

Perceptions of nurses on obesity treatment options

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Abstract

Background: Obesity is described as deviation from normal fat accumulation which endangers the health of an individual. The Body Mass Index (BMI) is normally used to indicate whether an individual is obese or otherwise. Different options of treatments are used in obesity reduction. Nurses play a significant role in providing medical care in obesity reduction.

Objectives: The study aimed at exploring the perceptions nurses have on obesity treatment options at the Korle-Bu Teaching Hospital, in the Greater Accra Region of Ghana.

Methods: The study used is an exploratory, descriptive qualitative design. Twelve (12) participants (nurses) were purposively sampled for the study. A semi-structured interview was also used to collect data from the participants. All the interviews were audio recorded, transcribed verbatim and analyzed using thematic content analysis, coding and categorization.

Findings: Findings show that 7 (58.3%) of the participants hold the view that obesity treatment options help to reduce weight and prolong the lifespan of patients. Conversely, 4 (33.3%) of participants argue that treatment options such as exercise, surgery, diet and herbal preparations might be costly or cheap.

Conclusions: Based on the findings, the need for food and exercise policies in all hospital settings was recommended. The need for workshops and specialists' courses to train nurses on obesity treatments was also emphasized.

Keyword: Body Mass Index; Nurses; Obesity; Overweight; Patients; Perceptions; Treatment Options

1 Introduction

Overweight and obesity are described as deviations from normal fat accumulation which endangers the health of an individual [1]. In assessing obesity, the best and extensively patronized way is to use the Body Mass Index (BMI). Other assessors of obesity include skinfold thicknesses, bioelectrical impedance, waist circumference, and waist-to-hip ratio [2]. The values that indicate whether an individual is obese or not are in ranges: below 18.5 is underweight, 18.5-24.9 is healthy weight, 25 - 29.9 is overweight, 30 and above is obese, 40 or higher is severely obese, also known as morbidly obese [3].

The causes of obesity include ingestion of medicine (mainly psychiatric medications, corticosteroids, specific β -adrenergic receptor blockers, and insulin), sleeping behaviors and quality, smash foods and yoyo-outcome, smoking

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cessation, lifestyle choices, cultural setting and alcohol intoxication [4, 5]. Obesity and overweight are the main factors giving rise to a number of chronic diseases such as cancer and diabetes. Obesity also leads to certain heart conditions such as hypertension, left ventricular hypertrophy, and co-morbid disorders like cardiovascular, metabolic, orthopedic and hepatic [1, 5].

The global occurrence of overweight and obesity have increased since 1980. Obesity levels have risen in all ages regardless of one's environment, culture or socioeconomic position [6]. According to the World Health Organization, of the adults who were classified as overweight, 31% of them were found to be obese [7]. Also, the Organization for Economic Development indicated that out of the adults' total number in 2015 by the, 19.5% were obese [8].

Studies in Africa revealed that overweight and obesity resulted in an increased number of disability and death cases [9]. In Ghanaian adults, there is an increase in the occurrence of overweight and obesity. Studies showed that among school-age kids, 17% were overweight and obese. In addition, 44% of them were liable to obesity or overweight because they showed less interest in taking part in sporting events [10, 11]. Also, obesity prevalence was 0.8% and overweight was 12.2% among 500 students at Junior High Schools in Ghana [12].

Treatment options and predictions are vital in the making of decision for patients. The beneficial ways of managing obesity consist of diverse interventions which range from lifestyle, surgical to pharmaco-therapeutics. Therefore, an individual's perspectives on choosing weight controlling methods can aid healthcare workers to advice patients [13, 14].

Nurses work in several specialty areas in hospitals to deliver care for persons, family, and communities in order for them to achieve, sustain, or recover quality health and good life [15]. Nurses play a role in preventing and recognizing weight issues and for providing guidance to patients [16, 17].

The study sought to explore the perceptions of nurses on obesity treatment options at the Korle-Bu Teaching Hospital, Accra in Ghana.

Specifically, the study sought to:

- Investigate the thoughts of nurses on obesity treatment options.
- Identify the effect of social influences on nurses' perceptions on obesity treatment options.
- Explore the easiness and difficulties of nurses advocating obesity treatment options.
- Identify the motivational factors influencing nurses on advocating obesity treatment options.

The outcome of this study will contribute to increasing awareness on accessibility and available on treatment options. The study will also serve as a guide in counseling obese patients and on the choices of treatment options of obesity in Ghana. Finally, it will provide vital information for hospital administrators in the care and management of obesity.

