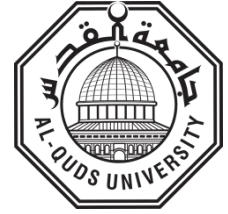


Deanship of Graduate Studies

Al-Quds University



**Nutrition Knowledge, Attitude And Practice Among Nurses
And Physicians Working At Palestinian Hospitals In The
West Bank And Jerusalem**

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Nutrition Knowledge, Attitude and Practices among Nurses and
Physicians working at Palestinian Hospitals in the West Bank
and Jerusalem

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A thesis submitted in Partial fulfillment of the requirements for
the degree of Master of Health Policy and Management/ Quality
and Patient safety track.

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Thesis Approval

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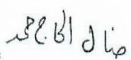
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Signature 

Jerusalem- Palestine 1445-2024

Dedication

I would like to give my endless thanks to my mother the one who was always there for me with endless love.

To my father, brothers, and beloved sister for the support at all stages of study years.

Special appreciation to my beloved husband who always supported and encouraged me.

To my only Son “Amin”, my forever happiness.

To everyone who encouraged, supported, and helped me all the way...

To the health staff who spend their times in helping and caring for patients with love to alleviate their suffering.

... I dedicate this research to them all.

Margaret Zayed

Declaration

I certify that this thesis submitted for the degree of master in Master of Health Policy and Management/ Quality and Patient safety track, is the result of my own research, except where otherwise acknowledged, and this (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed:

A handwritten signature in blue ink, appearing to read 'Margaret Zaed Zayed', with a stylized, cursive script.

Margaret Zaed Zayed

Date: 02/01/2024

Acknowledgment

Firstly, I would like to express my sincerest gratitude to my supervisor, Dr. Hazem Agha, for the continuous support, great knowledge and advice, guidance and patience to made the study possible.

Thank you to Dear coordinator and beloved teacher Dr. Asma Imam, for the support, help and patience. Special thanks to Al-Quds University in general and my teachers in specific for all the hard work, knowledge and collaboration they gave for me.

I would like to extend my thanks to all nurses and doctors in all the particiapted hospitals, without whom this thesis would not have been possible.

Finally, my thanks go to all the people who have supported me to complete the research work.

Margaret Zayed

December 2023

Abstract

Background:

Nutrition is an important factor in the promotion of health and improving health outcomes of people, especially in hospital settings. Good nutrition also reduces the risk of nosocomial infections and postoperative complications which are both related to shorter hospital stays and less medical cost. Nutrition care needs a multidisciplinary team to achieve the optimal goal. Physicians should diagnose, advice, and coordinate with dietitians to provide nutritional advice. Nurses also have the responsibility to screen patients for malnutrition, support them and ensure their needs are met through monitoring and communicating with other health care teams.

Aim: to determine nutrition knowledge, attitudes and practices among physicians and nurses regarding nutrition in four selected hospitals in West Bank and Jerusalem

Methods: descriptive-analytical, cross-sectional designs were used. The study population included all nurses and physicians in four Palestinian hospitals in the West Bank and Jerusalem. The sample size was 258 physicians and nurses. Data were collected by self-reported questionnaire that was divided into six major parts asking about Nutrition knowledge, attitudes and practices of nurses and physicians with their sociodemographic factors, in addition to questions about nutrition education, training and general nutrition care given. 205 questionnaires were returned with 79% response rate. The validity of the questionnaire were ensured by both content and face validity; Reliability of questionnaire was also ensured and Cronbach's alpha results showed ($\alpha=0.812$, 0.725, 0.901 for Knowledge, Attitude and practice questions respectively. Data analysis was done with the help of (SPSS version 27)

Results: Most of the participants were nurses (76.1%) aged from 26-30 years old. Participants showed moderate knowledge towards Nutrition in hospitals. Most of them agreed about the importance of care, either in terms of its priority (42.9% agree and 35.6% strongly agree), the importance of nutrition in fostering health recovery (44.4% agree and 47.8% strongly agree) and the need for individualized nutritional care for patients by the nutritionist (40.5% agree and 47.3% strongly agree). The study shows neutral attitudes towards nutrition among the participants. However, results found poor practices toward nutrition, 50% of them never check patients when eating to ensure they are eating well. Female health care professions tend to practice more supporting nutritional practices than males while age was significantly correlated to better attitudes and practice in both genders.

Conclusion: The study shows good nutritional knowledge and attitudes among nurses and physicians, while their practice in daily routines are not enough. The study also shows that most of the participants didn't receive any in-work training and they also agree that they need such continuous training during their work life. Adding nutrition curriculum to medical and nursing schools is recommended in addition to effective and efficient training and education programs in all hospitals to target all nurses and physicians who have direct contact with patients.

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Chapter One: Introduction

1.1 Background

Nutritional status of hospitalized patients can be a part of general Clinical nutrition that is defined as: “a discipline that deals with the prevention, diagnosis and management of nutritional and metabolic changes related to acute and chronic disease and conditions caused by a lack or excess of energy and nutrients’(T Cederholm *et al.*, 2017).

There is no denying that good nutrition is important for overall health especially for hospitalized patient as many of them experience nutrition deterioration throughout their hospital stay and many of them already malnourished before admission. Good Nutrition has its impact on decreasing mortality and morbidity rate, increasing or maintaining functional abilities of patients, shortening hospital admission days and decreasing the care cost. (Department of health and human services-USA, 2015). In addition, if we look at the readmission of hospitalized patients, it’s 50%lower if the discharged patient was well nourished.(Weiss *et al.*, 2006).

ESPEN (European Society for Clinical Nutrition and Metabolism) defines Malnutrition as “a state of altered body composition (decreased fat free mass) and body cell mass leading to diminished physical and mental function and impaired clinical outcome from disease, resulting from lack of intake or uptake of nutrition(T. Cederholm *et al.*, 2017). Around one third of hospitalized patients are malnourished(Corkins *et al.*, 2014), Many factors can lead to malnutrition but it’s mainly a consequence of acute or chronic illness or injury(Lean and Wiseman, 2008), and many effective strategies should be considered to address this issue.

Malnutrition and risk for malnutrition are common among hospitalized patients (39.1% 44.8% of the studied population respectively) in a study conducted in Cairo Hospital(Abd-al-atty

and Ibrahim, 2012). In addition, a cross-sectional study of 7-months period in a major tertiary hospital in Beirut hospital conducted that 2 out of 3 hospitalized patients aged 60 years or more are malnourished or at risk for malnutrition (El Osta *et al.*, 2019).

Poor nutritional status is a big risk factor for nosocomial infections and postoperative complications which then means longer hospital stays (Kirkland *et al.*, 2013). And the problem of malnutrition is indirectly a reason behind the increase in hospital's care costs. A study showed a decrease in hospital stay by 2.2 days when patients received a good nutritional service (Ockenga *et al.*, 2005). Another study showed a 6-days increase in hospitalization days when patients are at risk for malnutrition which means higher hospitalization costs (Barker, Gout and Crowe, 2011).

NCP (Nutritional care plan) is a nutrition therapy plan that should be developed by a multi/interdisciplinary of health care workers and patient's family and guided by dietitians in order to achieve the goal of patient treatment. In NCP, Dietitians define the rationale, explain the nutrition therapy and provide suggestions for monitoring the efficacy of the plan and reassessment consist of four major parts: Nutrition Screening, Nutrition assessment, Nutrition Diagnosis, Nutrition Intervention (T. Cederholm *et al.*, 2017).

In 2013, the Alliance to Advance Patient Nutrition suggested involving all staff in hospital in the aim of improving nutrition care in hospitals, so INPAC (Integrated Nutrition Pathway for Acute Care) was then developed and published to guide hospitals in implementing best evidence-based practices involving both direct care staff and management level believing that all healthcare staff play a role in preventing, detecting, and treating malnutrition (Keller *et al.*, 2015).

Research showed that doctors' nutrition advice in particular has a positive impact on patients' clinical conditions, they also have the impact to motivate patients to adopt healthy eating

habits(Mogre *et al.*, 2016). Patients usually prefer to hear the nutrition advice and its relation to disease from their physician(Potter et al., 2001). However, they used to miss this opportunity for different reasons including insufficient knowledge, skills, negative attitudes and lack of skills. In addition, some other factors have their influence such as lack of time and lack of sufficient education that may prevent them from providing national care(Mogre *et al.*, 2016). Moreover, nurses have a special role in ensuring and providing nutritional care as they have the most contact with patients, they screen patients, refer them to dietitians and encourage patients and their families(Xu *et al.*, 2017).

1.2 Problem statement

Good Nutritional intervention programs in hospitalized patients should be a medical priority in order to minimize medical complications and their consequences.

Nutrition care needs a multidisciplinary team in order to achieve the optimal goal. Physicians should diagnose, advise and coordinate with dietitians to provide the nutritional advice and medical nutrition therapy, so their basic education and medical training should provide them with sufficient skills, tools and knowledge to identify at- risk people and refer them to dietitians (Adamski *et al.*, 2018). Nurses also have the responsibility to screen patients for malnutrition, support them and ensure their needs are met through monitoring and communicating with other health care teams (Xu *et al.*, 2017). Nurses' role in nutritional management is considered one of the accountable factors for the nutritional status of patients(T. Cederholm *et al.*, 2017).

