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**The Cause and Effect of Responsibility Frame on the Perception of Obesity among  
35-55 Years University Female Academic Staff in Nairobi County, Kenya**

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**Abstract**

**Purpose:** The purpose of this study was to investigate the cause and effect of responsibility frame on the perception of obesity among 35-55 years University female academic staff in Nairobi County, Kenya.

**Methodology:** This study applied the one-group pretest-posttest experimental design. In the one-group pretest-posttest experimental design all study participants provided with the same treatment and assessment. The researcher, therefore, collected data using the pre-and posttest questionnaires. The treatment applied is *Slimpossible* television program season six episode one was purposively selected out of seven seasons and ninety-eight episodes covered by the *Slimpossible* television program. The obese females were qualified through an interview process to participate in the *Slimpossible* challenge, a popular weight loss television program aired by Citizen Television Network. The justification for choosing the season six-episode one television program was based on assessing the media frames according to Entman (1993), where the scholar mentions the following: human interest, consequences, morality, and responsibility. Although this study is aquasi-experimental research design, the researcher attempted to use randomization to improve the validity of the pretest and posttest experimental study design. Furthermore, out of the randomly selected sample, a purposeful sample was selected for assessment based on a specific interest (Stratton, 2019). The data was analyzed using the Statistical Package for Social Sciences (SPSS) version 23.0. This study presented descriptive statistics using tables with frequencies and percentages. Secondly, the research conducted inferential statistics using several types of inferential analysis tools such as the Factor analysis (The Keiser-Meyer –Olkin (KMO) test), Pearson’s correlation coefficient, and regression analysis (logical regression).

**Findings:** From the findings, the respondents presented that the media was responsible for showcasing slim-bodied celebrities on TV, in newspapers and magazines, increasing the stigma of obesity among females. They felt that the media was also responsible for supporting controversial weight loss practices that could yield harmful to obese individuals. The respondents also state that the government and public health were responsible for the rise of obesity among 35-55 years University female academic staff because of inefficiencies, lack of health clinics specific to treat obesity cases and lack of insurance covers for obesity cases. However, on individual responsibility, the respondents' findings registered relatively low, indicating that the person may not entirely be blamed for obesity. The inferential statistics successfully obtained three components about the responsibility frame using the factor analysis. Government and public health and social responsibility factors were more likely to produce a negative perception of obesity than personal responsibility.

**Unique Contribution to Theory, Practice and Policy:** In terms of contribution to theory, this study emanated from the media framing theory, where it provided responsibility frame as one among five frames, mentioned by an American political scientist known as Robert Entman in 1993. Its contribution to practice, from the conclusions, it was evident that government and public health were deemed responsible for the rise of obesity among 35-55 years University female academic staff because of inefficiencies, lack of health clinics specific to treat obesity cases and lack of insurance covers for obesity cases. Its contribution to policy looks at collaboration between World Health Organization and the Ministry of Health –in Human Nutrition and Dietetics Unit developing health and nutrition policies to caution the women suffering from obesity. The study recommends that international bodies such as the World Health Organization and the Ministry of Health –in Human Nutrition and Dietetics Unit be actively involved in the development of relevant nutrition policies that address obesity cases affecting individuals and help in setting up health clinics for treating obesity cases.

**Keywords:** Kenya, Nairobi, Responsibility Frame, Perception of Obesity, Obesity, Media Framing Theory

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## INTRODUCTION

Agyeman, Boatemaa, Frempong, and Aikins (2015) find that in Africa, females are viewed to have the highest prevalence of obesity compared to men in most countries. The perception is that urbanization is the biggest cause of obesity in Africa. Amugsi et al. (2017) concur with Agyeman et al. (2015) findings that the number of females at risk of obesity has doubled compared to men in Africa. In contrast, urbanization is a major catalyst for the increase in obesity. These high prevalence rates are reflected in Ghana, Tanzania, and South Africa. Nevertheless, about six reports, which include; the World Health Organization report on obesity in Africa (2014), Kenya Demographic and Health Survey (2014), Kenya STEPS Non-communicable Disease Risk Factors Survey (2014), Population Reference Bureau (2014), and United Kingdom Obesity Statistics (2014) establish that obesity levels are higher among middle-aged female between 35 to 64 years. Still, the weight levels decrease after a person reaches 64 years old. However, in men, obesity levels rise to 45 years old and remain constant.

Likewise, Armentia and Marin (2015) establish that media has greatly contributed to the obesity epidemic, and also obesity has the potential to impact society and the government sector negatively or positively. Furthermore, Armentia and Marin (2015) provide findings from numerous studies on the responsibility frame, indicating that obesity should be tackled at the governmental and societal levels. Hence, societal involvement produces societal causes and treatments, eventually producing governmental solutions. When the government was involved, positive strides were made because positive changes were being effected. Contrary, Couch, Thomas, Lewis, Blood, and Komesaroff (2015) find that studies on media framing of obesity were usually attributed to a person's lack of self-control. These studies were more inclined to point at the individual responsibility frame. These media frames tend to produce a negative perception of obesity and reinforce stigma in the population.

### Statement of the Problem

According to McGlynn and McGlone (2018) obesity is a serious disease that results to about three million deaths being reported each year, where the number of deaths has doubled in the last forty years in Western Countries. In Kenya, the Ministry of Health (2014) reported that more women than men are obese. The highest prevalence of obesity was in Nairobi County and it mostly affects women between 35 to 50 years. Furthermore, Lenneis and Pfister (2017) research studies showed that middle-age is a stage, where women are at risk of obesity problems and other related diseases such as cancer, and Type2 diabetes.

Moreover, Penkler et al. (2015) stated that since interception, existing studies have largely investigated on media representations of health issues. However, the authors' state that little focus has been given to issues of perception relating to health and media. Yoo and Junghyun (2012) posited that in media research, framing is useful in explaining people's attitudes and perceptions about obesity. Hence, in this study, the responsibility frame attempted to draw attention to responsible persons or bodies that might have caused obesity and might bring solutions to curb the disease (Abreu, 2015).

Among seventeen counties in Africa, Kenya has emerged as the country with the highest prevalence of obesity cases. According to Amugsi et al. (2017), obesity as an epidemic is doubling significantly in the African continents, for example, in Kenya, Rwanda, Niger, Ivory



Coast, Benin, and Uganda. Obesity is gradually increasing among Kenyans, with approximately 25 percent obese. The highest level was obtained from females who are between 35 years and 50 years, where a majority reside in urban areas (Ministry of Health, 2013).