2 Material and methods

2.1 Study Design and setting

A qualitative exploratory descriptive design was used for data collection [18]. This design was selected for this study because it provides a detailed comprehension of the problem by exploring the various forms and views of nurses on obesity treatment options.

The study was conducted at the Medical Out-Patient Department of the Korle-Bu Teaching Hospital located in the Greater Accra Region of Ghana. The Korle-Bu Teaching Hospital was chosen because its Medical Outpatient Department has an Endocrine Clinic which deals with care and management of obesity patients. As such, the clinic provides adequate information on obesity treatment options.

2.2 Population, Sample size and Sampling Technique

A purposive sampling technique was used in selecting participants for the study. Out of a population of five hundred and twenty-two nurses, at the time of the study, twelve nurses were included in the study because the point of data saturation was reached. Inclusion criteria for participation in the study covered nurses working at the Endocrine Clinic. The exclusion criteria exempted the nurses who did not work at the Endocrine Clinic.

2.3 Data Collection Tool and Procedure

A semi-structured interview guide was employed to collect data from face-to-face interviews. The interviews explored the perceptions of nurses on obesity treatment options. The interview guide was framed based on the objectives of the research. The interview guide was prepared into two sections: A, and B. Section A comprised of the socio-demographic information of the participants and Section B contained the ten main research open-ended questions. A pre-test of the interview guide was conducted on two registered nurses at the 37Military Hospital. The researcher sought consent from the Korle-Bu Teaching Hospital and acquired permission and consent from the nurses who agreed to partake in the study. Face-to-face interview English was employed at a location, date and time, which were convenient to the respondents and the researcher. At the beginning of the interview session, pleasantries were exchanged between the participant and the researchers in order to make the participants feel comfortable with the interview environment. Participants were allowed to read the information sheet which comprised of knowing the general information about the study, the possible risks and discomforts, the possible benefits, confidentiality matters, compensations, voluntary participation and right to leave the research study and also who to contact for further information; so that any misconception would be clarified. Participants were encouraged to respond to the questions as they want but not on coercion. In the course of each interview, the investigator probed and redirected replies. Moreover, respondents were allowed to take time in answering the questions posed to them. The interviews were recorded using a voice recorder with the consent of the participants. The researcher kept the field records. Each interview lasted between 30 to 45 minutes. The researcher analyzed the data alongside as the data were being gathered. The interviews that were recorded were transcribed verbatim. The researcher employed thematic content analysis to analyze the data. With the help of the thematic content analysis, the researcher made multiple copies of interview transcripts. All descriptions which were pertinent to the topic of investigation were marked with a highlighter pen. Each distinct unit of meaning was marked. Units which were similar were put together in a mass, the units were coded. Each mass was labeled into categories with keywords and phrases. The transcribed interview data and identified words, phrases, expressions, ideas or statements, and sentences that denoted the phenomenon under investigation were noted. The researcher used the information to generate codes, and the codes were therefore put into sub-themes and then gather the sub-themes and put them into themes [19].

2.4 Methodological rigor

Rigor was maintained based on the structure namely, credibility, transferability, dependability, and confirmability [20]. To achieve credibility in this study, the researcher employed purposive sampling to select the required participants who were professional nurses working at the endocrine clinic. Transferability was attained by the comprehensive explanation of the context of this research. Dependability was realized in this study by the full explanation about the sample, location, methods and analysis. For the researcher to attain confirmability, the researcher pursued a detailed perception of nurses on obesity treatment options. Data was gathered till a saturated point was reached. Data analysis was based on the data offered by the participants and lacked the investigator's feelings.

2.5 Ethical considerations

The research was approved by the Institutional Review Board (IRB) of the Korle-Bu Teaching Hospital. Consent forms were offered to respondents who agreed to be part of the study. They were asked to sign after they had met the inclusion criteria. Confidentiality and anonymity of the real source(s) of facts to be obtained for the study were ensured by not showing the names of the individuals who took part in the study. Privacy was ensured by interviewing the individual participants in the Unit head's office. Upon the outbreak of COVID 19, the researcher ensured that the appropriate measures such as maintaining a safe distance, sanitizing and washing of hands, using of face mask and face shield, ensuring no shaking of hands were strictly adhered to.

