

Knowledge of implications of obesity on reproductive health among women of reproductive age in Ibadan South-west Local Government Area, Oyo State, Nigeria

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Abstract

Background: Obesity is one of the risk factors to non-communicable diseases and it is characterized by an excess of adipose tissue in the body. It has also been implicated in reproductive health challenges confronting women including infertility. However, knowledge and attitude of Women of Reproductive Age (WRA) on the implications of obesity on their reproductive health status have not been fully explored among Nigerian WRA. This study was conducted to investigate knowledge of implications of obesity on reproductive health among WRA in Ibadan South-West Local Government Area in Oyo State.

Methods: This was a descriptive cross-sectional study. A three-stage sampling technique was used to select 500 WRA from six communities. Semi-structured, interviewer-administered questionnaire was used to elicit information on socio-demographic characteristics, knowledge and attitude towards obesity. Obesity was assessed using Body Mass Index (BMI) and Waist-to-Hip Ratio (WHR). Data were analysed using descriptive and inferential statistics.

Results: Age was 29.9 ± 8.7 years with 56.0% having tertiary education and 60.0% had biological children. Prevalence of obesity was 18.6% and 52.4% had abdominal obesity. Few respondents mentioned reproductive health problems influenced by obesity to include infertility (34.4%), obstructed labour (33.0%), delivery by caesarean section (26.0%), fibroid (4.0%) and menstrual disorders (3.0%). Majority (86.8%) had poor knowledge of the implications of obesity on reproductive health. Respondents (90.4%) had favourable disposition towards obesity and knowledge was found not significant in different with age ($p > 0.05$).

Conclusion: Poor knowledge was observed among the respondents. This implies the need for sensitization on the negative implications of obesity on reproductive health.

Keywords: Obesity, reproductive health challenges, women of reproductive age

Résumé

Contexte: L'obésité est l'un des facteurs de risque des maladies non transmissibles et se caractérise par un excès de tissu adipeux dans le corps. Il a également été impliqué dans les problèmes de santé reproductrice auxquels sont confrontées les femmes, notamment l'infertilité. Cependant, les connaissances et l'attitude des femmes en âge de procréer (FAP) sur les implications de l'obésité sur leur statut en matière de santé de la reproduction n'ont pas été complètement explorées chez les FAP nigérianes. Cette étude a été menée pour étudier les connaissances sur les implications de l'obésité sur la santé reproductrice chez les FAP dans la commune du Sud-Ouest d'Ibadan dans l'État d'Oyo.

Méthodes : Il s'agissait d'une étude descriptive transversale. Une technique d'échantillonnage en trois étapes a été utilisée pour sélectionner 500 FAP dans six communautés. Un questionnaire semi-structuré, administré par un intervieweur, a été utilisé pour obtenir des informations sur les caractéristiques sociodémographiques, les connaissances et l'attitude à l'égard de l'obésité. L'obésité a été évaluée à l'aide de l'indice de masse corporelle (IMC) et du ratio taille-hanches (RTH). Les données ont été analysées à l'aide de statistiques descriptives et inférences.

Résultats : L'âge était de $29,9 \pm 8,7$ ans, dont 56,0% avaient suivi des études supérieures et 60,0% avaient des enfants biologiques. La prévalence de l'obésité était de 18,6% et 52,4% avait l'obésité abdominale. Peu des répondantes ont mentionnés des problèmes de santé reproductrice liés à l'obésité à inclure l'infertilité (34,4%), l'accouchement avec obstruction (33,0%), l'accouchement par césarienne (26,0%), les fibromes (4,0%) et les troubles menstruels (3,0%). La majorité (86,8%) avait une connaissance insuffisante des conséquences de l'obésité sur la santé reproductrice. Les répondantes (90,4%) avaient une prédisposition favorable à l'obésité et les connaissances acquises n'étaient pas significatives avec l'âge ($p > 0,05$).