Rodhain and Gourmelen (2018) further state that the media framed obese individuals as solely responsible for their condition, emphasizing the individual responsibility frame more than the social and governmental factors. Contrary to the argument, authors like Scott et al. (2013) believed that cultural dynamics could be responsible for the increase in obesity in Africa. For instance, South African media research reveal that black men preferred chubbier females because they believed that slim females were more often exposed to HIV/AIDS. The cause and effect would be an increase in obesity and an increase in HIV/AIDS, both deadly consequences. Therefore, this study sought to establish whether the human-interest frame, consequences frame, responsibility frame, morality frame, and cultural dynamics affect the perception of obesity among 35-55 years university female academic staff in Nairobi County.

### **Media Framing Theory**

Gregory Bateson first mentions the framing concept in 1972, but he sought them as psychological frames that allowed interactive messages. Framing analysis has been rooted in both psychology and sociology. However, references to framing theory were also discussed in linguistics, discourse analysis and political science. Furthermore, Kahneman and Tversky (1973) note that in psychology the origins of framing are traced back to experimental work by Kahneman and Tversky in 1973. They investigated how different presentations with similar decision-making scenarios affected people's evaluations of the options given to them and eventually affected their choices. According to Goffman (1974), from the sociological perspective, the framing foundation was laid by Erving Goffman in 1974. Goffman (1974) was the first to focus on framing in the communication sphere and expressed that people constantly struggle to understand the world they live in and interpret their individual life experiences.

On the other hand, Abreu (2015) note that one of the most significant contributors to research in framing theory was an American political scientist known as Robert Entman in 1993. Entman defines media framing as selecting a few aspects distinguished from reality to make them more noticeable in a media text. Furthermore, Abreu (2015) state that Entman warned that without a unifying theory of framing, one could not explain how frames are developed, how they manifest in writing and how they influence the public's mind. This ideology brought about a different approach to identifying frames, for instance, media frames, audience frames and sociocultural frames, including measuring the cause and effect it has on audiences.

Entman (1991) establish five prevalent ways of framing news stories and highlights the following media frames; conflict frames, human interest frames, consequence frames, morality frames and responsibility frames. In addition, Semetko and Valkenburg (2000) concur with Entman (1991) description of the five frames: attribution of responsibility, human interest, conflict, morality and economic consequences. Entman's (1991) viewpoint about the conflict frame was to consider prioritising people engaged in a conflict to resolve it quickly because the conflict captures the audience's attention.

In addition, Semetko and Valkenburg (2000) define the human-interest frame as the efforts to personalize and dramatize news stories to draw and retain the audience's attention. On the other

hand, the consequence frame is essential because it helps the journalist put a value tag on what becomes a news story. Also, in the consequences, the media producers strive to make the issue relevant to the audience. Conversely, Entman (1991) state that in the morality frame, media could attempt to give the moral implication of an issue or even politicize the issue; for instance, some policies can take a moral tone while using the responsibility frame, the media seeks for who to blame for the obesity issue. The media seeks to attribute responsibility for a cause or a solution to the problem.

### **Responsibility Frame**

Couch et al. (2015) discussed responsibility frames from the perspective of individual responsibility. The authors mention that the majority of studies on the topic of media framing on obesity cover the aspect of individual responsibility compared to other factors, like social, governmental/political, or international responsibilities. Obese individuals are perceived as people who do not have self-control; hence the studies lean toward the responsibility frame. Furthermore, Couch et al. (2015) establish that most of these research studies attribute the individual responsible and solely to blame for the causes of the disease. If obesity is the sole responsibility of the individual, then he or she is responsible for treating it. Therefore, obesity cannot be perceived as an epidemic; hence other players cannot be involved in tackling the disease, like the government or lobby agencies. Frederick et al. (2016) concur with Couch et al. (2015) that the individual responsibility frame blames obesity on poor food and exercise choices and attributes it to personal willpower and self-control as significant in weight loss. On the other hand, Flint, Hudson, and Lavalley (2015) presented that media reports focus on obesity from an entertainment point of view. This media perspective makes it difficult for a government or a lobbyist agency to discuss the story seriously. Rodhain and Gourmelen (2018) also concur with Couch et al. (2015) and Flint et al. (2015) that media communication provides a lot of emphasis on individual responsibility frames affecting obesity entirely. This stereotypical approach has been known to lower their self-esteem and cause depression to suicide.

Moreover, Frederick et al. (2016) establish that media framing of obesity is essential to forming the audience's perception of the disease, including developing public policies. The writers cited that several studies agree with the fact that the majority of news media frames obesity as a matter of individual responsibility. This framing makes it hard for social change because the key players, like the government, are uninvolved. Besides, scholars like Islam and Fitzgerald (2016) concur with Rodhain and Gourmelen (2018) that individual framing requires the person to develop a remedy for the problem without loading it onto someone else. However, Frederick et al. (2016) believed that this type of framing often creates an environment for the negative perception of obesity in the affected individuals.

In addition, Armentia and Marin (2018) added that when the responsibility has been identified as individual; hence the solutions must come from the affected person wholesomely. The writer mentions that some of these solutions would involve changing their eating behaviors, doing physical exercises, or engaging in extreme interventions like surgical measures, which can cause more harm than produce well. Supporting findings from Armentia and Marin (2018) reveal that forty-seven percent of analyzed media articles show that individuals and their

families were responsible for obesity causes, while sixty-three percent of respondents accounted for the solutions to the affected individuals. Females were found to be more responsible for the disease than men because their role is to prepare and provide healthy meals for their families.

Aside from individual factors contributing to obesity, Young et al. (2016) opine that social or environmental factors could be major determinants of the causes of obesity. The author gave the following social or environmental factors: increased fast-food restaurants, limited time and space for exercise at work or in school, and large portions of food. In addition, Brahmhatt (2017) added a few social factors that could cause obesity: financial challenges, stress, problems in marriage, health illiteracy, and so forth. The author state that females who experienced posttraumatic stress increased in weight faster compared to those who did not have posttraumatic stress. Brahmhatt (2017) concur with Young et al. (2016) that policies to support such social causes of obesity had been proposed globally; however, there is limited support from the political class or legislators ruling in today's world. According to Young et al. (2016), people who believe that social factors contribute to the causes of obesity are more likely to support public health policies that attempt to reduce/eradicate the disease. Hence media messages targeting the social factors causing obesity appeal to the public. The authors argue that coverage of a narrative that emphasizes the social factors causing obesity increases the public acceptance that the food industry, food advertisers and marketers, employers, and the government are responsible for tackling obesity. It is important to note that whenever media uses images or videos of food industries as the major social determinants of obesity, the public's perception shifts from blaming the individual on the food manufacturers.