3 Result

3.1 Demographic data of participants

The nurses who participated in the study were both young and of middle ages; they were between the ages of 18 – 39 years. Ten of them were females and two were males. The majority of ten of them were registered general nurses, one public health nurse and one community health nurse. They were all Ghanaians and as well as Christians. Five of the participants have been working for three years, two for four years, two for six years, two for ten years, and one for seven years.

With the help of thematic content analysis, four main themes and nine subthemes regarding the perceptions of nurses on obesity treatment options emerged from the data. The major themes included; thoughts of nurses, social influences,

easiness and difficulties, and motivational factors. Under the first main theme, thoughts of nurses, there were two sub-themes, which comprised positive attitudes towards obesity treatment options and negative attitudes towards obesity treatment options. Under the second main theme, social influences were four sub-themes including beliefs of nurses about obesity treatment options patients' use, opinions on different options of treatment patients' use, beliefs about the cost of treatment options patients can afford, and motivating factors that cause the nurse to advocate the treatment options. Under the third major theme, easiness and difficulties, there were two subthemes: enabling factors of advocating for obesity treatments, and challenges of advocating for obesity treatments. Under the fourth major theme, motivational factors, there was one sub-theme: measures to help nurses

3.2 Thoughts of nurses on obesity treatment options

This theme described the thoughts that the participants had on the obesity treatment options. The participants had various opinions on obesity treatment options such as its effectiveness, cost of the treatments, commitment of the patient, feedbacks from patients and its patronage. These thoughts were either positive or negative.

3.2.1 Positive Attitudes Towards Obesity Treatment Options

Findings of the study showed that nurses demonstrated a positive feeling in regards with the treatment options for obese patients.

One of the participants stated that the treatments are effective even though some are uncommon but when practiced, it is effective.

- “But in this country, I do not know if is common. I haven’t come by anyone who has done gastric bypass in relation to cure. For diet and exercise sure, I have come by people. To some extent they are effective. So, the patient is not my direct friend but someone I knew from a friend and I realized she had lost weight compared, she did the surgery early last year and I saw her later in the year and comparing I realized she has lost weight. So is effective.” TH

Most of the participants declared that people do patronize treatment options

- “Oh yeah people get involved with the treatment, especially those diabetic patients and hypertension people who are obese. Yes, they do refer them to the dieticians. Some people patronize it.” TI

3.2.2 Negative Attitudes Towards Obesity Treatment Options

The findings of study revealed that nurses also have negative viewpoint toward the treatment options.

One participant mentioned that certain obesity treatment options were expensive to patronize.

- “But for the gym is costly, the amount they pay in a month is costly. Is not everyone who can afford it.” TI

One participant stated that patients are not committed.

- “Yeah, for me for instance it will be difficult for to see food and say am living healthy so I can’t eat. So, sometimes is difficult to adhere to it and you might crave to the food you take.” TK

3.3 Social influences on nurses’ perceptions on obesity treatment options

This theme showed that nurses believed there were treatments for obese patients which were being practiced both at the hospital and in the homes. The participants indicated that there are different ways (options) of treatment. The nurses’ beliefs about the costs of treatment options and belief in motivating factors made them advocate for the treatment options.

3.3.1 Beliefs of Nurses About Obesity Treatment Options Patients Use

The findings of the study revealed that nurses believed in obesity treatments as is either practiced in the hospital or outside the hospital.

One of the participants said:

- “To me I think is a good thing. It will help prolong the life of people who are obese.” TK

Also, another participant stated.

- “I think it will help very obese people in general who are not made to maybe exercise, to reduce their diet or something to reduce their weight.” TG

3.3.2 *Opinions on Different Options of Treatment Patients Use*

From the findings, it was exposed that participants believed that there are options for the treatment of obesity.

One of the participants said:

- “Well, sometimes they can put you on a dietary treatment and exercise too. Well, I can’t actually tell but I hear people say they have some kind of tea and other traditional medicines that you can take.” TB

One of the participants indicated that,

- “I believe when you go to other countries, Europe system of managing their obesity patients there are other options but in Ghana here is just a diet and exercise. They have keto-diet that sometimes is prescribed for them.” TC

3.3.3 *Beliefs About the Cost of Treatment Options Patients Can Afford*

The findings also revealed that nurses have belief about the cost of treatment options patients can afford.

