

EXPLORING THE KNOWLEDGE OF POST-OPERATIVE PATIENTS WITH GENERAL SURGERY REGARDING DIET AND NUTRITION

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ABSTRACT

Background: Adequate nutrition plays a vital role in post-operative recovery by promoting wound healing, reducing complications, and improving overall patient outcomes. Despite its importance, many surgical patients have insufficient knowledge regarding appropriate dietary practices following surgery.

Objective: To explore the knowledge of post-operative patients undergoing general surgery regarding diet and nutrition at a tertiary care hospital.

Methods: A cross-sectional analytical study was conducted at Sahiwal Teaching Hospital, Sahiwal, Pakistan. A total of 92 post-operative patients admitted to the general surgery wards were selected through purposive sampling. Data were collected using a structured bilingual (Urdu and English) questionnaire consisting of demographic information and 12 yes/no knowledge questions related to post-operative diet and nutrition. Descriptive statistics, including frequencies, percentages, mean, and standard deviation, were used for data analysis.

Results: Among the 92 participants, 61 (66.3%) were female and 31 (33.7%) were male. Most participants (51.1%) were aged 15–30 years. Overall, 54 (58.7%) participants demonstrated good knowledge regarding post-operative diet and nutrition, 31 (33.7%) had excellent knowledge, while only 7 (7.6%) had poor knowledge. Although participants generally recognized the importance of adequate nutrition, vitamins, and minerals in wound healing, gaps remained in understanding nutrient interactions and specific dietary recommendations during the recovery period.

Conclusion: The majority of post-operative patients demonstrated good knowledge of diet and nutrition; however, important deficiencies persist, particularly regarding specific nutritional guidelines and nutrient interactions. Strengthening patient education through structured nutritional counseling and public health education programs may enhance recovery outcomes, reduce complications, and improve the quality of post-operative care.

Keywords: Post-operative nutrition, Dietary knowledge, General surgery, Patient education, Nutritional awareness, Surgical recovery, Tertiary care hospital.

INTRODUCTION

1 Background:

Nutrition is widely recognized as a major contributing factor in the management and progression of various critical clinical conditions, significantly influencing patient outcomes and serving as a key determinant of both morbidity and mortality. Numerous studies have identified varying degrees of nutritional deficiency across the hospitalized population, often related to the underlying disease, metabolic demands, or inadequate intake during hospital stays. Importantly, these deficiencies are frequently reversible when detected and addressed in a timely manner through appropriate nutritional interventions. In surgical patients, nutritional status has a strong correlation with clinical outcomes, including rates of postoperative complications, recovery time, and overall survival (Weimann et al., 2021).

Suboptimal nutritional status and unfavorable body composition, such as loss of muscle mass or

excess fat, can adversely affect both short-term recoveries. Malnutrition is a controllable risk factor that necessitates proactive management and close attention, not only in the initial phase of the disease but also throughout the perioperative period, encompassing both early and late stages of recovery. Even modest improvements in nutritional intake and status can accumulate over time, leading to meaningful clinical benefits and improved quality of life. (Ford et al., 2022)

In the current era where ERAS (Enhanced Recovery After Surgery) protocols are increasingly adopted as the expected level of care, minimizing the duration of interrupted oral food intake is a central objective. The goal is to resume oral nutrition as soon as clinically feasible to support recovery and reduce postoperative complications. However, despite this emphasis on early feeding, nutritional therapy remains a critical and non-negotiable component within the broader metabolic framework of the ERAS concept. (Wischmeyer et al., 2018)

Nutritional status has emerged as a key determinant in the overall recovery trajectory

following both surgery and the underlying disease process. This is particularly relevant in patients undergoing surgery for oncological or chronic inflammatory conditions, where malnutrition is often prevalent due to factors like disease-related cachexia, treatment side effects, or prolonged reduced intake. Early identification and management of malnutrition in these patients are essential to optimize surgical outcomes. Furthermore, even when oral feeding is initiated according to protocol, the actual energy and protein requirements of patients are frequently not met by standard hospital diets, especially during the perioperative period. Evidence from clinical studies has demonstrated that energy intake by orally is often suboptimal following abdominal surgery, with patient of cancer being particularly vulnerable to nutritional deficits. (Constansia et al., 2022)

