

BODY SIZE PERCEPTIONS OF WOMEN AND OBESITY IN URBAN UGANDA

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ABSTRACT In 2016, up to 17.1% of women in urban Uganda were obese. Previous research in the area has highlighted that body size increases were positively viewed by older women. In this study, the body size of 540 women was classified using the Body Mass Index (BMI). Their body size perceptions were identified from a combination of participant observations and interviews, both semi-structured and in-depth. 21 (3.9%) of the women were classified as underweight, 264 (48.9%) as normal, 146 (27.0%) as overweight, and 109 (20.2%) as obese. The perception that one's body size was Just enough (normal) was commonest in the group of women classified as being overweight, 102 (69.9%). In addition, 393 (72.8%) of the women had no desire to change their body size. The positive perception of a big body size was perpetuated by its association with beauty, health, wealth, and maturity. The important indicators that one was Too fat (obese) were a feeling that one was too heavy and trouble finding fashionable fitting clothes. Nevertheless, intentional control of body size was uncommon, attempted by 72 women (13.3%). Obesity control efforts in Uganda may thus benefit from tackling the observed sociocultural barriers and emphasizing the implication of an obese body size on mobility and access to fashionable clothing.

Key Words: Too thin; Just enough; Too fat; Big; Body mass index.

INTRODUCTION

The Body Mass Index (BMI) classifies the body size of adults into four major categories based on weight and height. These are: underweight ($< 18.5 \text{ kg/m}^2$), normal weight ($18.5\text{--}24.99 \text{ kg/m}^2$), overweight ($\geq 25 \text{ kg/m}^2$), and obese ($\geq 30 \text{ kg/m}^2$). Overweight and obesity are synonymously described as indicative of excessive fat accumulation in the body (WHO, 2004), and are among the leading risk factors for mortality in the world (GBD, 2015).

Although the prevalence of obesity and overweight has been highest in high income countries with a GNI per capita of \$12,055 or more (World Bank, 2018), great increases have been reported in the lower-income countries that have a GNI per capita of \$995 or less (World Bank, 2018; WHO, 2016a). In Uganda, the highest prevalence of obesity has been observed in adult females where it increased from 0.9% to 6.8% between 1975 and 2016 (WHO, 2016b), occurring most commonly in those living in urban areas (12.5%), the older (those in their 30s-12.1%; or 40s-12.6%), the wealthier (16.9%), and the more educated (17.5%) (UBOS, 2018).

Positive self and societal perception of a body size categorized as overweight has been previously reported in many parts of Africa (Appiah et al., 2016; Ettarh et al., 2013; Holdsworth et al., 2004; Okoro et al., 2014; Tuoyire et al., 2017;

Venter et al., 2009) in places located in urban Ghana, Kenya, Senegal, Nigeria, and South Africa. Such notions have been shown to negatively influence the readiness of women to lose weight (Okop et al., 2016), and have been associated with the existence of a high prevalence of obesity and overweight (Appiah et al., 2014).

The literature has explored the body size perceptions of women in reference to a figure rating scale in which individuals are shown several figures representing different BMIs and are asked to choose the one that they consider to be most representative of their current body size, and another that they consider to be representative of their desirable body size. An agreement between these two is considered to indicate the respondent's body size satisfaction, while a disagreement indicates body size dissatisfaction (Benkeser et al., 2012).

It has however been pointed out that in using this method, it was not uncommon for the participants to choose differently when the order of presentation of the different body size images was changed (Doll et al., 2002), and that the order bias may account for the discrepancies between the figures identified by participants as being representative of one's current body size versus that identified as being representative of one's ideal body size. In addition, only a handful of studies have considered the reasons why women in Africa tend to perceive themselves as being thinner than they are, and why they tend to find increases in body size desirable, such as the association of an overweight body size with affluence (Appiah et al., 2016) and/or health (Draper et al., 2016), as reported from studies in Ghana and South Africa, respectively.

In Uganda, the only known study on women's body size perceptions highlighted mixed perceptions of women 40 years and older towards their increased body size owing to the societal association of a big body size to a good quality of life, beauty, and health (Janzon et al., 2015). It is thus imperative to further explore the prevalent perceptions of women of different age groups on body size and their possible role in the increasing prevalence of obesity in adult Ugandan women.

This study had 4 specific objectives as follows: 1) to determine the prevalence of obesity and associated factors, 2) to compare body size self-perception to the global classification using WHO's BMI guideline and identify its role in the desire to change body size, 3) to document the societal perceptions that influence body size self-perception, and 4) to explore the experience of intentional body size control in the target group of women living in the urban area located close to the capital city in Central Uganda.

RESEARCH METHODS

I. Research Area

The study was conducted in two villages of Mukono Central Division, located in Mukono District in Central Uganda (Fig. 1). Mukono Central Division covers 32.3 km² and serves as the District's administrative and commercial center. The

Division is situated along the Kampala-Jinja road, about 21 km east of Kampala Capital City (Mukono District Local Government, 2015). According to the 2014 census, Mukono Central Division had a total population of 69,671 people, with a density of 2,157 persons per square kilometer, making it the most densely populated sub-county in the District (UBOS, 2016a).

The Division was selected for the study because many of the existing studies on overweight and obesity in Uganda have been conducted in rural and peri-urban areas distant from the capital city (Baalwa et al., 2010; Kirunda et al., 2015; Mayega et al., 2012), but the combined prevalence of overweight and obesity in Uganda has been shown to be highest (41.4%) in women living in and around the capital, Kampala (UBOS, 2018).

Furthermore, the population of the Division has been shown to be having a relatively good socioeconomic status, a factor that has been associated with obesity and overweight in Uganda. According to the most recent National Housing and Population Census of Uganda, 92.6% of the population in this Division were able to read and write, 63% of persons aged 15+ years were involved in income generating activities outside the home, and only 7.7% of the households relied

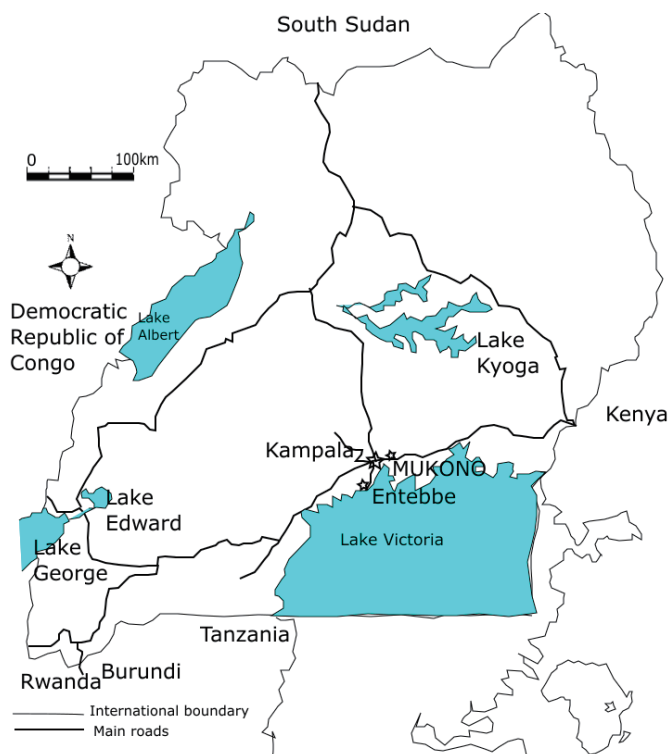


Fig. 1. Map of Uganda showing Mukono District

on subsistence agriculture as the main source of livelihood. Asset ownership was also common, with 61.3% of households found to own at least a radio. Lastly, many of the households were categorized as being food secure, with 88.9% of households reportedly having at least two meals a day (UBOS, 2016a).