Conclusion : Une faible connaissance a été observée parmi les répondantes. Cela implique un besoin de sensibilisation sur les implications négatives de l'obésité sur la santé reproductrice.

Mots-clés: Obésité, problèmes de santé reproductrice, femmes en âge de procréer

Introduction

In many developing countries, research and investment in health have been mainly devoted to infectious diseases, despite the growing need to address non-communicable diseases (NCDs) with more efforts and resources [1]. Deaths from infectious diseases, maternal and perinatal conditions, and nutritional deficiencies combined are projected to decline by 3.0% over the next 10 years, while at the same time deaths due NCDs are projected to increase by 17.0% [2]. As a result, it is estimated that of the projected 64 million deaths worldwide in 2015, 41 million (64.0%) will result from chronic diseases; unless urgent action is taken [1]. Obesity is a risk factor to some NCDs and it's characterized by an excess of adipose tissue. It should be considered a serious medical condition that can lead to significant morbidity and mortality rather than a character flaw or personal weakness [3].

Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health. Overweight and obesity are the fifth leading risk for global deaths. At least 2.8 million adults die each year as a result of being overweight or obese. In addition, 44.0% of the diabetes burden, 23.0% of the ischaemic heart disease burden and between 7.0% and 41.0% of certain cancer burdens are attributable to overweight and obesity [4]. Approximately 2.5 million deaths globally are attributable to obesity, of which one third occurs in developing countries [5]. In Nigeria, nearly one in four women is either overweight or obese (16.0% overweight and 6.0% obese). Overweight and obesity increase by age from 7.0% among women age 15-19 years to 34.0% among women age 40-49 years. More urban women (31.0%) than rural women (17.0%) are overweight or obese [6]. Obesity, which was previously thought to have low prevalence rate in Nigeria because of its association with wealth and affluence has risen in prevalence over the last decade to levels that now constitute epidemic threat [7, 8].

Obesity and overweight are common conditions that have consequences not only on NCDs but also to a great extent on reproductive health [9]. The impact of obesity on reproduction starts at a young age. Obese girls frequently experience the onset of puberty at a younger age than their normal-weight peers [10]. Obesity contributes to anovulation and menstrual irregularities, reduced conception rate and a reduced response to fertility treatment; it is frequently associated with disturbances in the menstrual cycle [11]. Maternal obesity is related to a significantly higher risk for complications during pregnancy, including a higher rate of delivery and

surgical difficulties, hypertension, thromboembolism, and gestational diabetes, which also contribute to foetal complications including congenital malformations, macrosomia, and antepartum stillbirth [12, 13]. Obesity is associated with an increased risk of maternal mortality, gestational diabetes mellitus, thromboembolism, pre-eclampsia and postpartum haemorrhage. Obesity also complicates operative delivery; it makes operative delivery more difficult, increases complications and paradoxically increases the need for operative delivery [9]. Obese women are also less likely to breastfeed for mechanical as well as physiological reasons, removing a fundamental safeguard against long-term weight gain for themselves and their children [14]. There is also evidence that excess body fat may impair mammary gland development before conception and during pregnancy by hormonal and metabolic effects [15].

Women are at higher risk because they are already faced with a number of health challenges that concerns their reproductive roles and these will definitely be compounded when they are obese. Obesity has been implicated in some cases of infertility among women [8]. Women of reproductive age have a vital role to play in the family; therefore any harm to them will have a spiral effect not only on the family but also on the society at large. In view of the cultural acceptance of obesity by some women, it is relevant to investigate knowledge of reproductive health implications and attitude of women of reproductive age in relation to obesity.

