

# Prevalence and sociodemographic correlates of adequate antenatal care visits in Malaysia: findings from the National Health and Morbidity Survey (NHMS) 2022



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## Introduction

- Antenatal care services are important in improving maternal health and reducing the risk of poor pregnancy outcomes and mortality.
- In 2016, the World Health Organisation (WHO) increased the ANC visits recommendation of at least four visits to eight visits following significant evidence in the reduction of perinatal mortality compared to the previous recommendation of four visits<sup>1</sup>.

## Objective

To determine the prevalence of eight or more ANC visits and their sociodemographic correlates among pregnant mothers in Malaysia

## Methods

- Data from the NHMS 2022: Maternal and Child Health, a nationwide cross-sectional survey with a complex design was analysed (N=6245).
- Validated questionnaires were used, and a face-to-face interview was conducted by trained data collectors among mothers aged 15-49 years.
- Adequate ANC in this study was defined as mothers who attended at least eight ANC visits.
- Complex sample descriptive and multivariable logistic regression analysis was performed.

## Results

Table 1: Prevalence of mothers aged 15-49 years attending antenatal care of at least eight visits by sociodemographic characteristics

Socio-demographic characteristics	Unweighted Count	Estimated population	Prevalence (%)	(95% CI)		RSE
				Lower	Upper	
<b>Malaysia</b>	5966	729622	94.3	93.1	95.4	0.006
<b>State</b>						
Johor	355	76933	95.4	87.6	98.4	0.025
Kedah	522	61911	97.1	95.0	98.3	0.008
Kelantan	535	55194	97.8	96.3	98.7	0.006
Melaka	448	29032	97.8	95.7	98.9	0.008
Negeri Sembilan	368	27459	95.4	92.1	97.4	0.014
Pahang	435	36051	98.6	97.0	99.3	0.006
Pulau Pinang	414	41152	95.2	92.5	97.0	0.012
Perak	443	56490	97.7	95.9	98.7	0.007
Perlis	461	7050	98.8	97.3	99.4	0.005
Selangor	370	140088	94.2	90.8	96.3	0.015
Terengganu	474	37540	98.8	96.4	99.6	0.007
Sabah & WP Labuan	329	65907	83.1	74.0	89.5	0.047
Sarawak	437	54587	95.0	92.7	96.6	0.010
WP Kuala Lumpur & Putrajaya	375	40327	87.9	82.0	92.0	0.029
<b>Locality</b>						
Urban	4154	506107	94.1	92.8	95.1	0.006
Rural	1812	223514	95.0	91.5	97.1	0.014
<b>Age</b>						
15-19	57	6725	71.2	57.6	81.9	0.088
20-24	569	68457	87.6	82.9	91.1	0.024
25-29	1744	209630	94.6	92.5	96.1	0.009
30-34	1885	230157	95.7	94.1	96.9	0.007
35-39	1242	152333	96.6	95.1	97.6	0.007
40-44	375	48903	95.4	91.9	97.4	0.014
45-49	41	5161	88.7	68.8	96.6	0.073
<b>Ethnicity</b>						
Malay	4746	544508	96.8	95.9	97.5	0.004
Chinese	216	29850	91.3	84.8	95.1	0.028
Indians	193	26721	96.1	90.9	98.3	0.018
Other Bumiputera	587	94818	95.7	93.6	97.1	0.009
Others	178	26352	60.8	51.1	69.7	0.079
<b>Citizenship</b>						
Malaysian citizen	5721	693538	96.5	95.8	97.1	0.003
Permanent Resident/ non-citizen	196	28431	61.5	52.3	70.0	0.074
<b>Marital status</b>						
Single/ separated/ divorcee/ widow	66	8240	81.9	71.8	88.9	0.053
Married/ cohabiting	5851	713216	94.5	93.2	95.6	0.006
<b>Mother's education</b>						
No formal education	73	10928	71.5	57.0	82.6	0.093
Primary school	281	37785	77.7	64.6	86.9	0.073
Secondary school	2911	346936	95.5	94.5	96.4	0.005
Tertiary education	2552	313475	96.8	95.5	97.8	0.006
<b>Occupation</b>						
Government/ semi-government employee	896	104085	97.8	95.4	99.0	0.008
Private employee	1079	146168	94.7	92.7	96.2	0.009
Employer/ self-employed	467	51630	94.5	91.3	96.5	0.014
Unpaid worker/ housewife/ not working/ student	3361	407792	93.5	91.7	94.9	0.009
<b>Household income/per capita income</b>						
B40	4684	569609	94.1	92.7	95.2	0.007
M40	1055	132313	95.9	93.8	97.2	0.009
T20	233	26382	92.2	85.3	96.0	0.028