The integration of nutritional care into the actions of healthcare personnel is crucial, and it is a multidisciplinary responsibility of hospital staff, including managers. As a result, the nutrition care procedure (NCP) is a major issue for dietitians, and there is a growing global desire to use it. Any interactive, step-by-step process used by a health practitioner and recorded in a medical record to support an affected person's food-associated behavior and subsequent health consequences is referred to as NCP. In the field of medical nutrition cure, NCP can be viewed as a scientific and problem-solving strategy that can screen, identify, diagnose, treat, and investigate issues related to nutrients and malnutrition. (M. Shakhshir & A. Alkaiyat, 2023)

A prospective cohort observe regarding patients undergoing major abdominal surgical operation assessed the power and protein consumption within the first week after surgical operation. (Constansia et al., 2022) In that study, 82% of the patients failed to reach the ESPEN recommendations' suggested energy requirements (25 kcal/kg energy and 1.5 g/kg protein), while 90% of the patients failed to meet the necessary protein consumption. (Gustafsson et al., 2019)

In order to maximize patient outcomes and hasten recovery, the Enhanced Recovery After Surgery (ERAS) strategy includes the early

introduction of oral nutrition following surgery. According to recent clinical guidelines, it is recommended to begin oral or enteral nutrition within the first 24 hours following surgery, provided the patient's condition allows. This early nutritional intervention helps to minimize the catabolic response to surgical stress and supports the maintenance of gut integrity. In addition, it involves addressing and reducing factors that negatively affect gastrointestinal motility and function, such as the use of opioids or prolonged fasting. Early mobilization is also emphasized as a key strategy to stimulate protein synthesis, preserve lean body mass, and maintain overall muscle function, all of which contribute to a faster and more efficient recovery process.(Weimann et al., 2021)

According to a recent comprehensive evaluation of 20 meta-analyses, patients having visceral surgery benefit from immune-enhanced diet, particularly in terms of a reduction in infection complications. Although there is disagreement over the best time to implement immune-enhanced diet, its exclusive postoperative usage has also demonstrated advantages. The majority of the data are to gastrointestinal surgery.(Slim et al., 2022)

1.2 PROBLEM STATEMENT:

During the recovery period after surgery, patients often need to make specific changes to their diet to support healing, regain energy, and avoid complications. Yet, many patients don't fully understand what these dietary changes involve. This gap may be due to limited time for education before discharge, a lack of personalized dietary advice, or simply not enough emphasis placed on nutrition during the care process. As a result, patients might go back to eating in ways that are not ideal for healing, sometimes without even realizing it. This issue tends to be even more significant for patients with lower health literacy or limited access to dietitians and other nutrition support. If not addressed, poor nutritional knowledge can lead to slower recovery, extended hospital stays, higher medical expenses, and a decline in quality of life while recovering.

1.3 Significance:

This study is important because it addresses a silent but significant factor affecting surgical recover. In the rush of clinical care, patients are often given medications and instructions for wound care, but nutritional guidance is commonly overlooked or oversimplified. Yet, what patients eat after surgery can directly affect how well they heal, how strong they feel, and whether they avoid complications like infections or poor wound healing. By identifying what patients' knowledge about diet and nutrition, this study can help healthcare professionals bridge that gap. The findings can lead to the development of better educational materials, more personalized discharge plans, and structured nutrition counseling that empowers patients to take an active role in their recovery. Beyond individual healing, this research has broader implications: better-informed patients can lead to shorter hospital stays, fewer readmissions, and lower healthcare costs. It also supports a more holistic, patient-centered approach to surgical care where patients are not just treated, but truly guided toward recovery in a sustainable and healthy way.

1.4 Hypothesis:

Null Hypothesis:

Patients have no knowledge regarding their diet and nutrition.

Alternative Hypothesis:

Patients have knowledge regarding their diet and nutrition.

1.5 Objectives:

➤ To explore the knowledge of post-op patients regarding diet and nutrition at tertiary care hospital.

1.6 Operational Definitions:

Knowledge:

In this study patients' knowledge about diet and nutrition is measured on Likert scale to identify their knowledge in this study. 12 questions used to assess their knowledge and each question has

two options, So, 'No' give score '1' and 'Yes' give score '2'.