One of the participants said:

- “For the diet I will say is costly or is not because it depends on the type of food you want to buy or you want to eat, somebody can eat healthy with little, and somebody can eat healthy with much. So, it depends.” TI

Another participant proclaimed that:

- “Ok, when you go to the gym, that one is costly, but when you do it on your own by walking and skipping, that one is not costly.” TE

3.3.4 *Motivating Factors that Cause the Nurse to Advocate the Treatment Options*

Findings from the study showed that there are certain motivating factors that will determine whether a nurse will advocate for obesity treatment options or not.

One participant said:

- “For a nurse to advocate that it means that particular nurse has developed an interest in knowing much about what is involved in obesity.” TA

Another participant proclaimed that:

- “It is money, Ok, now if is money sometimes. One normally maybe the money.” TC

3.4 **Easiness and difficulties of nurses advocating obesity treatment options**

This theme explains that there are some factors influencing nurses to advocate obesity treatments. These included enabling factors and challenges of advocating for obesity treatments

3.4.1 *Enabling Factors of Advocating for Obesity Treatments*

The findings of the study revealed that there are factors which facilitated the nurses to advocate obesity treatments.

During the interview session, one of the nurses uttered:

- “If we have a lot of options like a, b, c, d. I tell patient A will you, she says no I can’t, but you know you have a, b, c, d so definitely the person can choose from one. But if you have just one option, and the person can’t, but ok, the person will know that going home he or she may not do it.” TD

Another nurse declared that:

- “You have to at least you as the person who is interested in achieving what you want to achieve, you have to also do research and then to know what is good for you as well.” TA

3.4.2 *Challenges of Advocating for Obesity Treatments*

The findings from the study uncovered certain challenges faced by nurses who advocate for obesity treatments.

In the interview session, one of the nurses voiced:

- “Sometimes when they go there, she will plan the diet with them, ok, so you are used to taking five pieces of plantain, why don’t you do it three, the adjusting to that thing will be a problem. Is always a problem.” TC

A nurse pronounced that:

- “With the gastric bypass, the only challenge will be maybe complications from surgery, so yeah, all complications from surgery we know about, you not feeling well, gaping, infections, all those things.” TH

3.5 **Motivational factors influencing nurses on advocating obesity treatment options**

This theme unravel that there are measures to help the nurses. These included plans for the nurses to be educated or trained on the treatment options through platforms or specialist’s schools. Also, the nurses should always be available to the patients, and attend to their needs.

3.5.1 *Measures to Help Nurses*

From the findings, it was shown that there are ways to help the nurses manage obesity.

One of the public health nurses said that:

- “Basically, there should be maybe in-service training concerning such conditions or workshops on such conditions that will help the nurse to boost their competencies and knowledge about such conditions.” TF

Another nurse during the interview disclosed that:

- “Staff should be available so when somebody is assigned this particular exercise, the person can have full time and have time for the patient, because the person wouldn’t be called to do other things so that he or she would be assigned to a particular treatment, help promote good result.” TJ

4 **Discussion**

The aim of the study was to explore the perceptions of nurses on obesity treatment options at the Korle-Bu Teaching Hospital, Accra. The findings shows nurses thoughts on obesity treatments, social influences about obesity treatment options, easiness and difficulties in advocating obesity treatment options, and motivational factors affecting nurses on the treatment options. These findings were then related to other studies. The literature supports a whole range of perceptions of nurses on obesity treatment options.

Findings show that nurses reported having good experience, this was revealed as one participant indicated that diet and exercise was an option people (patients) get really involved in and they practice it a lot. Many studies supported this fact that female nurses had a greater likelihood to opt for weight reduction as they approved physical workout being helpful to lose weight [21].

The study also revealed that some of the treatment options were costly (GHC 50.00 \approx \$8.56) but effective. This was consistent with the study findings of which revealed that a treatment option such as surgery cost about \$48,836 which in the Ghanaian currency is GHC 285,202.25. This option was nevertheless effective for patients [22].

In addition, nurses believed in multicomponent plans such as a combination of dietary and bodily activity approaches to target obesity [23]. This affirms the current study which indicated that nurses believed in different obesity treatment options such as dietary management, exercise, and gastric bypass.

The study also discovered that nurses believed that getting to know patients' complaints help them to advocate for the treatments. This is similar to a study which revealed patients' complaints are cherished sources for excellence improvements, hence nurses ought not to be only scientifically experienced, but also humanistic concerned [24].