Studies focused on in-depth experiments investigating on news framing of obesity by Saguy and colleagues in 2010-2014, as well as those done by Frederick and colleagues in 2010-2018, show that media framing of obesity as a public health epidemic has led to the increase in public stigmatization of affected individual (Stanford et al., 2018). However, the mentioned studies also show that public health measures have a significant positive impact in improving weight issues, though it is linked to increased obesity stigma. Brooker et al. (2017) affirmed that public health officials are constantly calling on journalists to portray obesity to emphasize social responsibility rather than personal causes and treatments. Armentia and Marin (2015) argue that the obesity issue tackled from a public health approach tends to have more impact despite the heightening public prejudice.

Schultz (2017) establishes that in the United States alone, obesity issues make it to the headlines in popular television and newspapers. The author provides an example of a news story that appeared in the summer of 2013, where a meeting took place among the American Medical Association delegates hosting one of the country's largest numbers of public health physicians. The delegates wanted obesity to be declared an epidemic so that public health agencies could treat the disease with seriousness. When obesity is treated as an epidemic, government could set aside funds to handle it and enforce legislative measures to assist in making improvements.

We can also look at international interventions such as; Stanford et al. (2018) stating that efforts had been put in place in developed countries, like the United States of America and Great Britain, by introducing legislation that can protect persons with obesity. The legislation further

protects them on the subject of discrimination against obese persons in employment, even to protect the characteristic of body weight under the civil rights law. The developed countries state that obesity is also a form of disability, so ensure it is treated as such under the civil rights law. On the other hand, countries have attempted to develop legislation to help reduce this disease. For example, World Health Organization (2017) appeared to commend the South African parliament for positive attempts by passing a bill that pressured food industries to increase taxes on sugar drinks, a major contributor to obesity increase in the country. Apart from South Africa, other countries that have introduced tax bills on sugar-sweetened drinks include the United Kingdom, Northern Ireland, and the United Arab Emirates.

### Research Gaps

The researcher observed that most of the existing studies done on media framing of obesity had concentrated majorly on the responsibility frame, followed by the human-interest frame and morality frame. These findings were based on Armentia and Marin (2018) report that about 63 percent of media articles attribute obesity and its solution to the responsibility frame.

## METHODOLOGY

### Research Design

Consequently, this study applied the one-group pretest-posttest experimental design, which required all study participants to receive the same treatment and assessment (Allen, 2017). In this research experiment, the first step is to administer the pretest questionnaire to the participants to fill, then ensure that their responses are captured on the Google Excel sheet before sending the participants the treatment, which is a link to the *Slimpossible* YouTube video. Afterward, the researcher administers the post-test questionnaire for the respondents to fill in. *Slimpossible* is a television show designed to combat the issue of obesity among 35-55 years University female academic staff in Kenya. The shows ran for 15 weeks, attracting obese females from Nairobi and other environs. In the show, 21 ladies are evaluated on their consistency in losing weight, and the winner was revealed officially once the 15 weeks are completed. The host is the Royal Media Groups airing live on Kenya Citizen TV.

**Table 1: One-Group Pretest-Posttest Experimental Design**

Pretest	Independent Variable	Posttest
O1	Treatment ( <i>Slimpossible</i> TV program)	O2

**Source:** Visual Illustration of the One-Group Pretest-Posttest Design (Allen, 2017).

### Target Population

The target population comprised 1848 participants who were female academic staff in three public universities in Nairobi County, Kenya, as indicated in Table 3.2. This target population was derived from the Commission of University Education (2016), the University of Nairobi (2018), The Technical University of Kenya (2019), and Kenyatta University (2019).

The rationale for using female academic staff in public universities is informed by Nkwoka et al. (2014), where the authors establish that an increase in obesity correlates with an increase in education. The researchers' findings were based on a study at a public university called Usmanu Danfodiyo University in Nigeria. The study focused on both academic and non-academic staff. However, it reveals a higher prevalence of obesity among academic staff. In contrast, the non-academic staff had a lower prevalence rate of obesity because of their low-level education and low pay scale. On the other hand, Khan et al. (2013) expound that the reason why there is an increase in obesity among high-income female academic staff is contributed by the high intake of fatty content. Similarly, the Ministry of Health Report (2015) opine that the proportion of obesity cases in 35-55 years females increases with education and wealth.

Also, the rationale of Nairobi County is informed by the Ministry of Health (2015) research findings that reveal Nairobi as the leading county with the highest proportion of obese females at 48 percent compared to all other counties in Kenya. The Ministry of Health (2015) further establishes that obesity increases with age. It establishes that those between 35-55 years had the highest prevalence of obesity level compared to those below 30 years.

The rationale for choosing public universities over private universities is informed by existing statistical data for the number of female academic staff in public universities in the Kenya Bureau of Statistics (2014) report. In contrast, the report also mentions that no statistical data supported the number of female academic staff in private universities. The researcher opted to work with three public universities: the University of Nairobi, Technical University of Kenya, and Kenyatta University because of the existing data supporting the three public universities.

Furthermore, the Commission of University Education (2016) opine that chartered public universities, like the University of Nairobi, Technical University of Kenya, and Kenyatta University have the highest number of academic staff at 69 percent compared to chartered private universities at 19 percent. The rest of the 12 percent were obtained from constituent colleges. Moreover, the Commission of University Education (2016) report state that there is insufficient evidence or even a lack of statistical data to support the number of female academic staff in private universities.

### **Sample and Sampling Technique**

According to Babbie (2011) a sample was selected among the population that could be collected and studied. In this research study, the sample collected and studied comprised of 317 respondents. The sample size for this study was determined using Fisher et al (1998) formula (Israel, 1992). A 95% confidence level with + 5% margin of error (E) would be desired in this research study. The unadjusted sample size ( $n'$ ) required for + 5% using the conservative

sample proportion (p) of  $P=0.5$  (or 50%) is:  $n' = \left(\frac{Z}{E}\right)^2 p(q)$

Where

n is the desired sample size

Z is the standard normal deviation at the required confidence interval.



E is margin of error.