II. Study Design and Participants

The study adopted a parallel mixed methods design, in which both quantitative and qualitative research methods were simultaneously applied to facilitate a comprehensive understanding of the research question (Graff, 2014). The quantitative method used was the cross-sectional survey method based on semi-structured interviews and physical measurement. The qualitative method was ethnography, based on a combination of participant observation and in-depth interviews (Bhattachajee, 2012).

The participants in the study were selected from two villages, each located in one of the 4 parishes in Mukono Central Division. The 2014 census report showed that there were 7,251 and 11,612 females living in each of the 2 parishes in the study, respectively (UBOS, 2016b). Those older than 15 years old made up about 55.2% of the population (UBOS, 2016a). This means that there were about 4,001 and 6,408 women aged 15 years and older in each of the parishes. There were 10 villages in the first parish so the population of women older than 15 years old in the first village was estimated at 400. The second parish had a total of 9 villages so the proportion of women older than 15 years in the second village was estimated at 700. The total study population was thus estimated at 1,100 women. The village leaders acknowledged these estimations as representative of their village populations as they know them, although village level population data was not yet available at the time of the study.

The sample size required was determined using Cochran's formula also recommended for cross sectional surveys by Charan and Biswas (2013) as follows:

$$n = \frac{z^2 P(1 - P)}{c^2}$$

Where:

n = Sample size.

z = Z Value (2.58 for 99% confidence interval).

P = Expected prevalence of the condition expressed as a proportion of 1 based on previous or pilot studies (overall for overweight and obese women in the greater Kampala was 41.4% (UBOS, 2018).

c = Confidence level = 0.05.

$$n = \frac{(2.58)^2 0.414(1 - 0.414)}{0.05^2} = 646 \text{ respondents}$$

In total, 656 women were invited to participate in the study. Of these, 31 women declined to participate in the study and 85 women were excluded, due either to pregnancy or because they were still breastfeeding a child under 6 months of age. The final sample size included 540 women (83.5% of the target sample size). Of these, 63 women participated in the qualitative study. These were purposively selected to include a relatively equal proportion of normal weight, overweight, and obese women. By the point of saturation, the sample included 1 woman classified by BMI as being underweight, 28 women classified as being normal, 14 women classified as being overweight, and 20 women classified as being obese. The study included both women who worked away from home and those that were at home during the time of the study.

III. Data Collection

All participants in the cross-sectional survey were measured and asked about how they perceived their body size. The women in the qualitative study were asked more questions pertaining to their ethnicity, parenthood, marital status, education level, employment, occupation, length of residence in the urban area, and their household size, among others.

All measurements were taken according to the WHO protocol with the women barefoot, standing upright, and wearing no more clothing than necessary. The height measurements were taken using the Prestige Stadiometer (T023000201 by Prestige, India) while the weight measurements were taken using the Tanita Body Composition Meter (BC-202-WH by Tanita, Japan) that automatically returns results on both weight and BMI when an individual stands on it following input of age, gender and height. The women were then classified into four major categories according to the WHO guideline.

The author conducted fieldwork for a total of 204 days between February 2016 and September 2017. During this time, she lived as a resident in the study site and conducted participant observation and interviews with participants in homes, shops, markets, bars, hair salons, and hospitals, while taking detailed field notes. This enabled her to be part of the village and facilitate an “emic” understanding of the research question. Unstructured interviews were conducted as part of the participant observation to facilitate a deeper understanding of the daily interactions that were being observed. Responses to the interview questions were written out verbatim, in the languages that they were spoken, i.e. Luganda, Lugishu, and English. Qualitative data collection proceeded until no new data about the research topics emerged from the continued interviews (63 interviews).

IV. Data Analysis

The data from the cross-sectional survey was analyzed using SPSS v. 25. The BMI of each woman was coded into one of the 4 categories based on the guideline by WHO, i.e. underweight, normal, overweight, or obese. The frequency and prevalence of each category as a percentage of the total population was determined using the descriptive statistics function.

The common responses to the question on body size self-perception could be classified into 3 categories, namely: 1) Too thin (underweight), 2) Just enough (normal), and 3) Too fat (obese). The analysis of the body size self-perception in relation to the WHO global classification was arrived at by running a cross tabulation which also displayed analysis of the chi square statistic. This tabulation displayed the frequencies, from which the percentages were calculated and tabulated manually.

Similarly, the 3 common responses to the question on the desire to change body size were coded as: 1) neither desire to increase nor reduce body size, 2) desire to increase body size, and 3) desire to reduce body size. To analyze the willingness of the women to change their body size in relation to both the WHO global classification and their self-perception, the author ran a cross tabulation which also displayed the analysis of the chi square statistic.

To identify some of the factors which may be associated with BMI and self-perception in the study area, the women from the qualitative study in each of the 4 BMI groups were descriptively compared based on several sociodemographic characteristics using means and standard deviations. Spearman's rank correlation was used to determine the existence of relationships.

The data on the societal perceptions on body size was analyzed by thematic content analysis (Bhattachajee, 2012) using QDA Miner software. All the output from the study was initially categorized into several small groups each including all information that appeared to be connected to each other. Similar groups were then further categorized into fewer groups, until the themes from the data were clearly understood and decided upon. The data on the women's experience of intentional control of body size was also summarized using frequencies and percentages.

RESULTS

I. Sociodemographic Characteristics of the Women in the Study

Table 1 shows the age distribution of women in the cross-sectional survey. The youngest woman in the study was 15 years old, while the oldest woman in the study was 81 years old. The mean age of the women in the study was 31.4 years old, and majority of the women in the study were in their 20s or 30s, 233 (43.1%) and 149 (27.6%), respectively.