Little is known about Nutrition care in hospitalized patients and also very little information is available in Palestine about the knowledge, Attitudes and practices of nurses and physicians towards nutrition. Findings from this study could be used to fill a gap in nutritional knowledge,

attitude and practices among Palestinian physicians and nurses. Additionally, findings from this research study could lead to an adjustment in curriculum for all medical programs, which could help prepare future professionals better and make them more equipped and confident to deal with nutritional concerns in professional practice. In addition, research findings can be a baseline for hospitals to establish continuous Nutrition education programs.

Study Justification

Nutrition research in hospitalized patients is a neglected and weak area in Palestine. In West bank, only one published study on nutritional knowledge, attitude, practices among physicians and nurses was performed at different governmental and non-governmental hospitals and showed inadequate nutrition knowledge and poor nutritional practices among healthcare workers. (Shakhshir and Alkaiyat, 2023)

Only one study was done in Gaza Strip and showed that nurses and physicians are unable to provide effective nutrition care and they need to improve their knowledge, attitudes and practices(Naser *et al.*, 2021). The study was done on three major hospitals in Gaza: Al-Shifa Medical Complex in Gaza City, Al-Aqsa Hospital in Deir Al Balah City, and Nasser Medical Complex in Khan Younis City, and none of these hospitals offered nutritional services at the time of the study. There's also another unpublished descriptive cross-sectional study conducted in East Jerusalem hospitals: Al-Makased Hospital, Saint Joseph Hospital, Saint John Ophthalmology Hospital, Augusta Victoria Hospital, and Red Crescent Hospital. The study was conducted on nurses only (n=407) and found that most of participated nurses had a fair level of nutrition knowledge in general and poor nutrition knowledge regarding some selected clinical items, 85% of participants had good level of nutritional practice(Attawna, 2013).

Main objective

The purpose of this study is to determine nutritional knowledge, attitudes and practices among physicians and nurses regarding nutrition in four selected hospitals in West Bank and Jerusalem , together with factors influencing them.

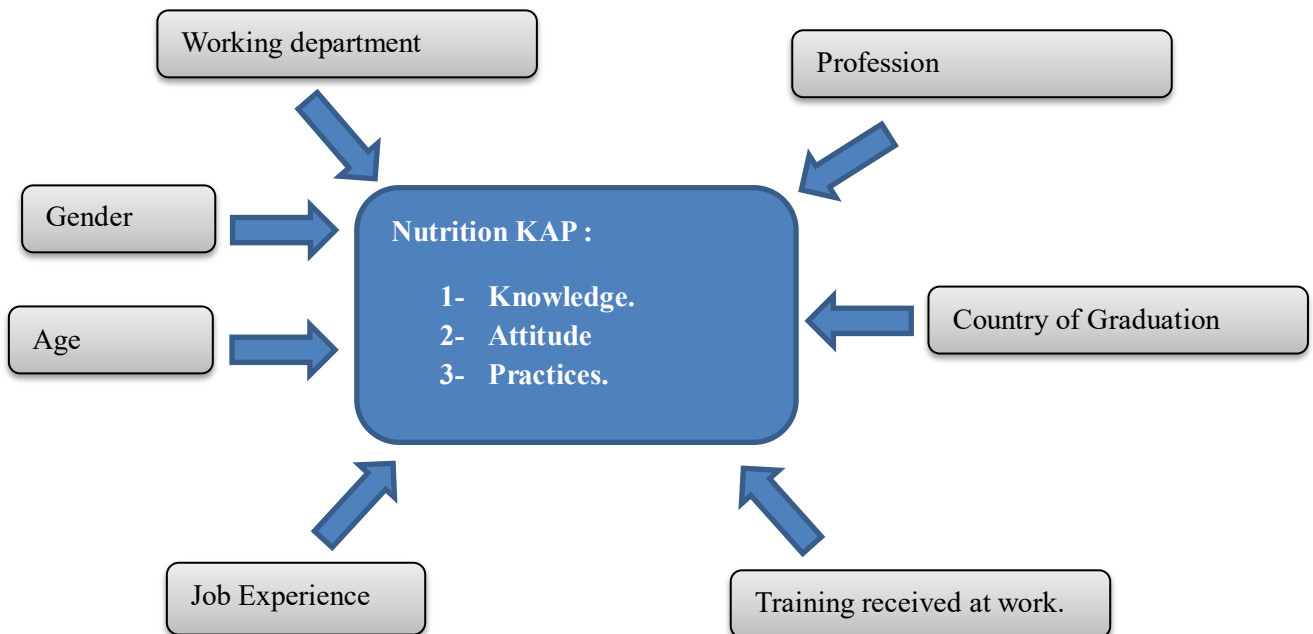
Specific objectives

1. Determine the nutritional knowledge of the physicians and nurses in four selected hospitals in West Bank.
2. Determine the attitudes of physicians and nurses in four selected hospitals in West Bank and Jerusalem regarding nutrition.
3. Determine the existing practices of physicians and nurses related to nutrition.
4. Identify factors influencing nutritional knowledge, attitudes and practices among physicians and nurses in four selected hospitals in West Bank and Jerusalem

Chapter Two: Literature review

Conceptual framework: The conceptual framework shows the relationships between different study variables and summaries all factors that may have an effect on nurses and physicians level of nutritional knowledge and practices.

Figure 1.0: Conceptual framework



Operational Definitions

Dependent variables

Nutrition Knowledge

Nutrition knowledge is defined as the knowledge of all nutrition related health concepts and processes such as knowledge of diet and disease effect, diet and general health, dietary recommendations and nutrients major sources in food(Axelsson and Brinberg, 1992; Parmenter and Wardle, 1999; McKinnon, Giskes and Turrell, 2014). In other words, two of the following concepts are essential to say that someone has nutrition knowledge: food groups, balanced diets, current dietary guidelines, sources of nutrients, storage and preparation of food, use of food labels, and the relationship between nutrition and disease(Parmenter and Wardle, 2000). Nutrition knowledge will be measured through a standard scale or pre-made set of questions.

Nutrition Attitude

An attitude is a dispositional readiness to respond to certain institutions, persons or objects in a consistent manner which has been learned and has become one's typical mode of response(Wang and Cheng, 2020). Good nutrition knowledge may facilitate positive changes in healthcare workers attitudes toward nutrition care.

Nutrition Practice

Nutrition Practice can be defined as any specific advice or care given by a health worker to caregivers on nutrition, feeding characteristics, dietary composition, or food intake.

Independent variables:

Professional and Organizational related factors: Profession or specialty, years of experience in the profession, nutrition related training, years of experience in the profession , country of residence, in service training.

Demographic factors: age, gender.

Introduction

Good nutritional support in hospitalized patient can reduce the risk of malnutrition and its related problems. By giving good nutrition care patients are able to fight infections, get better wound healing, have more strength and being discharged earlier. Screening of nutrition status of patients is the first step towards the rest of nutritional care plan. Poor management of patient nutrition can lead to malnutrition and much more complications(Bellanti, 2022).

In recent years, many research was conducted on hospital malnutrition and its effect on patients, institutions and the whole health system. Literature and studies reported a prevalence of malnutrition in hospitalized patients with a percentage range 20 to 50 % with an average 41.7%(Bellanti, 2022). In Palestine, little data is available on hospital malnutrition. A single- center study conducted on hemodialysis patients at Al-Najah National University hospital showed that 47.2% of patients had mild-to-moderate malnutrition(Rezeq *et al.*, 2018). Another Cross sectional study conducted on hemodialysis patients in Hebron Governmental Hospitals showed prevalence of malnutrition was among 45.4% of patients(Badrasawi *et al.*, 2021).

Malnutrition is considered as disease and has its own code on the ICD (International Classification of Diseases)(ICD, 2023). Studies showed that hospitalized patients diagnosed with

malnutrition or at risk for malnutrition are at higher risk for increased morbidity and mortality as malnutrition negatively affect recovery from traumas or surgeries. In addition, longer hospital stay and higher treatment costs are significantly associated with hospital malnutrition(Ouaijan and Hwalla, 2019). One of the main factors of malnutrition and worsening of nutrition status is the medical staff knowledge, attitudes and practices, and their recognition of patient's risk of malnutrition in their daily routines(Ouaijan and Hwalla, 2019).

Nutrition Education and training in medical and nursing schools is one of the main factors for better nutrition knowledge, attitudes and practice. Lacking this type of training is an international problem. A report published in Canadian Medical Association Journal shows that most doctors lack the adequate training in nutrition as many medical schools give no more than 25 hours of nutrition training in the 6 years of medical education. And around 87% of medical students agree that nutrition education should be a part of undergraduate programs(Vogel, 2018).

Another survey conducted to assess the burden of nutrition education in medical school showed that 22% of doctors had no nutrition education in their academic years while the majority of the polled physicians reported receiving some nutrition education and 35% of this sample reported that this education was a single lecture or less, and this situation remains the same in residency years(Aggarwal *et al.*, 2018). In America, 58% of polled physicians said that they didn't receive any nutrition education while in Europe and Asia the problem was less as the absence of nutrition education was among 30% of participants(Aggarwal *et al.*, 2018).

A systematic review published by The Lancet conducted on Nutrition in medical schools in USA, Europe, Middle East, Africa and Australia shows that there is insufficient nutrition education incorporation in medical education years, with no effect of country, setting or education

years(Aggarwal *et al.*, 2018). One of the reviewed studies was conducted in United Arab Emirates on 125 medical graduates from the Gulf Medical University in Ajman, 78.5% reported not receiving adequate nutrition education in their undergraduate schools especially in the field of clinical and primary care nutrition. 80% of participants perceived that nutrition education is important in the academic years(Gomathi, 2014).