$p$  is the percentage of the target population with the desired characteristics.

$$q = 1 - p$$

Therefore, sample size for the respondents are:

$$n = \frac{1.962(0.5 \times 0.5)}{(0.05)^2}$$

$$= 384$$

Since the population was less than 10,000, the final sample estimated was calculated using the formula below:

$$nf = \frac{n}{1 + (n/N)}$$

Where:  $nf$  = The desired sample size (when the population is  $< 10,000$ )

$n$  = Desired sample size when the population was more than  $> 10,000$

$N$  = Population with the desired characteristics

$$nf = \frac{384}{1 + (384/1848)}$$

$$= 317$$

The sample size:

=317 Participants

### Sampling Technique

Leavy (2017) defines *sampling* as the process requiring the researcher to select several elements from a large population. The study employed the stratified sampling design, a probability random sampling procedure, and then the study subjects were purposefully selected to form a sample group for the experiment. According to Etikan and Bala (2017), the probability random sampling procedure improves validity by ensuring representative sample selection. In addition, Adwok (2015) opine that probability sampling deals with the quantitative study that requires the researcher to select from a moderately great number of populations systematically to ensure adequate representation of the total population. According to Taherdoost (2016) a stratified sample ensures that a subgroup, also known as the strata of a given population, is adequately represented within the whole sample population of a study. The sub-group can be based on gender, age, educational level, and income level. For example, in this study, we divide a sample of university female academic staff into subgroups by age, like 35-39 years, 40-44 years, 45-49 years, 50-55 years and above. The second strata looked at the

level of education, like a graduate assistant, Master's degree graduate, Ph.D. student, doctorate, associate professor, professor, and any other. The third strata looked at the income levels:

- a minimum income per month between 80,000-99,999 Kenya Shillings
- a median income per month between 100,000-199,999 Kenya Shillings
- a maximum income per month between 200,000-399,999 Kenya Shillings

According to Stratton (2019), several research methods must be applied to improve the validity of a pre-test and post-test experimental design, that is, the application of randomly selected groups of participants. Although this study is a quasi-experimental research design, the researcher attempted to use randomization to improve the validity of the pretest and posttest experimental study design. Furthermore, out of the randomly selected sample, a purposeful sample was selected for assessment based on a specific interest (Stratton, 2019).

**Table 2: Proportionate Allocation of Participants**

Public Universities in Nairobi County	Total population (Female Faculty)	To calculate the (%) Proportionate	Participant Proportionate
University of Nairobi	666	36 %	114
The Technical University of Kenya	222	12%	38
Kenyatta University	960	52 %	165
<b>Total</b>	<b>1848</b>	<b>100%</b>	<b>317</b>

### Sample of *Slimpossible* Television Program

The *Slimpossible* television program season *six* episode *one* was purposively selected out of seven seasons and ninety-eight episodes covered by the *Slimpossible* television program. The obese females were qualified through an interview process to participate in the *Slimpossible* challenge, a popular weight loss television program aired by Citizen Television Network. The justification for choosing the season *six*-episode *one* television program was based on assessing the media frames according to Entman (1993), where the scholar mentions the following: human interest, consequences, morality, and responsibility. Furthermore, in season *six*, episode *one*, variables like the perception of obesity and the cultural dynamics are also present.

### Data Collection Procedure

The researcher used several steps to describe the procedure for experimenting in detail. They are as follows: In the first step, the researcher engaged an administrator working in the human resources administrations block of the three Kenyan Universities with a spacing of two separate days for each. The researcher presented the letter of approval to research provided by the Board of Postgraduate Studies at Jomo Kenya University of Agriculture and Technology, Juja Kenya. The administrators accepted and provided a copy of a list of academic staff working at the university.

The list contained the names of all academic staff, their contact details, their email details, and the schools and departments represented. The researcher recruited and trained two research

assistants to assist in the entire process of selecting the participants and in experimenting. Therefore, the researcher and the assistants purposefully selected the name representing female academic staff for each university and then used the simple random number method to assign every individual a number.

Using a random number table, the researcher randomly picked a subset of the population. Then the researcher divided the responsibility by assigning each research assistant to one university at a time; for example, the first research assistant was assigned to handle the University of Nairobi, the second one was assigned to tackle the Technical University of Kenya in Nairobi, and the researcher handled Kenyatta University, Nairobi. The researcher provided airtime to each assistant to reach out to the respective university female academic staff through phone calls. In making the calls, we would introduce ourselves to the participant, briefly explain the experiment's purpose, and spell out the study expectations for conducting it. The process went on for one week. The response to the calls, for instance, the participants expressed interest in experimenting; some recommended the research tools and the treatment to be sent to their email box, while others preferred it via *Whatsapp Messaging App*.

Each participant was contacted individually by phone, therefore eliminating subjects' interactions. The researcher and the assistants could delimit experimental mortality, especially when some participants were notified of their busy schedules, by sending the pretest first on their chosen platforms, either by email or through the *Whatsapp Messaging App* per their request. After completing the pretest, the *Slimpossible*, a 45-minute youtube video, was forwarded to their respective platforms. Follow-up calls were made to ascertain whether the participants watched and completed the video. Once a participant completed watching the video, then the post-test questionnaire was either emailed or sent to the messaging app. The researcher monitored progress through the automatic pretest responses that came in from the Google forms onto the Google sheet. A follow-up call was made to respondents who had not done the posttest to encourage them to fill it out. The procedure took one week.

### **Data Processing and Analysis**

Data processing was done. It entailed the data cleaning process, where the researcher checked for errors in the filled data and checked for completeness of data. Data cleaning also requires screening and organizing of data before analyzing them. Hence, the researcher cleaned the data by checking the completeness of the data and whether all questions were answered. Somekh and Lewin (2005: p.215) state that “statistical methods consist of a wide range of tools and techniques that could be used to describe and interpret quantitative data. It meant they should be measured numerically.” This study analyzed the data obtained using the Statistical Package for Social Sciences (SPSS) version 23.0. Therefore, the researcher conducted several levels of analysis. Firstly, this study presented descriptive statistics using tables with frequencies and percentages. Secondly, the research conducted inferential statistics using several types of inferential analysis tools such as the Factor analysis (The Keiser-Meyer –Olkin (KMO) test), Pearson’s correlation coefficient, and regression analysis (logical regression). These tools were used to examine the cause and effect of the consequence frame on the perception of obesity among 35-55 years University female academic staff in Nairobi.

**Table 3: Model of Specification**

Objectives	Level of Measurement of Data	Statistical Tools
To investigate the cause and effect of responsibility frame on the perception of obesity among 35-55 years University female academic staff in Nairobi County, Kenya.	Interval/Ratio	Regression Analysis, Pearson's correlation, KMO test

**Regression Model**

**H<sub>04</sub>:** Responsibility frame has no significant cause and effect on the perception of obesity among 35-55 years University female academic staff in Nairobi County, Kenya.

$$Y = \beta_0 + \beta_4 x_4 + \epsilon$$

Whereby;

$Y$  = Perception of obesity

$\beta_0$  = Constant

$\beta_4$  = Coefficients of determination

$x_4$  = Responsibility frame

$\epsilon$  = Error term

The study uses a multiple regression analysis (Stepwise method) for the moderating variable.