Table 2 shows the sociodemographic characteristics of women in the qualitative study. The women in the study were mostly of Ganda ethnicity, 53 (84.2%). The mean age was 30.7 years (SD = 10.7). Most of the women in the study were in their 20s or 30s, 32 (50.7%) and 17 (27.0%), respectively. Most women, 56 (88.9%), were married or living with a spouse, and 60 (95.2%) had at least 1 child. The mean number of children per woman in the study was 2.7 (SD = 2). The mean household size in the study was 3.8 (SD = 1.4). Most of the women in the study lived in households comprised of 3, 22 (34.9%) or 4, 20 (31.7%) people. The mean number of years of education completed by the women in the study was 9.2 years (SD = 3.4).

Table 1. Age group classification of women in the study

Age group	Number	Percent	Mean	Range	SD
15–19	49	9.1			
20–29	233	43.1			
30–39	149	27.6			
40–49	62	11.5			
50–59	32	5.9			
60–69	9	1.7			
70–79	5	.9			
80–89	1	.2			
Total	540	100.0	31.4	15–81	11.3

Table 2. Sociodemographic factors by BMI status of women in the qualitative study

	Underweight (1)	Normal (28)	Overweight (14)	Obese (20)	Total (63)	SD
Ethnic origins						
Ganda (Central)	1	21	13	18	53	
East	0	1	1	0	2	
West	0	5	0	2	7	
Other country	0	1	0	0	1	
Age (mean years)	20	26.1	32	36.7	30.7*	10.7
Marital status (N)						
Married	1	24	14	17	56	
Separated	0	1	0	3	4	
Never	0	3	0	0	3	
Children number (mean)	1	1.8	3.1	3.8	2.7*	2.0
Household size (mean N)	3	3.5	3.4	4.6	3.8*	1.4
Education (mean years)	10	9.9	9.4	8.0	9.1	3.4
Urban residence (mean years)	2.0	2.9	9.1	9.1	6.2*	7.9
Employment status (N)						
Not working	0	8	5	6	19	
Working	1	20	9	14	44	
Occupation category (N)						
Not working	0	8	5	6	19	
Informal	1	18	9	12	40	
Formal	0	2	0	2	4	
Daily expenditure (mean UGX)	15,000	8,803	13,436	11,725	10,859*	4,786

Where * denotes a significant difference

Although many women, 41 (65.1%), were born in rural areas, most of the women, 58 (92%), had lived in an urban area for at least a year. The mean length of urban residence was 6.2 years (SD = 7.9). Nearly all the women, 62 (98.4%), had moved to the study area from another part of the country. The common reasons for migration were marriage or in the interest of the spouse for 31 (49.2%), and to find work 23 (36.5%). Accordingly, many of the women, 44 (69.8%), were working. The commonest occupation categories were tending small shops 11 (17.5%), and selling fresh 6 (9.5%), or cooked produce 7 (11.1%). The mean daily expenditure of the women in the study was 10,859 Ugandan shilling (UGX) (SD = 4,786), approximately equivalent to 2.9 USD at the time of the study.

On average, the obese women were older, had more children, lived in households with more people, had lived in an urban area for longer, and had a higher daily expenditure than the normal weight women. Age was significantly positively correlated with the number of children ($r(63) = 0.496, p < 0.01$). In turn, the number of children was significantly positively correlated with household size ($r(63) = 0.369, p < 0.01$).

II. Prevalence of Obesity in the Study Area

Of the 540 women, 21 (3.9%) were classified by BMI as being underweight, 264 (48.9%) as normal, 146 (27%) as overweight, and 109 (20.2%) as obese (Table 3). The woman with the lowest BMI was classified as moderately thin, at a BMI of 16.4 kg/m² while the woman with the highest BMI was classified as obese Class III (morbid obesity), at a BMI of 45.1 kg/m².

Table 3. BMI classification of body size of women in the study

BMI classification	N	%
Underweight	21	3.9
Normal weight	264	48.9
Overweight	146	27.0
Obese	109	20.2
Total	540	100

III. BMI, Self-Perception and the Desire to Reduce or Increase Body Size

The body size self-perception of the women could be classified into 3 main groups, i.e. 165 (30.6%) who perceived their body size as being Too thin (underweight) —“*mutono nyo*”, 85 (15.7%) who perceived their body size as being Too fat (obese) —“*munene nyo*”, and 290 (53.7%) who perceived their body size as being Just enough (normal) —“*malabumazi*”. The body size self-perception of the women was significantly different from their BMI classification ($p < 0.001, N = 540$) (Table 4).

Table 4. Self-perception of women

Self-perception of body size	Under-weight	Normal weight	Overweight	Obese	Total	Chi square, <i>p</i> value, <i>df</i>
Just enough (Normal)	9 (42.9%)	125 (47.4%)	102 (70.0%)	54 (49.5%)	290 (53.7)	169.7, < 0.001, 6
Too small (Underweight)	12 (57.1%)	127 (48.1%)	22 (15.0%)	4 (3.7%)	165 (30.6)	
Too fat (Obese)	0 (0%)	12 (4.5%)	22 (15.0%)	51 (46.8%)	85 (15.7)	
Total	21 (100%)	264 (100%)	146 (100%)	109 (100%)	540 (100%)	

Of the women categorized by BMI as being underweight, 12 (57.1%) perceived their body size as being Too thin (underweight) while the rest, 9 (42.9%) perceived their body size as being Just enough (normal). Of the women categorized by BMI as being normal, 127 (48.1%) perceived their body size as Too thin (underweight), 124 (47.4%) perceived their body size as Just enough (normal), while 12 (4.5%) perceived their body size as Too fat (obese). Of the women categorized by BMI as overweight, 22 (15.1%) perceived their body size as Too thin (underweight), 102 (69.9%) perceived their body size as Just enough (normal) while 22 (15.1%) perceived their body size as Too fat (obese). Of the women categorized by BMI as obese, 4 (3.7%) perceived their body size as Too thin (underweight), 54 (49.5%) perceived their body size as Just enough (normal), while 51 (46.8%) perceived their body size as Too fat (obese). This tendency was common and significant across all age groups (Table 5).

Those who perceived themselves as being Too small (underweight) often expressed a desire to increase their body size, and their description of their body size was often followed by reasons as to why they felt a need to increase, such as: “*Njagala kweyongera ko katonu, banyoma nyo olwobutono* —I want to increase [in size] a bit, people despise me too much because of smallness” (Participant K117, 18 years old, normal weight BMI, where K is the village name, 117 is the assigned participant code number alias for the real name, 18 years old is the age, and normal weight is the body size category as classified by BMI).

Likewise, those who perceived themselves as being Too fat (obese) usually expressed a desire to reduce their body size, giving reasons such as: “*Njagala kutoola ko kuba mpulira neekoye. Ogenda mu boutique nolaba akagoye akakunyumide naye nga tekakutuuka* —I want to reduce the size because I feel I am fed up with myself. You (I) go to a boutique and see clothing that you like but then it cannot fit you (me)” (K176, 24 years old, obese BMI).

