.0	5.00	5.00
Locality					
Urban	68	19,402	15.9	10.80	22.70
Rural	24	4,272	6.6	3.90	10.90
Age					
15-19	3	499	10.5	4.35	23.29
20-24	17	2,629	10.5	6.49	16.50
25-29	29	6,698	11.8	6.63	20.15
30-34	30	11,010	16.8	10.79	25.14
35-39	11	2,367	8.2	4.29	15.23
40-44	2	472	8.6	2.22	27.93
45-49	0	-	-	-	-
Ethnicity					
Malay	48	9,406	8.4	5.94	11.79
Chinese	15	7,066	25.1	12.00	45.19
Indians	7	4,093	41.6	21.46	64.91
Other Bumiputera	15	2,372	8.5	3.70	18.24
Others	7	737	8.0	3.14	18.98
Citizenship					
Malaysian citizen	84	22,611	12.9	8.91	18.38
Permanent Resident/ Non-Malaysian	8	1,063	8.9	3.93	19.10
Marital status					
Never married/ separated/ divorced/ widowed	1	247	13.0	1.48	59.79
Married/ cohabiting	90	22,948	12.6	8.70	17.98
Mother's education					
None/Primary	13	2,305	11.3	5.13	23.11
Secondary	47	10,299	11.7	7.64	17.59
Higher	28	10,247	14.2	7.82	24.26
Occupation					
Public Sector	11	1,461	4.3	2.16	8.34
Private Sector	18	9,639	18.6	10.28	31.27
Self-employed					
Housewife/ Unemployed/ Student	7	1,428	13.8	6.64	26.35
	54	10,632	12.2	9.00	16.29
Household income					
Less than RM1000	9	1,455	11.6	3.93	29.46
RM1000 – RM1999	19	3,146	9.7	5.31	17.16
RM2000 – RM2999	14	2,079	9.7	5.41	16.67
RM3000 – RM3999	10	1,673	6.5	3.30	12.27
RM4000 – RM4999	7	1,503	6.1	3.71	9.75
RM5000 and above	31	13,012	19.6	10.89	32.67

Some cells have respondent count <30. Results should be interpreted with caution.

APPENDIX 8 : OPERATIONAL DEFINITION OF VARIABLES

APPENDIX 8
Operational Definition Of Variables
CHILD HEALTH – Vaccinations and Neonatal Tetanus Protection

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
BCG Vaccination	BCG_F	Weight	Children aged 12-23 who received BCG vaccination before the date of interview Verified: BCG vaccination received verified by documentation (child health cards) or BCG scar No: did not receive vaccination	COMPUTE BCG_F=NV01a_j = 1 NV01a_j = 2. EXECUTE. Value labels. 1 verified 2 no
Dose 1 Hep B vaccination	aHEP1_F	Weight	Children aged 12-23 who received Hepatitis B vaccination before the date of interview HEP1_F: Hepatitis B Dose 1 HEP2_F: Hepatitis B Dose 2 HEP3_F: Hepatitis B Dose 3 Verified: vaccination received verified by documentation Self-reported: self-reported by mother, unable to verify No: did not receive vaccination	RECODE NV01b_i (-9=SYSMIS) (SYSMIS=SYSMIS) (ELSE=Copy) INTO HEP1_F. VARIABLE LABELS HEP1_F 'HEP1_F'. EXECUTE. Value labels. 1 verified 1 self-reported 2 no
Dose 2 Hep B vaccination	HEP2_F			RECODE NV01c_i (-9=SYSMIS) (SYSMIS=SYSMIS) (ELSE=Copy) INTO HEP2_F. VARIABLE LABELS HEP2_F 'HEP2_F'. EXECUTE. Value labels. 1 verified 2 self-reported 3 no
Dose 3 Hep B vaccination	HEP3_F			RECODE NV01g_i (-9=SYSMIS) (SYSMIS=SYSMIS) (ELSE=Copy) INTO HEP3_F. VARIABLE LABELS HEP3_F 'HEP3_F'. EXECUTE. Value labels. 1 verified 2 self-reported 3 no

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
Dose 1 DPT/IPV/Hib immunisation	DPT1_F	Weight	Children aged 12-23 who received DPT/IPV/Hib vaccination before the date of interview DPT1_F: DPT/IPV/Hib Dose 1 DPT2_F: DPT/IPV/Hib Dose 2 DPT3_F: DPT/IPV/Hib Dose 3 Verified: vaccination received verified by documentation Self-reported: self-reported by mother, unable to verify No: did not receive vaccination	RECODE NV01d_i (-9=SYSMIS) (SYSMIS=SYSMIS) (ELSE=Copy) INTO DPT1_F. VARIABLE LABELS DPT1_F 'DPT1_F'. EXECUTE. Value labels. 1 verified 3 self-reported 4 no RECODE NV01e_i (-9=SYSMIS) (SYSMIS=SYSMIS) (ELSE=Copy) INTO DPT2_F. VARIABLE LABELS DPT2_F 'DPT2_F'. EXECUTE. Value labels. 1 verified 2 self-reported 3 no RECODE NV01f_i (-9=SYSMIS) (SYSMIS=SYSMIS) (ELSE=Copy) INTO DPT3_F. VARIABLE LABELS DPT3_F 'DPT3_F'. EXECUTE. Value labels. 1 verified 2 self-reported 3 no
Dose 2 DPT/IPV/Hib immunisation	DPT2_F			
Dose 3 DPT/IPV/Hib immunisation	DPT3_F			
MMR vaccination	MMR_F	Weight	Children aged 12-23 who received MMR vaccination before the date of interview Verified: vaccination received verified by documentation Self-reported: self-reported by mother, unable to verify No: did not receive vaccination	RECODE NV01h_i (-9=SYSMIS) (SYSMIS=SYSMIS) (ELSE=Copy) INTO MMR_F. VARIABLE LABELS MMR_F 'MMR_F'. EXECUTE. Value labels. 1 verified 2 self-reported 3 no