- <55%(13 out of 24) Poor knowledge.
- >55%-80%(14-19 out of 24) Good knowledge.
- >80%-100%(>20 out of 24) Excellent knowledge.

LITERATURE REVIEW

Assessing health care professionals' Knowledge, Attitude, and Practice (KAP) on nutritional awareness was the aim of this study. Medical professionals, such as doctors, dentists, and nursing professors, are the subject of a descriptive study. Through the use of purposive sampling, 90 interested participants who met the inclusion criteria were selected. Using a structural questionnaire to test knowledge, a rating scale to assess attitude, and a checklist to assess practice, the KAP of health care professionals pertaining to nutritional components was gathered. Understanding, Attitude, and Practice of Medical Professionals The nutritional awareness of likely doctors, dentists, and nurses was assessed. Of the 90 participants, 15.5% have inadequate knowledge, 43.3% have intermediate knowledge, and 41.1% have adequate knowledge. Every single participant has an optimistic outlook. Regarding practices, 47.7% have excellent practices, 42.2% have good practices, and 1% have fair practices. For every participant, a statistical correlation between KAP was discovered. This study comes to the conclusion that, despite the abundance of resources. Because health care providers' knowledge has to be increased.(Muna Shakhshir & Abdulsalam Alkaiyat, 2023)

Few studies have been conducted to assess nutritional knowledge, particularly in Middle Eastern nations. In a cross-sectional study, 112 patients of both sexes, ages 18 to 65, were selected from the King Abdul-Aziz University Hospital's surgical clinics in Jeddah, Saudi Arabia. A preoperative questionnaire was utilized to evaluate patients' post-bariatric surgery knowledge of general nutrition and consumption in relation to dietary recommendations. For general nutrition knowledge, the average score

was 42 out of 85, or 50%. The percentage of patients classified as having a low and medium level of nutritional comprehension was approximately 40% and 60%, respectively. Patients' post-bariatric nutritional knowledge was comparatively low (mean: 16/81 points). Patients' educational attainment was linked to both their body mass index ($p = 0.045$) and overall general nutritional awareness score ($p = 0.05$). There is currently a lack of general and post-bariatric dietary awareness among Saudi bariatric patients. To validate these results, a multi-center investigation with a bigger sample size and a range of sociodemographic traits is necessary. The purpose of such a study would be to ascertain the level of nutritional awareness among patients receiving bariatric surgery and use that data to direct the implementation of educational initiatives.(Alkhalidy et al., 2019)

Using an anonymous questionnaire, the study sought to determine patients' baseline nutritional knowledge, attitudes, and beliefs before to total hip (THA) or total knee arthroplasty (TKA). With approval from the Institutional Review Board, 300 patients, with an average age of 67 years (range: 39 to 89), were given an anonymous questionnaire; 184 (61.3%) of these patients were women and 116 (30.6%) were men. There were 238 TKAs (79.3%), 12 revision TKAs (4%), 6 revision THAs (2%), and 44 THAs (14.6%). Nearly all of the participants (99.6%) acknowledged the significance of preoperative diet. The majority (98.6%) showed high levels of self-assessed confidence and stated that they were aware of what to consume before surgery to improve their results. Preoperative nutrition knowledge was more likely to be reported by women ($P = .05$), and confidence was positively correlated with higher education levels ($P = .002$). Just 169 participants (56.3%) said they were aware of the supplements they should take. When questioned, 84% of participants said that if their surgeon suggested a nutrition regimen, they would buy it. The bulk of research suggests that a healthier diet and the appropriate supplements might optimize status of nutrition and potentially enhance outcomes of surgery.(Germano et al., 2024)

A strong predictor of postoperative outcomes, nutritional status is recognized as an essential component of surgical recovery programs. It is essential to consume enough nutrients to treat the postoperative stress response and to prevent the loss of muscle mass, strength, and functionality. Particularly in older people, inadequate protein consumption can result in severe muscular atrophy, which can reduce independence and increase mortality risk. Pre-operative fasting guidelines, preventing and screening for malnutrition, and addressing post-operative insulin resistance are the main areas of attention for current surgical nutrition guidelines. Recommendations for the timing and content of macronutrients around surgery are less clear. In order to prevent atrophy and the resulting loss of capability, this review aims to highlight oral nutrition options that can be used both before and after major surgery. It is described how carbohydrates, and particularly protein and necessary amino acids, can help fight the postoperative stress cascade and promote healing. There will also be discussion of practical nutrient timing concerns to optimize oral nutritional intake, particularly in the immediate pre- and post-operative periods. (Hirsch et al., 2021)

MATERIAL AND METHOD

3.1 Design of study:

This study examined post-operative patients' knowledge of diet and nutrition at a tertiary care hospital using a cross-sectional analytical study methodology.