**DATA ANALYSIS, RESULTS AND DISCUSSIONS**

The results and findings of the study were based on the research objectives. The section links the various variables included in the model. It aims at establishing the cause and effect of media framing on the perception of obesity among 35-55 years University female academic staff in Nairobi County, Kenya. This chapter presents the data analysis, interpretation, and discussion. The analysis was done using SPSS software. Frequencies, graphs, and tables were used to display the results.

**Response rate**

The researcher issued 317 questionnaires, of which 252 were received, translating to a response rate of 79.5%. Of the 252 questionnaires collected back from respondents, 30 were rejected because of incompleteness culminating in 222 usable questionnaires for analysis.

**Descriptive Statistics**

Descriptive statistics summarizes the observations made after data analysis.

Descriptive statistics for responsibility frame



**Table 4: Average Scores on Responsibility Frame**

	Pre-test			Post-test		
	Agree	Neutral	Disagree	Agree	Neutral	Disagree
1 A middle-aged obese woman is personally responsible for obesity because of lack self-control.	47 21.2%	77 34.7%	98 44.2%	57 25.7%	45 20.3%	120 54%
2 A middle-aged obese woman is personally responsible for obesity because of over-eating.	67 30.2%	50 22.5%	105 47.3%	79 35.6%	33 14.9%	110 49.5%
3 A middle-aged obese woman is personally responsible for obesity because of overindulging in foods with high fats.	67 30.2%	50 22.5%	105 47.3%	79 35.6%	33 14.9%	110 49.5%
4 A middle-aged obese woman is personally responsible for obesity because of not exercising.	57 25.7%	62 27.9%	103 46.4%	103 46.4%	33 14.9%	86 38.7%
5 A middle-aged obese woman is personally responsible for obesity because laziness.	67 30.2%	50 22.5%	105 47.3%	79 35.6%	33 14.9%	110 49.5%
6 Media is responsible for spreading news reports without providing public health fact sheets and reports on obesity.	127 57.2%	66 29.7%	29 13.1%	135 55.4%	58 26.1%	29 13.1%
7 Media is responsible for creating content, i.e., images and videos showing obese female overindulging in fast foods and alcohol.	145 65.3%	50 22.5%	27 12.2%	181 81.5%	29 13.1%	12 5.4%
8 Media is responsible for showcasing slim bodied celebrities on TV, newspapers and magazines, thus increasing obesity stigma among female.	152 68.5%	70 31.5%	0 0.0%	198 89.2%	24 10.8%	0 0.0%
9 Media is responsible for supporting controversial weight loss practices that may be harmful to obese individuals.	160 72.1%	34 15.3%	28 12.6%	164 73.9%	34 15.3%	24 10.8%
10 Media is responsible for under-reporting about obesity issues as a disease so that it can be given national attention to tackle it.	129 58.1%	65 29.3%	28 12.6%	147 66.2%	51 23%	24 10.8%
11 The lack of public health information is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County, Kenya.	143 64.4%	79 35.6%	0 0.0%	159 71.6%	63 28.4%	0 0.0%
12 The lack of public health policies that aim at reducing the rise of obesity cases in Kenya is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County.	109 49.1%	113 50.9%	0 0.0%	115 51.8%	107 48.2%	0 0.0%
13 The lack of government funding and support in pushing for agendas that can help reduce obesity cases is responsible for obesity in Nairobi County, Kenya.	108 48.6%	113 50.9%	1 0.5%	103 46.4%	107 48.2%	12 5.4%
14 The lack of health care insurance that covers medical expenses for obese persons is responsible for the rise in obesity cases in Nairobi County, Kenya.	69 31.1%	137 61.7%	16 7.2%	91 41%	102 45.9%	29 13.1%
15 The lack of proper health clinics that facilitate and treat obesity cases is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County, Kenya.	96 43.2%	97 43.7%	29 13.1%	115 51.8%	67 30.2%	40 18%
16 The lack of interest to dealing with obesity from a National level is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County, Kenya.	96 43.2%	125 56.3%	1 0.5%	103 46.4%	107 48.2%	12 5.4%

From the table above, we make the following observations: A high proportion of respondents agree with the following statements on obesity: “Media is responsible for supporting

*controversial weight loss practices that may be harmful to obese individuals,”* with **72.1%** and **73.9%** for pre-test and post-test, respectively. *“Media is responsible for showcasing slim-bodied celebrities on TV, newspapers, and magazines, thus increasing obesity stigma among females.”* with **68.5%** and **89.2%** for pre-test and post-test, respectively. *“Media is responsible for creating content, i.e., images and videos showing obese female overindulging in fast foods and alcohol,”* with **65.3%** and **81.5%** for pre-test and post-test, respectively. *“The lack of public health information is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County, Kenya,”* with **64.4%** and **71.6%** for pre-test and post-test, respectively. Young et al. (2016) support this finding, stating that media messages target the social factors causing obesity, for instance, acceptance of fast foods, alcohol, controversial weight loss practices, and promoting slim-bodied celebrities as ideal.

A high proportion of respondents disagree with the following statements on obesity: *“A middle-aged obese woman is personally responsible for obesity because of lack self-control,”* with **44.2%** and **54%** for pre-test and post-test, respectively. *“A middle-aged obese woman is personally responsible for obesity because of over-eating,”* with **47.3%** and **49.5%** for pre-test and post-test, respectively. *“A middle-aged obese woman is personally responsible for obesity because of overindulging in foods with high fats,”* with **47.3%** and **49.5%** for pre-test and post-test, respectively. *“A middle-aged obese woman is personally responsible for obesity because of not exercising,”* with **46.4%** and **38.7%** for pre-test and post-test, respectively. *“A middle-aged obese woman is personally responsible for obesity because of laziness,”* with **47.3%** and **49.5%** for pre-test and post-test, respectively. This finding does not agree with Couch et al.’s (2015) studies, where the majority of studies on media framing and obesity were inclined towards individual responsibility compared to other factors, like social, governmental/political, or international responsibilities. However, the findings show that individual responsibility was the least influencing the perception of obesity. The respondents felt obese females should not be blamed for being in that state.