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
Vaccination status at the time of interview	Final_status	Weight	<p>Final status</p> <p>Verified: received all primary vaccination based on Ministry of Health's schedule (BCG, DPT/IPV/Hib Dose 3, Hep B Dose 3, and MMR) at the time of interview and verified by documentation (child health card)</p> <p>Not vaccinated: verified by both cards and verbally as do not received BCG, DPT/IPV/Hib, Hep B and MMR at the time of interview</p> <p>Self-reported: self-reported as received all vaccines (BCG, DPT/IPV/Hib, Hep B and MMR) at the time of interview but cannot be verified</p> <p>Incomplete: received some primary vaccination but not all at the time of interview</p>	<pre> DATASET ACTIVATE DataSet1. COMPUTE Verified=BCG_F = 1 & DPT3_F = 1 & HEP3_F = 1 & MMR_F = 1. EXECUTE. COMPUTE Notvaccinate=BCG_F = 2 & DPT3_F = 3 & HEP3_F = 3 & MMR_F = 3. EXECUTE. COMPUTE Self-reported=DPT3_F = 2 & HEP3_F = 2 & MMR_F = 2. EXECUTE. COMPUTE Incomplete=Verified + Notvaccinate + Self-reported. EXECUTE. IF (Verified >= 0 & Notvaccinate >= 0 & Self-reported >= 0 & Incomplete >= 0) Combined=0. EXECUTE. DO IF (Verified = 1). RECODE Combined (0=1) INTO Final_status. END IF. EXECUTE. DO IF (Notvaccinate = 1). RECODE Combined (0=2) INTO Final_status. END IF. EXECUTE. DO IF (Self-reported = 1). RECODE Combined (0=3) INTO Final_status. END IF. EXECUTE. DO IF (Incomplete = 0). RECODE Combined (0=4) INTO Final_status. END IF. EXECUTE. </pre>

CHILD HEALTH - Care Of Illness and Injury

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
CM01	CM01_new	Weight_C2	Children aged 0-59 months who had diarrhoea in the last two weeks	CM01_new RECODE CM01 (1=1) (2=2) (-6=SYSMIS) (-9=SYSMIS) INTO CM01_new. EXECUTE. Value labels. 1 Yes 2 No
CM02	CM02_new	Weight_C2	Children who were given a drink of fluid made from a special packet called ORS during the episode of diarrhoea	CM02_new RECODE CM02 (1=1) (2=2) (-6=SYSMIS) (-9=SYSMIS) INTO CM02_new. EXECUTE. Value Labels. 1 Yes 2 No
CM03	CM03_new	Weight_C2	Antibiotics were given to treat the diarrhoea	CM03_new RECODE CM03 (1=1) (2=2) (-6=SYSMIS) (-7=SYSMIS) INTO CM03_new. EXECUTE. Value Labels. 1 Yes 2 No
CM04	CM04_new	Weight_C2	What has been done to dispose of the stools after child passes stools	CM04_new RECODE CM04 (1=1) (2=2) (3=3) (4=4) (5=5) (6=6) (7=7) (-6=SYSMIS) INTO CM04_new. EXECUTE. Value Labels. 1 Child used toilet/latrine 2 Put/rinsed into toilet or latrine

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
CM05	CM05_newly	Weight_C2	Symptoms of ARI among children who have fever, cough and fast breathing or difficulty breathing in the last two weeks	3 Rinsed/ thrown into drain, ditch, river or sea 4 Thrown into garbage (solid waste) 5 Buried 6 Left in the open 7 Other answer than those above
either_one diarrhoea_ARI	either_one_diarrhoea_ARI	Weight_C2	Children who had an episode of diarrhoea OR symptoms of Acute Respiratory Infection (ARI) in the last two weeks	CM05_newly RECODE CM05a (1=1) (2=2) (-6=SYSMIS) (-9=SYSMIS) INTO CM05a_new. EXECUTE. RECODE CM05b (1=1) (2=2) (-6=SYSMIS) (-9=SYSMIS) INTO CM05b_new. EXECUTE. RECODE CM05c (1=1) (2=2) (-6=SYSMIS) (-9=SYSMIS) INTO CM05c_new. EXECUTE. COMPUTE CM05_newly=CM05a_new=1 & CM05b_new = 1 & CM05c_new = 1. EXECUTE. Value Labels. 0 No 1 Yes
				Either one diseases (Diarrhoea or ARI) COMPUTE either_one_diarrhoea_ARI=CM01_new = 1 CM05_newly = 1. EXECUTE. Value Labels. 0 No 1 Yes

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
both_diseases_diarrhoea_ARI	both_diseases_diarrhoea_ARI	Weight_C2	Children who had an episode of diarrhoea AND symptoms of Acute Respiratory Infection (ARI) in the last two weeks	Both Diseases (Diarrhoea & ARI) COMPUTE both_diseases_diarrhoea_ARI=CM01_new = 1 & CM05_newly = 1. EXECUTE. Value Labels. 0 No 1 Yes
CM06a	CM06a_new	Weight_C2	Did children with symptoms of ARI seek advice or get treatment	CM06a_new RECODE CM06a (1=1) (2=2) (-9=SYSMIS) (-6=SYSMIS) INTO CM06a_new. EXECUTE. Value Labels. 1 Yes 2 No
CM06b	CM06b_new	Weight_C2	Places where the children with symptoms of ARI seek advice or get treatment	CM06b_new RECODE CM06b (1=1) (2=2) (-6=SYSMIS) (3=3) (4=4) (5=SYSMIS) INTO CM06b_new. EXECUTE. Value Labels. 1 Public 2 Private 3 TCM 4 Community Health Provider
	Public		Advice or treatment from Public	COMPUTE Public=CM06a_new = 1 & CM06b_new = 1. EXECUTE. Value Labels. 0 No 1 Yes
	Private		Advice or treatment from Private	COMPUTE Private=CM06a_new = 1 & CM06b_new = 2. EXECUTE. Value Labels. 0 No 1 Yes

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
	TCM		Advice or treatment from TCM	<p>COMPUTE TCM=CM06a_new = 1 & CM06b_new = 3. EXECUTE.</p> <p>Value Labels. 0 No 1 Yes</p>
	Community Health Provider		Advice or treatment from Community Health Provider	<p>COMPUTE Community_Health_Provider=CM06a_new = 1 & CM06b_new = 4. EXECUTE.</p> <p>Value Labels. 0 No 1 Yes</p>
CM06c	CM06_new	Weight_C2	Children who required admission to hospital for symptoms of ARI (admission \geq 24 hours)	<p>CM06_new</p> <p>RECODE CM06c (1=1) (2=2) (-6=SYSMIS) (-9=SYSMIS) INTO CM06c_new. EXECUTE.</p> <p>Value Labels. 1 Admitted 2 Not admitted</p>
CM07	CM07_new	Weight_C2	Children with symptoms of ARI in the last two weeks who were given antibiotics	<p>CM07_new</p> <p>RECODE CM07 (1=1) (2=2) (-6=SYSMIS) (-9=SYSMIS) (-7=SYSMIS) INTO CM07_new. EXECUTE.</p> <p>Value Labels. 1 Yes 2 No</p>
WS1	WS1_treated	Weight_C2	Source of drinking water as treated or untreated water. Treated water refers to piped water whether piped into the house, compound or neighbour, public standpipe and bottled drinking water, either mineral or distilled, as well as water from a tanker-truck.	<p>WS1_newly</p> <p>RECODE WS1_newly (1=1) (2=2) (3=1) INTO WS1_treated. EXECUTE.</p> <p>Value labels. 1 Treated water 2 Untreated water</p>

