

Prevalence of Obesity and Body Weight Perception among Pregnant Women

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ABSTRAK

Obesiti semakin meningkat di seluruh dunia dan secara umumnya ramai wanita mempunyai persepsi yang tidak tepat mengenai berat badan mereka. Tujuan kajian ini dijalankan adalah untuk mengenal pasti kadar obesiti di kalangan wanita mengandung dan persepsi mereka tentang berat badan sendiri. Seramai 315 wanita mengandung telah mengambil bahagian dalam kajian ini. Indeks jisim badan (BMI) mereka direkod dan persepsi tentang berat badan mereka dinilai dengan menggunakan soal selidik. Lebih dari separuh peserta (60.6%, n=191) dalam kajian ini didapati mempunyai berat badan yang melebihi paras normal dimana peratusan obes adalah 29.8% (n=94) manakala 30.8% (n=97) mempunyai berat badan yang berlebihan. Analisa kappa (kappa = 0.185 (95% CI, 0.119 hingga 0.258, $p < 0.001$) menunjukkan bahawa kebanyakan wanita mengandung mempunyai persepsi yang tidak tepat mengenai berat badan mereka. Majoriti peserta obes (84%, n= 79) dan berat badan berlebihan (77.4%, n= 75) berpendapat bahawa kategori BMI mereka adalah kurang dari yang sebenarnya. Hanya peratusan kecil peserta obes (16%, n=15) dan berat badan berlebihan 18.6% (n=18) telah menilai kategori BMI mereka dengan tepat. Kami juga mendapati bahawa kebanyakan wanita hamil yang mempunyai berat badan yang normal telah mengenal pasti kategori BMI mereka dengan tepat. Penemuan dari penyelidikan ini menunjukkan bahawa wanita obes dan berlebihan berat badan, berpendapat bahawa status berat badan mereka adalah kurang dari yang sebenarnya. Persepsi yang tidak tepat ini akan memberi impak negatif kepada kesihatan semasa mengandung dan boleh menyebabkan komplikasi. Pendidikan tentang berat badan yang tepat perlu diberi semasa penjagaan pra-kehamilan untuk mencapai kesihatan yang optima semasa mengandung.

Kata kunci: berat badan, kehamilan, obesiti, persepsi

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ABSTRACT

Obesity is rapidly increasing worldwide and there is a general misconception regarding body weight perception. The aim of this study was to determine the prevalence of obesity and body weight perception among pregnant women. A total of 315 pregnant women participated in this study. Their Body Mass Index (BMI) was recorded and weight perception was assessed using a questionnaire. About two third (60.6%, n=191) participants in the study had excess weight out of which, 29.8% (n=94) were obese and 30.8% (n=97) were overweight. There was poor agreement between participant's true body weight category and their perception ($k=0.185$ (95% CI, 0.119 to 0.258), $p<0.001$). Majority of participants who were obese (84%, n=79) and overweight (77.4%, n=75) underestimated their weight status. Only a very small percentage of obese (16%, n=15) and overweight 18.6% (n=18) participants had correct perception of their weight. However, the majority (84.3%, n=86) of participants with normal body weight had correct perception regarding their body weight. This study found that most obese and overweight women tend to underestimate their weight status while those of normal weight had correct perception of their body weight. The inaccurate perception of those who are obese and overweight may impact weight gain during pregnancy and affect pregnancy related complications. Education regarding ideal body weight and its benefits needs to be instilled during pre-pregnancy care to achieve better overall outcome.

Keywords: body weight, obesity, perception, pregnancy

INTRODUCTION

The global epidemic of obesity is rising rapidly with almost 40% adults being overweight while 13% are obese (World Health Organization 2016). In Asia, obesity rates ranges between 1.7% in Vietnam to 14% in Malaysia (Wan 2014). The major co-morbidities associated with obesity and overweight include cardiovascular disease, stroke, type 2 diabetes mellitus and malignancies of the breast, endometrium, kidney, prostate and colon. The mortality associated with obesity increases with increasing Body

Mass Index (BMI) (Abdelaal et al. 2017). The association between obesity and raised blood pressure occurs early and has been described among children (Cheah et al. 2019).

Obese women in the reproductive age group face greater risk of adverse outcomes in pregnancy. It is associated with pregnancy related complications for both mother and the child such as gestational diabetes, preeclampsia, thromboembolism, congenital abnormalities thus increasing pregnancy related morbidity and mortality (Weiss et al. 2004; Kabiru & Raynor 2004). Research has also

shown that obese mothers contribute to increased weight in their children who later become obese adults leading to a vicious cycle (Schmatz et al. 2010; Cedergren 2004).