A high proportion of respondents neither agree nor disagree with the following statements on obesity: *“The lack of health care insurance that covers medical expenses for obese persons is responsible for the rise in obesity cases in Nairobi County, Kenya.”* with **61.7%** and **45.9%** for pre-test and post-test respectively. *“The lack of interest in dealing with obesity from a National level is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County, Kenya,”* with **56.3%** and **48.2%** for pre-test and post-test, respectively. *“The lack of government funding and support in pushing for agendas that can help reduce obesity cases is responsible for obesity in Nairobi County, Kenya,”* with **50.9%** and **48.2%** for pre-test and post-test, respectively. *“The lack of public health policies that aim at reducing the rise of obesity cases in Kenya is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County,”* with **50.9%** and **48.2%** for pre-test and post-test, respectively. Armentia and Marin (2015) argues that the obesity issue tackled from a public health approach tends to have more impact despite the heightening public prejudice; therefore, these findings shows dissatisfaction from the respondents with how the government and public health institutions in Kenya have handled the issue of obesity case among female.

**Analysis of Sample Paired Statistics****Table 5: Paired Sample Statistics and Corresponding T-tests**

		Pre-test		Post-test		T-test	
		Mean	SD	Mean	SD	t-stat.	p-value
1	A middle-aged obese woman is personally responsible for obesity because of lack self-control.	2.84	1.121	2.71	1.164	1.707	0.089
2	A middle-aged obese woman is personally responsible for obesity because of over-eating.	2.71	1.029	2.81	0.99	-1.227	0.221
3	A middle-aged obese woman is personally responsible for obesity because of overindulging in foods with high fats.	2.77	1.125	2.86	1.078	-1.06	0.29
4	A middle-aged obese woman is personally responsible for obesity because of not exercising.	2.68	0.986	3.08	0.922	-4.969*	0
5	A middle-aged obese woman is personally responsible for obesity because laziness.	2.57	1.181	2.81	1.143	-2.457*	0.015
6	Media is responsible for spreading news reports without providing public health fact sheets and reports on obesity.	3.5	0.8	3.53	0.788	-0.457	0.648
7	Media is responsible for creating content, i.e., images and videos showing obese female overindulging in fast foods and alcohol.	3.68	0.877	3.91	0.703	-3.679*	0
8	Media is responsible for showcasing slim bodied celebrities on TV, newspapers and magazines, thus increasing obesity stigma among female.	4.08	0.842	4.38	0.673	-5.075*	0
9	Media is responsible for supporting controversial weight loss practices that may be harmful to obese individuals.	3.84	0.94	3.97	0.963	-1.794	0.074
10	Media is responsible for under-reporting about obesity issues as a disease so that it can be given national attention to tackle it.	3.61	0.895	3.71	0.856	-1.577	0.116
11	The lack of public health information is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County, Kenya.	3.86	0.745	3.92	0.698	-1.514	0.131
12	The lack of public health policies that aim at reducing the rise of obesity cases in Kenya is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County.	3.64	0.733	3.67	0.728	-0.496	0.621
13	The lack of government funding and support in pushing for agendas that can help reduce obesity cases is responsible for obesity in Nairobi County, Kenya.	3.64	0.741	3.56	0.815	1.214	0.226
14	The lack of health care insurance that covers medical expenses for obese persons is responsible for the rise in obesity cases in Nairobi County, Kenya.	3.39	0.832	3.43	0.904	-0.622	0.535
15	The lack of proper health clinics that facilitate and treat obesity cases is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County, Kenya.	3.45	0.905	3.49	0.96	-0.583	0.561
16	The lack of interest to dealing with obesity from a National level is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County, Kenya.	3.59	0.755	3.62	0.873	-0.597	0.551

From the table of mean and standard deviation, we make the following observations: Generally high means (above average) are registered by all the variables of the responsibility frame in both the pretest and post-test scores. High means are registered across the groups in the following variables: *"Media is responsible for showcasing slim bodied celebrities on TV, newspapers, and magazines, thus increasing obesity stigma among females"*; **4.08** and **4.38** for the pretest and post-test, respectively. *"Media is responsible for supporting controversial weight loss practices that may harm obese individuals"*: **3.84** and **3.97** for the pretest and post-test, respectively. *"The lack of public health information is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County, Kenya,"* **3.86** and **3.92** for the pretest and post-test, respectively. Frederick et al. (2016) establish that media framing of obesity is essential to forming the audience's perception of the disease, including developing public policies. The writers cited that several studies agree that most news media frames obesity as a matter of individual responsibility. This framing makes it hard for social change to occur because the key players, like the government, are uninvolved.

Relatively low means are registered across the groups by the variable below: *"A middle-aged obese woman is personally responsible for obesity because of laziness"*; **2.57** and **2.81** for pretest and post-test scores, respectively. The t-test results show that the pretest and post-test results are significantly different at a 5% level of significance in only the following variables: *A middle-aged obese woman is personally responsible for obesity because of not exercising; A middle-aged obese woman is personally responsible for obesity because laziness; Media is responsible for creating content, i.e., images and videos showing obese female overindulging in fast foods and alcohol; and Media is responsible for showcasing slim bodied celebrities on TV, newspapers, and magazines, thus increasing obesity stigma among female.* Supporting findings from Armentia and Marin (2018) reveal that forty-seven percent of analysed media articles show that individuals and their families were responsible for obesity causes, while sixty-three percent of respondents accounted for the solutions to the affected individuals. Furthermore, females were found more responsible for the disease than men because their role is to prepare and provide healthy meals for their families.

### **Factor Analysis**

The factor analysis was successful in extracting three independent components of the responsibility frame. The Kaiser-Meyer –Olkin (KMO) test of adequacy (KMO=0.386; Chi-square=13164, d.f=120, p=0.000) was significant, implying factor analysis using the principal component method was appropriate. The three components cumulatively explain 80.5 % of the total variability.