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
WS3	WS3_newly	Weight_C2	<p>Untreated water refers to water from protected wells, unprotected wells, rainwater collection and water from a river/stream/dam/canal/irrigation channel.</p> <p>Methods of solid waste disposal as sanitary or unsanitary methods.</p> <p>Sanitary methods refer to household garbage collected by the local authorities whether regular or not, or collected and thrown in a specialised area for recycling.</p> <p>Unsanitary methods refer to household garbage buried outside the house, open burning, or rubbish thrown into the drain, river or sea or anywhere.</p>	<p>WS3_newly</p> <p>RECODE WS3 ('1'=1) ('2'=1) ('3'=1) ('6'=1) ('4'=2) ('5'=2) ('7'=3) INTO WS3_newly.</p> <p>EXECUTE.</p> <p>Value labels.</p> <ol style="list-style-type: none"> Sanitary waste disposal Unsanitary waste disposal Others
WS4	WS4_newly	Weight_C2	<p>Methods of waste disposal as sanitary or unsanitary latrines.</p> <p>Sanitary latrines refer to flush toilet with sewerage system connection, flush toilet with septic tank, pour flush toilet,</p> <p>Unsanitary latrines refer to pit/bore hole latrine with or without a closed lid, hanging toilet direct to sea/river, or no facility where the person has to use the bush/field.</p>	<p>WS4_newly</p> <p>RECODE WS4 ('1'=1) ('2'=1) ('3'=1) ('4'=2) ('5'=2) ('6'=2) ('7'=2) ('7=SYSMIS) INTO WS4_newly.</p> <p>EXECUTE.</p> <p>Value labels.</p> <ol style="list-style-type: none"> Sanitary latrine Unsanitary latrine
C101	C101_new	Weight_C2	<p>Children aged 12-59 months who have experienced any injury in the past 1 year due to a fall, burn, poisoning, submersion in water, or by a firearm, sharp object or an act of violence from another person, which resulted in a minimum of 1 day being unable to perform daily activities like playing or had to be brought to see a health care provider for treatment.</p>	<p>C101_new</p> <p>RECODE C101 ('1'=1) ('2'=2) ('6=SYSMIS) (-9=SYSMIS) INTO C101_new.</p> <p>EXECUTE.</p> <p>Value labels.</p> <ol style="list-style-type: none"> Yes No

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
C102	C102_new	Weight_C2	The place where children sought treatment if they had any injury in the past one year	<p>C102_new</p> <p>RECODE C102 (1=1) (2=2) (3=3) (4=4) (5=SYSMIS) (-6=SYSMIS) INTO C102_newly. EXECUTE.</p> <p>Value labels.</p> <ol style="list-style-type: none"> 1 Self-treated at home 2 Sought treatment at hospital/clinic 3 Traditional or complementary medicine premise or practitioner like sinseh, homeopathy, ayurveda, bomoh 4 Others like, pharmacy shop, or neighbours
C103	C103_new	Weight_C2	Children admitted to the hospital ward as a result of the injury (admission at least 24 hours) in the past 12 months	<p>C103_new</p> <p>RECODE C103 (1=1) (2=2) (-6=SYSMIS) INTO C103_new. EXECUTE. VALUE LABELS</p> <p>Value labels.</p> <ol style="list-style-type: none"> 1 Yes 2 No
C104	C104_new	Weight_C2	The place where the injury happened among children 12-59 months	<p>C104_new</p> <p>RECODE C104 (1=1) (2=2) (4=4) (-6=SYSMIS) (-9=SYSMIS) INTO C104_new. EXECUTE.</p> <p>Value labels.</p> <ol style="list-style-type: none"> 1 Inside the house including within the house compound 2 Outdoor but out of house compound, eg playground, swimming pool 3 Caretaker facilities (babysitter/ childcare centre/ nursery/ kindergarten) 4 Others

CHILD HEALTH - Care Of Oral Health

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
CG01	Important	Weight_C2	Perception on importance of looking after children's oral health	Important Value labels 1 Not important 2 Important 3 Very important
CG06	Clean_teeth	Weight_C2	Frequency of cleaning/brushing child's teeth or supervision of child's tooth brushing	Clean_teeth Value labels 1 Every day 2 Once in a few days 3 Never
CG07	Dental_treat	Weight_C2	Prevalence of mothers who had ever brought their child for a dental visit	Dental_treat Value labels 1 Yes 2 No
CG08	Dental_lastcheckup	Weight_C2	Timing of child's last dental visit	Dental_lastcheckup Value labels 1 Less than one year ago 2 1-2 years ago 3 More than two years ago 4 Never
CG09	First_checkup	Weight_C2	Opinion on timing of child's first dental check-up	First_checkup Value labels 1 Before 2 years old 2 2-3 years old 3 4-5 years old 4 Dont Know
CG09	First_C_Perception	Weight_C2	Perception of age of a child's first dental visit	First_C_Perception. RECODE First_checkup (1=1) (-7=2) (2 thru 3=2) INTO First_C_Perception. EXECUTE. Value labels 1 Good perception 2 Poor perception

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
CG10	Child_dentist	Weight_C2	Willingness to take child for dental treatment upon advice	Child_dentist Value labels 1 Yes 2 No
CG11	Reason	Weight_C2	Reasons for not bringing child for dental treatment	Reason Value labels 1 My child is too young to get treatment 2 The dental clinic is too far 3 My child is afraid of dental treatment 4 I think dental treatment for milk teeth is not important
CG12	Advice_Childteeth	Weight_C2	Mothers who had ever received advice from health personnel on looking after child's oral health	Advice_Childteeth Value labels 1 Yes 2 No