Literature also shows lack of sufficient nutrition education in nursing schools' curriculum. A systematic review of 10 papers from Europe, Africa and Asia was conducted and concluded that nurse doesn't have the nutrition knowledge. The study concluded that undergraduate nursing training in nutrition is a sufficient way to provide a good and effective nutrition care to patients(Laing and Crowley, 2021).

One big study was performed by Morten Mowe *et al.* (2008) in Denmark, Sweden and Norway to assess the nutrition knowledge among health care workers using a questionnaire about different aspects of nutritional practice that was answered by 4512 doctors and nurses. The study concluded that participants showed insufficient nutrition knowledge and this was the most common cause of inadequate nutritional practice(Mowe *et al.*, 2008).

A study conducted on 451 Canadian-trained family physicians to study their current practices towards nutrition. They showed poor practices among medical doctors as 72.5% of physicians thought that patients need more nutritional care than they were able to provide. Nearly all physicians identified lack of time and compensation as the strongest barriers to providing nutrition guidance, 82.3% of family physicians reported their formal nutrition training in medical school to be inadequate and it might be another barrier. However, same participant showed positive and strong attitude toward nutritional care. Attitude scores were not associated with

gender but were significantly associated with age: physicians younger than 50 year of age had more positive attitudes(Gowans *et al.*, 2010).

A study conducted in India on 90 health care professionals working in hospitals, found that all the participants have positive attitudes toward nutrition while 47.7% of them showed excellent practices(Rajalakshmy, Lokeshmaran and Renuka, 2019).

Zalalem Wondimagegne and Anetene Shele(2015) showed in their study in Southern Ethubia that the majority of the studied healthcare workers had poor knowledge and practices (Only 55.5% of participants have good skills and knowledge). The same study showed that three quarters of the respondent showed favorable attitude towards nutritional issues, their cross-sectional study was conducted on 355 health care workers working in governmental institutions. The study found that poor knowledge and practice was mainly associated with inadequate nutrition training either in medical schools or work place training(Zelalem and Anteneh, 2015).

In Greece, Grammatikopoulou et al. found that medical doctors in Greece demonstrate low knowledge of fundamental nutrition principles in hospitals, this result was after conducting a cross sectional study in Greece on 115 medical doctors with different specialties: internal medicine physicians and surgical specialties (residents and specialized), so the recommendation was includingNutrition knowledge in the study years or through specific continuous education(Grammatikopoulou *et al.*, 2019).

Mogre et al.(2017) tested the knowledge and attitude of 104 nurses in four randomly selected hospitals located in the Tamale Metropolis of Ghana and concluded that nurses' knowledge in malnutrition and its management was slightly above average (54.0%), but their attitudes were highly positive. They also associated some factors and concluded that Receipt of previous training,

work experience and number of years as a nurse significantly positively affected knowledge and attitude scores(Mogre *et al.*, 2017). In addition, Bauer, Halfens and Lohrman (2015) pointed that there is association between both nutrition knowledge and attitude and education level and years of experience among nurses. Their study was a cross sectional one and was performed in 66 Austrian nursing homes with 458 participants (nurses), 60.6% of the respondents answered the questions correctly about nutrition knowledge but only 39.2% of respondents had positive attitudes towards nutritional care(Bauer, Halfens and Lohrmann, 2015)In 2018, Mogre et. Al conducted another study on 114 medical doctors in Ghana to address their attitude towards nutrition care and the barriers to giving such care. 80% of them reported good attitude towards nutrition, while the major barriers in giving nutrition care were lack of time (79%) and inadequate knowledge (78.6%)(Mogre *et al.*, 2018) .

Lita Villalon also studied the barriers to nutrition care among 457 health care workers including nurses and doctors. A survey conducted in hospitals and nursing care homes in New Brunswick. Results showed that lack of time was a major barrier in giving nutrition care(Villalon, Laporte and Carrier, 2011). Gluperi Hakli and Funda Cakiroglu (2013) performed a cross-sectional and descriptive study in the geriatric care centers (nursing homes, hospitals) in Ankara, Turkey to address the nurses and care givers' attitudes towards the nutrition of the elderly using a survey and "SANN-G" scale (Staff Attitudes to Nutritional Nursing Care Geriatric Scale). Study found that nurses scores towards positive attitudes were below the cut off scores. The study also showed significant positive relationship between educational level of nurses and attitude scores(Gluperi et al., 2013).

Another cross-sectional study conducted by Boaz et al. (2013) in two large governmental hospitals in Israel to address the nutrition knowledge and attitudes among 106 nurses. Results showed that the mean proportion of correct answers to the nutrition knowledge questionnaire was $51.9\% \pm 0.1\%$ and concluded that further nutrition education is needed for nursing staff. The same study also showed a significant positive association of nutrition knowledge and the positive attitude of nurses about the importance of the role of nutrition in health and disease(Boaz et al., 2013).

Boaz et al. in their cross sectional study in Israel found that nutrition care tasks, including feeding patients, performing nutrition assessment, and providing appropriate food to patients, were ranked as relatively unimportant among participated nurses(Boaz et al.,2013).

In Saudi Arabia, Al-Khaldi (2019)performed a cross sectional study on 117 Saudi physicians in Jeddah hospitals using a questionnaire, and found that the physicians' knowledge related to nutrition topics was poor(mean nutritional knowledge scores were low: 50%; SD: 24%), the study also showed that nutrition knowledge was higher among older physicians($p=0.01$), those with more years of experience($p=0.045$) and among physicians with master's degree ($p<0.001$) (Alkhaldy, 2019b) . The same study found that physicians have difficulty in identifying patients at nutritional risk (screening) without difference among higher ages or education levels and most physicians showed agreement about lacking of techniques for identifying malnourished patients (assessment)(Alkhaldy, 2019b).

In Lebanon, a study showed a good practice among physicians as around 50% of participants reported referring most to all patients to a dietitian if they have malnutrition or any nutrition related disorder. The study showed that lack of time was a major barrier in giving nutrition care by doctors

(in around 62% of doctors), while around 72% mentioned the problem was patients' poor adherence to dietary advice, and 50% contribute the barrier to lack of doctor's knowledge(Hseiki *et al.*, 2017).

A cross-sectional study was carried out in Amman by Al-Shwaiyat *et al* (2013) in Al-Hussein Hospital and King Hussein Medical Center to study the level of therapeutic nutritional knowledge of 250 Jordanian nurses and the results showed that the mean correct-response rate was 58.8%, the study showed no correlation between years of experience of nurses and nutritional knowledge. On (Al-Shwaiyat, 2013).

Department

In a study conducted in Korea on 283 nurses working in internal medicine, surgery and an intensive care unit to assess their knowledge and attitudes toward nutrition, there was no significant effect of working department on the study results(Kim and Choue, 2009). However, ICU nurses workers showed the highest practice scores than other nurses, according to a previous Palestinian study conducted on governmental and non governmental hospitals(Shakhshir, 2020).

Gender

The effect of gender on the nutritional knowledge and attitude was previously studied in literature. A study conducted on 2316 medical students in US to assess their practices towards nutrition showed that females were more likely to give nutrition advice than males(Spencer *et al.*, 2006).By contrast, in a study conducted in Switzerland to study the KAP of doctors towards nutrition, it was concluded that there's no differences between genders in their response(Marques-vidal, 2016). A study conducted on 200 physicians in Iran, also showed no significant difference between males and females in their knowledge towards nutrition(Ahmadi *et al.*, 2009). Another Turkish study

conducted on 210 physicians shows the same result of no significant difference among females or males(Özçelike *et al.*, 2007). While, Areej Al – Khaldi found in her study that Male physicians have higher knowledge in nutrition compared with female physicians(Alkhaldy, 2019).

Job Experience

In the Korean study conducted on nurses by Kim and Chour, there was no significant differences between nurses' level of nutritional knowledge and experience(Kim and Choue, 2009). In addition, according to a study conducted in Turkey on 302 nurses to assess the Nutrition knowledge level of nurses, there was no significant difference between job experience and nutrition knowledge scores(Yalcin N *et al.*, 2013). In Al- Shwaiyat *et al* study, they also showed that there was no significant correlation between years of experience and nutritional knowledge among nurses(Al-shwaiyat *et al.*, 2013).

Chapter Three: Methodology

Study design

The design was implemented through a quantitative cross-sectional study as this study analyzed data of variables collected at one given point in time across a sample population. This type of study was chosen because it's simple, easy, quick and inexpensive as data is collected once. In addition, in this study we looked and compared many characteristics of the study population in the same study. Another reason, Multiple outcomes and exposures can be studied in cross sectional study type so many findings can be used to create an in-depth research study (Wang and Cheng, 2020). Collection of data was done between May 2023 to September 2023.