Table 6 shows the desire of women to increase or reduce their body size in relation to the BMI-derived body size classification and the self-perceived body size. Only 63 (11.7%) of the women expressed a desire to reduce their body size. 1 (1.6%) of these was a woman who perceived her body size as being Too thin (underweight), 14 (22.2%) were women who perceived their body size as being Just enough (normal) while 48 (76.2%) were women who perceived their body size as being Too fat (obese). 84 (15.6%) of the women desired to increase their body size. Nearly all these, 80 (95.2%) were women who perceived their body size as Too small (underweight). Only 3 (3.6%) women perceived their body size as Just enough (normal), and 1 (1.2%) woman thought herself Too fat (obese). The rest of the women, 393 (72.8%), had no interest in changing their body size. Among them, 84 (21.3%) women perceived their body size as Too small (underweight), 273 (69.5%) women as Just enough (normal), while 36 (9.2%) women perceived their body size as Too fat (obese). Body size self-perception of women was significantly positively associated with the desire to increase, reduce, or maintain their body size ($X^2 = 380$, $df = 4$, $p < 0.001$).

Table 5. Self-perception by BMI in different age groups

Age X ² , df	Perception	BMI category				Total
		Underweight	Normalweight	Overweight	Obese	
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15–19 16.2, 6	Just enough (Normal)	3 (60.0)	11 (32.4)	3 (37.5)	0 (0.0)	17 (34.7)
	Too small (Underweight)	2 (40.0)	21 (61.8)	1 (12.5)	1 (50.0)	25 (51.0)
	Too fat (Obese)	0 (0.0)	2 (5.9)	4 (50.0)	1 (50.0)	7 (14.3)
	Total	5 (100)	34 (100.0)	8 (100.0)	2 (100.0)	49 (100.0)
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20–29 72.2, 6	Just enough (Normal)	4 (44.4)	68 (50.0)	37 (67.3)	15 (45.5)	124 (53.2)
	Too small (Underweight)	5 (55.6)	61 (44.9)	8 (14.5)	0 (0.0)	74 (31.8)
	Too fat (Obese)	0 (0.0)	7 (5.1)	10 (18.2)	18 (54.5)	35 (15.0)
	Total	9 (100)	136 (100.0)	55 (100.0)	33 (100.0)	233 (100.0)
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30–39 64.1, 6	Just enough (Normal)	1 (25.0)	32 (48.5)	30 (73.2)	18 (47.4)	81 (54.4)
	Too small (Underweight)	3 (75.0)	32 (48.5)	9 (22.0)	1 (2.6)	45 (30.2)
	Too fat (Obese)	0 (0.0)	2 (3.0)	2 (4.9)	19 (50.0)	23 (15.4)
	Total	4 (100)	66 (100.0)	41 (100.0)	38 (100.0)	149 (100.0)
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40–49 18.4, 4	Just enough (Normal)	0	7 (43.8)	21 (77.8)	11 (57.9)	39 (62.9)
	Too small (Underweight)	0	8 (50.0)	4 (14.8)	1 (5.3)	13 (21.0)
	Too fat (Obese)	0	1 (6.3)	2 (7.4)	7 (36.8)	10 (16.1)
	Total	0	16 (100.0)	27 (100.0)	19 (100.0)	62 (100.0)
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50–59 17.1, 6	Just enough (Normal)	0 (0.0)	2 (40.0)	8 (72.7)	8 (53.3)	18 (56.3)
	Too small (Underweight)	1 (100.0)	3 (60.0)	0 (0.0)	1 (6.7)	5 (15.6)
	Too fat (Obese)	0 (0.0)	0 (0.0)	3 (27.3)	6 (40.0)	9 (28.1)
	Total	1 (100)	5 (100.0)	11 (100.0)	15 (100.0)	32 (100.0)

Table 6. BMI, body size self-perceptions, and the desire to increase or reduce body size

Body size self-perception	BMI Category		Neither increase nor reduce	Increase	Reduce	Total
Too small (Underweight)	BMI category	Underweight	4	8	0	12
		Normal weight	68	59	0	127
		Overweight	9	12	1	22
		Obese	3	1	0	4
	Total		84	80	1	165
Just enough (Normal)	BMI category	Underweight	9	0	0	9
		Normal weight	121	1	3	125
		Overweight	96	1	5	102
		Obese	47	1	6	54
	Total		273	3	14	290
Too fat (Obese)	BMI category	Normal weight	5	0	7	12
		Overweight	11	0	11	22
		Obese	20	1	30	51
	Total		36	1	48	85
Total			393	84	63	540

IV. Perceptions Against a Body Size Perceived as Too Small (Underweight)

Factors that made a small body size, and reductions in body size undesirable included: to avoid disrespect, to look good especially when wearing traditional clothes, to look healthy, to look mature, to look wealthy, and because the husband is big or prefers bigger women. The factors commonly perceived as underlying reductions in body size were: stress, pregnancy and lactation (especially when one did not have enough food to eat), poverty/low income and constrained access to food, sickness, aging, family history, contraception, and less commonly, strenuous activity.

Having enough “flesh covering the bones” appeared to be necessary for one to feel that they “looked good (*okulabika bulungi*).” For this reason, even some women who were classified by BMI as being normal weight perceived their body size as Too small (underweight) and desired to increase it, as illustrated by one woman: “I want to increase [my size], but the body refused...” (K74, 30 years old, normal BMI). This tendency was evident in the descriptions of several other women, not only in talking about their own body size with statements such as: “I look terrible when I am small,” but also in talking about the body size of others around them in generalized descriptions such as: “fat people are appealing to look at ... but when small you look terrible ... and everybody talks about you.” One insightful comment about what exactly people may say, in the words of one participant who had an obese BMI was, “When you are small you look ugly ..., like you are sick.” In fact, several women in the study who considered their body size to have reduced in the recent past attributed it to a recent illness. Women were particularly afraid of reducing their body size because of the fear of being misperceived by others as having been infected with HIV. In the words of one woman; “When your size reduces, and you become small, they say you have