**Table 6: Factor Analysis Results**

	<b>Government &amp; public responsibility</b>	<b>Individual responsibility</b>	<b>Social responsibility</b>
The lack of public health policies that aim at reducing the rise of obesity cases in Kenya is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County.	.880*	0.116	0.259
The lack of government funding and support in pushing for agendas that can help reduce obesity cases is responsible for obesity in Nairobi County, Kenya.	.878*	0.127	0.33
The lack of proper health clinics that facilitate and treat obesity cases is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County, Kenya.	.790*	0.233	0.396
The lack of health care insurance that covers medical expenses for obese persons is responsible for the rise in obesity cases in Nairobi County, Kenya.	.785*	0.254	0.448
The lack of interest to dealing with obesity from a National level is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County, Kenya.	.773*	0.187	0.467
A middle-aged obese woman is personally responsible for obesity because of over-eating.	0.216	.949*	0.129
A middle-aged obese woman is personally responsible for obesity because of overindulging in foods with high fats.	0.21	.944*	0.11
A middle-aged obese woman is personally responsible for obesity because laziness.	0.217	.922*	0.22
A middle-aged obese woman is personally responsible for obesity because of lack self-control.	-0.145	.834*	-0.005
A middle-aged obese woman is personally responsible for obesity because of not exercising.	0.2	.807*	0.119
Media is responsible for supporting controversial weight loss practices that may be harmful to obese individuals.	0.222	0.014	.832*
Media is responsible for under-reporting about obesity issues as a disease so that it can be given national attention to tackle it.	0.496	0.155	.753*
Media is responsible for showcasing slim bodied celebrities on TV, newspapers and magazines, thus increasing obesity stigma among female	0.248	0.219	.734*
Media is responsible for creating content, i.e., images and videos showing obese female overindulging in fast foods and alcohol.	0.451	0.099	.715*
Media is responsible for spreading news reports without providing public health fact sheets and reports on obesity.	0.386	0.254	.642*
The lack of public health information is responsible for the steady rise of obesity among 35-55 years University female academic staff in Nairobi County, Kenya.	0.58	-0.068	.608*

From the table, factor 1 describes inefficiencies and lack of responsibility from public health and government. For example, the lack of public health policies that aim at reducing the rise of obesity cases in Kenya, the lack of government funding and support in pushing for agendas that can help reduce obesity cases, the lack of proper health clinics that facilitate and treat obesity cases, the lack of health care insurance that covers medical expenses for obese persons and the lack of interest by the National level in dealing with obesity. Therefore, factor 1 could be called *Government and public health responsibility*. On the other hand, factor 2 described the irresponsible behavior of middle-aged obese females, such as over-eating, overindulging in foods with high fats, laziness, lack of self-control, and lack of exercise. Therefore, factor 2 can be referred to as *Individual responsibility*. Existing literature by Couch et al. (2015) show that most of these research studies attribute the individual responsible and solely to blame for the causes of the disease. If obesity is the sole responsibility of the individual, then he or she is responsible for treating it.

Factor 3 described the irresponsible social aspects such as supporting controversial weight loss practices, under-reporting obesity issues as a disease so that it can be given national attention to tackle it, and showcasing slim-bodied celebrities on TV, in newspapers and magazines, thus increasing obesity stigma among female, creating content, i.e., images and videos showing obese female overindulging in fast foods and alcohol, spreading news reports without providing public health fact sheets and reports on obesity and lack of public health information. Therefore, factor 2 can be referred to as *social responsibility*. According to Young et al. (2016), people who believe that social factors contribute to the causes of obesity are more likely to support public health policies that attempt to reduce/eradicate the disease.

### Inferential Statistics for Responsibility Frame

#### Research Hypothesis:

Responsibility frame has no significant cause and effect on the perception of obesity among 35-55 years University female academic staff in Nairobi County, Kenya.

#### Correlation between Responsibility Frame and Perception of Obesity

**Table 7: Correlations between Perception and Extracted Factors of Responsibility Frame**

	Perception	Government & public responsibility	Individual responsibility	Social responsibility
Perception	1			
Government & public health responsibility	0.346**	1		
Individual responsibility	-0.191**	0	1	
Social responsibility	0.539**	0	0	1

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The table shows that the selected variables of the responsibility frame are all significantly correlated with perception at a 1% significance level and uncorrelated among themselves. It was the test for the hypothesis, which means that the null hypothesis was rejected because there was a significant correlation between the selected variables of responsibility frame and the perception of obesity among 35-55 years University female academic staff in Nairobi County.

### Regression analysis

Fitting all extracted variables and the response in the model, the results were as shown in table below.

**Table 8: Parameter Estimates and their Standard Errors**

Parameter	Estimate, $\beta$	std. error	Wald	df	sig.	exp( $\beta$ )
constant(least negative)	-0.933	0.126	54.643	1	.000	0.393
constant(moderate)	1.660	0.151	120.992	1	.000	5.259
Government & public health responsibility	1.115	0.126	78.682*	1	.000	3.050
Individual responsibility	-0.637	0.114	31.275*	1	.000	0.529
Social responsibility	1.467	0.129	129.529*	1	.001	4.336

Link function: Logit.

The model fits well. Both Pearson (**734.8**) and Deviance (**694.6**) chi-square statistics for goodness of fit were significant ( $p$ -value=**0.00**). The results indicated that all the responsibility frame factors were statistically significant at a 5% significance level. The interpretations were as follows; Factor 1 focused on *Government & public health responsibility*, whereby the estimated odds ratio is **3.05**. Therefore for every one-unit increase in the *government & public health responsibility*, a person is three times more likely to have a lower negative perception towards middle-aged obese females as opposed to higher levels of negative perceptions. Factor 2 focused on *Individual responsibility*, whereby the estimated odds ratio is **0.529**. Therefore for every unit increase in *individual responsibility*, a person is 47% less likely to have a lower negative perception towards middle-aged obese females than higher negative perceptions. Factor 3 focused on *Social responsibility*, whereby the estimated odds ratio is **4.336**. Therefore for every unit increase in *social responsibility*, a person is 4.34 times more likely to have a lower negative perception towards middle-aged obese females than higher negative perceptions.

### Summary

From the findings, the respondents presented that the media was responsible for showcasing slim-bodied celebrities on TV, in newspapers and magazines, increasing the stigma of obesity among females. They felt that the media was also responsible for supporting controversial weight loss practices that could yield harmful to obese individuals. The respondents also state that the government and public health were responsible for the rise of obesity among 35-55

years University female academic staff because of inefficiencies, lack of health clinics specific to treat obesity cases and lack of insurance covers for obesity cases. However, on individual responsibility, the respondents' findings registered relatively low, indicating that the person may not entirely be blamed for obesity.

The inferential statistics successfully obtained three components about the responsibility frame using the factor analysis. Government and public health responsibility and social responsibility factors were more likely to produce a negative perception of obesity than personal responsibility. Most literature reviews captured the element of individual responsibility; nevertheless, the findings were dissimilar to previous studies that attribute individual responsibility as a major cause of obesity.

### **Conclusion**

Based on the quantitative analysis, it can be concluded that responsibility frames of obesity are important factors to consider when developing media content on nutritional health for individuals, specifically for a 35-55 years female affected with obesity and feels helpless to lose weight. The results also indicated that the affected obese individuals could be assisted if healthy eating policies were developed by communication advocacy groups and Government/public health and nutrition agencies.