Study Setting

The study was conducted at four Palestinian Hospitals. Four major hospitals in the middle and northern district of Palestine were selected: Istishari Arab hospital (IAH) - Ramallah, Augusta Victoria Hospital (AVH)- Jerusalem, Specialized Arab Hospital (SAH)- Nablus and Nablus Specialized hospital-Nablus (NSH). IAH is Private hospital in Ramallah offering secondary and tertiary service and it's JCI accredited with a capacity of 175 beds. AVH is a church-hospital complex on the northern side of East Jerusalem offering specialized treatments and it's JCI accredited with a capacity of 171 beds. Specialized Arab Hospital is another private hospital in Nablus city but it isn't accredited with a capacity of 97 beds. Nablus specialty hospital is another non-accredited hospital in Nablus city with a capacity of 54 beds (Palestinian Ministry of Health, 2021). Sampling method of the hospitals was purposive as the main trait among chosen hospitals is that they offers secondary and tertiary services with different types of specialties and don't only depend on single or limited types of services

Population

All nurses and physicians in the participated hospitals and has direct contact with patients as distributed in Table1.

Table (A): Population size distribution according to the study settings

Hospital	Nurses	Physicians	Total
AVH	154	80	234
IAH	207	53	260
SAH	158	30	188
NSH	79	17	96
Total	598	180	778

Sample size and sampling

Sample size was calculated using RAOSOF sample size calculator. A convenient sample of 205 participants has been chosen to participate in the study, using 5% margin of error, 95% confidence interval, 79% response rate.

Eligibility Criteria (Inclusion and exclusion criteria)

Inclusion Criteria

- Full time Job
- Work at the studied hospitals.
- Resident doctors only without specialty

Exclusion criteria

- Nurses and physicians under training

Study tool

The study tool was a self- administered online questionnaire that was partially obtained from previous study(Laur *et al.*, 2017) with the author's permission. The KAP questions were obtained from the original study as it is with no any change. Some additional sections were added and translated to Arabic and then it was validated and approved by a panel of experts .

The questionnaire was divided into six major parts: the first three parts were developed based on the literature that studied multiple exposures and also based on the aim of the study, and the last three parts were the questions obtained exactly from the original study. The first Part included eight questions about sociodemographic and professional data which included: hospital setting, age, gender, work unit, specialty, country of graduation and work experience. The second part included five questions about nutrition education and training received at hospitals and workplaces. The third part included four questions about general nutritional care given by health care providers. The fourth part included 15 questions about healthcare providers' knowledge towards nutrition. The fifth part included 5 questions about the Attitude of health care providers and the final part was about staff Practice toward nutrition (questions 21-27).

Likert scale questions were used in the Knowledge, attitude and practices parts of questionnaire. Both knowledge and attitude questions comprised of five likert scale questions: (Strongly agree, Agree, Neutral, Disagree and Strongly disagree) with five points. While Attitudes questions comprised of four questions (Never, Sometime, Often, Always) with four points. The KAP scores were analyzed and categorized using the sum score of each outcome and based on Bloom's cut-off point (Houpi, Rodríguez and Strobel, 2015; Olum *et al.*, 2020).

Scoring system was different from the one used in the original questionnaire of KAP. The total knowledge scores were categorized into 3 levels: high level 4-5 points (80-100%), moderate level 3-3.95 points (60-79%), and low level below 3 points (below 60%). The total attitude scores were categorized into three levels: positive attitude 4-5 points (80-100%), neutral attitude 3-3.95 points (60-79%), and negative attitude below 3 points (below 60%). The total Practices score were categorized into three levels: Good practices 3.2-4 points (80-100%), moderate level 2.4-3.16 points (60-79%), and low level below 2.4 points (below 60%).

Validity and Reliability

After the back to back translation of questionnaire, Face and content validity were used to assure validity of questionnaire: The questionnaire were evaluated by experts to validate the questions and their comments were taken into consideration to do some modifications on medical terminology and statements consequences.

Pilot study

Twenty questionnaires were given to nurses in Istiashari Arab Hospital to check the feasibility and improve the design and asked those who received the questionnaire for any

suggestion in any part. Minor modifications were made on format and language to make it more understandable.

To measure the internal consistency of the instruments, the researcher conducted the "Cronbach Alpha coefficient". The results were high as following: Part four: 0.812, Part five: 0.725, Part Six: 0.901.

Data Collection

Data was collected from May 2023 to September 2023 and it was done through self-administered online questionnaires distributed to participants on their own phones or E-mails and took around 7 minutes to fill it. The participants had the right to complete the questionnaire or not after reading the consent form and the purpose of the study.

Ethical Considerations

The study protocol was certified by the ethical committee at faculty of public health with an approval letter (Annex 4). Al- Quds university sent formal letters to the hospitals' administrators and permissions were gotten before starting the data collection (Annex 5). The participants ensured confidentiality since the questionnaire was an online fillable form without the need to mention the name or any personal data and they were informed that the collected data will be used for research purposes only (Annex 3).

Chapter four: Results

This chapter provides the descriptive and analytical results of the current study, where descriptive results include the description of the participants' responses to questions related to demographic and professional data, as well as questions related to their knowledge, attitude and practice towards nutrition, while the analytical results are dedicated to analyzing the relationship between participant's demographic and professional factors and the scores of knowledge, attitude and practice.

First, it is worth mentioning that the non-parametric tests were used in the analysis process, which is related to the violation of normality assumption of data distribution, as shown in Table A, where both Shapiro-Wilk and Kolmogorov-Smirnov tests had a significant result, resulting in rejecting the null hypothesis that assumes the normal distribution of the data.

Table B: Normality test and interpretation of the sample

Normality test	Statistic	Df	p-value	Interpretation
Kolmogorov-Smirnov	0.134	205	< 0.001	Not normal
Shapiro-Wilk	0.888	205	< 0.001	Not normal

Part 1: Demographic and professional data of the nurses and doctors

The following table distributes the results of the nurses' and doctors' demographic and professional data, where it shows that around half of them (45.4%) are working at Istishari Arab Hospital, followed by Augusta Victoria (23.4%), with a median age of 29 years old, mostly are between 26 and 30 years old (37.6%), and more males (65.9%) than females (34.1%) have participated in the study.

Most of the participants were nurses (76.1%), with more than one third of them (34.6%) having an experience of 3 to 7 years, and there were approximate percentages for participants who have 2 years or less (28.3%) and more than 10 years of experience (25.4%). The majority of the participants have graduated in Palestine (86.3%) and are more commonly working at intensive care units (27.8%), with almost all of them (93.2%) have a direct contact with the patients. The following figures illustrate the distribution of participants' demographic and professional data.

Table 1: Distribution of nurses' and doctors' demographic and professional data (n = 205)

Variable	Values	Frequency	Percentage
Hospital	Augusta Victoria – Jerusalem	48	23.4%
	Istishari Arab Hospital – Ramallah	93	45.4%
	Arab Specialized Hospital – Nablus	32	15.6%
	Nablus Specialized Hospital – Nablus	32	15.6%
Age (in complete years)	20 – 25 years old	45	22.0%
	26 – 30 years old	77	37.6%
	31 – 35 years old	52	25.4%
	36 – 40 years old	14	6.8%
	Older than 40 years	17	8.3%
	Median (IQR)	29.0 (7)	
Gender	Male	135	65.9%
	Female	70	34.1%
Current job	Specialist	3	1.5%
	Resident doctor	46	22.4%

	Nurse	156	76.1%
Current job experience	0 – 2 years	58	28.3%
	3 – 7 years	71	34.6%
	8 – 10 years	24	11.7%
	More than 10 years	52	25.4%
Country of graduation	Palestine	177	86.3%
	Arab countries	24	11.7%
	European country	1	0.5%
	Eastern Europe	2	1.0%
	Latin America	1	0.5%
Current department	Intensive care units	57	27.8%
	Medical and cardiology wards	23	11.2%
	Surgical wards	30	14.6%
	Oncology wards	34	16.6%
	Gynecology/obstetrics wards	14	6.8%
	Others	47	22.9%
Do you have a direct patient contact?	Yes	191	93.2%
	No	14	6.8%

Part 2: Nutritional education and training

This part shows the results of information related to the training and education that the participants received regarding nutrition, in which the following table shows that most of them have received a nutritional training during their academic years (62.9%), and the most common duration of training was for more than one month (16.1%).

Also, vast majority of the participants believe it is necessary to include nutritional aspects in their nursing and medical curriculum, and while 69.3% of them did not receive any nutritional training in their workplace, only an approximate percentage of 73.2% stated they are willing to receive training sessions and courses in their workplace, which were more focused on the need for specific nutritional training in specific cases, like end-stage renal disease, and how to deal with dietary modifications when the patients have alterations in their health status. The following figures illustrate the distribution of information related to participants' nutritional education and training.

Table 2: Distribution of participants' nutritional education and training

Question	Answers	Frequency	Percentage
Was nutrition a part of your training in college?	Yes	129	62.9%
	No	68	33.2%
	Not sure	8	3.9%
How much did you spend in nutritional training?	None	102	49.8%
	Less than a week	24	11.7%
	One to two weeks	24	11.7%
	Two to four weeks	22	10.7%

	More than one month	33	16.1%
Do you think it is necessary to receive a nutritional curriculum?	Yes	193	94.1%
	No	12	5.9%
Did you receive any in-service course or session about nutrition?	Yes	63	30.7%
	No	142	69.3%
Do you want to receive courses or sessions in the future?	Yes	150	73.2%
	No	55	26.8%

Part 3: General nutritional care given by health care providers.