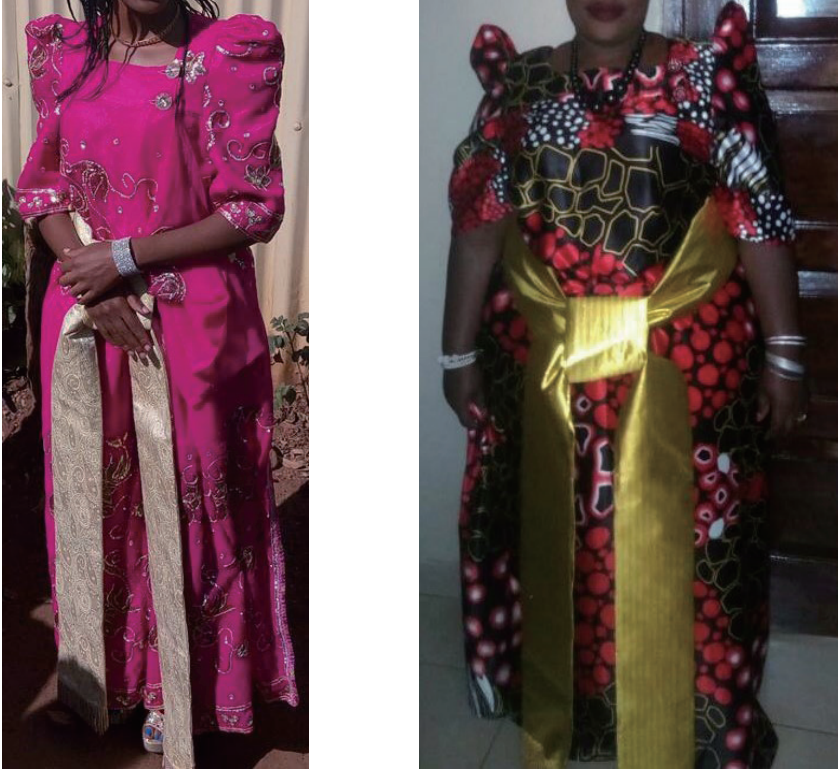


Fig. 2. *Gomesi* at a traditional marriage ceremony

‘*siliimu*’ (HIV/AIDS)” (K334, 40 years old, overweight BMI).

Increases in body size were also perceived as an inherent part of maturing in women since involuntary increases in body size were frequently experienced during and after child bearing. It was also held that small women had trouble looking good in traditional clothes such as the *gomesi* (Fig. 2), that was considered as the appropriate attire particularly for married women, especially when they attended traditional ceremonies or other formal occasions together with their husbands. For example, one woman who wanted to increase her body size said, “I haven’t gained enough weight to put on a *gomesi* and they give me the front seat” (K283, 27 years old, normal BMI). To be “given the front seat” here means that she feels that she does not have the right body size to look presentable in a *gomesi*.

Furthermore, women felt that people easily perceived them as being poor when their body size reduced or when they were small. Since food purchase was nearly the only possible means of accessing food in the study site, small people were deemed “too poor to eat and attain the desirable body size” (K436, 34 years, normal BMI). Another woman said’ “*Abantu balya kimu banagejja batya Kweno emmere eyo ku taayiza, obutaayiza* —People eat only one meal how will they grow fat with this food which is just for ‘trapping’ (where trapping means that one has no single assured source of food, but rather needs to have several strat-

egies on how to obtain food. This expression is used to emphatically state the feeling that food is hard to find)” (K140, 40 years old, overweight BMI).

Body size was thus an accepted indicator of one’s life situation, “*embeera*”, illustrated by K87: “I would like to gain weight... I do not want to announce my situation.... For them they know that it is a fat person who has some money. So, if you are small, you find that even though you may be better off than someone economically, they will despise you” (K87, 39 years old, normal BMI).

In addition, stress, economic or otherwise, was inevitably thought of as a cause of reduction in body size. Many women reported that they had experienced a reduced desire to eat when they were stressed, had many thoughts, or problems (*ebilowoozo*). Therefore, reduction in body size and a smaller body size was often associated with stress from poverty and lacking enough money to meet one’s needs and those of their immediate family.

The disrepute of a small body size was expressed in three common Ganda words, *omuntu akunyoma*, *akujooaga*, and *akuyisa mu amaaso*, which all meant that people with a body size that was considered as Too small (underweight) were liable to being disrespected, despised, and bullied by others. The words denote the opposite of the highly prized “*ekitiibwa*”, loosely translated as respect or to be highly esteemed, that was desirable for many women. Many normal weight women stated that others laughed at them, and in some cases, they were labelled with names such as *smolo* or *nakabiri*, and other derogatory terms that were used to describe a body size that was considered as being Too thin (underweight).

V. Perceptions against a Body Size Perceived as Too Fat (Obese)

Factors that made a big body size, and increases in body size undesirable included; heaviness and trouble getting around, increased risk of chronic diseases, difficulty in finding affordable and fashionable fitting clothes, loss of a good body shape “figure,” discrimination in accessing public transportation, fear of being abandoned by husband/spouse, and the risk of being wrongly perceived as older and richer. The factors commonly perceived as underlying increases in body size were child bearing, peace of mind/the absence of stress, family history, use of contraception, having money and enough to eat, growing up, non-strenuous work, good income, and good health.

The most common concern that the women had about a body size perceived as being Too fat (obese) was the “heaviness” that reduced one’s ability to “manage themselves (*okwesobola*)” (K282, 36 years old, obese BMI). Some women had reached this conclusion at a point in their lives when they had perceived themselves as Too fat (obese), from watching other women around them whom they perceived as Too fat (obese), or from their own experience with their current body size that they perceived as Too fat (obese). They spoke of the difficulties in walking and experiencing rapid increases in heart rate when they tried to achieve some ordinary tasks such as walking uphill (K227, 49 years old, overweight BMI). They observed that this heaviness also reduced their ability to work since their work usually involved lifting things and moving from one place to

the other (K84, 37 years old, obese BMI). For many women such recognition was a red light, and they desired to reduce their body size. For example, K342 (51 years old, obese BMI) wanted to reduce her body size because she felt too heavy and often experienced back aches and swollen feet. In fact, some overweight BMI women were comfortable with their body size if they did not feel heavy (K223, 56 years old, overweight BMI). Others felt comfortable because they did not feel as lazy and weak as they used to and experienced less difficulty in walking, since their body size had reduced in the recent past (K232, 23 years old, overweight BMI).

Some women asserted that “Being fat comes with diseases.” Raised blood pressure, locally called “pressure” or “*pulesa*” was the most commonly mentioned non-communicable disease (NCD) risk factor associated with a body size perceived as being Too fat (obese). One woman with known raised blood pressure and diabetes remorsefully recounted the increases in body size that she had experienced as she matured, saying, “I have got this body in adulthood and I think it is the one that has come with these diseases” (K83, 63 years old, overweight BMI).

Although the women frequently voiced a fear of “raised blood pressure” as a disincentive for increases in body size, it appeared that the women more commonly appreciated “stress” as the underlying cause of “raised blood pressure.” For instance, one overweight BMI woman who had a known high blood pressure condition said she got it because “I have a lot of problems” (K227, 49 years old, overweight BMI). Another woman was confident that she could not get high blood pressure or hypertension because it did not happen when she experienced what she considered the gravest problem in her life which was the loss of her son, saying, “See it failed to attack me when my child died...” (K301, 80 years old, obese BMI).