Materials and methods

This study was a descriptive cross sectional survey among women of reproductive age in Ibadan South West Local Government Area, Ibadan. The study population was women of reproductive age between 15-49 years who consented to be part of the study. A three-stage sampling technique was used to select 500 respondents for this study. A pretested semi-structured and interviewer-administered questionnaire was used for data collection and it elicited information on socio-demographic characteristics of respondents, attitude of women towards obesity and knowledge of respondents on implications of obesity on reproductive health. Attitude of women towards obesity was assessed with an 11-item attitudinal scale. Respondents' attitude towards obesity was analyzed on a 22-point scale with scores of 50th centile and below classified as 'Positive' and greater than this centile was classified as 'Negative' attitude. Knowledge of implications of

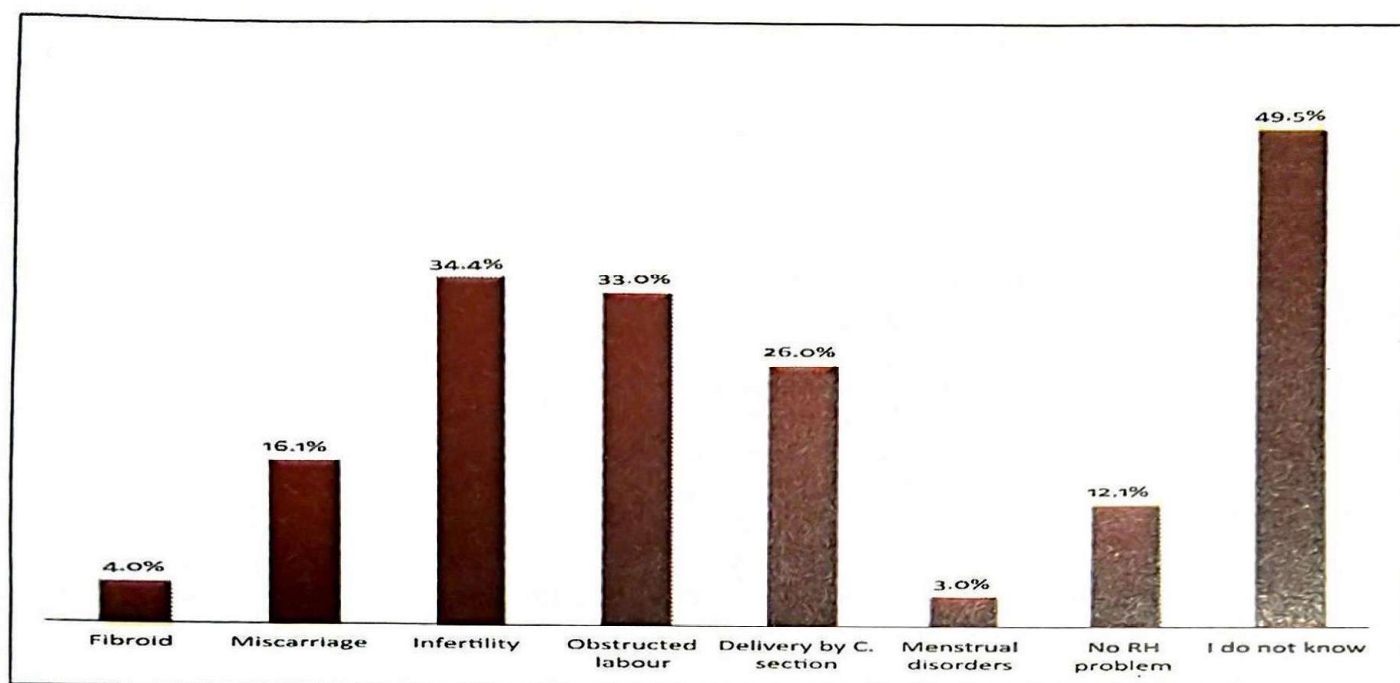


Fig. 1: Reproductive health problems mentioned to be associated with obesity

obesity on reproductive health was assessed on a 7-item scale of 14 points. Knowledge score were classified as poor (0-8) and good (>8).