### **Recommendations**

From the conclusions, it was evident that government and public health were deemed responsible for the rise of obesity among 35-55 years University female academic staff because of inefficiencies, lack of health clinics specific to treat obesity cases and lack of insurance covers for obesity cases. The study recommends that international bodies such as the World Health Organization and the Ministry of Health –in Human Nutrition and Dietetics Unit be actively involved in the development of relevant nutrition policies that address obesity cases affecting individuals and help in setting up health clinics for treating obesity cases. In addition, the Ministry of Health, in conjunction with National Hospital Insurance Fund (NHIF) and other registered medical insurance bodies in Kenya, should provide comprehensive insurance coverage exclusive to persons suffering from obesity.



## REFERENCES

- Abreu, A.A. (2015). Framing theory in communication research in Spain: Origins, development and current situation. *Revista Latina de Comunicación Social*, 70, 423-450.
- Agyeman, C., Boatemaa, S., Frempong, G. & Aikins, A.D. (2015). *Metabolic syndrome: Obesity in Sub-Saharan Africa*. Switzerland: Springer International Publishing.
- Allen, M. (2017). *The SAGE encyclopedia of communication research methods*. Thousand Oaks: Sage Publications.
- Amugsi, D.A., Dimbuene, Z.T., Mberu, B., Muthuri, S. & Ezeh, A.C. (2017). Prevalence and time trends in overweight and obesity among urban women: An analysis of demographic and health surveys data from 24 African countries, 1991-2014. *BMJ Open*, 7, 1-22.
- Armentia, J.I. & Marin, F. (2018). How the Spanish Press frames obesity: A study of content published by El País La Vanguardia, and El Correo in 2015. *Journalism*, 1-19.
- Babbie, E. (2011). *The basics of social research*(5th ed.). Australia: Wadsworth, Cengage Learning.
- Baker, T.L. (1994). *Doing social research*(2nd.ed.). New York: McGraw-Hill Inc.
- Brahmbhatt, M. (2017). Social and physical determinants of obesity in adults. *Advances in Obesity, Weight Management & Control*, 6(1), 17-23. Retrieved from <https://medcraveonline.com/AOWMC/AOWMC-06-00144.pdf>
- Brun, A.D., McCarthy, M., McKenzie, K. & McGloin, A. (2015). Examining the media portrayal of obesity through the lens of the Common Sense Model of illness representation. *Health Communication*, 30, 430-440.
- Couch D, Thomas SL, Lewis S, Blood, R.W., Komesaroff, P. (2015) Obese adults' perceptions of news reporting on obesity: The panopticon and synopticon at work. *Sage Open*
- Creswell, J.W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches*(4th ed). Los Angeles: Sage.
- Entman, R.M. (1991). Framing US coverage of international news: Contrast in narratives of KAL and Iran air incidents. *Journal of Communication*, 41(4), 6-27.
- Etikan, I. & Bala, K. (2017). Combination of probability random sampling method with non probability random sampling method (sampling versus sampling methods). *Biometrics & Biostatistics International Journal*, 5(6), 210-213.
- Frederick, D.A., Saguy, A.C., Sandhu, G. & Mann, T. (2016). Effects of competing news media frames of weight on antifat stigma, beliefs about weight and support for obesity-related public policies. *International Journal of Obesity*, 40, 543-549.
- Islam, S. & Fitzgerald, L. (2016). Indigenous obesity in the news: A media analysis of news representation of obesity in Australia's indigenous population. *BMC Obesity*, 3(30), 1-10.

- Kenya National Bureau of Statistics. (2018). *Population distribution by sex, number of households, area and density by administrative unit*. Retrieved from <https://www.knbs.or.ke/population-distribution-by-sex-number-of-households-area-and-density-by-administrative-units/>
- Khan, A., Afridi, A.K. & Safdar, M. (2013). Prevalence of obesity in the employees of Universities, Health and Research Institutions of Peshawar. *Pakistan Journal of Nutrition*, 2(3): 182-188.
- Kyoung An, S. & Gower, K.K. (2009). How do the news media frame crises? A content analysis of crisis news coverage. *Public Relations Review*, 35, 107-112.
- Leavy, P. (2017). *Research design: Quantitative, qualitative, mixed methods, art based and community-based participatory research approaches*. New York: The Guilford Press.
- Lenneis, V. & Pfister, G. (2017). Health messages, middle-aged women and the pleasure of play. *Annals of Leisure Research*, 20(1), 55-74.
- Luo, H., Li, J., Zhang, Q., Cao, P., Ren, X., Fang, A., Liao, H. & Liu, L. (2018). Obesity and the onset of depressive symptoms among middle-aged and older adults in China: Evidence from the CHARLS. *BMC Public Health*, 18(909), 1-9.
- McGlynn, J. & McGlone, M.S. (2018). Desire or disease? Framing obesity to influence attributions of responsibility and policy support. *Health Communication*, 1-13.
- Ministry of Health (2013). *Transforming health: Accelerating attainment of Universal health Coverage: The Kenya Health Sector Strategic and Investment Plan -KHSSP July 2012- June 2017*. Nairobi: The Ministry of Health.
- Nkwoka, I.J., Egua, M.O., Abdullahi, M., Sabi, A. & Mohammed, A.I. (2014). Overweight and obesity among staff of Usmanu Danfodiyo University, Sokoto, Nigeria. *International Research Journal*, 201, 290-295.
- Rodhain, A. & Gourmelen, A. (2018). Obesity: The link between stigma and perceived responsibility. *Journal of Marketing Management*, 34(15-16), 1418-1439.
- Semetko, H.A. & Valkenburg, P.M. (2000). Framing European politics: A content analysis of press and television news. *Journal of Communication*, 50(2), 93-109.
- Stratton, S.J. (2019). Quasi-Experimental design (Pre-test and Post-test Studies) in prehospital and disaster research. *Prehospital and Disaster Medicine*, 34(6), 573-574.
- Taherdoost, H. (2016). Sampling methods in research methodology: How to choose a sampling technique for research. *International Journal of Academic Research in Management*, 5(2), 18-27.
- Vidar, H., Randi, S., Kristian, G. H., Aage, T., & Stein, V. (2013). Body mass index, smoking, and risk of death between 40 and 70 years of age in Norwegian cohort of 32,727 women and 33, 475 men. *European Journal of Epidemiology*, 28(1), 35-43.
- World Health Organization. (2017). *African parliament decision to pass tax bill on sugary drinks*. Retrieved from <https://www.afro.who.int/news/who-commends-south-african-parliament-decision-pass-tax-bill-sugary-drinks>.

Young, R., Hinnant, A. & Leshner, G. (2016). Individual and social determinants of obesity in strategic health messages: Interaction with political ideology. *Health Communication*, 31(7), 903-910.