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**Research Paper**

# Nurses' knowledge about bariatric surgery at surgical wards in Al-Diwaniya Teaching Hospital

**Bahaa Mirza Skal***
*Lecture, M.Sc. Adult of Nursing Department, College of Nursing, University of Al-Qadisiyah, Iraq.

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**ABSTRACT**

**Background:** Bariatric surgery is the only type of therapy that demonstrates both efficacy and for a long-time impact on weight reduction and the amelioration of obesity-related morbidity. A nurse performs a crucial role in the following surgery by providing high-quality nursing care, preventing or minimizing problems, and facilitating the healing process.
**Objectives:** The aims of the study to evaluate the nurses' understanding of bariatric surgery and determine the correlation between their knowledge and demographic factors such as age, gender, education level, and extensive years of expertise.
**Methods:** An "descriptive cross-sectional study" was carried out to assess the nurses' proficiency in understanding the bariatric procedure in the surgical departments of Al-Diweniya Training Hospital. The duration of the study was prolonged from May 1st, 2024 to August 5th, 2024. A purposive (not-probability) representative sample (40) nurses employed in the surgical wards was selected. A survey was created to gather information on the demographic features of nurses and their comprehension of bariatric surgery. cross-sectional study was conducted to evaluate the nurses' level of knowledge regarding bariatric surgery in the surgical wards of Al-Diwaniya Teaching Hospital. The study was extended from May 1st, 2024 until August 5th, 2024. A deliberate "(non-probability) sample of (40) nurses" employed in the surgical wards was chosen. A survey was devised to collect data on the nurses' demographic characteristics and their understanding of bariatric surgery.
**Results:** The findings of the research indicate that a more of the nurses, precisely 81%, lack sufficient knowledge about postoperative care. In addition, 19% of the nurses shown a moderate degree of understanding, while none of them displayed a high level of awareness.
**Conclusion:** The current study determined that nurse prossess low knowledge regarding bariatric surgery.
**Recommendations:** The study proposes that nurse employed on surgical wards need to attend specialized training courses.

*Corresponding Author:*
Bahaa Mirza Skal



*Journal of Nursing Research, Patient Safety and Practice (JNRPSP)*

Lecture, M.Sc. Adult of Nursing Department, College of Nursing, University of Al-Qadisiyah, Iraq.
Email: bahaa.mirza@qu.edu.iq

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## 1. INTRODUCTION

Obesity has emerged as a significant public health concern in both economically developed and developing regions worldwide. In 2016, around 1.9 billion individuals worldwide were classified as overweight. Among this population, over There has been a threefold increase in the number of obese individuals during the 1970s, with a total of 650 million people being classified as obese. Based on the assumption that the current rate of gain maintains consistent, it is projected that by 2025, more than one-third of the worldwide adult population would be overweight and over 1 billion people will be classified as obese. By the year 2030, almost 57.8% of the adult population worldwide, which is equivalent to 3.3 billion people, will be categorized as overweight or obese [1]. The incidence of obesity in the Eastern Mediterranean region ranges from 74% to 86% among women and 69% to 77% among men [2]. In Iraq, the prevalence of obesity among the older population is 65.6%, which corresponds to around 23.6 million individuals [3]. Obesity is the buildup and uneven spread of body fat, caused by factors such genetic inheritance, consumption of high-calorie and high-fat foods, and insufficient Exercise [4]. "Bariatric surgery" is a highly efficient remedy for severe obesity that results in a decrease and reversal of various health problems linked to obesity, sustained reduce of weight, enhancement in quality of life, and extended lifespan [5]. Surgical results in significant weight reduce and aids in preventing, enhancing, or conquering over 40 diseases and conditions associated with obesity, these include cardiovascular illness, type 2 diabetes, obstructive sleepapnea, and specific types of cancer. There exist three distinct surgical procedures for weight loss: The gastric constraints, lack of absorption, or a mix of both can occur. Restricted operation diminishes the stomach's capacity to limit the quantity of food that can be ingested in a single sitting. Malabsorption techniques disrupt the process of food and nutrients being absorbed in the gastrointestinal system [6]. The selection of the surgical procedure is mostly based on the degree of being obese, the presence of additional medical conditions, the surgeon proficiency, and the specific requirements of the person or any other factors that may prevent the procedure [7]. Prior to suggesting surgical intervention, strict criteria are used for choosing patients, including: (i) having obesity for more than 5 years, (ii) experiencing frequent failure of non-surgical therapies, (iii) having a BMI If an individual has a "body mass index" (BMI) that is "more than 40 kg/m2 or a BMI higher than 35 kg/m2" along with additional medical concerns, (iv) being between the ages of 21 and 65, (v) not having any mental illnesses, and (vi) not alcohol abusing or psychiatric drugs [8]. The rate of death associated with bariatric procedures is high, while the likelihood of experiencing complications after surgery is significant. Possible postoperative complications might involve prosthesis leaks leading to an infection of the per infection of the wound, an abdominal hernia, thrombosis of deep veins, gall bladder stones, edema, intestinal discomfort, and nutritional deficiencies [9]. A nurse performs a crucial role in ensuring the welfare and medical care of patients. Their responsibilities include aiding patients in their surgery planning, informing them about probable post-surgical complications, and coordinating the appropriate arrangements for their recuperation [10].