Furthermore, the study revealed that acquisition of knowledge helps in diagnosing individual patient as early as possible for treatment to commence. This finding was consistent with a study which showed that nurses had insufficient knowledge to detect obesity in adults as well as in children, and preparation to care for the obese patients [25].

Obese patients mostly refuse to change their behaviours, which become an obstacle to the treatment [26]. Their findings are similar to the current study as it was discovered that the patient mindset was a challenge. The study revealed that nurses should be available in all ways to help patients when the need arises. Similarly, a study showed patients needed all sort of care, and both the organization and societal situations were inflexible [27]. Hence nurses were included in planning and delivery of healthcare services to make them ready to meet the necessities of the people.

Training courses should be planned for the nurses in order to help the nurses teach the patients a healthy lifestyle [28]. This is consistent with the current study which shows that certain measures such as policies and training of nurses were useful for nurses in managing obesity

4.1 Nursing implications

Nurses are expected to educate patients on their preference of treatment options and should be able to close the gap between their authorities, patients, and other workers through good communications skills and better relationships. Formulation of policies and protocols will make the nurses monitor patients' BMI regularly and on time which enable them give advice and counselling. Preparing students with the required skills and knowledge on obesity treatment options might enable them manage obese patients in all hospital.

5 Conclusion

The study explored the perceptions of nurses on obesity treatment options. The nurses believed in different obesity treatment options which help the patient to reduce weight and also prolong the lifespan of the patient. The nurses were confident of the effectiveness of the various treatment options, and they also believed that advocating for treatment options would be easier because of the effectiveness of the treatments. However, there were challenges such as the patient commitment to the treatment options, and success of the treatments. Measures such as policy formulation on obesity treatment, and training of nurses on obesity treatment options are therefore recommended.

Recommendation

- Nurses must be knowledgeable about treatment options for obese patients and they must team up with the dietician to help obese patients make the right choice.
- Avenues such as workshops and seminars should be organized for nurses to be trained on obesity treatment options.
- Nurses can specialize in courses having obesity management and possibly endocrine nursing.
- The curriculum for training nurses can be expanded to incorporate more information on obesity treatments or endocrine conditions.
- Policies concerning the various options available in the management of obesity should be formulated and implemented.
- Media corporations ought to apportion airtime for health informative programs on obesity for its sensitization and awareness

Study limitation

- The small sample size of 12 nurses could not be counted a good depiction of getting all the perceptions of the obesity treatment options in Ghana. The study took place in a single hospital in Ghana, and thus the findings cannot be generalized to other divisions.

Compliance with ethical standards

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Disclosure of conflict of interest

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Statement of ethical approval

The study was approved by the Institutional Review Board (IRB) of the Korle-Bu Teaching Hospital.

Statement of informed consent

The study involved information about persons, so the authors wrote informed consent.

References

- [1] World Health Organization. Obesity. Retrieved February, 2019. Available at <https://www.who.int/topics/obesity/en/Final>
- [2] School of Public Health. Obesity Prevention Source. Boston: Harvard TH Chan, 2017. Available at <http://www.ama-assn.org/ama/pub/news/neannualmeetPage>
- [3] National Library of Medicine. Obesity Screening. Retrieved (2021) from <https://medlineplus.gov/lab-tests/obesity-screening/>
- [4] van der Valk ES, van den Akker EL, Savas M, Kleinendorst L, Visser JA, Van Haelst MM, Sharma AM, van Rossum EF. A comprehensive diagnostic approach to detect underlying causes of obesity in adults. *Obesity reviews*. 2019 Jun, 20(6):795-804.
- [5] Sahoo K, Sahoo B, Choudhury AK, Sofi NY, Kumar R, Bhadoria AS. Childhood obesity: causes and consequences. *Journal of family medicine and primary care*. 2015 Apr, 4(2):187.
- [6] Chooi YC, Ding C, Magkos F. The epidemiology of obesity. *Metabolism*. 2019 Mar 1, 92:6-10.
- [7] World Health Organization. Obesity and overweight. Fact sheet. Geneva. Retrieved February 2019 from <https://www.who.int/topics/obesity/en/>
- [8] Organisation for Economic Co-operation and Development. Obesity update. Retrieved February 15, 2019 from <https://www.oecd.org>.
- [9] Hyland K. Methods and methodologies in second language writing research. *System*. 2016 Jul 1, 59:116-25.
- [10] Ofori-Asenso R, Agyeman AA, Laar A, Boateng D. Overweight and obesity epidemic in Ghana—a systematic review and meta-analysis. *BMC public health*. 2016 Dec, 16(1):1-8.
- [11] Aryeetey R, Lartey A, Marqus G. S, Nti H, Esi C, & Brown P. Prevalence and predictors of overweight and obesity among school aged children in Ghana. Retrieved September 2019 from <https://www.researchgate.net/6504>
- [12] Kumah DB, Akuffo KO, Abaka-Cann JE, Affram DE, Osaе EA. Prevalence of overweight and obesity among students in the Kumasi metropolis. *Journal of nutrition and metabolism*. 2015 Feb 11, 2015.
- [13] Rao VR, Candasamy M, Bhattamisra SK. Obesity an overview: Genetic conditions and recent developments in therapeutic interventions. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*. 2019 May 1, 13(3):2112-20.