Anthropometric measurements conducted were weight, height, waist and hip circumference. Body weight was measured in kilogram using a validated Harson scales (Model H89 black). Height was measured in metres using portable locally manufactured but validated stadiometers. Body mass index (BMI) was calculated as weight in kilograms divided by the square of the height in meters. It is the most commonly used measure for monitoring the prevalence of obesity at population level. BMI (kg/m^2) was categorized using the World Health Organization [16] definitions. Waist circumference was taken at approximate midpoint between the lower margin of the last palpable rib and the top of the iliac crest [17] while the hip circumference was taken at the widest portion of the buttocks and measured to the nearest centimetre using a flexible tape. Waist-to-hip ratio was calculated by dividing the waist circumference by the hip circumference in centimetre. Data collected were analysed using descriptive and bivariate statistics.

Results

About half (50.6%) of the respondents were married while 41.4% were single. Majority of the respondents were Christians (79.0%) and Yoruba (84.0%). Only 60.0% of respondents reported having biological children. Few (22.2%) of the respondents was aged 25-29 years while respondents aged 40-44 years and 45-49 years were 6.6% and 9.2%, respectively. Fifty six percent of respondents had tertiary education while 35.4% and 6.4% had secondary and primary school education, respectively.

The reproductive health problems implicated in obese persons as stated by the respondents included menstrual disorder (3.0%); fibroid (4.0%) and miscarriage (16.1%). Other reproductive health-related problems mentioned were child delivery requiring caesarian operation (26.0%); obstructed labour (33.0%) and infertility (34.4%). A few (12.1%) of the respondents stated that there were no reproductive health problems associated with obesity while 49.5% did not know the reproductive health problems associated with obesity (Figure 1). The set of data presented in Figure 1 was from a general response to the question on reproductive health problems that are associated with obesity as understood by the respondents.

Table 1: Knowledge of respondents on implications of obesity on reproductive health N=500

Variables	N	%
<i>Implication of obesity on menstrual cycle</i>		
Excessive flow*	66	13.2
Cessation of menses*	29	5.8
Scanty flow*	15	3.0
Pain	21	4.2
Offensive odour	15	3.0
Irregular menses*	79	15.8
No effect on menses	218	43.6
I don't know	234	46.8
<i>Implication of obesity on child delivery</i>		
Obstructed labour*	251	50.2
Delivery by caesarean section*	229	45.8
Macrosomic baby*	14	2.8
Stillbirth	37	7.4
Neonatal abnormalities*	9	1.8
Microsomic baby	24	4.8
No effect on child delivery	82	16.4
I don't know	237	47.4
<i>Implication of obesity on forms of cancer</i>		
Breast*	153	30.6
Endometrial*	16	3.2
Cervix*	34	6.8
Intestinal/colon*	12	2.4
Kidney*	27	5.2
Lung†	13	2.6
Stomach†	12	2.4
I don't know	95	19.0

Note: Multiple responses recorded

*Correct responses

†Evidence not too strong

However, in Table 1, three domains of knowledge were used to assess respondents' knowledge of implications of obesity on reproductive health. These domains included implications of obesity on: menstrual cycle, child delivery and types of cancer. Each of these domains has variables that were used to measure the knowledge as presented in Table 1.

Some of the implications of obesity on menstrual cycle as mentioned by the respondents (500) included excessive flow of menstrual blood (13.2%), cessation of menses (5.8%) and offensive odour (3.0%) (Multiple responses recorded). Respondents who indicated that they did not know the effects of obesity on menstrual cycle were 46.8% while 43.6% stated that obesity does not have effects on menstrual cycle.

Knowledge of effects of obesity on child delivery as determined by the set variables and mentioned by the respondents ranged from neonatal

abnormalities (1.8%) to obstructed labour (50.2%); details are presented in Table 1.