3.2 Study Setting:

This study was conducting at Sahiwal Teaching Hospital, Sahiwal.

3.3 Population of study:

Patients admitted to general surgery wards at Sahiwal Teaching Hospital in Sahiwal served as the study's population source for samples. Both men and women made up this group, and they were both eager to take part.

3.4 Study Variables:

Variables:

➤ Knowledge

3.5 Sampling Technique/Strategy:

Purposive sampling technique is used.

3.6 Sample Size:

Solvin's formula is used to determine the study's sample.

$$n = N / (1 + N * (e^2))$$

n is the sample size.

N = size of population (120)

e=error (0.05)

Ninety-two is the sample size.

3.7 Study Duration:

This study is conducting within five months from February 2025 to June 2025.

3.8 Inclusive Criteria:

- Participants who aged between 16-80.
- Those who admit in surgery wards of Sahiwal Teaching Hospital, Sahiwal and are willing to participate.

3.9 Exclusive Criteria:

- Patients who aged less than 16 and more than 80 are not include.
- Those who are not admit to surgery wards of Sahiwal Teaching Hospital, Sahiwal.
- Patients who are not willing and with severe illness are not include.

3.10 Research Tools:

Knowledge level of post-operative nutrition was determined using 12 questions consisted of "yes" and "no" statements regarding the importance of maintaining normal nutritional status, post-operative nutritional guidelines, roles and sources of nutrients. Data will be collected by using a structured questionnaire.

3.11 Procedure of Data Collection:

Written informed consent is collected from each candidate prior to the survey being administered. Data is gathered from participants via a self-administered questionnaire. There are 18 standardized questions in the sample, with 6 predefined answers pertaining to demographics and 12 predefined yes/no answers. In order to

facilitate and ease participant comprehension, the questionnaire is written in both Urdu and English. After a thorough assessment of the literature and analysis of previous research, the questionnaire is created.

3.12 Data Analysis Plan:

The data analysis process uses frequency, percentages, arithmetic mean, standard deviation, and demographic factors to determine significant differences across groups.

3.13 Ethical Consideration:

The rules and regulations set by the ethical committee of university of Lahore will be

RESULTS

Table 1 displays the gender-specific outcome of demographic factors. In this study 92 people participate from which 61(66.3%) respondents were women and 31(33.7) respondents were male.

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
female	61	66.3	66.3	66.3
Male	31	33.7	33.7	100.0
Total	92	100.0	100.0	

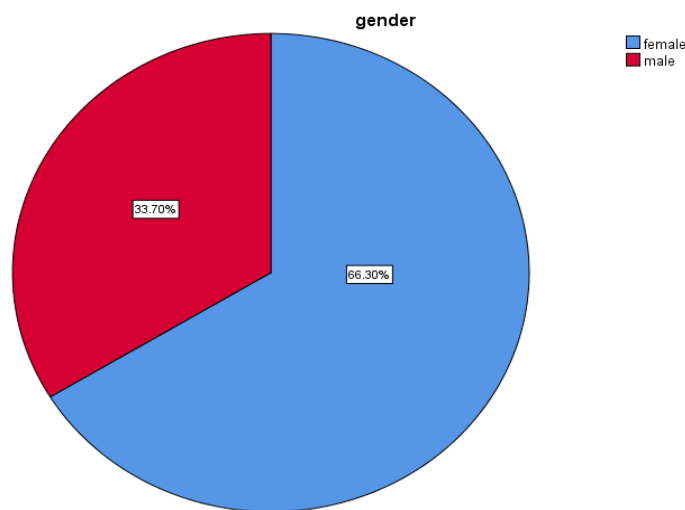


Table 2 shows the result of demographic variables in terms of age group. In this study 92 people participate from which 47(51.1%) respondents were between 15-30 years, 26(28.3%) respondents were between 31-45 years and 19(20.7) respondents were between 45- more years.