## 2. RELATED WORK

Consuming a diet that is rich in fat and cholesterol is a prevalent factor in the development of overweight or obesity. Obesity is linked to a diet that is high in saturated fat, leading to an increase in low-density lipoproteins (LDL, or LDL-C for low-density lipoprotein cholesterol). Heart disease is correlated with trans fatty acids (TFAs), saturated fats, and cholesterol [11]. Undoubtedly, physical inactivity is the

most crucial factor associated with obesity. Sedentary individuals may consume fewer kilojoules than those who are physically active, yet their weight continues to increase due to a lack of energy expenditure. The growing demands of work and time constraints, along with many sociological and environmental factors, encourage the use of labor-saving gadgets and reliance on cars for transportation. Engaging in sedentary activities such as watching television or using the internet leads to a decrease in energy expenditure [12]. Diminished self-esteem can be a contributing factor to detrimental eating habits, such as the consumption of comfort foods like chocolate. Consequently, the subsequent weight increase can further worsen one's self-image. Excessive eating might occur due to anxiety, despair, guilt, boredom, or as a way to seek attention. Overeating can be defined by some academics as a form of food addiction and a way to cope with stressful life situations [13]. Up to 70% of individuals who are fat may have a genetic susceptibility to obesity. Obesity has been associated with a range of identified genes. Genes appear to influence the storage of calories and the release of energy. In communities where food scarcity is no longer a concern, the presence of "energy-thrifty" genes, which were once advantageous during periods of food shortage, now have a negative impact on individuals. Genes may be accountable for the variations in body size observed between two individuals residing in the same environment [14]. A robust correlation exists between the FTO gene (fat mass and obesity-associated gene) and the body mass index (BMI). Genetic variations of this gene may elucidate the reason why certain individuals experience weight gain while others do not. Individuals possessing a specific variant of the FTO gene allele exhibit a heightened desire to eat, diminished feelings of fullness, and an elevated intake of calories [15]. The employment environment has a well-established impact on the prevalence of obesity. The limited availability of time for exercise and physical activity due to extended working hours will result in an increase in Body Mass Index (BMI). Additionally, it may result in a shift towards pre-packaged meals and fast food rather than handmade meals. Obesity can be caused by medical conditions such as Cushing's disease and hypothyroidism. Obesity can be influenced by insulin resistance resulting from polycystic ovarian syndrome. Some drugs, such as steroids and antidepressants, can lead to fast weight gain [16]. Patients' height and weight are measured in order to calculate their body mass index. The Body Mass Index (BMI), calculated by dividing body weight in kilogrammes by height in meters squared, is considered the most reliable method for determining if a patient is overweight or obese. Patients are categorised as overweight or pre-obese if their BMI falls between 25 and 29.9 kg/m2. They are also considered to have obesity if their BMI exceeds 30 kg/m2. Obesity is classified as severe or extreme when the body mass index (BMI) exceeds 40 kg/m2, according to the World Health Organisation (WHO) in 2015. Additionally, it is feasible to examine the hip and waist-to-hip ratio. Women with waist-to-hip ratios exceeding 0.80 and males with waist-to-hip ratios exceeding 0.90 are believed to have a higher proportion of visceral fat storage, specifically in the abdominal region. Android obesity refers to a morphological look commonly recognised as a "apple-shaped" appearance. Individuals with android obesity have a higher likelihood of getting type 2 diabetes, coronary artery disease, and stroke compared to individuals with gynoid obesity, which is frequently referred to as the "pear-shaped" physique [17].