NUTRITION

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
NA03	NA03_Birth_weight Birth_weight_recode	weight_children	Number of most recent live births in the last 2 years weighing below 2,500 grams at birth. Total number of most recent live births in the last 2 years	SPSS Variable Definition * Complex Samples Descriptives. CSDSCRIPTIVES /PLAN FILE=C:\Users\iku\Desktop\NHMS 2016\Data NHMS 2016\Data Analysis /SUMMARY VARIABLES=NA03_Birth_weight /MEAN /STATISTICS SE CV COUNT POPSIZE CIN(95) /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE * Complex Samples Frequencies. CSTABULATE /PLAN FILE=C:\Users\iku\Desktop\NHMS 2016\Data NHMS 2016\Data Analysis /TABLES VARIABLES=Birth_weight_recode /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE
NA08 NA09 HH07 (children)	WAZ_Final_recode	weight_children	Number of children under age 5 who fall below i) minus two standard deviations (moderate and severe) ii) minus three standard deviations (severe) of the median weight for age of WHO 2006 Child Growth Standards	* Complex Samples Frequencies. CSTABULATE /PLAN FILE=C:\Users\iku\Desktop\NHMS 2016\Data NHMS 2016\Data Analysis /TABLES VARIABLES=WAZ_Final_recode /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE
NA10 NA11 HH07 (children)	HAZ_Final_recode	weight_children	Number of children under age 5 who fall below i) minus two standard deviations (moderate and severe) ii) minus three standard deviations (severe) of the median weight for age of WHO 2006 Child Growth Standards	* Complex Samples Frequencies. CSTABULATE /PLAN FILE=C:\Users\iku\Desktop\NHMS 2016\Data NHMS 2016\Data Analysis /TABLES VARIABLES=HAZ_Final_recode /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE
NA08 NA09 NA10 NA11 HH07 (children)	WHZ_Final_recode	weight_children	Number of children under age 5 who fall below i) minus two standard deviations (moderate and severe) ii) minus three standard deviations (severe) of the median weight for age of WHO 2006 Child Growth Standards	* Complex Samples Frequencies. CSTABULATE /PLAN FILE=C:\Users\iku\Desktop\NHMS 2016\Data NHMS 2016\Data Analysis /TABLES VARIABLES=WHZ_Final_recode /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE
NA08 NA09 NA10 NA11 HH07 (children)	BMI_Final_recode	weight_children	Number of children under age 5 who are above two standard deviations of the median weight for height of the WHO 2006 Child Growth Standards	* Complex Samples Frequencies. CSTABULATE /PLAN FILE=C:\Users\iku\Desktop\NHMS 2016\Data NHMS 2016\Data Analysis /TABLES VARIABLES=BMI_Final_recode /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE
CF01	CF01_early_initiation	Weight_C2	Number of women with a live birth in the last 2 years who put their last new born to the breast within one hour of birth	* Complex Samples Frequencies. CSTABULATE /PLAN FILE=C:\Users\iku\Desktop\NHMS 2016\Data NHMS 2016\Data Analysis /TABLES VARIABLES=CF01_early_initiation /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
CF12	CF_12 Recode (filter_\$=(CF03=1 & Age_calculated <= 2))	Weight_C2	Number of infants under 6 months of age who are exclusively breastfed - Infants receiving breast milk, and not receiving any other fluids or foods, with the exception of oral rehydration solution, vitamins, mineral supplements and medicines	USE ALL; COMPUTE filter_\$=(CF03 = 1 & Age_calculated <= 2). VARIABLE LABELS filter_\$ 'CF03 = 1 & Age_calculated <= 2 (FILTER)'. VALUE LABELS filter_\$ '0' 'Not Selected' '1' 'Selected'. FORMATS filter_\$ (f1.0). FILTER BY filter_\$. EXECUTE. * Complex Samples Frequencies. CSTABULATE /PLAN FILE='C:\Users\iku\Desktop\NHMS 2016\Data NHMS 2016\Data Analysis NHMS 2016\Data Cohort '+ 2\Data terbaru '13-7-16\Child_0-6m.csaplan' /TABLES VARIABLES=CF_12Recode /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE
CF03 CF11 CF12j CF12j	Predominat_ BF_eastin (filter_\$ = 1 & CF03 = 1 & CF11 = 1 & CF12j = 2 & CF12j = 2)	Weight_C2	Number of infants under 6 months of age who received breast milk as the predominant source of nourishment during the previous day - Infants who receive breast milk and certain fluids (water and water-based drinks, fruit juice, ritual fluids, oral rehydration solution, drops, vitamins, minerals, and medicines), but do not receive anything else (in particular, non-human milk and food-based fluids)	USE ALL; COMPUTE filter_\$=(CF03 = 1 & CF11 = 1 & CF12j = 2 & CF12j = 2). VARIABLE LABELS filter_\$ 'CF03 = 1 & CF11 = 1 & CF12j = 2 & CF12j = 2 (FILTER)'. VALUE LABELS filter_\$ '0' 'Not Selected' '1' 'Selected'. FORMATS filter_\$ (f1.0). FILTER BY filter_\$. EXECUTE. * Complex Samples Frequencies. CSTABULATE /PLAN FILE='C:\Users\iku\Desktop\NHMS 2016\Data NHMS 2016\Data Analysis NHMS 2016\Data Cohort '+ 2\Data terbaru '13-7-16\Child_0-6m.csaplan' /TABLES VARIABLES=Predominat_BF_eastin /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE
CF03	CF03 (filter_\$ = 20 & Age_month_CH >= 20 & Age_month_CH <= 23)	weight_children	Number of children age 20-23 months who received breast milk during the previous day	USE ALL; COMPUTE filter_\$=(Age_month_CH >= 20 & Age_month_CH <= 23). VARIABLE LABELS filter_\$ 'Age_month_CH >= 20 & Age_month_CH <= 23 (FILTER)'. VALUE LABELS filter_\$ '0' 'Not Selected' '1' 'Selected'. FORMATS filter_\$ (f1.0). FILTER BY filter_\$. EXECUTE. * Complex Samples Frequencies. CSTABULATE /PLAN FILE='C:\Users\iku\Desktop\NHMS 2016\Data NHMS 2016\Data Analysis NHMS 2016\Data Cohort '+ 1\Child_0-59m.csaplan' /TABLES VARIABLES=CF03 /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE
CF03 CF17	Age_month_CH (filter_\$ = 35 & Age_month_CH <= 35 & CF3_CF17 = 2)	weight_children	The age in months when 50 percent of children did not receive breast milk during the previous day	USE ALL; COMPUTE filter_\$=(Age_month_CH <= 35 & CF3_CF17 = 2). VARIABLE LABELS filter_\$ 'Age_month_CH <= 35 & CF3_CF17 = 2 (FILTER)'. VALUE LABELS filter_\$ '0' 'Not Selected' '1' 'Selected'. FORMATS filter_\$ (f1.0). FILTER BY filter_\$. EXECUTE.