Age group	Frequency	Percent	Valid Percent	Cumulative Percent
15-30 years	47	51.1	51.1	51.1
31-45 years	26	28.3	28.3	79.3
45- more years	19	20.7	20.7	100.0

Total	92	100.0	100.0	
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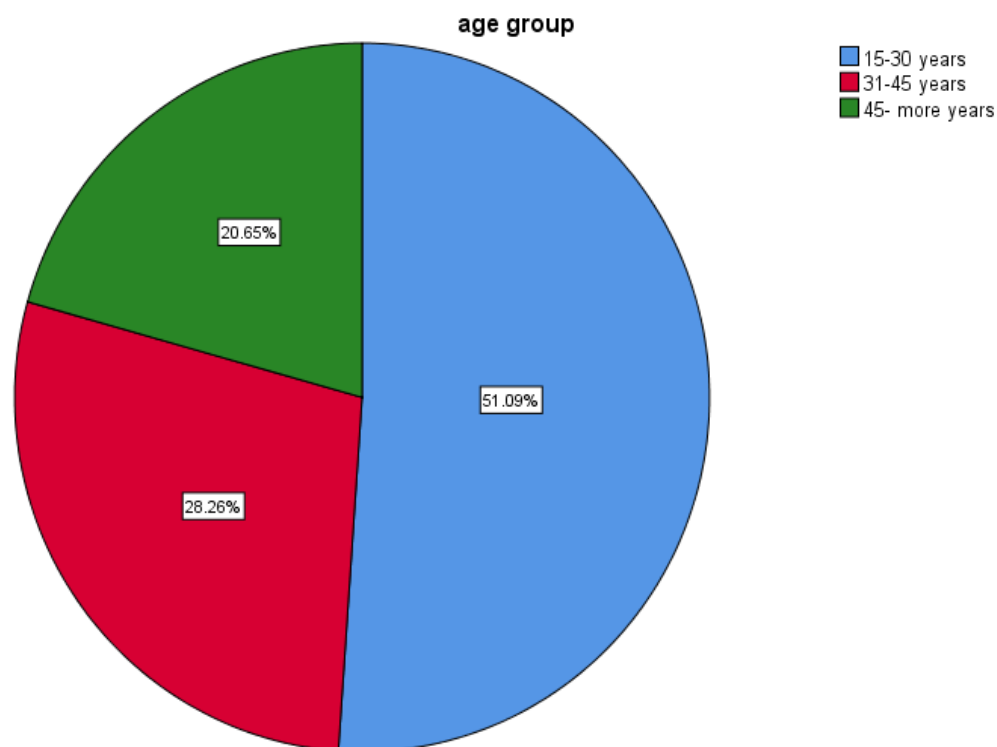


Table 3 shows the result of demographic variables in terms of marital status. In this study 92 people participate from which 61(66.3%) respondents were single and 31(33.7) respondents were married.

Marital status	Frequency	Percent	Valid Percent	Cumulative Percent
Single	25	27.2	27.2	27.2
Married	67	72.8	72.8	100.0
Total	92	100.0	100.0	

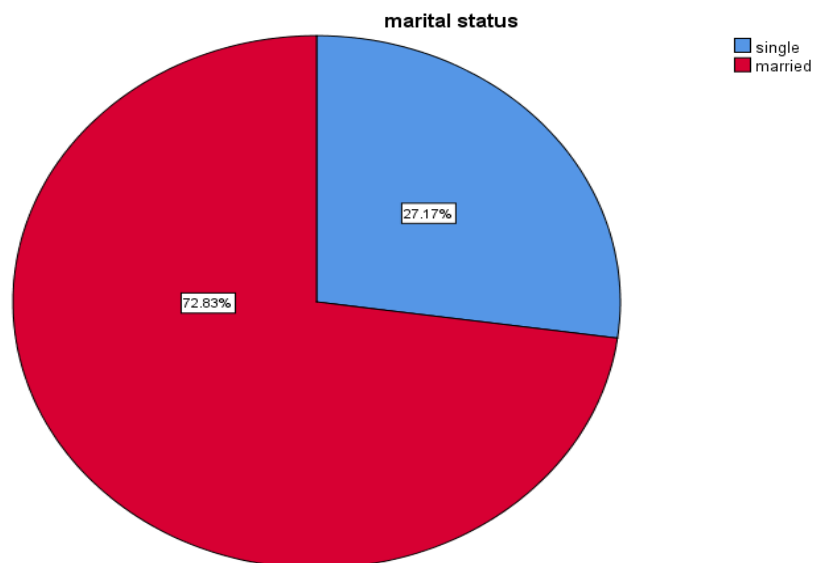


Table 4 shows the result of demographic variables in terms of occupation. In this study 92 people participate from which 4(4.3%) respondents were professional, 27(29.3%) respondents were business man, 22(23.9%) respondents were farmer, and 39(42.4) respondents were other specify.

