EPIDPP 23/162

Physical Environment Characteristics among Physically Inactive Antenatal Women in Seremban, Malaysia

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SUMMARY

Physically inactive antenatal women are associated with adverse pregnancy and birth outcomes such as preeclampsia, gestational diabetes mellitus, preterm birth, and others. The physical environment is known to influence the amount and type of physical activity, which can be positive or negative. This study aimed to determine the characteristics of the physical environment among physically inactive antenatal women. There was an association between the availability of transportation, safety in conducting physical activity, and weather influence on physical activity in physically inactive antenatal women. Nevertheless, focused intervention toward reducing the significant barriers to physical activity can be done effectively.

Keywords

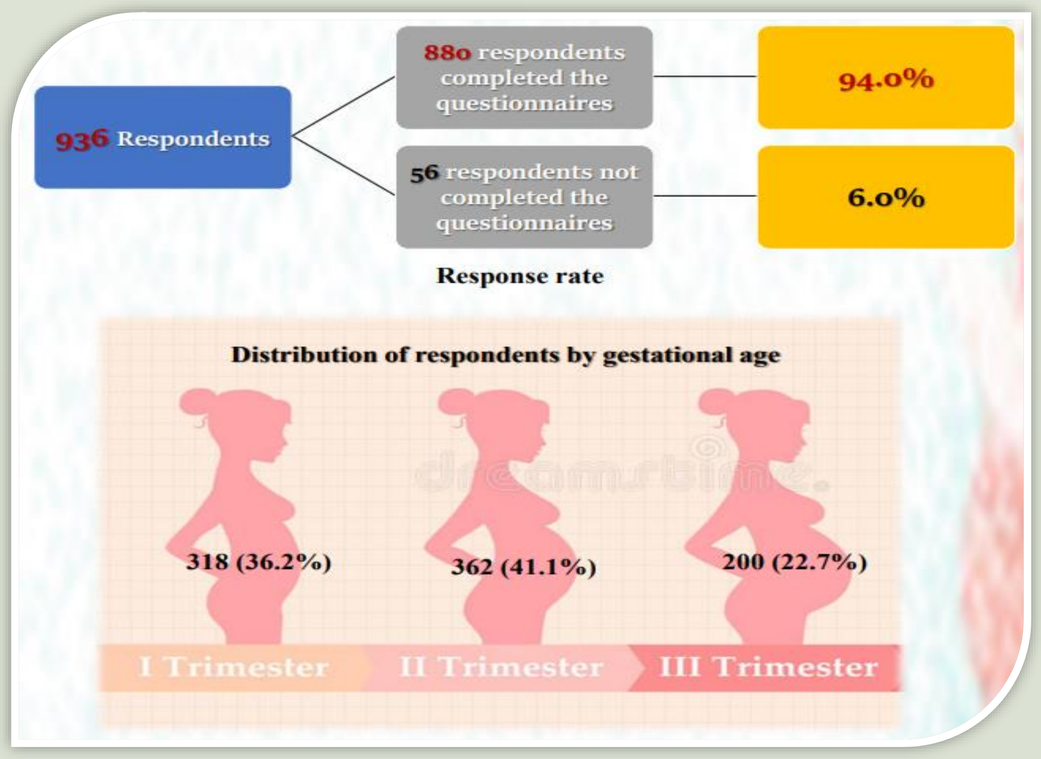
Physical activity, physical environment, antenatal women, observational study, Malaysia

INTRODUCTION

Physically inactive antenatal women are associated with adverse pregnancy and birth outcomes. The American College of Obstetrics and Gynaecology (ACOG) recommends that all pregnant women should engage in regular physical activity with a total amount of 150 minutes per week (1). However, only a few follow the recommendation. Various factors were found to affect physical inactivity among antenatal women, including the physical environment. For example, the availability of transportation to the site, safety issues, unpredictable weather, and others, are likely to influence the amount and type of physical activity among antenatal women. A study done in South Carolina stated that perceived safety in performing physical activity was significantly associated with the level of physical activity. Hence, this study aimed to determine the physical environmental characteristics among physically inactive antenatal women, so that further targeted and effective intervention can be done to improve their physical activity.

MATERIAL & METHODS

This study used a cross-sectional study design and proportionate stratified random sampling in the selection of 936 participants, of antenatal women attending 12 government health clinics from September 2017 to July 2020 in Seremban, Negeri Sembilan. The selected participants were Malaysian and able to read and write in the Malay language and used a self-administered questionnaire for data collection. The independent variables that were measured for physical environments include the availability of physical activity facilities, availability of transportation, weather influence on conducting physical activity and safety in performing physical activity, as well as the availability of child care. A total of 936 questionnaires were distributed to eligible respondents with a response rate of 94.0 %. Descriptive analysis and reliability analysis using ICC were employed. All data were analysed using SPSS version 23.0.



RESULTS & DISCUSSION

The majority of the respondents claimed that weather's influences on physical activity and the availability of childcare were crucial environmental factors, which was 78.30% for both. Otherwise, there was a significant association between the availability of transportation in doing physical activity (p-value<0.001), safety in conducting physical activity (p-value<0.001), and weather influence on physical activity (p-value <0.001) with physical inactivity among antenatal women. The unavailability of transport makes women struggle to go anywhere, including recreational areas or parks, to take part in physical activity. A study was done in Malaysia in regards to the satisfaction of using public transport in 2012 reported that most of the participants preferred to use private transport because of the poor quality of services, such as the failure of public transport to adhere to the scheduled operating time, and poor vehicle maintenance to provide a conducive and safer environment (2). Nevertheless, bad weather was found to influence antenatal women's physical activity levels. Hot seasons trigger women to be physically inactive (3). This was possibly due to the effect of pregnancy thermoregulation which increases body heat production (4). Therefore, it is good to suggest indoor exercise in an ambient environment to perform physical activity.

Table 1. The distribution of physical environmental factors of respondents (n=880)

Variables	n (%)
Availability of Physical Activity Facilities	
Yes	441 (50.10)
No	439 (49.90)
Availability of Transport in Doing Physical Activity	
Yes	340 (38.60)
No	540 (61.40)
Safety in Conducting Physical Activity	
Yes	532 (60.50)
No	348 (39.50)
Weather Influence on Physical Activity	
Yes	689 (78.30)
No	191 (21.70)
Availability of Childcare	
Yes	689 (78.30)
No	191 (21.70)

Table 2. The association between physical environment and physically inactive antenatal women in Seremban (n=880)

	Inactive n = 565 (%)	Active n = 315 (%)	Test Statistics		
			X^2	*df*	*P-value*
Availability of PA Facilities					
Yes	294 (66.70)	147 (33.30)	2.332	1	0.127
No	271 (61.70)	168 (38.30)			
Availability of Transport in Doing PA					
Yes	247 (72.60)	93 (27.40)	17.184	1	**<0.001***
No	318 (58.90)	222 (41.10)			
Safety in Conducting PA					
Yes	369 (69.40)	163 (30.60)	15.564	1	**<0.001***
No	196 (56.30)	152 (43.70)			
Weather Influence on PA					
Yes	467 (67.80)	222 (32.20)	17.652	1	**<0.001***
No	98 (51.30)	93 (48.70)			
Availability of Childcare					
Yes	302 (63.80)	171 (36.20)	0.057	1	0.812
No	263 (64.60)	144 (35.40)			

* Significant at P < 0.05

CONCLUSION

Physically inactive antenatal women were associated with the availability of transportation for doing physical activity, the safety of conducting physical activity, and the influence of weather on physical activity. Further targeted and effective intervention should be done to improve the physical activity among antenatal women in Seremban.

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