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
				WEIGHT BY Weight_children EXAMINE VARIABLES=Age_month_CH /PLOT BOXPLOT STEMLEAF /COMPARE GROUPS /PERCENTILES(5,10,25,50,75,90,95) HAVERAGE /STATISTICS DESCRIPTIVES /CINTERVAL 95 /MISSING LISTWISE /NOTOTAL
CF11	CF11 (filter_\$ 'Age_month_ CH <= 23')	weight_children	Number of children age 0-23 months who were fed with a bottle during the previous day - receiving any food or drink from a bottle with a nipple / teat (including breastmilk)	USE ALL COMPUTE filter_\$=(Age_month_CH <= 23) VARIABLE LABELS filter_\$ 'Age_month_CH <= 23 (FILTER)'. VALUE LABELS filter_\$ 0 'Not Selected' 1 'Selected'. FORMATS filter_\$ (f1,0). FILTER BY filter_\$. EXECUTE. * Complex Samples Frequencies. CSTABULATE /PLAN FILE='C:\Users\iku\Desktop\NHMS 2016\Data NHMS 2016\Data Analysis NHMS 2016\Data Cohort '+1\Child_0-59m.csaplan' /TABLES VARIABLES=CF11 /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE
CF03 CF12a CF12b CF12c CF12h CF12i CF12j	Age appropriate_BF_eastin (filter_\$ 'Age_month_ CH <= 5 & CF03 = 1 & CF12a = 2 & CF12b = 2 & CF12c = 2 & 'CF12h = 2 & CF12i = 2 & CF12j = 2) (filter_\$=(Age_month_CH >= 6 & Age month CH <= 23 & CF03 = 1 & CF12a = 1 CF12b = 1 CF12c = 1 CF12h = 1 CF12i = 1 CF12j = 1)	weight_children	Number of children age 0-23 months appropriately fed during the previous day - Infants age 0-5 months who are exclusively breastfed, and children age 6-23 months who are breastfed and ate solid, semi-solid or soft foods	USE ALL COMPUTE filter_\$=(Age_month_CH <= 5 & CF03 = 1 & CF12a = 2 & CF12b = 2 & CF12c = 2 & CF12h = 2 & CF12i = 2 & CF12j = 2) VARIABLE LABELS filter_\$ 'Age_month_CH <= 5 & CF03 = 1 & CF12a = 2 & CF12b = 2 & CF12c = 2 & CF12h = 2 & CF12i = 2 & CF12j = 2 (FILTER)'. VALUE LABELS filter_\$ 0 'Not Selected' 1 'Selected'. FORMATS filter_\$ (f1,0). FILTER BY filter_\$. EXECUTE. USE ALL COMPUTE filter_\$=(Age_month_CH >= 6 & Age_month_CH <= 23 & CF03 = 1 & CF12a = 1 CF12b = 1 CF12c = 1 CF12h = 1 CF12i = 1 CF12j = 1). VARIABLE LABELS filter_\$ 'Age_month_CH >= 6 & Age_month_CH <= 23 & CF03 = 1 & CF12a = 1 CF12b = 1 CF12c = 1 CF12h = 1 CF12i = 1 CF12j = 1 (FILTER)'. VALUE LABELS filter_\$ 0 'Not Selected' 1 'Selected'. FORMATS filter_\$ (f1,0). FILTER BY filter_\$. EXECUTE * Complex Samples Frequencies. CSTABULATE /PLAN FILE='C:\Users\iku\Desktop\NHMS 2016\Data NHMS 2016\Data Analysis NHMS 2016\Data Cohort '+1\Child_0-59m.csaplan' /TABLES VARIABLES=Age_appropriate_BF_eastin /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
CF03 CF13 CF14	Age_month_CH (<= 23) - (filter_\$=(Age_month_CH >= 6 & Age_month_CH <= 23)) - Minimum acceptable_diversity_eastin	weight_children	<p>4. Flesh foods (meat, fish, poultry, liver/ organ meats)</p> <p>5. Eggs</p> <p>6. Vitamin A –rich fruits and vegetables</p> <p>7. Other fruits and vegetables</p> <p>a. Number of breastfed children age 6-23 months who had at least the minimum dietary diversity and the minimum meal frequency during the previous day.</p> <p>b. Number of non- breastfed children age 6-23 months who received at least 2 milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day.</p>	<pre> /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE. USE ALL. COMPUTE filter_\$=(Age_month_CH >= 6 & Age_month_CH <= 23 & minimum_meal_freq = 1 & Minimum dietary diversity = 2 & CF03 = 2 & Milk_feeding_freq_recode = 2). VARIABLE LABELS filter_\$ 'Age_month_CH >= 6 & Age_month_CH <= 23 & minimum_meal_freq = 1 & '+Minimum dietary diversity = 2 & CF03 = 2 & Milk_feeding_freq_recode = 2 (FILTER)'. VALUE LABELS filter_\$ 0 'Not Selected' 1 'Selected'. FORMATS filter_\$ (f1.0). FILTER BY filter_\$. EXECUTE. COMPUTE Minimum_acceptable_diversity_eastin=BF_minimum_acceptable_diet + NonBF_minimum_acceptable_diet. EXECUTE. USE ALL. COMPUTE filter_\$=(Age_month_CH >= 6 & Age_month_CH <= 23) VARIABLE LABELS filter_\$ 'Age_month_CH >= 6 & Age_month_CH <= 23 (FILTER)'. VALUE LABELS filter_\$ 0 'Not Selected' 1 'Selected'. FORMATS filter_\$ (f1.0). FILTER BY filter_\$. EXECUTE. </pre>
				<pre> * Complex Samples Frequencies. CSTABULATE /PLAN FILE='C:\Users\iku\Desktop\NHMS 2016\Data NHMS 2016\Data Analysis NHMS 2016\Data Cohort '+1\Child_0-59m.csaplan'. /TABLES VARIABLES=Minimum_acceptable_diversity_eastin /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE </pre>