## 3. METHODOLOGY

To achieve the goals of this research: [18] In order to accomplish the objectives of this research: [19] An descriptive cross-sectional study was conducted to evaluate the nurses' level of knowledge regarding bariatric surgery in the surgical wards of Al-Diwaniya Teaching Hospital [20]. The study was extended from May 1st, 2024 until August 5th, 2024.

The researcher devised tools for the investigation [21]. A subset of 40 nurses was chosen using non-probability purposive sampling. The research instrument content of two parts: the first part collects demographic data about the nurses [22], while the second part evaluates their knowledge of bariatric surgery using a set of 20 items classed as "Know" and "Don't Know". Each question comprised two components: one denoting knowledge and the other denoting lack of understanding. The value of 2 is allocated to the option "Know answer" while the value of 1 is assigned to the option "Don't Know". The test is anticipated to be finished within a time frame of around 25 to 30 minutes [23].

The validity of the study instrument was evaluated by a "panel of 12 experts", while its reliability was verified using the alpha Cronbach approach. The data analysis involved using descriptive statistics and statistical inference to detect differences in the demographic characteristics of the nurses and their degree of knowledge. The data were analyzed using the SPSS software, especially version 26.0. Descriptive data analysis entails computing the Mean of the score (M.S), along with its Standard Deviation (S.D) and frequency (f). Inferential data analysis involves the application of statistical procedures such as the T-test for independent samples, one-way analysis of variance (one-way ANOVA), and Pearson correlation.

## 4. RESULTS AND DISCUSSION

Table 1. The Demographic Data of the Study Sample

| Demographic Data | Rating and Intervals | F | % |
|---|---|---|---|
| Age / years | 20-25 | 26 | 65.0 |
| | 26-30 | 12 | 30 |
| | 31-35 | 1 | 2.5 |
| | 36-40 | 1 | 2.5 |
| | Total | 40 | 100 |
| sex | Male | 17 | 42.5 |
| | Female | 23 | 57.5 |
| | Total | 40 | 100 |
| Educational Level | Secondary School of Nursing | 6 | 15.0 |
| | Diploma in Nursing | 10 | 25.0 |
| | Bachelor in Nursing | 24 | 60.0 |
| | Total | 40 | 100 |
| Years of Experience in Nursing | 1-5 | 34 | 85.0 |
| | 6-10 | 5 | 15.5 |
| | 11-15 | 1 | 2.5 |
| | Total | 40 | 100 |
| Years of Experience in Surgical Ward | 1-5 | 39 | 97.5 |
| | 6-10 | 1 | 2.5 |
| | Total | 40 | 100 |
| Nursing Documentation Training Courses | Yes | 3 | 7.5 |
| | No | 37 | 92.5 |
| | Total | 40 | 100 |

F = frequency, % = percent

Table 1 presents the demographic data of the sample used in the study. The study's findings reveal that 65.0% of nurses fall within the age group of 20-25 years old. The chart indicates that 57.5% of nurses were of the female gender. The data from the table reveals that a significant proportion of nurses (60%) possessed a bachelor's degree in nursing. 85.5% of nurses possess a range of 1-5 years of experience in the field of nursing. Within the surgical ward, a significant majority of nurses, namely 97.5%, has a range of 1-5 years of expertise exclusively in performing surgical procedures. Nevertheless, an overwhelming majority (92.5%) of nurses have not undergone any form of training in nursing documentation courses.

Table 2. Knowledge of Nursing Staff Regarding Bariatric Surgery

| Level of Nurses' Knowledge | F | % | MS | Std. Deviation | ASS |
|---|---|---|---|---|---|
| Low | 18 | 45.0 | 1.46 | .136 | fair |
| Fair | 15 | 37.5 | | | |
| Good | 7 | 17.5 | | | |
| Total | 40 | 100.0 | | | |

The ratings can be categorized as follows: good (with a mean between 1.68 and 2), fair (with a mean between 1.34 and 1.67), and low (with a mean between 1 and 1.33). F represents frequency, while % represents percent. Ass. stands for Assessment, MS represents Mean Score, and Sd stands for Standard Deviation.