There was also a concern by the women that it was difficult for people who were obese to find suitable clothes, with the new fashion trend of closer fitting clothes. One normal weight woman who was comfortable with her body size for example stated that, “I do not want to be too much because this is a generation of fitting clothes but even if one (a person that is Too fat) dresses up, they cannot look good. —*mulembe gwa fitingi, naye nebwoyambala tonyuma.*” (K49, 29 years old, normal BMI). “*Fitingi*” clothes refer to tightly fitting clothes in contrast to the loosely fitting “traditional clothes.” Such tighter clothing is the most readily available on the market, affordable, and the most fashionable. It thus appeared as a major disincentive for increasing one’s body size, and an incentive to reducing it for many women. One obese woman who wanted to reduce her body size said, “Clothes can’t fit me, I can’t put [them] on and look good” (K73, 32 years old, obese BMI), and another said, “Thin people look good in clothes” (K294, 36 years, obese BMI).

VI. Efforts and Strategies to Increase or Reduce Body Size

Only 72 women (13.3%) reported ever having made any sort of conscious effort to change their body size, of which 11 (2.0%) had tried to increase their

body size while 61 (11.3%) had tried to reduce their body size. Of those that had tried to increase their body size, 3 (27.3%) were of overweight BMI and 8 (72.7%) were of normal weight BMI. Of those that had tried to reduce their body size, 21 (34.4%) were of normal weight BMI, 13 (21.3%) were of overweight BMI, and 27 (44.3%) were of obese BMI (Table 7).

Table 7. Attempted body size control efforts by BMI category

Body size control effort	Normal weight	Over-weight	Obese	Total
Yes, to reduce	21	13	27	61
Yes, to increase	8	3	0	11
Total	29	16	27	72

Although many women, 165 (30.6%), perceived themselves as being Too small (underweight) only a few women, 11 (2.0%), had made some intentional efforts towards increasing their body size. Many women believed that their body size would increase involuntarily in the absence of disease and the stress that caused lack of appetite. This is illustrated in the following statements: “When I get peace, God will bring fatness, but now I am sickly” (K71, 22 years old, normal BMI), and “If I had no stress, I would be fat” (K78, 35 years old, normal BMI). Furthermore, taking an action to increase one’s body size was perceived as a costly venture. In the words of one woman, “I would like to add some weight and look healthier, but I am too poor to eat and attain my desired weight” (K436, 34 years old, normal BMI).

Women who did try to gain weight reported using modern contraception methods (1 woman, 6.7%), buying appetite supplements to support increased food intake (3 women, 20.0%), eating a lot of food (5 women, 33.3%), and eating foods believed to support weight gain such as *posho* or porridge, meat, milk, ice cream and yoghurt (6 women, 40.0%). Others bought foods that were marketed as body boosters. One woman however reported having given up on buying such a kind of porridge to increase her body size because it was too expensive.

The most common strategy for reducing body size was engaging in what 29 (38.0%) of the women described as “physicals” or exercise. They did not use the local word “duiro,” due to its connotation of heavy exercise. The women had adopted light forms of exercise. The most common among these was “walking around,” not taking a motor cycle taxi, *boda-boda*, for transport, keeping themselves busy in work or farming, and sometimes jogging. Women hoped that they could keep off the excess weight if they kept a busy schedule or incorporated light physical activity in their daily activities. For instance, 2 obese women were surprised at how much they weighed despite feeling that they kept “active” at work.

The next most common strategy to reduce one’s body size for 17 women (22.0%) was to use food items such as citrus, ginger, garlic, and even a strong locally brewed spirit known as *Waragi* perceived as “fat burning (*bisala amasavu*).” Drinking warm water in the morning was commonly recounted, by 6

women (8.0%), as a strategy to reduce abdominal fat. Finally, 6 women (8.0%) reported having purchased herbal products and supplements, such as *kaziire*, marketed as weight reducing in the form of slimming tablets, slimming capsules, and slimming body oil.

The strategy involving restriction of food intake was taken by 18 women (24.0%), where strategies such as not eating as much (*okendeeza endya*), skipping meals, especially the evening meal (*obutalya kyagulo*), or avoiding food items perceived as fattening (*ebigeza*) such as sugar, oils, fats, and fried foods (*ebisavusavu*) and meats while increasing the consumption of foods perceived to enhance the reduction of body size such as greens and fruits were reported. However, one woman reported that she had given up on food restriction when she developed ulcers.

The strategies that were reported to have been used with some level of success in changing body size were: 1) medicine and supplements for both weight gain and weight loss respectively as indicated by one woman, "I used not to have a good appetite, I bought medicine to boost my appetite. I think it's the reason I am fat now" (K456, 39 years old, obese BMI), and 2) running for weight loss (K566, 21 years old, normal weight BMI). But many women who had "tried slimming tablets, capsules, vaseline, herbals" (K622, 23 years old, obese BMI; K578, 40 years old, obese BMI; K657, 27 years old, obese BMI; K371, 27 years old, obese BMI), voiced frustration at failing to achieve their desired body size despite having tried several different methods such as slimming medicine, drinking hot water, lemon juice, skipping meals, and even reducing the amount of food they eat.

DISCUSSION

The present study reinforced the reports of a high prevalence of BMI-defined obesity in women living in areas of Uganda that are close to the capital city, Kampala. This area, described as greater Kampala was reported to have a BMI-defined female overweight and obesity prevalence as high as 24.3% and 17.1%, respectively, in 2016 (UBOS, 2018).

Household size and child bearing have been indicated as possibly important determinants of obesity in women in addition to age, urban residence, and socio-economic status that were reported in previous studies (Baalwa et al., 2010; Kirunda et al., 2015; Mayega et al., 2012). From this study, it appeared that older women and women from larger households were more likely to be obese because they were more likely to have more children. There is substantial evidence showing that child bearing-related increases in body size are a risk factor for BMI-defined overweight and obesity in women, although it remains to be understood if these are due to lifestyle changes during pregnancy and lactation, gestational weight gain, or a combination of factors (Gunderson et al., 2004; Gunderson, 2009; Gunderson et al., 2008).

The women with a body size defined as being overweight had the highest incidence of perceiving their body size as Just enough (normal) 102 (70.0%). This

appeared to be facilitated by the positive social perception of a big body size as being more respectable, good looking and representing good health, maturity, good standard of living, absence of stress and strenuous activity, and looking good in traditional clothing.

The positive perception towards an overweight body size appeared to be preserved by an existing social stigma surrounding a small or reduced body size, where poor health (even HIV/AIDS) was suspected, let alone poverty. In fact, because of its “slimming effects on the body” the local term for the AIDS in Ganda and other Bantu languages is *siliimu*, from the English word, slim (Stone, 2010). That this kind of perception persists long after the advent of ART (antiretroviral therapy) for AIDS, is likely associated with the still high prevalence of HIV/AIDS in Uganda, especially in women and even more so, in the region where the study area is located. According to a recent report, 6.2% of adults aged 15–64 years in Uganda were living with HIV (approximately 1.2 million people), and the prevalence was higher in women (7.6%) particularly those living in urban areas (9.8%). The region where Mukono is located has the highest prevalence of HIV/AIDS in the country at 8.0% (Ministry of Health et al., 2016).