CHILD DEVELOPMENT

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
CE05	CE05	Weight_C2	<p>Attendance to organised learning or early childhood education programme for children 36 to 59 months.</p> <p>The place should have some learning activities. The question aims to find out if the child is participating in early learning activities. Baby-sitting or child-minding, even if done in a special place such as a day-care centre, does not qualify as such a programme unless it includes organised learning activities.</p>	<p>CE05</p> <p>Value labels.</p> <p>1 Yes</p> <p>2 No</p>
CE07	CE07all_R_4plus	Weight_C2	<p>Percentage of children age 36-59 months with whom adult household members have engaged in four or more activities that promote learning and school readiness during the last 3 days.</p>	<p>Creating CE07all_R</p> <p>DO IF (Age_CH >= 36 & Age_CH < 60).</p> <p>COUNT CE07all_R=CE07a_R</p> <p>CE07b_R CE07c_R CE07d_R</p> <p>CE07e_R CE07f_R(1).</p> <p>VARIABLE LABELS CE07all_R</p> <p>'CE07all_R'.</p> <p>EXECUTE.</p> <p>Creating CE07all_R_4plus</p> <p>RECODE CE07all_R(4 thru 6=1) (1 thru 3=2) INTO CE07all_R_4plus.</p> <p>VARIABLE LABELS CE07all_R_4plus</p> <p>'4 or more activities by mfo'.</p> <p>EXECUTE.</p> <p>COUNT CE07all_R=CE07a_R</p> <p>CE07b_R CE07c_R CE07d_R</p> <p>CE07e_R CE07f_R(1).</p> <p>VARIABLE LABELS CE07all_R</p> <p>'CE07all_R'.</p> <p>EXECUTE.</p> <p>DO IF (Age_CH >= 36 & Age_CH < 60).</p> <p>RECODE CE07all_R</p> <p>(MISSING=SYSMIS)(4 thru 6=1)</p> <p>(Lowest thru 3=2) INTO</p> <p>CE07all_R_4plus.</p> <p>END IF.</p> <p>VARIABLE LABELS CE07all_R_4plus</p> <p>'4 or more activities by mfo'.</p> <p>EXECUTE.</p>

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
CE01	CE01_R_3	Weight_C2	Percentage of children under age 5 by 3 or more children's books present in the household.	<p>VALUE LABELS 1= 4 or more activities engaged in by mother, father or other adult aged 15 years or more in past 3 days 2= less than 4 activities engaged in by mother, father or other adult aged 15 years or more in past 3 days</p> <p>Creating CE01_R_3 RECODE CE01(MISSING=SYSMIS) (3 thru Highest=1) (Lowest thru 2=2) INTO CE01_R_3. VARIABLE LABELS CE01_R_3 '3 or more books'. EXECUTE. VALUE LABELS 1= 3 or more books 2= less than 3 books</p> <p>Creating CE01_R_10 RECODE CE01(MISSING=SYSMIS) (10 thru Highest=1) (Lowest thru 9=2) INTO CE01_R_10. VARIABLE LABELS CE01_R_10 '10 or more books'. EXECUTE. VALUE LABELS 1= 10 or more books 2= less than 10 books</p> <p>Creating CE02all COUNT CE02all=CE02a CE02b CE02c(1). VARIABLE LABELS CE02all 'CE02all'. EXECUTE.</p> <p>RECODE CE02all (MISSING=SYSMIS) (2 thru 3=1) (Lowest thru 1=2) INTO CE02all_twotypes. VARIABLE LABELS CE02all_twotypes 'two or more types playthings'. EXECUTE.</p> <p>VALUE LABELS 1= 2 or more types of play things 2= less than 2 types of playthings</p>
	CE01_R_10	Weight_C2	Percentage of children under age 5 by 10 or more children's books present in the household.	
	CE02all_twotypes	Weight_C2	Percentage of children under age 5 by two or more types of playthings present in the household	

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
CE03	R_CE03_CE04	Weight_C2	Percentage of children under age 5 left with inadequate care for more than one hour at least once during the past week	Creating R_CE03_CE04 COMPUTER_CE03a_CE04a=CE03a = 1 CE04a = 1 EXECUTE. VALUE LABELS 1= Left with inadequate care 0= Adequate care
ND01	ND01a, ND01b, ND01c, ND01d, ND01e	Weight_C2	The question aims to find out if the child had developmental delay by asking some activities based on age of babies. Percentage of children age 6-8 months who had developmental delay if one of the answer was 'No'	Creating ND01 IF (Age_CH >= 6 & Age_CH < 9) ND01 = ND01a = 1 ND01b = 1 ND01c = 1 ND01d = 1 ND01e = 1 ND01f = 1 EXECUTE. VALUE LABELS 1=Yes 2=No.
ND02	ND02a, ND02b, ND02c, ND02d	Weight_C2	Percentage of children age 9-11 months who had developmental delay if one of the answer was 'No'	Creating ND02 IF (Age_CH >= 9 & Age_CH < 12) ND02 = ND02a = 1 ND02b = 1 ND02c = 1 ND02d = 1 ND02e = 1 ND02f = 1 EXECUTE. VALUE LABELS 1=Yes 2=No.
ND03	ND03a, ND03b, ND03c, ND03d	Weight_C2	Percentage of children age 12-14 months who had developmental delay if one of the answer was 'No'	Creating ND03 IF (Age_CH >= 12 & Age_CH < 15) ND03 = ND03a = 1 ND03b = 1 ND03c = 1 ND03d = 1 ND03e = 1 ND03f = 1 EXECUTE. VALUE LABELS 1=Yes 2=No.
ND04	ND04a, ND04b, ND04c, ND04d	Weight_C2	Percentage of children age 15-17 months who had developmental delay if one of the answer was 'No'	Creating ND04 IF (Age_CH >= 15 & Age_CH < 18) ND04 = ND04a = 1 ND04b = 1 ND04c = 1 ND04d = 1 ND04e = 1 ND04f = 1 EXECUTE. VALUE LABELS 1=Yes 2=No.

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
ND05	ND05a, ND05b, ND05C, ND05d	Weight_C2	Percentage of children age 18-23 months who had developmental delay if one of the answer was 'No'	Creating ND05 IF (Age_CH >= 18 & Age_CH < 240) ND05 = ND05a = 1 ND05b = 1 ND05c = 1 ND05d = 1 ND05ej = 1 ND05f = 1 EXECUTE. VALUE LABELS 1=Yes 2=No.
ND06	ND06a, ND06b, ND06c, ND06d	Weight_C2	Percentage of children age 24-35 months who had developmental delay if one of the answer was 'No'	Creating ND06 IF (Age_CH >= 24 & Age_CH < 36) ND06 = ND06a = 1 ND06b = 1 ND06c = 1 ND06d = 1 ND06ej = 1 ND06f = 1 EXECUTE. VALUE LABELS 1=Yes 2=No.
ND07	ND07a, ND07b, ND07c, ND07d, ND07e	Weight_C2	Percentage of children age 36-47 months who had developmental delay if one of the answer was 'No'	Creating ND07 IF (Age_CH >= 36 & Age_CH < 48) ND07 = ND07a = 1 ND07b = 1 ND07c = 1 ND07d = 1 ND07ej = 1 ND07f = 1 EXECUTE. VALUE LABELS 1=Yes 2=No.
ND08	ND08a, ND08b, ND08c, ND08d, ND08e, ND08f	Weight_C2	Percentage of children age 48-59 months who had developmental delay if one of the answer was 'No'	Creating ND08 IF (Age_CH >= 48 & Age_CH < 60) ND08 = ND08a = 1 ND08b = 1 ND08c = 1 ND08d = 1 ND08ej = 1 ND08f = 1 EXECUTE. VALUE LABELS 1=Yes 2=No.
ND11	ND11	Weight_C2	Percentage of children who had been referred or currently had follow up under physiotherapy, occupational therapy etc for developmental delay	ND11 VALUE LABELS 1=Yes 2=No.