Self-perception of body weight is the extent of agreement between an individual's perceived and actual measured weight. A study on self-perception of body weight and weight related behaviours among women of reproductive age group, discovered that overweight women who underestimated their weight are less likely to adopt healthy eating habits. They are also less likely to skip meals or opt to try dietary supplements compared to women who accurately perceived their weight (Rahman & Berenson 2010). Studies have shown that women tend to underestimate their body weight status. Body weight perception is directly linked to weight management behaviours. Correct self-perception of the body weight especially in overweight and obese women may lead to better participation in weight loss strategies (Rahman & Berenson 2010; Agrawal et al. 2014)

Perceived susceptibility is an important component of the health belief model. Behavioural change theories have suggested that health education or weight management will not be effective if the recipients do not consider themselves as overweight or obese (Jones et al. 2014). Several studies have shown that majority women tend to underestimate or inaccurately report their height and weight leading to a misperception of weight status (Bhanji et al. 2011; Boo 2013). This misperception may lead to

a false belief that they are at lower risk of pregnancy related complications. Hence, recognition of accurate weight status is an important initial first step to improving weight management behaviour.

Assessing body weight perception and addressing misconceptions can help overcome obesity which is a modifiable risk factor and help reduce pregnancy related morbidity and mortality. The aim of this study was to determine the prevalence of overweight and obesity among pregnant women and to determine their body weight perception. This information may be useful to plan strategies to correct any misperception as a measure to achieve ideal body weight during pre-pregnancy care programs.

MATERIALS AND METHODS

A cross-sectional study was conducted at in 4 urban primary care antenatal clinics in Seremban, between February and May 2015 using convenient sampling. Sample size was calculated using formula, based on the prevalence of obesity in the reproductive age of 16.7% from an earlier study (Xu Gang 1999; Sidik & Rampal 2009). Participants between the age group of 18 to 45 years, in the first trimester of pregnancy, who were able to read and understand English or the national language (Bahasa Malaysia) were invited to participate. Patients were approached by the researcher in the waiting area of the antenatal clinic after they registered for their scheduled visit. Participants were inquired regarding the term of their pregnancy and this

information was verified using the antenatal book. Those who fulfilled the selection criteria and agreed to participate were briefed regarding the research. They were given the questionnaire and later collected by the researcher upon completion.

The self-administered questionnaire consists of 2 sections. Section A, contained patient's demographic details while section B assessed participant's perception of their body weight. Self-perception of body weight was assessed using a single question: "How do you perceive your current weight status?" for which participants were instructed to select one out of the four answer options provided (underweight, normal, overweight and obese). The questionnaire was subjected to face validation during pilot testing and minor adjustments were made based on patient's feedback. Participants' weight, height and BMI (BMI=weight in kg/height in cm²) was recorded by the researcher and categorised using the Malaysian clinical practice guideline on the management of obesity where BMI of ≥ 23.0 -27.4 (overweight and pre-obese) was categorised together as overweight and ≥ 27.5 kgm² was defined as obese (Malaysian clinical practice guidelines 2004). Data was analysed using Statistical Package for the Social Sciences (SPSS) version 22.0 using descriptive statistics and Cohen's Kappa coefficient for the degree of agreement between body image perception and actual BMI. Ethical approval was obtained from Ethics and Industry Research Committee, Universiti Kebangsaan Malaysia (UKM)

and the Medical Research and Ethics Committee (NMRR-14-373-20847).

RESULTS

A total of 315 pregnant women in the first trimester of pregnancy agreed to participate in this study. Their mean age was 29.3 years (SD 4.8), with the youngest being 18 while the oldest was 43 years of age. About 46% of participants had tertiary education and most of them were employed (66.3%). About half of them (54.6%) had one or more children. The mean BMI of the participants was 25.1 kgm² (SD 5.42) with the highest BMI being 44.2 kgm² and the lowest was 14.7 kgm². About two third (60.6%, n=191) of participants in the study had excess weight out of which, 29.8% (n=94) were obese and 30.8% (n=97) were overweight (Table 1).

The agreement between the participants' perception of their weight category and their true weight category based on the calculated BMI was tested using kappa coefficient test. There was poor agreement ($k=0.185$ (95% CI, 0.119-0.258), $p<0.001$) indicating a significant discrepancy between participant's true body weight category and their perception. A large percentage of obese (84%, n=79) and overweight (77.4%, n=75) participants underestimated their weight status.

The detailed analysis of participant's perception of their body weight category showed that only 16% (n=15) of the obese participants had correctly identified their weight category as obese while a large majority of 84%, (n=79) underestimated themselves as either

Table 1: Participant demography and perception of their current weight

	Mean (SD)	Frequency (n)	Percentage (%)
Mean age	29.3 years (SD 4.8)		
Age groups (years)		75	23.8
<25		212	67.3
26-35		28	8.9
>36			
Mean BMI	25.1 kg ^m (SD 5.42)		
BMI groups			
Underweight		22	7.0
Normal		102	32.4
Overweight		97	30.8
Obese		94	29.8
BMI Group			
<23		124	39.4
≥23		191	60.6
Education			
Primary & secondary		170	53.9
Tertiary Education		145	46.0
Job			
Employed		209	66.3
Unemployed		106	33.7
Number of Children			
Nulliparous		143	45.4
Multiparous		172	54.6
Perception of weight			
Normal weight		207	65.7
Overweight		61	19.4
Underweight		30	9.5
Obese		17	5.4

overweight (42.6%, n=40) or normal weight (41.4%, n=39). Similarly, the majority (77.4%, n=75) of overweight participants also underestimated their weight category as normal while only 18.6% (n=18) correctly identified themselves as overweight. Surprisingly, the majority (84.3%, n=86) of participants with normal body weight correctly identified their

weight category. Very few participants (2% of overweight and 12% of normal weight) participants overestimated their weight category. Table 2 shows the participant's perception in relation to their true BMI category.