- [14] Xing S, Sharp LK, Touchette DR. Weight loss drugs and lifestyle modification: Perceptions among a diverse adult sample. *Patient Education and Counseling*. 2017 Mar 1, 100(3):592-7.
- [15] Coulehan JJ, Block MR. *The medical interview: Mastering skills for clinical practice*. 1997. Philadelphia: FA Davis. 2005, 3.
- [16] Basdevant A, Laville M, Ziegler O, et de Diététique SD, Association Française d'Etudes et de Recherches sur l'Obésité (AFERO, Association de Langue Française pour l'Etude du Diabète et des Maladies Métaboliques. Recommendations for the diagnosis, the prevention and the treatment of obesity. *Diabetes & metabolism*. 2002 Apr, 28(2):146-50.
- [17] Jackson SE, Wardle J, Johnson F, Finer N, Beeken RJ. The impact of a health professional recommendation on weight loss attempts in overweight and obese British adults: a cross-sectional analysis. *BMJ open*. 2013 Nov 1, 3(11):e003693.
- [18] Abdul-Mumin KH. The process of internationalization of the nursing and midwifery curriculum: A qualitative study. *Nurse education today*. 2016 Nov 1, 46:139-45.
- [19] Anderson R. Thematic content analysis (TCA). *Descriptive presentation of qualitative data*. 2007, 3:1-.
- [20] Lincoln YS, Guba EG. *Ethics: The failure of positivist science*. Paper Accepted for presentation at the annual meeting of the American Evaluation Association, Kansas City, MO.1985
- [21] Fan M, Hong J, Cheung PN, Tang S, Zhang J, Hu S, Jiang S, Chen X, Yu S, Gao L, Wang C. Knowledge and attitudes towards obesity and bariatric surgery in Chinese nurses. *Obesity Surgery*. 2020 Feb, 30:618-29.
- [22] Klebanoff MJ, Corey KE, Chhatwal J, Kaplan LM, Chung RT, Hur C. Bariatric surgery for nonalcoholic steatohepatitis: a clinical and cost-effectiveness analysis. *Hepatology*. 2017 Apr, 65(4):1156-64.
- [23] Kelley CP, Sbrocco G, & Sbrocco T. *Behavioral Modification for the Management of Obesity*. National Library of Medicine. (2016). Available at <https://pubmed.ncbi.nlm.nih.gov/26896208/>
- [24] Wei H, Ming Y, Cheng H, Bian H, Ming J, Wei TL. A mixed method analysis of patients' complaints: Underpinnings of theory-guided strategies to improve quality of care. *international journal of nursing sciences*. 2018 Oct 10, 5(4):377-82.
- [25] Bucher Della Torre S, Courvoisier DS, Saldarriaga A, Martin XE, Farpour-Lambert NJ. Knowledge, attitudes, representations and declared practices of nurses and physicians about obesity in a university hospital: training is essential. *Clinical obesity*. 2018 Apr, 8(2):122-30.
- [26] Jallinoja P, Absetz P, Kuronen R, Nissinen A, Talja M, Uutela A, Patja K. The dilemma of patient responsibility for lifestyle change: perceptions among primary care physicians and nurses. *Scandinavian journal of primary health care*. 2007 Jan 1, 25(4):244-9.
- [27] Baumbusch J, Leblanc ME, Shaw M, Kjørven M. Factors influencing nurses' readiness to care for hospitalised older people. *International Journal of Older People Nursing*. 2016 Jun, 11(2):149-59.
- [28] Kelly M, Wills J. Systematic review: What works to address obesity in nurses?. *Occupational Medicine*. 2018 May 23, 68(4):228-38.