AUTISM

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
ND09	ND09	Weight_C2	Percentage of children who had done the MCHAT assessment before this	ND09 VALUE LABELS 1=Yes 2=No.
ND10	ND10	Weight_C2	Percentage of children who had MCHAT assessment results informed to parents	ND10 VALUE LABELS 1=Yes 2=No.
NM	suspect_autism	Weight_C2	<p>*NM applies to children aged 18 to 35 months.</p> <p>Number of subjects being told failed MCHAT (Self reported by caretaker or by health record booklet with confirmed failed MCHAT screening) plus subjects with Positive Screening MCHAT during survey (Score 2 or more on critical question of MCHAT OR score 3 or more for any MCHAT question)</p>	suspect_autism VALUE LABELS 1=Yes 0=No.

SCREEN TIME

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
Overall screen time	overallST		Overall screen time exposure to either television or those other than television of more than 2 hours per day for age more than 24-59months and yes for screen time for age less than 24 months	COMPUTE overallst=Age_CH < 24 & exposure_2y = 1 Age_CH >= 24 & finaltv_othertv = 2 VARIABLE LABELS overallst 'exposureST'. EXECUTE. * Complex Samples Frequencies. CSTABULATE /PLAN FILE=C:\Users\user\Desktop\cddpn\Child_0-59.csaplant' /TABLES VARIABLES=overallst /CELLS POPSIZE TABLEPCT /STATISTICS SE CV CIN(95) COUNT DEFF /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE.
Exposure more than 2 hours for age 24-59 months for tv	tv		Percentage of exposure more than 2 hours to tv for children aged 24-59 months	* Complex Samples Crosstabs. CSTABULATE /PLAN FILE=C:\Users\user\Desktop\cddpn\Child_0-59.csaplant' /TABLES VARIABLES=Sex Citizen HIncome Education_bapa Education_Mother Mother_occu Father_occu Ethnic2 BY overallst /CELLS POPSIZE ROWPCT /STATISTICS SE CV CIN(95) COUNT DEFF /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE.
Exposure more than 2 hours for age 24-59 months for other than tv	Other than tv		Percentage of exposure more than 2 hours to other than tv for children aged 24-59 months	* Complex Samples Crosstabs. CSTABULATE /PLAN FILE=C:\Users\user\Desktop\cddpn\Child_0-59.csaplant' /TABLES VARIABLES=Sex Citizen HIncome Education_bapa Education_Mother Mother_occu Father_occu Ethnic2 BY tv /CELLS POPSIZE ROWPCT /STATISTICS SE CV CIN(95) COUNT DEFF /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE.
Exposure more than 2 hours for age 24-59 months for either tv/other than tv	Finaltv_other tv		Percentage of exposure more than 2 hours to either tv/other than tv for children aged 24-59 months	* Complex Samples Crosstabs. CSTABULATE /PLAN FILE=C:\Users\user\Desktop\cddpn\Child_0-59.csaplant' /TABLES VARIABLES=Sex Citizen HIncome Education_bapa Education_Mother Mother_occu Father_occu Ethnic2 BY oitherthanv /CELLS POPSIZE ROWPCT /STATISTICS SE CV CIN(95) COUNT DEFF /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE.
Exposure to tv for age 0-23 months	tv_2		Percentage of exposure to tv for children aged 0-24 months	* Complex Samples Crosstabs. CSTABULATE /PLAN FILE=C:\Users\user\Desktop\cddpn\Child_0-59.csaplant' /TABLES VARIABLES=Sex Citizen HIncome Education_bapa Education_Mother Mother_occu Father_occu Ethnic2 BY finaltv_othertv /CELLS POPSIZE ROWPCT /STATISTICS SE CV CIN(95) COUNT DEFF /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE. * Complex Samples Crosstabs. CSTABULATE

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
Exposure to other than tv for age 0-23 months	other than tv_2		Percentage of exposure to other than tv for children aged 0-24 months	<pre> /PLAN FILE=C:\Users\user\Desktop\cddpn\Child_0-59.csaplan' /TABLES VARIABLES=Sex HHIIncome Father_occu Mother_occu Ethnic2 tv_2 /CELLS POPSIZE ROWPCT /STATISTICS SE CV CIN(95) COUNT DEFF /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE * Complex Samples Crosstabs. CSTABULATE /PLAN FILE=C:\Users\user\Desktop\cddpn\Child_0-59.csaplan' /TABLES VARIABLES=Citizen BY tv_2 /CELLS POPSIZE ROWPCT /STATISTICS SE CV CIN(95) COUNT DEFF /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE. </pre>
Exposure to either tv/other than tv for age 0-23 months	exposure_2y		Percentage of exposure to either tv/other than tv for children aged 0-24 months	<pre> * Complex Samples Crosstabs. CSTABULATE /PLAN FILE=C:\Users\user\Desktop\cddpn\Child_0-59.csaplan' /TABLES VARIABLES=Sex HHIIncome Education_bapa Education_Mother Mother_occu Father_occu Ethnic2 BY otherthantv_2 /CELLS POPSIZE ROWPCT /STATISTICS SE CV CIN(95) COUNT DEFF /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE. * Complex Samples Crosstabs. CSTABULATE /PLAN FILE=C:\Users\user\Desktop\cddpn\Child_0-59.csaplan' /TABLES VARIABLES=Citizen BY otherthantv_2 /CELLS POPSIZE ROWPCT /STATISTICS SE CV CIN(95) COUNT DEFF /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE. COMPUTE exposure_2y=CS01a = 1 CS01b = 1. EXECUTE. </pre>
Exposure to either tv/other than tv for age 0-24 months				<pre> * Complex Samples Frequencies. CSTABULATE /PLAN FILE=C:\Users\user\Desktop\MCH 2016\Final Folder_CDD_ST\screen time\Child_0-59.csaplan' /TABLES VARIABLES=exposure_2y /CELLS POPSIZE TABLEPCT /STATISTICS SE CIN(95) COUNT DEFF /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE. * Complex Samples Crosstabs. CSTABULATE /PLAN FILE=C:\Users\user\Desktop\MCH 2016\Final Folder_CDD_ST\screen time\Child_0-59.csaplan' /TABLES VARIABLES=Sex Citizen Ethnic2 Education_Mother Education_bapa Mother_occu Father_occu HHIncome NG BY exposure_2y /CELLS POPSIZE ROWPCT /STATISTICS SE CV CIN(95) COUNT DEFF /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE. </pre>