Data on the knowledge of implication of obesity on types of cancer showed that 30.6% of respondents mentioned breast cancer while 6.8% and 3.2% stated cervical and endometrial cancers, respectively. Other correct types of cancer mentioned included renal (5.4%) and intestinal/colon (2.4%). However, 19.0% of respondents did not know that obesity can be a risk factor to some types of cancer.

Respondents (36.4%) stated that obesity is associated with increased risk of cancers. Many (52.8%) did not agree that obesity can contribute to failure to initiate and sustain exclusive breastfeeding while 29.0% and 18.2% agreed and did not know, respectively. Effects of obesity on mother's health during pregnancy as stated by the respondents were fatigue (45.8%), eclampsia (42.2%), fever (9.8%) and gestational diabetes (8.2%). Few (16.3%) and 46.4% mentioned that there was no implication and

Table 2: Association between Age Group of Respondents and Knowledge of Implications of Obesity on Reproductive Health N=500

Variable	Knowledge category on implications of obesity		Total
	Poor (n)	Good (n)	
Age group (in years)			
15-19	48	6	54
20-24	89	6	95
25-29	90	21	111
30-34	84	13	97
35-39	53	11	64
40+	70	9	79

$\chi^2=8.421$; $df=5$; $p\text{-value}=0.13$

did not know of any implication of obesity on women's health in pregnancy, respectively.

Respondents' score on implications of obesity on reproductive health was 4.8 ± 3.0 . Majority of the respondents (86.8%) had poor knowledge of the implications of obesity on reproductive health. With the level of significance set at <0.05 , there was no significant association between age group of respondents and level of knowledge of implications of obesity on reproductive health (table 2).

The respondents who strongly agreed that obesity is not a symbol of well-being and good living were 46.6%. Respondents (48.8%) agreed that obese people are lazier than normal weight people while 41.2% agreed that obese people are very untidy. Few (22.0%) of the respondents strongly disagreed that they liked obese people than slim ones while 54.4% agreed that they were comfortable associating with obese people. Respondents (25.6%) disagreed that obese persons are as healthy as non-obese (table 3). Also, 30.4% of the respondents detested becoming obese. The mean score of attitude towards obesity

Table 3: Attitude of Respondents towards Obesity

(N=500)

Variable	SA n (%)	A n (%)	U n (%)	D n (%)	D n (%)
I do not consider obesity as a symbol of richness and good living	233(46.6)	237(47.4)	12(2.4)	14(2.8)	4(0.8)
I expect obese people to live normal lives	20(4.0)	216(43.2)	60(12.0)	179(35.8)	25(5.0)
I picture obese people as being lazier than normal weight people	93(18.6)	244(48.8)	72(14.4)	83(16.6)	8(1.6)
I see obese people as very untidy	71(14.2)	206(41.2)	111(22.2)	97(19.4)	15(3.0)
I like obese people than slim ones	10(2.0)	38(7.6)	86(17.2)	256(51.2)	110(22.0)
I see obesity as the worst thing that can happen to anybody	42(8.4)	152(30.4)	54(10.8)	218(43.6)	34(6.8)
I consider obese persons as confident as other people	13(2.6)	168(33.6)	106(21.2)	196(39.2)	17(3.4)
I consider obese people as not being healthy as non obese people	42(8.4)	271(54.2)	50(10.0)	128(25.6)	9(1.8)
I support that obese workers can be as successful as other workers	28(5.6)	235(47.0)	116(23.2)	112(22.4)	9(1.8)
I am comfortable associating with obese people	20(4.0)	272(54.4)	45(9.0)	142(28.4)	21 (4.2)
I am sure that obese people are as happy as non obese people	18(3.6)	148(29.6)	140(28.0)	172(34.4)	22 (4.4)

SA: Strongly Agree; A: Agree; U: Undecided; D: Disagree; SD: Strongly Disagree

was 7.1 ± 3.4 . Majority (90.4%) of the respondents had positive attitude i.e. was favourably disposed towards obesity.