The following table distributes the responses of the participating nurses and physicians towards statements about the nutritional care they provide to their patients. The table shows that around one third of the nurses and physicians always (32.2%) or sometimes (31.7%) provide the dietary/nutrition advice to their patients, and are often providing them to around one quarter of the patients (32.7%). Also, the table shows that the most common barriers that face the nurses and physicians in terms of providing dietary/nutrition advice to their patients were the lack of adequate knowledge (75.1%) and enough time (50.7%), while minimal percentage of them stated that advice being not important as a barrier (12.7%). Lastly, the participants stated that the most common person that they seek nutrition/dietary advice from when caring for their patients is the nutritionist (93.7%), while 69.8% would use the internet, and 52.7% would seek it from their supervisor, with less percentages who mentioned libraries (25.4%) and other sources (23.9%). The following figures illustrate the distribution of the participants' responses towards questions of nurses' and physicians' provision of nutritional care to the patients.

Table 3: Distribution of participants' responses to nutritional care statements

Questions	Answers	Frequency	Percentage
Do you provide nutrition/dietary advice to your patients?	Always	66	32.2%
	Most of the time	61	29.8%
	Sometimes	65	31.7%
	Never	13	6.3%
How often were you asked for nutritional	Never	12	5.9%
	Less than 25% of the patients	67	32.7%

advice by your patients in the past six months?	25 – 50 % of the patients	57	27.8%
	50 – 75 % of the patients	37	18.0%
	More than 75% of the patients	32	15.6%
Which of the following do you consider barrier towards providing nutrition/dietary counselling to your patients?	Not enough time	104	50.7%
	Lack of adequate knowledge	154	75.1%
	It is not important	26	12.7%
	Patients are not interested	78	38.0%
	It is too complicated	58	28.3%
	Others	59	28.8%
When you encounter a problem in giving advice to your patient, where do you go for help/advice?	A nutritionist	192	93.7%
	My supervisor	107	52.2%
	The library	52	25.4%
	The internet	143	69.8%
	Others	49	23.9%

Part 4: Nurses' and Physicians' nutritional Knowledge.

The following table distributes the responses of the nurses and physicians towards statements regarding nutritional care for the patients they take care of. The mean knowledge score was 3.9561 which means moderate knowledge. Majority of the participants disagreed (50.2% disagree and 29.8% strongly disagree) that nutritional aspect is not important when caring for patients, with a great agreement (48.3% strongly agree and 36.6% agree) that nutritional screening is preferred to be done when patients are admitted to the hospital. Also, 53.2% strongly agree and 33.7% agree that patient's weight should be recorded at admission, while less agreement is noticed about the role of all healthcare providers in the nutritional preparation (preparing dishes, opening cans, ... etc.) for the patients (38.5% agree) and in nutritional care (feeding the patient) when necessary (49.3% agree).

When asked about malnutrition, majority of the participants agreed about the importance of care, either in terms of its priority (42.9% agree and 35.6% strongly agree), the importance of nutrition in fostering health recovery (44.4% agree and 47.8% strongly agree) and the need for individualized nutritional care for patients by the nutritionist (40.5% agree and 47.3% strongly agree). Moreover, high agreement level was noticed regarding the individual role of the participants in encouraging patients to eat their meals (52.2% agree and 33.2% strongly agree), as well as in the agreement towards the beneficial impact of eating monitoring as a method for determining nutritional status (50.2% agree and 36.1% strongly agree), with 56.6% agreeing that interrupting patients during eating can affect the nutritional intake of the them, while 51.7% of them agree and 37.1% strongly agree that it is all healthcare providers team's responsibility to encourage the patient to eat the food, while less agreement (23.4% agree and 34.6% disagree) that it is the role of the nutritionist only. Lastly, majority of the participants agree (54.6% agree and

38.5% strongly agree) that malnourished patients are in need for a community post-discharge nutritional monitoring and care, with 38.0% disagreeing that patient's weight is not important to be recorded at discharge. The following figure illustrates the distribution of participants' answers towards nutritional knowledge.

Table 4: Distribution of nurses' and physicians' responses to **Knowledge** statements

Statement	SA*		A*		N*		D*		SD*	
	F*	%	F*	%	F*	%	F*	%	F*	%
1. Nutrition is not important for healing of patients	15	7.3%	24	11.7%	2	1.0%	10	50.2%	6	29.8%
2. There should be a nutritional screening for admitted patients to discover malnutrition	99	48.3%	75	36.6%	20	9.8%	8	3.9%	3	1.5%
3. Patients' weight should be recorded at admission	109	53.2%	69	33.7%	10	4.9%	13	6.3%	4	2.0%
4. All healthcare providers can help in patients' nutritional preparation	47	22.9%	79	38.5%	44	21.5%	29	14.1%	6	2.9%
5. All healthcare providers can participate in nutritional care when important	57	27.8%	101	49.3%	28	13.7%	18	8.8%	1	0.5%
6. Malnutrition is a big priority in the hospital	73	35.6%	88	42.9%	26	12.7%	17	8.3%	1	0.5%
7. Providing malnourished patients with appropriate nutrition fosters their healing	98	47.8%	91	44.4%	12	5.9%	2	1.0%	2	1.0%
8. All malnourished patients need individual care from the nutritionist	97	47.3%	83	40.5%	12	5.9%	13	6.3%	0	0.0%
9. I have a key role in encouraging the patient to eat the meal	68	33.2%	107	52.2%	23	11.2%	7	3.4%	0	0.0%
10. Eating monitoring is a good method to determine patient's nutritional status	74	36.1%	103	50.2%	15	7.3%	12	5.9%	1	0.5%

11. Interruptions during meals can affect the nutritional intake of the patient	50	24.4 %	11 6	56.6 %	2 7	13.2 %	12	5.9%	0	0.0%
12. Encouraging the patient to eat the food is all team's responsibility	76	37.1 %	10 6	51.7 %	1 1	5.4%	11	5.4%	1	0.5%
13. Patient's nutritional care is the role of the nutritionist only	27	13.2 %	48	23.4 %	3 2	15.6 %	71	34.6 %	2 7	13.2 %
14. Malnourished patients need post-discharge community care	79	38.5 %	11 2	54.6 %	1 1	5.4%	1	0.5%	2	1.0%
15. Patient's weight is not important at discharge	18	8.8%	51	24.9 %	2 7	13.2 %	78	38.0 %	3 1	15.1 %

* *SA = Strongly agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly disagree, F = Frequency*

Part 5: Nurses' and Physicians' nutritional Attitude

The following table describes the frequencies and percentages of nurses' and physicians' responses to statements related to their Attitudes towards nutritional care. The mean attitude score was 3.6234 which means neutral attitude. The table shows high agreement levels among the participants regarding the provided attitude statements. For example, 59.5% agree and 31.7% strongly agree that they know the circumstances when they should refer to a nutritionist during patient's care, with 54.1% agreeing and 40% strongly agreeing that they know how to refer to and reach the nutritionist. Also, 53.2% agree and 26.8% strongly agree that they know when their patient is or at risk of developing malnutrition, and similar percentages (51.7% agree and 21.0% strongly agree) for their attitudes regarding strategies of patient's encouragement to eat, while 51.2% agree and 37.1% strongly agree that they still need nutritional care training to ensure better patient care.

Table 5: Distribution of nurses' and physicians' responses to Attitude statements

Statement	SA*		A*		N*		D*		SD*	
	F*	%	F*	%	F*	%	F*	%	F*	%
16. I know well when I should refer to a nutritionist	65	31.7%	122	59.5%	15	7.3%	2	1.0%	1	0.5%
17. I know how to reach and refer to the nutritionist	82	40.0%	111	54.1%	7	3.4%	3	1.5%	2	1.0%
18. I know when the patient has or is vulnerable to malnourishment	55	26.8%	109	53.2%	27	13.2%	14	6.8%	0	0.0%
19. I know some strategies to encourage patient's eating	43	21.0%	106	51.7%	32	15.6%	21	10.2%	3	1.5%
20. I need more training for providing better nutritional care	76	37.1%	105	51.2%	14	6.8%	10	4.9%	0	0.0%

*SA = Strongly agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly disagree, F = Frequency

Part 6: Nurses' and Physicians' nutritional Practice

The means practice score was 2.3 which means poor practices. The participants were also asked to determine the frequency of specific nutritional practices and were not that frequent in general as shown in Table 6. For example, nurses and physicians sometimes ensure the patient has what is needed for eating (39%), help the patient in opening food containers (31.2%), help in eating if needed (30.7%) and encourage the family to bring food from outside, if allowed to (37.1%). On the other hand, participants never (50.5%) or sometimes (41.5%) checking patients when eating to ensure eating well, while they sometimes order their tasks to minimize food interruption (31.7%) and provide nutritional advice for malnourished patients and their families at discharge (39.5%). The following figures illustrate the participants' practices towards nutritional care.