Less than half of the women with BMI-defined obese body size in the study perceived their body size as being Too fat (obese) (51 women, 46.8%). Of these, 30 (58.8%) were interested in reducing their body size. In turn, up to 27 (90.0%) of these had made some effort to this end. A perception that one was Too fat (obese) was consistent with a desire to reduce body size, which in turn was consistent with the taking of an action to reduce body size.

The perception that one was Too fat (obese), and the desire to reduce the body size occurred most often when women felt too heavy to comfortably perform the activities they needed to do in their daily living. The dependence on imported second hand clothes also appeared to play a major role in this. Since such clothes were mostly available in smaller sizes, women having trouble fitting into the available clothes on the market started to perceive their body size as being Too fat (obese). Body size and body image have been shown to influence clothing choices of women in developed countries (Reddy & Otieno, 2013). This study found that an inverse relationship exists in a developing country where clothing choice is more limited.

Lastly, in a place where access to routine screening for NCDs and body measurement is nearly nonexistent (Kibirige et al., 2017), feeling heavy and trouble finding affordable, fashionable clothes were the most common and reliable way for women to tell that they were (becoming) Too fat (obese). Framing public health messages around the implications of obesity on the ability to work as well as the difficulty in finding fashionable clothes may be a useful addition to the current emphasis on the risk of non-communicable diseases, which appears to be still competing with stress as the perceived cause of raised blood pressure. This also demonstrates a gap in NCD risk awareness strategies that needs to be addressed by campaigns clarifying the health problems that may ensue from raised blood pressure and hypertension, and why obesity may be of greater concern than stress.

The findings of this study in the selected communities thus suggest that social-

cultural factors act as both push and pull factors in the rising levels of obesity observed in Ugandan women. The social cultural pressure that i) stigmatizes HIV/AIDS, ii) associates small body sizes to poverty, stress, ill health and HIV, and iii) that equates a big body size with looking mature and looking good in traditional clothes (*gomesi*) pushes on one hand, women with normal weight and even some who are overweight BMI to contemplate weight gain, while feeling heavy and difficulty in finding fashionable clothes pushes women to contemplate the need for reducing body size and/or avoiding increases. These factors which account at least in part for the uncommonness of intentional efforts to control body size (13.3%) in the study area play a significant role in the observed high prevalence of overweight and obesity.

CONCLUSION

The stigma towards a small body size in the study area hampers many women's awareness of their increased body size until they become obese, and even when they do, they remain reluctant to act until they have experienced functional limitations and difficulties in finding fashionable clothes. Those who have reached this point however easily adopt strategies towards reduction of body size albeit with little success. These thus provide a window of opportunity for targeted interventions against obesity, which may compliment the current emphasis placed on NCD risk prevention but also point to the need for research on what works in the management of obesity in Uganda.

REFERENCES

- Appiah, C.A., G.E. Otoo & M. Steiner-Asiedu 2016. Preferred body size in urban Ghanaian women: Implication on the overweight/obesity problem. *Pan African Medical Journal*, 23: 1–9. Online. <http://doi.org/10.11604/pamj.2016.23.239.7883> (Accessed December 24, 2017).
- Appiah, C.A., M. Steiner-Asiedu & G.E. Otoo 2014. Predictors of overweight/obesity in urban Ghanaian Women. *International Journal of Clinical Nutrition*, 2(3): 60–68. Online. <http://doi.org/10.12691/ijen-2-3-3> (Accessed December 24, 2017).
- Baalwa, J., B.B. Byarugaba, E.K. Kabagambe, K.E. Kabagambe & A.M. Otim 2010. Prevalence of overweight and obesity in young adults in Uganda. *African Health Sciences*, 10(4): 367–373. Online. <http://www.ncbi.nlm.nih.gov/pubmed/21416039> (Accessed December 24, 2017).
- Benkeser, R.M., R. Biritwum & A.G. Hill 2012. Prevalence of overweight and obesity and perception of healthy and desirable body size in urban, Ghanaian women. *Ghana Medical Journal*, 46(2): 66–75. Online. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3426384/> (Accessed December 24, 2018).
- Bhattachjee, A. 2012. *Social Science Research: Principles, Methods, and Practices. Textbooks Collection. Book 3*. Online. https://scholarcommons.usf.edu/oa_textbooks/3 (Accessed December 17, 2017).
- Charan, J. & T. Biswas 2013. How to calculate sample size for different study designs in medical research? *Indian Journal of Psychological Medicine*, 35(2): 121–126. Online.