DISCUSSION

This study shows that more than half

Table 2: Agreement between participants’ perception of weight and their BMI

Participant’s perception of weight category	BMI Categories			
	Underweight N(% within BMI category)	Normal weight N(%within BMI category)	Overweight N(%within BMI category)	Obese N (%within BMI category)
Underweight	15 (68.0)	13 (12.7)	2 (2.0)	0 (0.0)
Normal weight	7 (32.0)	86 (84.3)	75 (77.4)	39 (41.4)
Overweight	0 (0.0)	3 (3.0)	18 (18.6)	40 (42.6)
Obese	0 (0.0)	0 (0.0)	2 (2.0)	15 (16.0)
Total	22 (100.0)	102 (100.0)	97 (100.0)	94 (100.0)

(60.6%) of the pregnant women had excess body weight with almost one third (29.8%) of them were obese and another one third overweight (30.8%). Data from the institute for public health also found that the prevalence of obesity in women above 18 years of age was almost similar (16.7-29.6%) (Institute of Public Health 2011) while the National Health Morbidity Survey (NHMS), recorded maternal obesity prevalence of 14.6% (National Health and Morbidity Survey 2016). A more recent study in Australia also found high prevalence (55.2%) of overweight and obesity among pregnant woman (Lang et al 2019). Rapid urbanisation may have a role causing greater affinity for fast food consumption and sedentary lifestyles. More women may be eating out as they are working and consuming high calorie meals with less fruits and vegetables (Ebbeling et al. 2002). Women are also at higher risk of obesity because traditionally they are involved in preparing the family meals and have greater access to food (Baharudin et al. 2013).

Our study shows poor agreement between the participant’s perception of their weight status and their actual BMI where participants mostly

underestimated their weight status. This finding is similar to a study in Korea and Australia where women also underestimated their weight status (Boo 2013; Shub et al. 2013; Lang et al. 2019). A large majority of obese (84%) and overweight (77%) participants in this study underestimated their weight status compared to those in normal or underweight categories. These results suggests that obese and overweight women tend to underestimate their weight compared those who have normal body weight (Callaway et al. 2009; Lang et al 2019). This is probably due to the common misperception of the relationship between weight and health risks. Women who underestimate their weight tend to gain excessive weight during pregnancy (Herring et al. 2008). The lack of accurate perception hinders efforts for weight management strategies leading to increase weight gain during pregnancy higher morbidity. Those who have normal body weight or are underweight may have better perception of their body weight status due to increased awareness hence may already be taking precautions to achieve a smaller body weight.

It is interesting to note that perception of ideal weight has a cultural origin. In some cultures, for example in Asia, being overweight and obese may be perceived as a sign of prosperity and good health (Gregory et al. 2008). A study in India that looked at self-perception of body weight found that 4% of overweight and obese women were satisfied with their current weight status and had no intention of losing weight (Agrawal et al. 2014). Cultural influences may result in increased tolerance to bigger body size and nurture the false perception that being overweight or obese is related to better health and better status. These misconceived ideas may cause misperception of body weight and false sense of good health propagating ignorance to risks associated with excessive body weight in pregnancy. Accurate weight perception affects health care behaviour. This is a reflection of the health belief model which includes perceived susceptibility, seriousness of the health problem, benefits of taking action, identifying potential barriers to action and cues to action (Romano & Scott 2014). The first step is perceived susceptibility, for this, women need to recognise and accept their current weight status. Studies have shown that, if women who are overweight or obese consider themselves as having normal or healthy weight status, they will not be motivated to take part in lifestyle modification efforts to reduce weight and subsequently reduce obesity related risk in pregnancy (Yang et al. 2014; Rahman & Berenson 2010; Gaudet et al. 2011). Pregnant women

may not know that obesity can cause complications and increases risk for both mother and child (Leelavathi & Rachael 2018). Although the current study did not look at patient satisfaction of current weight status or perception of ideal body weight, research in this area could help to tackle possible causes for obesity in the future. Data collection for this study was taken from one district hence results may not be generalisable to the entire population.

CONCLUSION

There is a high prevalence of overweight and obesity among pregnant women in this study. Pregnant women have poor perception of their weight where they mostly underestimated their weight status. These findings are of concern as women may not identify obesity, overweight correctly and deter efforts towards healthy lifestyle. Efforts to reduce obesity related pregnancy risks may also be futile. Overweight and obese women need to be identified early and educated regarding ideal body weight and health hazards associated with obesity during pre-pregnancy care. This could help change their mind-set and heighten awareness regarding importance of maintaining ideal body weight.

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