Table 6: Distribution of nurses' and physicians' responses to Practices statements

Please chose how frequent you apply the following	Never		Sometimes		Often		Always	
	F*	%	F*	%	F*	%	F*	%
1. Ensuring the patient has all what is needed when eating	46	22.4%	80	39.0%	39	19.0%	40	19.5%
2. Helping the patient in opening food containers	47	22.9%	64	31.2%	47	22.9%	47	22.9%
3. Helping the patient in eating when needed	43	21.0%	63	30.7%	41	20.0%	58	28.3%
4. If allowed, I encourage patient's family to bring food from outside	38	18.5%	76	37.1%	47	22.9%	44	21.5%
5. Checking the patients when eating to ensure they eat well	42	50.5%	85	41.5%	51	24.9%	27	13.2%
6. Ordering my tasks so I do not interrupt the patient during meal	46	22.4%	65	31.7%	57	27.8%	37	18.0%
7. When a malnourished patient is discharged, I provide the patient and family with advice	52	25.4%	81	39.5%	36	17.6%	36	17.6%

Part 6: Analytical results

For the purpose of analytical analysis, the relationship between participants' selective demographic factors and their attitude and practice scores, where the scores were calculated by dividing the summation of the statements' codes by the number of statements (average score). The suitable non-parametric test was then chosen depending the types of the demographic factors, where Mann-Whitney U test was used to test the differences based on the gender, job (doctor vs nurse) and graduation country (Palestine vs others), while Kruskal-Wallis was used for the differences based on experience and department, and Spearman Correlation for the correlation between age and the outcomes.

The following table (7) shows that female participants had higher scores of nutritional practices frequency than males ($p\text{-value} = 0.050$), which indicates that female health care professions tend to practice more supporting nutritional acts than males. The age of the health care professions was significantly correlated with better attitude of nutrition (Spearman Correlation = 0.191, $p\text{-value} = 0.006$) and practices (Spearman = 0.187, $p\text{-value} = 0.007$). Also, nurses were significantly more frequently to practice nutritional support acts than doctors ($p\text{-value} < 0.001$), with better attitude among who have an experience of more than 10 years than others ($p\text{-value} = 0.039$). On the other hand, the rest of factors, including the receiving of in-service training, were not significantly related to significant differences in participants' knowledge attitudes and practices of nutritional care.

Table 7: Relationship between nurses' and physicians' demographic factors and nutritional care knowledge attitude and practice

Factors	Values	Knowledge (out of 5)			
		Mean	SD	Test value	p-value
Gender	Male	3.950	0.410	4427	0.459
	Female	3.968	0.451		
Age	Spearman			0.191	0.006
Current job	Doctor	3.901	0.406	3454	0.309
	Nurse	3.974	0.428		
Current job experience	0 – 2 years	3.920	0.384	8.364	0.039
	3 – 7 years	3.907	0.433		
	8 – 10 years	3.897	0.427		
	> 10 years	4.091	0.432		
Country of graduation	Palestine	3.960	0.423	2380.5	0.738
	Others	3.929	0.428		
Current department	ICUs	3.984	0.488	6.192	0.288
	Med/Cardio	3.907	0.463		
	Surgical	3.867	0.360		
	Oncology	4.010	0.418		
	Gyn/Ob	3.781	0.384		
	Others	4.017	0.360		
Training received	Yes	4.013	0.396	3991	0.218
	No	3.931	0.434		
Factors	Values	Attitude (out of 5)			
		Mean	SD	Test value	p-value
Gender	Male	3.627	0.440	4700	0.950
	Female	3.617	0.525		

Age	Spearman			0.187	0.007
Current job	Doctor	3.563	0.488	3411	0.249
	Nurse	3.642	0.464		
Current job experience	0 – 2 years	3.610	0.381	6.391	0.094
	3 – 7 years	3.552	0.467		
	8 – 10 years	3.583	0.521		
	> 10 years	3.754	0.523		
Country of graduation	Palestine	3.638	0.451	2168.5	0.281
	Others	3.529	0.574		
Current department	ICUs	3.589	0.467	5.082	0.406
	Med/Cardio	3.478	0.511		
	Surgical	3.693	0.457		
	Oncology	3.588	0.475		
	Gyn/Ob	3.614	0.649		
	Others	3.719	0.388		
Training received	Yes	3.654	0.408	4274	0.606
Factors	Values	Practices (out of 4)			
		Mean	SD	Test value	p-value
Gender	Male	2.317	0.791	3937	0.050
	Female	2.576	0.835		
Age	Spearman			0.039	0.577
Current job	Doctor	1.974	0.592	2273	< 0.001
	Nurse	2.541	0.828		
Current job experience	0 – 2 years	2.350	0.749	1.096	0.778
	3 – 7 years	2.445	0.844		
	8 – 10 years	2.321	0.885		
	> 10 years	2.453	0.825		
Country of graduation	Palestine	2.429	0.800	2131.5	0.234
	Others	2.255	0.897		
Current department	ICUs	2.624	0.905	7.995	0.156

	Med/Cardio	2.149	0.743		
	Surgical	2.214	0.668		
	Oncology	2.328	0.600		
	Gyn/Ob	2.306	0.907		
	Others	2.474	0.882		
Training received	Yes	2.363	0.797	4249	0.567

Chapter Five: Discussion

Introduction

The current study was conducted with the main aim of investigating the levels of knowledge, attitude, and practice towards nutrition among physicians and nurses who work in four selected hospitals in West Bank and Jerusalem – Palestine, with the testing of the most commonly related demographic factors. The study found high Moderate level of knowledge, and neutral levels of attitude but poor levels of practice, with some significant differences according to their demographic factors. According to the findings of the current study, the researcher provided a comprehensive discussion, which consists of providing a critique from the researcher's point of view regarding different aspects of the study's methodology and results, as well as comparing the results with the findings from the previously reviewed literature.

The study was conducted using a descriptive-analytical cross-sectional design, which was used for several reasons, including being time- and cost-effective, as well as the ability for the researcher to more easily investigate the levels of knowledge, attitude, and practice quantitatively, with the ability to compare their findings and numerically present them. The used design, on the other hand, has some disadvantages, including recall bias from the nurses and physicians who participated in the study, as well as being less rigorous in the scientific hierarchy of methodological designs, resulting in less reliance on proposing a causality conclusion based on the findings. Therefore, the researcher decided to strengthen the study by choosing a simple randomization sampling method to recruit the participants, in which all of the nurses and physicians in the targeted hospitals were pooled into one randomization software and then randomly selected. This method of sampling helps ensure the generalizability of the data on the population of the study, as it helps in giving each one of the population members the same chance of being selected to participate. Lastly, regarding reaching the participants, a formal method was used, which is the work email addresses

of the participants, ensuring that the delivery of the online questionnaire was fair, reducing the sampling and response types of bias.

In the end, 205 of the targeted 258 participants positively replied and filled in the form, giving a response rate of 79%, which is acceptable, as the percentage of response rate is higher than 50%. As a result, so far, the given findings support the rigorous application of the current study compared to several other studies.

Main finding of the study

In terms of the main findings of the demographic data, the proportion of the respondents' distribution according to their workplace was successfully similar to the actual proportions of each hospital to the overall population, supporting the increased ability of generalizability. This also somehow applied to the age categories distribution, where it included relatively high percentages of participants between the ages of 20 and 35 years old, which contains the majority of the labor force in the targeted hospitals. Moreover, the distribution of the participants according to the current job reflected the actual percentages in the targeted hospitals, where nurses (76.1%) had around threefold the percentage of physicians (23.9%). The demographic factors in the current study included a variable related to the country that the participant had graduated in, which gives it a kind of novelty compared to the rest of the reviewed studies, as different aspects of nutritional and overall care can be affected by this factor, mostly related to differences in received curriculums (Baker, Cary, & da Conceicao Bento, 2021; Kajander-Unkuri et al., 2021). Lastly, the percentage of participants who have direct contact with patients is justified by the fact that most of the participants are working in closed and open units taking care of patients, while the rest of them (6.8%) are possibly working in units of quality, continuous education, ... etc.

Nutrition Education and Training

Around one-third of the participants stated that nutrition was not a part of their training during college (33.2%), with almost one-half of them (49.8%) stating that they did not spend any time or period of training in the area of nutrition, which calls for the need to implement nutritional aspects in the clinical training curriculum that nurses and physicians receive during the academic years, taking into consideration that the theoretical part of nutrition is indeed received in the university, but the question focused on the clinical side, which can interpret the differences in scopes of focus that the clinical trainers provide to their students, which emphasizes the need to develop a homogeneous clinical training curriculum for the nutrition assessment and care of the patients. These findings are followed by the call of participants to necessarily receive nutritional aspects in the curriculum (94.1%). On the other hand, the majority of the participants stated that they did not receive targeted in-service training sessions about nutritional care in their hospitals (69.3%), which also calls for the need to increase the focus on nutritional aspects of continuous education, and this was found to increase the competency levels among the healthcare providers (Sunguya et al., 2013; Vrkatić et al., 2022) and improve the patient's outcomes (Baute et al., 2018). Similar to what has been mentioned earlier, this finding is followed by the majority of participants calling for receiving nutritional training in the future (73.2%), supporting the need to do so and implement nutritional aspects in in-hospital continuous education programs.

The previously mentioned findings are consistent with the findings related to the prevalence rates of malnutrition among patients who are hospitalized, as the rate is around 45% in the reviewed studies, either globally between 20% and 50% (Bellanti et al., 2022), or in Palestine by Badrasawi et al. (2021) (45.4%) or Rezeq et al. (2018) (47.2%). These findings of relatively high rates of malnutrition also call for more focus on the nutritional aspect of patient care, starting with the increase of awareness among health-care providers about the importance of nutritional assessment and interventions. Additionally, the study of Ouaijan and Hawalla (2019) emphasized the link of

health-care providers' level of knowledge and attitudes to the level of provided nutritional care and patient's health outcomes.