- <https://doi.org/10.4103/0253-7176.116232> (Accessed December 24, 2017).
- Doll, M., G.D.C. Ball & N.D. Willows 2002. Rating of figures used for body image assessment varies depending on the method of figure presentation. *International Journal of Eating Disorders*, 35: 109–114. Online. <http://doi.org/10.1002/eat.10233> (Accessed December 17, 2017).
- Draper, C.E., K.J. Davidowitz & J.H. Goedecke 2016. Perceptions relating to body size, weight loss and weight-loss interventions in black South African women: A qualitative study. *Public Health Nutrition*, 19(03): 548–556.
- Ettarh, R., S. Van de Vijver, S. Oti & C. Kyobutungi 2013. Overweight, obesity, and perception of body image among slum residents in Nairobi, Kenya, 2008–2009. *Preventing Chronic Disease*, 10(4): 130198. Online. <http://doi.org/10.5888/pcd10.130198> (Accessed December 24, 2017).
- Global Burden of Disease (GBD) Risk Factors Collaborators 2015. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990–2015: A systematic analysis for the Global Burden of Disease Study 2015. *The Lancet*, 388(10053): 1659–1724. Online. [http://doi.org/10.1016/S0140-6736\(16\)31679-8](http://doi.org/10.1016/S0140-6736(16)31679-8) (Accessed December 24, 2017).
- Graff, C.J. 2014. Mixed methods research. In (H.R. Hall & L.A. Rousell, eds.), *Evidence-Based Practice: An Integrative Approach to Research, Administration, and Practice*, pp. 45–64. Burlington, MA. Jones and Bartlet Learning.
- Gunderson, E.P. 2009. Childbearing and obesity in women: Weight before, during, and after pregnancy. *Obstetrics and Gynecology Clinics of North America*, 36(2): 317–332. Online. <http://doi.org/10.1016/j.ogc.2009.04.001> (Accessed November 4, 2018).
- Gunderson, E.P., M.A. Murtaugh, C.E. Lewis, C.P. Quesenberry, D.S. West & S. Sidney 2004. Excess gains in weight and waist circumference associated with childbearing: The Coronary Artery Risk Development in Young Adults Study (CARDIA). *International Journal of Obesity*, 28(4): 525–535. Online. <http://doi.org/10.1038/sj.ijo.0802551> (Accessed November 4, 2018).
- Gunderson, E.P., B. Sternfeld, M.F. Wellons, R.A. Whitmer, V. Chiang, C.P. Quesenberry Jr, C.E. Lewis, & S. Sidney 2008. Childbearing may increase visceral adipose tissue independent of overall increase in body fat. *Obesity*, 16(5): 1078–1084. Online. <http://doi.org/10.1038/oby.2008.40> (Accessed November 4, 2018).
- Holdsworth, M., A. Gartner, E. Landais, B. Maire & F. Delpuech 2004. Perceptions of healthy and desirable body size in urban Senegalese women. *International Journal of Obesity*, 28(12): 1561–1568. Online. <http://doi.org/10.1038/sj.ijo.0802739> (Accessed November 4, 2018).
- Janzon, E., S. Namusaazi & I. Bolmsjö 2015. Increasing obesity in Ugandan women due to transition from rural to urban living conditions? A qualitative study on traditional body image, changed lifestyles and unawareness of risk for heart disease. *Journal of Research in Obesity*, 2015: 1–13. Online. <http://doi.org/10.5171/2015.213083> (Accessed December 24, 2017).
- Kibirige, D., D. Atuhe, L. Kampiire, D.S. Kiggundu, P. Donggo, J. Nabbaale & W. Lumu 2017. Access to medicines and diagnostic tests integral in the management of diabetes mellitus and cardiovascular diseases in Uganda: Insights from the ACCODAD study. *International Journal for Equity in Health*, 16(1): 1–12. Online. <https://doi.org/10.1186/s12939-017-0651-6> (Accessed January 9, 2019).
- Kirunda, B.E., L.T. Fadnes, H. Wamani., J. Van den Broeck & T. Tylleskär 2015. Population-based survey of overweight and obesity and the associated factors in peri-urban and rural Eastern Uganda. *BMC Public Health*, 15(1): 1168. pp. 1–11. Online. <http://doi.org/10.1186/s12889-015-2506-7> (Accessed December 24, 2017).

- Mayega, R.W., F. Makumbi, E. Rutebemberwa, S. Peterson, C.G. Östenson, G. Tomson, G & D. Guwatudde 2012. Modifiable socio-behavioural factors associated with overweight and hypertension among persons aged 35 to 60 years in eastern Uganda. *PLOS One*, 7(10): e47632. Online. <http://doi.org/10.1371/journal.pone.0047632> (Accessed December 24, 2017).
- Ministry of Health, Centers for Disease Control, Westat, & ICAP 2016. *Uganda Population-Based HIV Impact Assessment*. Online. <http://www.afro.who.int/sites/default/files/2017-08/UPHIA Uganda factsheet.pdf> (Accessed July 17, 2018).
- Mukono District Local Government 2015. *District Development Plan 2015/2016–2019/2020*. Online. <http://npa.ug/wp-content/uploads/2017/05/Mukono-District-Development-Plan-Final.pdf> (Accessed December 24, 2017).
- Okop, K.J., F.C. Mukumbang, T. Mathole, N. Levitt & T. Puoane 2016. Perceptions of body size, obesity threat and the willingness to lose weight among black South African adults: A qualitative study. *BMC Public Health*, 16(1): 365. Online. <http://doi.org/10.1186/s12889-016-3028-7> (Accessed December 24, 2017).
- Okoro, E.O., B.A. Oyejola, E.N. Etebu, H. Sholagberu, P.M. Kolo, A. Chijioko & S.A. Adebisi 2014. Body size preference among Yoruba in three Nigerian communities. *Eating and Weight Disorders*, 19(1): 77–88. Online, <http://doi.org/10.1007/s40519-013-0060-9> (Accessed December 24, 2017).
- Reddy, S. & R. Otieno 2013. Relationship between body image and clothing perceptions among women aged 18–55 years in the UK. *International Journal of Arts and Commerce*, 2(5): 40–49.
- Stone. M.R. 2010. *The Garland Handbook of African Music*. Online. <https://books.google.co.jp/books/> (Accessed December 24, 2017).
- Tuoyire, D., A. Kumi-Kyereme & D. Doku 2017. Perceived ideal body size of Ghanaian women—“Not too skinny, but not too fat.” *Women & Health*, 58(5): 583–597. Online. <http://www.tandfonline.com/doi/abs/10.1080/03630242.2017.1321607> (Accessed December 24, 2017).
- Uganda Bureau of Statistics (UBOS) & ICF 2018. *Uganda Demographic and Health Survey 2016. Kampala, Uganda, Rockville, Maryland, USA*. Online. <https://dhsprogram.com/pubs/pdf/FR333/FR333.pdf>. (Accessed December 24, 2018).
- Uganda Bureau of Statistics (UBOS) & ICF 2016a. *The National Population and Housing Census 2014 —Sub-County Report Volume I Central Region, I, 200–215. Kampala*. Online. https://www.ubos.org/onlinefiles/uploads/ubos/census_2014_regional_reports/Census_2014_Report_Central_Region.pdf (Accessed December 24, 2018).
- Uganda Bureau of Statistics (UBOS). 2016b. *Total Population by Sex, Total Number of Households and Proportion of Households Headed by Females by Subcounty and Parish, Central Region, 2014*. Online. https://www.ubos.org/wp-content/uploads/publications/03_2018Population_by_Parish_Census_2014_Central_Region.pdf (Accessed December 24 2017).
- Venter, F.C., C.M. Walsh, M. Slabber, & C.J. Bester 2009. Body size perception of African women (25–44 years) in Mangaung. *Journal of Family Ecology and Consumer Sciences*, 37(December 2009), 12–23. Online. <http://doi.org/10.4314/jfec.v37i1.48942> (Accessed December 20, 2017).
- The World Bank 2018. WDI - Classifying countries by income. Online. <http://datatopics.worldbank.org/world-development-indicators/stories/the-classification-of-countries-by-income.html> (Accessed December 24, 2018).
- World Health Organization (WHO) 2004. *BMI Classification*. Online. <http://www.who.int/features/factfiles/obesity/facts/en/> (Accessed December 24, 2017).
- World Health Organization (WHO) 2016a. *Prevalence of Overweight among Adults, BMI ≥*

- 25: *Age-standardized Estimates by World Bank Income Group*. Online. <http://apps.who.int/gho/data/view.main.bmi25awbv?lang=en> (Accessed December 15, 2017).
- World Health Organization (WHO) 2016b. *Prevalence of Obesity among Adults, BMI \geq 30: Age-standardized Estimates by Country*. Online. <http://apps.who.int/gho/data/node.main.a900a?lang=en> (Accessed December 15, 2017).

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