Occupation	Frequency	Percent	Valid Percent	Cumulative Percent
Professional	4	4.3	4.3	4.3
Business	27	29.3	29.3	33.7
Farmer	22	23.9	23.9	57.6
Other specify	39	42.4	42.4	100.0
Total	92	100.0	100.0	

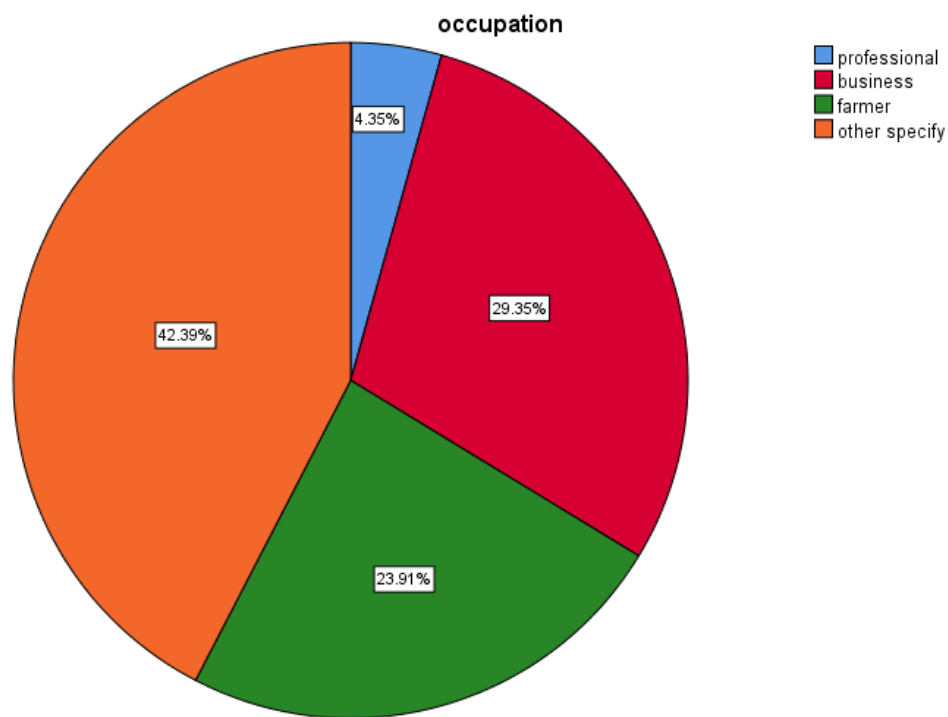


Table 5 shows the result of demographic variables in terms of education level. In this study 92 people participate from which 4(4.3%) respondents were illiterate, 27(29.3%) respondents were primary, 22(23.9%) respondents were secondary, and 39(42.4) respondents were tertiary.

Educational level	Frequency	Percent	Valid Percent	Cumulative Percent
Illiterate	32	34.8	34.8	34.8
Primary	18	19.6	19.6	54.3
Secondary	30	32.6	32.6	87.0
Tertiary	12	13.0	13.0	100.0
Total	92	100.0	100.0	