In comparison to the previously reviewed studies, the study of Aggarwal et al. (2018) stated that the percentage of physicians who did not receive a nutritional education reached 30% in Europe and Asia and 58% in America, and in the current study it was found that 33.2% of the nurses and physicians didn't receive it, which is closer to the previous findings in Asia and Europe. The similarity in findings highlights the need for more focus on nutritional education and training. The emphasis is also supported in the Emirati study of Gomathi, Shehnaz and Khan (2014) which found that 78.5% of the physicians did not receive enough nutritional education in the undergraduate period, with 80% saying that it is important in the academic years, compared to 94.1% in the current study.

The consistency of our findings with a previous Palestinian of Shakshir and Khayat (2023) study suggests that insufficient nutritional knowledge, attitude and practices among nurses and physicians towards nutrition physicians may be a national issue.

Nutrition Knowledge of Nurses and Physicians

Despite the overall moderate knowledge score of the current study, there are some good responses from nurses and physicians towards their nutritional knowledge. When they were asked if giving malnourished patients an adequate amount of food will enhance their recovery, 92.2% of them agreed. This percentage is higher than what was found in previous study of Shakhshir and Khayyat (2023) in when participants were asked about the same issue (76.1% agreed), and the current findings were also higher than a previous Canadian study by Laur et al (2016) when 84% agreed the statement. This could be related to the different internal nutrition policies of studied hospitals.

Meals interruptions in hospitals patient can negatively affect patient's overall nutrition status (Naughton *et al.*, 2021). In the current study, 81% of participants agree that interruptions during the meal can negatively affect patient food intake, which is higher than what was found in Shakshir and Al-Khayat (2023) when only 60.5% agreed about the same knowledge statement. Our findings were lower than tcanadian study as (88%) agreed that interruptions will negatively affects patient's oral intake. Nurses and physicians should prioritize their duties to not interrupt their patients while eating and this should be a part of nutrition policies and strategies at hospitals.

Nutrition screening is the first step in the Nutrition care plan in hospitals and it's the duty of nurses in most settings and all health care providers should be aware about the importance of this step. When current study asked about nurses and phycians agreement about if all patients should be screened for malnutrition at admission to hospital, 84.9 % showed agreement. This was higher than previous studies that asked about the same issue 71 % by Laur et al and 72.6% in the study of Shakshir and Al-Khayyat). This suggests that policies are need in hospitals setting with continuous training programs to ensure that all admitted patients are nutritionally screened at admission.

Nutrition Attitudes of Nurses and Physicians

Attitudes of nurses and physicians were neutral in the current study and this was similar to the previous Palestinian study of Shakshir and Alkhayat(2023). Around same percentages agreed that they need more training to better support the nutrition needs of their patients (88.3 % in the current study with 81.2% in the other one). This findings can help and support the suggestions of doing continuous training at hospitals settings and facilitate the policies application.

Nutrition Practices of Nurses and Physicians

Practices scores were the lowest among the current study participants, and according to the same study, many reasons can be responsible behind these poor practices such as lack of time and

insufficient knowledge. One of the study questions was about how often staff Realign their tasks so they do not interrupt patients during their meal time. Only 18% of participants always realign their tasks which is a low percentage, this finding was around similar to the Palestinian study by Shakhshir and AlKhayat (2023) when 14.6% always do the same issue. Finding was also poor in the the Canadian study .of Laur et al (2016) with 20% only realigns their tasks.

One of the Nurses tasks at hospitals is to regularly Visit and check patient during their meal time to see how well they are eating, so they may help him or as for further nutrition assessment and report their overall nutrients intake to physicians or dietitians. In the current study 50% of participants reported that they never check patients while eating which is a high percentage. This finding wasn't the same as what was found by Shakhshir and Alkhayat (2023) when only 20% reported that they don't check their patient. This difference could be related to the type of studied hospitals and the workload on nurses staff.

28.3% of the current studied populations reported that they assist the patient to eat if they need help, this result isn't satisfactory and means that many patients may need assistance in eating but found no help (21% of nurses and physicians said that they never assist patients. This finding suggest to do more studies to investigate the detailed reasons behind such poor practices other than lack of time. Focus on nutrition curriculum in universities can support health professions with good knowledge about nutrition that also can affect their attitudes and practices in work places.

There was a difference in the main finding of the current study and the study of Mowe et al. (2008), where the latter found insufficient knowledge level among the participants, while the current study found a higher level of knowledge regarding patient nutrition, and the findings may be different related to the differences in sample sizes (205 vs 4512), as well as location, and the time of study conduction (2008 vs 2013), with the possibility of several factors that affected the

improvement of knowledge level from 15 years till now. This can also show some advancement trends in the nutritional level of knowledge among nurses and physicians.

Although the Ethiopian study of Wondimagegne and Shele (2015) found a poor level of knowledge and attitude among the sampled nurses, it was different in the included setting than in the current study, where they included only healthcare providers from governmental hospitals, while the current study included private hospitals, which may interpret the differences. It is also important to include nurses and physicians from different health sectors, which allows for the comparison between governmental and non-governmental sectors, and look for the major differences in the application of nutritional training programs, therefore, improving the targeted efforts of policymakers in the health sector. The recommendations to include nutritional education programs in a more extensive way in the medical curriculum continue to appear in more studies, like the Greek study of Grammatikopoulou et al. (2019) on 115 physicians, who found a poor level of nutrition knowledge among them, and recommended specific continuous education in the hospitals. The previous study also shares the inclusion of physicians from different departments and specialties with the current study.

Relationship between study variables and nurses' nutritional knowledge, attitudes and Practices.

The agreement also appears between the current study and the Israeli study of Boaz et al. (2013), where there was a need for more nutrition training for the nurses. Also, both studies agreed on the positive significant correlation between the increased level of knowledge about nutrition and enhanced attitudes, although the previous study focused on one area of the correlation, which was the attitude towards the importance of nutrition in health and diseases, while the current study investigated the correlation with the whole score of attitude. Also, the previous study did not investigate for the practice level's correlation, which gives the current study more advantage,

although the current study found no significant correlation between the practice and attitudes of nutrition ($p\text{-value} = 0.966$), while better practices were found to be correlated by higher levels of knowledge ($p\text{-value} = 0.041$).

The Saudi study of Alkhalidy (2019) was conducted on a smaller sample than of the current study (117 vs 205, respectively) and found a lower level of knowledge regarding nutrition among the participated physicians, while both studies share the significant association between age and knowledge, as well as the experience level. On the other hand, the current study did not investigate the role of educational levels on the knowledge levels, because the hierarchy of knowledge levels differ between nurses and physicians. In conclusion, both studies share the same findings related to the positive role of age and experience on nutritional knowledge, which calls for the need of experience sharing between the older and younger generations of healthcare providers. The findings were opposite to the Jordanian study of Naseem et al. (2013), who found no significant effect of experience on the level of knowledge about nutrition, which can be interpreted by that the Jordanian study was applied on nurses only, as well as the differences in knowledge evaluation questionnaire content.

Both Villalon, Laporte and Carrier (2011) and Mogre et al. (2016) stated that the most common barrier to providing nutritional support and care to patients was the lack of time. In the previous study 50% of participants found that lack of time was a barrier to provide nutrition care, while the most common barrier was the lack of knowledge among health care providers and 28.3% of them found that nutrition care is too complicated. This again calls for another recommendation for the hospitals to employ more dieticians and increase the importance of nutrition in the educational programs.

The Lebanese study of Hseiki et al. (2017) also found that time is the most common barrier towards providing enough nutritional care for the patients among their sample of physicians. Also,

the study added a finding that poor patient adherence to nutrition is a major barrier (50% of participants stated it), which also highlights the need to conduct a similar idea in a Palestinian study to investigate the situation among Palestinian patients and evaluate how it could affect the attitudes and practices of healthcare providers of nutritional support. It is recommended to do future studies in Palestine to address the barriers in detail. Addressing the barriers of nutritional support from the subjective way is important to help overcome such barriers to improve the nutritional care that is provided to patients, as the subjective data from healthcare providers is important because they are the frontline in providing the nutritional care.

The significant association between experience and knowledge levels of nutrition in the Ghana study of Mogre et al. (2017) were found to agree with the current study's findings, while they disagree in that the previous study found a positive impact of experience on attitude, and of training on both knowledge and attitude, which is opposite to the current study's findings. Differences may be interpreted in that the previous study was conducted on a sample of nurses on the nutrition of children patients, while the current study included nurses and physicians and was on the nutrition of patients in general. The positive association between experience and knowledge of nutrition among patients was also found in the Austrian study of Bauer, Halfens and Lohrmann (2015), although the previous study was conducted on a different sample of nurses, i.e. home nursing care providers, and included a larger sample, too (205 vs 458).

In agreement with the findings of the previous study, the Turkish study of Demir and Cakiroglu (2013) emphasized the importance of nutritional aspects among the elderly patients who are admitted to geriatric care centers, and that the education of nurses has a positive impact on the level of knowledge among nurses who are working in such centers. This highlights the need for the recommendation to conduct similar studies among nurses who work in geriatric care centers in Palestine, as well as investigating the attitudes and practices towards them. Another type of healthcare providers is the family medicine doctors, who also care for the nutritional aspects of the

patients in a highly individualized manner, because of the differences between the patients, in which the Canadian study of Wynn et al. (2010) highlighted the recommendations of recruited family medicine physicians to focus more on the nutritional aspect of patient's care (72.5%). In agreement with previously reviewed studies, almost all physicians agreed on the time and compensation as barriers to provide nutritional guidance, with a percentage that is higher than in the current study in terms of inadequate nutritional training in the university period (82.3% vs 49.8% of no training in the current study). The study also agrees with the current study in the absence of significant knowledge differences according to their gender, but higher with age, although the current study used the correlational test, while the previous study compared between participants who are older vs younger than 50 years old.