Weight and height were 63.7 ± 13.0 kg and 1.6 ± 0.1 m, respectively while the BMI was 25.0 ± 5.0 kg/m². Respondents (49.6%) were of normal weight, 4.4% were underweight while 27.4% and 18.6% were overweight and obese, respectively. The respondents' waist circumference was 83.9 ± 42.5 cm while the hip circumference was 95.3 ± 10.2 cm. The WHR was 0.9 ± 0.1 . Respondents who had low Waist-to-hip ratio (WHR) were 47.6% while 52.4% had high WHR.

Discussion

The implications of obesity on reproductive health as reported by the respondents included obstructed labour, miscarriages, menstrual problem, and neonatal abnormalities among others. This was similar to findings by Ogbuji [18], which highlighted the outcome of obesity on pregnancy and labour to include increased prevalence of pregnancy-induced hypertension, gestational diabetes, thromboembolism, urinary tract infections, induction of labour, instrumental delivery, caesarean section, anesthetic and postoperative complications including uterine infections. Nitert et al., [19] reported that 57.0% of the women in their study knew that being very obese prior to pregnancy increased the overall risk of pregnancy and birth complications. Over 75.0% of the respondents in the study identified that obese women had increased risk of overall complications, including gestational diabetes and hypertensive disorders of pregnancy compared to women of normal weight. The result from this study also showed that few respondents (19.6%) indicated that obesity is not associated with increased risk of cancer, 36.4% stated that obesity is associated with increased risk of cancer while 44.0% did not know if there is an association between the two medical conditions. This is supported by the findings of Soriano et al., [20], which revealed that there was a gap in knowledge regarding the risk obesity poses for the development of breast and colon cancer. Age of the respondents was found to have no effect on knowledge of obesity as a risk factor to reproductive health.

Respondents tended to view obese persons as being healthy as non-obese persons. This finding is at variance with [21] study that showed that school teachers tended to view obese persons as less healthy than non-obese persons. This study also showed that few of the respondents regarded obesity as the worst thing that can happen to anybody; which is similar to the findings of [21] and [22]. Neumark-Sztainer

et al., [21] also submitted that 57.0% of their respondents agreed with the statement that "most obese people feel that they are not as good as other people", which is similar to what this study revealed that 39.2% of respondents disagreeing with the statement that views obese persons as confident as other people". Few (29.6%) of the respondents in this study agreed that obese people are as happy as non obese people which differs from the findings of [23] study where 63.3% of their respondents agreed that obese people feel unhappier than others. This study revealed that majority had positive attitude towards being obese. This implies that majority of women of reproductive age are favourably disposed to obesity. Positive disposition to overweight and obesity can hinder the effectiveness of weight control health education and promotion intervention programs.

When the prevalence of obesity among the respondents in this study was compared to the findings from other African countries, it is similar to the 18.0% that was reported in a study among urban dwellers in the Republic of Benin [24] but higher than the 13.6% reported in Ghana [25]. An earlier cross-sectional study in the southwestern part of Nigeria also found obesity to be present in 21.2% of the subjects [26]. The WHR assessment of participants in this study revealed that more than half (52.4%) had truncal obesity.

Conclusion and recommendation

The prevalence of obesity is gradually on the increase and the implications on reproductive health among WRA have not been fully understood by many of the respondents. Ironically, majority of the respondents in this study were favourably disposed towards obesity. This calls for relevant health promotion and education interventions to tackle the increasing prevalence of overweight and obesity. This implies that there is a need to create awareness that will assist in change in knowledge through appropriate health education program. Subsequently, availability of programs serving as reinforcement will assist in changing perception and attitude towards obesity. Nutrition education has a very strong role to play as part of the interventions to foster healthy eating as well as engagement in some controlled physical exercises among this group of women. The infertility clinics in Obstetrics and Gynaecology Departments should include weight management and control as parts of the screening and management of infertile couples. A similar study on men's knowledge of the relationship between obesity and fertility is very necessary

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