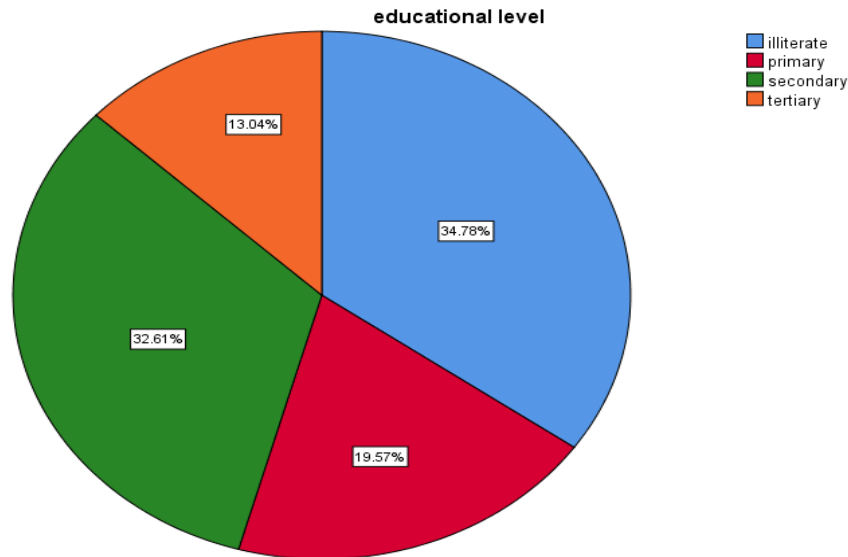


Table 6 shows the result of demographic variables in terms of area of residence. In this study 92 people participate from which 61(66.3%) respondents were live in urban area and 31(33.7) respondents were live in rural area.

Area of residence	Frequency	Percent	Valid Percent	Cumulative Percent
Urban	51	55.4	55.4	55.4
Rural	41	44.6	44.6	100.0
Total	92	100.0	100.0	

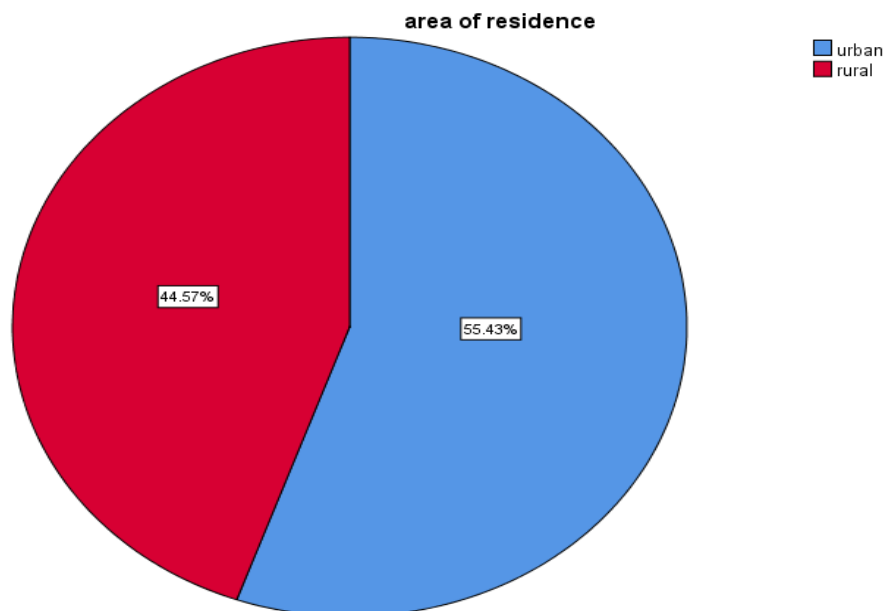
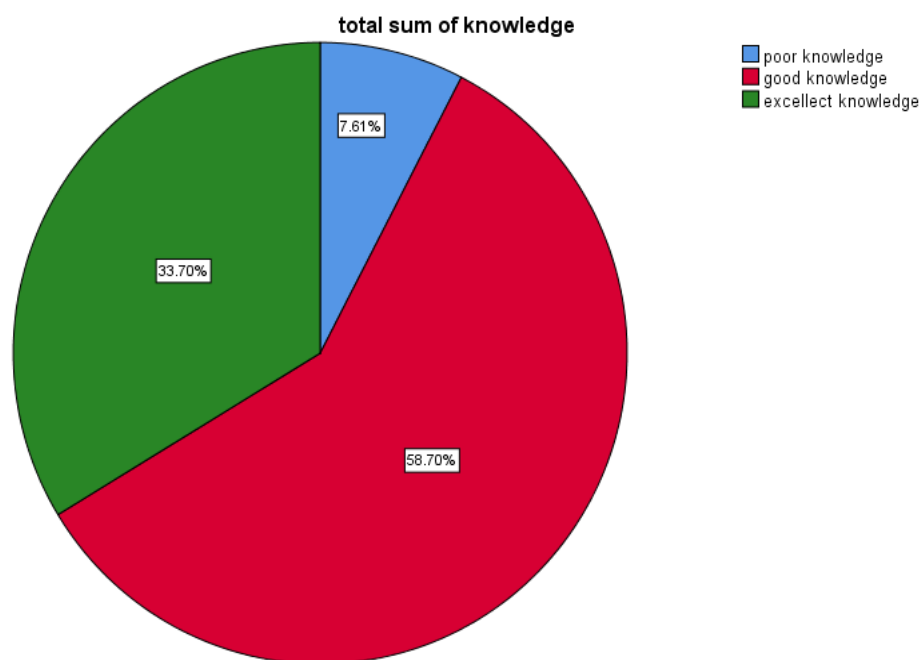