Table 2 shows the mean of level of nurses' knowledge was (1.46), the majority of the study sample was (45.0%) a fair level of nurses' knowledge.

Table 3. Correlation between Nurses' Overall Knowledge Assessment and their Demographic Data

| Demographic Data | P-Value | S |
|---|---|---|
| Age/Years | .770 | N.S |
| Sex | .949 | N.S |
| Education Levels | .739 | N.S |
| Years Of Experience in Nursing | .473 | N.S |
| Years Of Experience in Surgical Ward | .030 | I.S |
| Nursing documentation Training Courses | .659 | N.S |

A result is considered significant (S) if the P-value is less than 0.05. Conversely, a result is considered nonsignificant (NS) if the P-value is greater than 0.05.

The Table 3 demonstrate that there is no correlation among the general knowledge of nurses and their demographic information in most cases, with a p-value more than 0.05, except for the item "years of experience in surgical ward," where there is a correlation with a p-value of 0.03.

### 4.1 Discussion

The study included a sample aged (20-25) years old, accounting for (65.0%)) of the all participants. The findings were consistent with the research made by (20), which reported that the largest proportion (39.8%) of nurses fell between the age range of (18-27) years old. This study reveals that the more of the samples, specifically (57.5%), consist from female participants. This study corroborated the findings of (21), which indicated that the more participants from female, accounting for (58.5%) of the total responses. In the present study, the highest proportion of participants have attained a secondary school education in the field of nursing, accounting for (60.0%). The results of this study corroborated the findings of (22), which reported that (56.7%) of the nurses included in the study had a Secondary School education. The study results indicate that 85.0% of nurses working in nursing wards and 97.5% in surgical wards have 1 to 5 years of experience. These findings align According to a survey conducted by (23), more than 50% of the participants had between 1 and 5 years of experience. Moreover, the current study demonstrates that a substantial percentage (45.0%) of participants possess a limited understanding about bariatric surgery (24). The study posits that the nurses' deficiency in understanding bariatric surgery may be ascribed to a multitude of causes. Firstly, bariatric surgery is a recently developed method for addressing obesity, and nurses may not have received thorough education on this approach on obesity and bariatric surgery throughout their nursing education (25). Additionally, there may be a lack of training courses specifically focused on bariatric surgery for nurses. Lastly, nurses may not actively engage in continuous learning and updating of their knowledge in this field.

## 5. CONCLUSION

The majority of the nurses involved in this study lacked the knowledge related to bariatric surgery, including knowledge about the bariatric surgery, and awareness of potential consequences.

- No discernible difference among demographic variables (such as age, sex, educational level, and years of experts in nursing, surgical ward) and nurses' level of knowledge.

- The study revealed that the prevailing demographic of participating nurses were females aged between (20-25) years. These nurses had completed a bachelor's in nursing and had 1 to 5 years of experts in nursing and surgical ward.

### 5.1 Recommendation

- Providing training courses for nurses to augment their comprehension of the procedure of bariatric surgery.
- These nurses should receive training classes to augment their comprehension of weight loss surgery, the related complications, and the nursing care necessary prior to and during the procedure.
- The researcher proposed doing additional inquiries into bariatric surgery in Iraq, as there is a dearth of studies on this topic.

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### Author Contributions Statement

| Name of Author | C | M | So | Va | Fo | I | R | D | O | E | Vi | Su | P | Fu |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bahaa Mirza Skal | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | | | ✓ |

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

### Conflict of Interest Statement

The authors declare that there are no conflicts of interest regarding the publication of this paper.

### Informed Consent

All participants were informed about the purpose of the study, and their voluntary consent was obtained prior to data collection.

### Ethical Approval

Not Applicable.

### Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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**BIOGRAPHIE OF AUTHOR**



**Bahaa Mirza Skal,** is a Lecturer in the Adult Nursing Department, College of Nursing, University of Al-Qadisiyah, Iraq. She holds an M.Sc. in Adult Nursing and is involved in nursing education and clinical teaching. Her professional interests include adult nursing care, patient-centered care, evidence-based practice, and healthcare quality improvement. She is committed to developing nursing students' clinical competencies and contributing to improved patient outcomes through effective nursing education and practice. Email: bahaa.mirza@qu.edu.iq