EARLY CHILDHOOD CARE AND EDUCATION

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
CE05	CE05	Weight_C2	Attendance to organised learning or early childhood education programme for children 36 to 59 months. The place should have some learning activities. The question aims to find out if the child is participating in early learning activities. Baby-sitting or child-minding, even if done in a special place such as a day-care centre, does not qualify as such a programme unless it includes organised learning activities.	CE05 Value labels. 1 Yes 2 No
CE07	CE07all_R_4plus	Weight_C2	Percentage of children age 36-59 months with whom adult household members have engaged in four or more activities that promote learning and school readiness during the last 3 days.	Creating CE07all_R DO IF (Age_CH >= 36 & Age_CH < 60). COUNT CE07all_R=CE07a_R CE07b_R CE07c_R CE07d_R CE07e_R CE07f_R(1). VARIABLE LABELS CE07all_R 'CE07all_R'. EXECUTE. Creating CE07all_R_4plus RECODE CE07all_R(4 thru 6=1) (1 thru 3=2) INTO CE07all_R_4plus. VARIABLE LABELS CE07all_R_4plus '4 or more activities by mfo'. EXECUTE. COUNT CE07all_R=CE07a_R CE07b_R CE07c_R CE07d_R CE07e_R CE07f_R(1). VARIABLE LABELS CE07all_R 'CE07all_R'. EXECUTE. DO IF (Age_CH >= 36 & Age_CH < 60). RECODE CE07all_R (MISSING=SYSMIS)(4 thru 6=1) (Lowest thru 3=2) INTO CE07all_R_4plus. END IF. VARIABLE LABELS CE07all_R_4plus '4 or more activities by mfo'. EXECUTE.

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
CE01	CE01_R_3	Weight_C2	Percentage of children under age 5 by 3 or more children's books present in the household.	<p>VALUE LABELS 1 = 4 or more activities engaged in by mother, father or other adult aged 15 years or more in past 3 days 2 = less than 4 activities engaged in by mother, father or other adult aged 15 years or more in past 3 days</p> <p>Creating CE01_R_3 RECODE CE01 (MISSING=SYSMIS) (3 thru Highest=1) (Lowest thru 2=2) INTO CE01_R_3. VARIABLE LABELS CE01_R_3 '3 or more books'. EXECUTE. VALUE LABELS 1 = 3 or more books 2 = less than 3 books</p> <p>Creating CE01_R_10 RECODE CE01 (MISSING=SYSMIS) (10 thru Highest=1) (Lowest thru 9=2) INTO CE01_R_10. VARIABLE LABELS CE01_R_10 '10 or more books'. EXECUTE.</p> <p>VALUE LABELS 1 = 10 or more books 2 = less than 10 books</p> <p>Creating CE02all COUNT CE02all=CE02a CE02b CE02c(1). VARIABLE LABELS CE02all 'CE02all'. EXECUTE.</p> <p>RECODE CE02all (MISSING=SYSMIS) (2 thru 3=1) (Lowest thru 1=2) INTO CE02all_twoypes. VARIABLE LABELS CE02all_twoypes 'two or more types playthings'. EXECUTE.</p> <p>VALUE LABELS 1 = 2 or more types of playthings 2 = less than 2 types of playthings</p>
	CE01_R_10	Weight_C2	Percentage of children under age 5 by 10 or more children's books present in the household.	
	CE02all_twoypes	Weight_C2	Percentage of children under age 5 by two or more types of playthings present in the household	

CHILD PROTECTION

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
CE03	R_CE03_CE04	Weight_C2	Percentage of children under age 5 left with inadequate care for more than one hour at least once during the past week	<p>Creating R_CE03_CE04 COMPUTER_CE03a_CE04a=CE03a = 1 CE04a = 1 EXECUTE. VALUE LABELS 1 = Left with inadequate care 0 = Adequate care</p>
CD01	CD01	Weight_C2	<p>*CD01 applies to children 12 to 59 months.</p> <p>Only non-violent discipline refers to forbidding something the child does, explaining why the child's behaviour was wrong, OR giving the child something else to do. It also excludes shaking the child, scolding in a harsh tone, spanking, hitting with an object, calling names, slapping, AND hitting with bare hands; which constitutes any violent discipline.</p> <p>Psychological aggression refers to scolding in a harsh tone OR calling the child dumb, lazy or such.</p> <p>Any physical punishment refers to shaking the child, spanking or hitting child on the bottom with bare hands, hitting child on the bottom or elsewhere on the body with something like a rattan stick, feather duster, hanger or other hard object, slapping child on the face, OR hitting, slapping, pinching child on hand, arm or leg.</p>	<p>Creating CD_NonViolent IF (Age_CH >= 12 & Age_CH < 60) CD_NonViolent= (CD01a = 1 CD01b = 1 CD01e = 1) & (CD01c = 2 & CD01d = 2 & CD01f = 2 & CD01g = 2 & CD01h = 2 & CD01i = 2 & CD01j = 2). EXECUTE. VALUE LABELS 1=YES 0=NO</p> <p>Creating CD_PsychAggression IF (Age_CH >= 12 & Age_CH < 60) CD_PsychAggression=CD01d = 1 CD01h = 1. EXECUTE. VALUE LABELS 1=YES 0=NO</p> <p>Creating CD_PhyPunishment IF (Age_CH >= 12 & Age_CH < 60) CD_PhyPunishment=CD01c = 1 CD01f = 1 CD01g = 1 CD01i = 1 CD01j = 1. EXECUTE. VALUE LABELS 1=YES 0=NO</p>

Variable Name	Variable in SPSS	Weight	Definition	SPSS Variable Definition
CD02	CD02	Weight_C2	<p>Psychological aggression and any physical punishment are subsets of any violent discipline. *CD02 applies to children 12 to 59 months.</p> <p>Belief that it is necessary for a child to be physically disciplined in order to bring up, raise or educate a child properly.</p>	<p>CD02 VALUE LABELS 1=Yes 2=No.</p>



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