Table 7 shows that out of the 92 participants, 7 (7.6%) participants have a poor knowledge, defined as a score below 13 on the tool. 54 (58.7%) participants have a good knowledge, defined as a score between

14-19 on the tool, and 31 (33.7%) participants have a excellent knowledge, defined as a score between 20-24. This table summarizes participants' knowledge and their corresponding scores on the tool.

Total sum of knowledge	Frequency	Percent	Valid Percent	Cumulative Percent
Poor knowledge	7	7.6	7.6	7.6
Good knowledge	54	58.7	58.7	66.3
Excellent knowledge	31	33.7	33.7	100.0
Total	92	100.0	100.0	



DISCUSSION

Table 7 shows the categories of respondents' knowledge scores. Most of the people who responded knew a lot about post-operative nutrition. The total result for knowledge on post-operative nutrition was good among adults with surgical with a median score of only 58.7%, has found that the knowledge of peri-operative care among 300 elective surgical patients in Ireland was limited, with an average knowledge score of only 31.9%. This was much lower than the finding of the present study. Many patients had incomplete knowledge of important aspects of their care after surgery. The outcome is also in alignment with the outcomes of a recent research by Bajracharya et al. (2021), who reported that the knowledge level regarding post-operative diet was low among 100 surgical patients in Nepal, with knowledge score of only 31.0%. Lack of such knowledge may lead to questionable dietary

practices or behaviors, which can result in delayed wound healing after surgery.

Table 7, shown percentage answered correctly regarding post-operative nutrition knowledge questions by respondents. Most of the questions answered correctly, the influence of mass media promotion on the health benefits of micronutrients could be the cause of that, increasing public knowledge and awareness in Italy as reported by Hawkes (2021). Additionally, Hassan et al. (2022) suggest that the adoption of the food pyramid may be a contributing factor in the widespread dissemination of knowledge about healthy fat sources. According to a Rajiah (2022) study, the majority of Malaysian respondents (88%) are aware that inadequate water intake can have negative health effects.

It was found that while respondents were aware of the significance of vitamin and mineral intakes for a quicker recovery from wounds, they lacked understanding about the effects and guidelines of

nutrient-nutrient interactions. For example, the majority of responders were unaware that vitamin C improves the absorption of iron. The majority were also unaware that concurrent use of iron and zinc can reduce mineral absorption. Furthermore, they were unaware that consuming moderate amounts of mono- and polyunsaturated fats after surgery enhances calorie intake for wound healing.

CONCLUSION

In summarized, most of the adults with surgical experience in Sahiwal Teaching hospital exhibited good knowledge of post-operative nutrition, however, some people have poor knowledge about post operative diet and nutrition. This indicates that more health-related programs on post-operative nutrition need to be conducted among the public. In order to provide the best possible nutritional care for surgical patients following surgery, healthcare professionals should assist in providing sufficient patient education and enhancing patients' understanding of post-operative nutrition. Age and educational attainment, on the other hand, had a major impact on post-operative nutrition knowledge and attitudes. Their education and knowledge of post-operative nutrition were positively and significantly correlated, suggesting that a high level of education was linked to a high level of knowledge. This suggests that public education is necessary to raise awareness.

6.1 LIMITATION:

- Small sample size.
- Exclusion of other type of surgery.

6.2 RECOMMENDATION:

- Patient should guide about diet and nutrition properly.
- Arrange public health education programs.

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