RSE, relative standard error

Table 2: Simple and multiple logistic regression of attaining adequate ANC care among mothers in Malaysia

Variables	Crude OR (95% CI)	p-value	Adjusted OR (95% CI)	p-value
<b>Locality</b>				
Rural	1		-	-
Urban	0.84(10.79,32.9)	0.573	-	-
<b>Age</b>				
15-19	1		1	
20-24	2.85(1.54,5.26)	0.001	1.84(0.60,5.58)	0.283
25-29	7.02(3.89,12.68)	0.000	3.01(1.01,8.94)	<b>0.047**</b>
30-34	8.98(4.62,17.47)	0.000	3.98(1.31,12.07)	<b>0.015**</b>
35-39	11.47(5.92,22.21)	0.000	4.89(1.62,14.77)	<b>0.005**</b>
40-44	8.32(3.58,19.32)	0.000	4.30(1.25,14.76)	<b>0.021**</b>
45-49	3.18(0.78,13.01)	0.107	1.48(0.23,9.54)	0.681
<b>Ethnicity</b>				
Malay	1		1	
Chinese	0.34(0.17,0.68)	0.002	0.40(0.20,0.82)	<b>0.012**</b>
Indians	0.81(0.32,2.05)	0.650	0.86(0.33,2.27)	0.767
Other Bumiputera	0.73(0.45,1.19)	0.209	0.94(0.58,1.54)	0.820
Others	0.05(0.03,0.08)	0.000	0.38(0.10,1.41)	0.147
<b>Citizenship</b>				
Malaysian citizen	1		1	
Permanent Resident/ non-citizen	0.06(0.04,0.09)	0.000	0.19(0.05,0.71)	<b>0.014**</b>
<b>Marital status</b>				
Single/ separated/ divorcee/ widow	1		1.00	
Married/ cohabiting	3.84(2.07,7.11)	0.000	2.83(1.15,7.02)	<b>0.024**</b>
<b>Mother's education</b>				
No formal education	1		1	
Primary school	1.39(0.54,3.53)	0.494	0.68(0.27,1.74)	0.422
Secondary school	8.49(4.30,16.74)	0.000	1.34(0.61,2.95)	0.466
Tertiary education	12.24(5.84,25.65)	0.000	1.55(0.65,3.69)	0.322
<b>Occupation</b>				
Unpaid worker/ housewife/ not working/ student	1		1	
Government/ semi-government employee	3.10(1.43,6.71)	0.004	1.65(0.72,3.79)	0.239
Private employee	1.25(0.88,1.79)	0.220	0.99(0.67,1.45)	0.960
Employer/ self-employed	1.18(0.69,2.03)	0.540	1.07(0.60,1.92)	0.818
<b>Household income/per capita income</b>				
T20	1		1	
B40	1.35(0.65,2.78)	0.423	3.97(1.84,8.58)	<b>&lt;0.001**</b>
M40	1.97(0.90,4.29)	0.090	2.70(1.20,6.10)	<b>0.017**</b>

\*\*p<0.05

## Discussion & Conclusion

- Our study demonstrated that the prevalence of attaining adequate ANC following the latest WHO recommendation of at least eight visits among mothers in Malaysia was at a satisfactory level.
- In fact, our data is higher than the prevalence reported for ANC of at least three visits in other South East Asian countries like Indonesia which was at 93.3% in 20122.
- This is largely contributed by the antenatal guidelines set by the Malaysian government over the past decade which recommended ANC visits of at least eight in the ANC follow-up schedule even for uncomplicated pregnant mothers<sup>3</sup>.
- Despite that, existing practices in promoting adequate attainment of ANC services among pregnant mothers should be continued while efforts to improve the quality of ANC services provided should be enhanced in the future.

## Acknowledgement

We would like to thank the Director General of Health Malaysia for granting permission to publish this abstract.

## Keywords

Antenatal care, maternal and child health, health utilisation

## References

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