The Korean study of Kim and Choue (2009) agrees with the current study in that the department that the healthcare provider does not significantly affect the level of knowledge about nutrition of patients, which can be interpreted by the notion that knowledge level is consistent among nurses regardless of the type of patients they deal with, which is against the findings of the recent Palestinian study of Shakhshir and Alkaiyat (2023), and it can be interpreted by the differences in targeting and number of hospital recruited.

In terms of the gender's association with the level of knowledge about nutritional care, the study of Spencer et al. (2006) found that female participants showed significantly higher knowledge levels than males, which is against the findings of the current study, and may be related to the differences in sample characters, where the previous study was conducted on 2316 students, compared to 205 nurses and physicians in the current study. On the other hand, more studies of the reviewed literature found no significant differences in level of knowledge of nutrition between males and females (Ahmadi et al., 2009; Han et al., 2016; Özçelik, Sürücüoğlu, & Akan, 2007), which is in parallel of the current study's findings.

All of the reviewed studies that were concerned in the investigation of the experience impact on the level of knowledge about nutrition found no significant relationship between them (Kim & Choue, 2009; Naseem et al., 2013; Yalcin et al., 2013), which is against the finding of the current study, where higher experience level was associated with better knowledge level, which can be interpreted by differences in settings characteristics, as well as sampling methods, where the current study implemented simple randomization, giving it the higher advantage.

Conclusion

Nutrition is of the highest priorities in patient-centered care approaches in health institutions, and several factors were found to be related to the staff's knowledge, attitude and practices of nutritional care. Main results found acceptable levels of knowledge and attitude, but poor practice, towards nutritional care. The levels of knowledge were significantly higher among older and more experienced participants, while the attitudes levels were more positive among older participants and practice was better among nurses than physicians. More focus on the nutritional aspect of education and training in the university curriculum and in-service training is needed, as well as in the Palestinian literature.

Recommendations

Based on the findings and discussion of the current study, the researcher recommends to:

1- Increase the level of awareness among nurses and physicians about the importance of implementing nutritional care plans for their patients through continuous education and training, which includes thorough assessment of malnutrition and monitoring of patients' needs, and keeping up to date with the nutritional care guidelines and protocols.

2- Emphasis of the need to implement nutritional education and training in the health education system of continuous education programs, which may help in increasing the level of knowledge, as found by several previous studies.

3- Conduct further studies in Palestine in the area of nutritional care, focusing on recruiting participants from governmental and non-governmental hospitals, allowing for more comparison, as well as including the investigation of the barriers to appropriate nutritional care.

Limitations

The main limitations in the conduction of the current study were focused on:

- 1- Time constraints related to academic pressure and requirements.
- 2- Lack of funding, which may have allowed for more rigorous methodological design implementation, like a prospective or pretest-posttest design, as well as the ability to give incentives to the participants, like nutritional care brochures.
- 3- The lack of related studies that were published in Palestine, which may have allowed to compare the results of the current study with them, and reading the trend in the levels of knowledge among similar sampled participants.

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Annexes

Annex 1: Questionnaire -English Version

Questionnaire for Nurses and Physicians.

Please note that this research is purely academic and therefore your privacy is completely respected.

Section one

1. Name of the health
 - a) Augusta Victoria hospital- Jerusalem
 - b) Istishari Arab Hospital- Ramallah
 - c) Specialized Arab hospital-Nablus
 - d) Nablus Specialized Hospital- Nablus
2. Sex
 - a. Male
 - b. Female
3. Age of the participant _____ Years
4. What is your current job title (Specialist Doctor, Resident doctor, Nurse)
5. How many years have you been working in the medical \nursing field
 - a) 0-2 years
 - b) 3-7 years
 - c) 8-10 years
 - d) More than 10 years
6. What is the country of graduation?
Palestine, Arabic Countries, Europe ,Eastern Europe ,USA, Latin America.

7. What department are you currently working :

ICU, CCU\ Medical\ Surgical\ Oncology\Gynecology and obstetrics , Others.

8. Do you have direct contact with patients?
Yes,No.

Section two

1. Was nutrition part of your training in college?

a. ☒ Yes

b. ☐ No

☐

c. Not sure

2. How much time was spent on nutrition during your training?

a. ☐ None

b. ☐ Less than 1 week

c. ☐ One to two weeks

d. ☐ Two to four weeks

e. ☐ More than one month

☐

4. Do you feel it necessary to receive nutrition education at the **medical or nursing colleges**?

a. ☐ Yes

b. No

5. Have you received any in-service course/seminars/Training?

a. Yes

b. No

6. Would you like to have in-service courses/Training on nutrition?

a. ☒ Yes

☐

No

Section three

1. Do you provide nutrition/dietary advice to your patients or clients?

☐

- a. Always
- b. ☐ Most of the time
- c. ☐ Sometimes
- d. ☐ Never

2. How often were you asked for nutritional advice by your patients in the past six months?

- a. Never
- b. Less than 25% of patient
- c. (25-50%) of patients
- d. (50-75%) of patients
- e. More than 75% of patients

3. Which of the following do you consider barrier towards providing nutrition/dietary counselling to your patients?

(add a note of multiple selection is accepted)

- a. Not enough time during consultation
- b. Lack of adequate information/knowledge in nutrition
- c. Nutrition advice is not important
- d. Patients are not interested
- e. Dietary advice is too complicated
- f. Others mention _____

4. When you encounter problem in giving dietary/nutrition advice to your patients
where do you go for help/advice



- To a dietitian\ Nutritionist



- To my superior/supervisor



- To the library(Books)



- To the internet

- Others please mention



Section four

Please rate your agreement with the following statements		Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
1	Nutrition is not important to every patient's recovery in hospital					
2	All patients should be screened for malnutrition at admission to hospital					
3	A patient's weight should be taken at admission					
4	All staff involved in patient care can help set up the tray, open packages, etc.					
5	All staff involved in patient care can provide hands-on assistance to eat when necessary					
6	Malnutrition is a high priority at this hospital					
7	Giving malnourished patients an adequate amount of food will enhance their recovery					
8	All malnourished patients require individualized treatment by a dietitian					
9	I have an important role in promoting a patient's food intake					
10	Monitoring food intake is a good way to determine a patient's nutritional status					
11	Interruptions during the meal can negatively affect patient food intake					
12	Promoting food intake to a patient is every staff member's job					
13	Nutritional care of a patient is only the role of the dietitian					
14	Malnourished patients who are discharged need follow up in the community					
15	A patient's weight is not necessary at discharge					

Section five

Please rate your agreement with the following statements		Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
1	I always know when to refer to a dietitian					
2	I know how to refer to a dietitian					
3	I know when a patient is at risk of malnutrition or is malnourished					
4	I know some strategies to support food intake at meals					
5	I need more training to better support the nutrition needs of my patients					

Section Six

Please rate your agreement with the following statements		Never	Sometimes	Often	Always
1	Check the patient has all that they need to eat (e.g., dentures, glasses)				
2	Help a patient with opening food packages				
3	Assist a patient to eat if they need help				
4	If permitted, encourage a patient's family to bring food from home for the patient				
5	Visit and check a patient during their meal time to see how well they are eating				
6	Realign my tasks so I do not interrupt a patient during their meal time				
7	At discharge of a malnourished patient, provide the patient or family with nutrition education material				

Annex2: Questionnaire – Arabic Version

استبيان للأطباء والممرضين

استبيان للأطباء والممرضين

الرجاء العلم ان هذا البحث هو بحث أكاديمي بحث ولذلك سيتم احترام خصوصيتك بشكل كامل.

القسم الأول (المعلومات الشخصية)

1. اسم المؤسسة الطبية (المستشفى) (اختياري)

أ. مستشفى المطلع- القدس

ب. المستشفى الاستشاري العربي- رام الله

ت. المستشفى العربي التخصصي- نابلس

ث. مستشفى نابلس التخصصي - نابلس

2. الجنس

أ. ذكر

ب. أنثى

3. عمر المشارك ----- سنة

4. المسمى الوظيفي الحالي الخاص بك

أ. طبيب مختص

ب. طبيب مقيم

ت. ممرض/ة

5. كم سنة مضى على عملك في المجال الطبي/التمريض

أ. 0-2 سنة

ب. 3-7 سنوات

ت. 8-10 سنوات

ث. أكثر من 10 سنوات

6. البلد التي تخرجت منها؟

- أ. فلسطين
- ب. دولة عربية
- ت. اوروبا
- ث. اوروبا الشرقية
- ج. الولايات المتحدة
- ح. امريكا اللاتينية

7. في اي قسم تعمل/تعملين حاليا:

- أ. وحدة العناية المركزة
- ب. قسم الباطني والقلب
- ت. قسم الجراحة
- ث. قسم الأورام
- ج. قسم أمراض النسائية والتوليد
- ح. أخرى:

8. هل لديك اتصال مباشر مع المرضى

- أ. نعم
- ب. لا

القسم الثاني (معلومات عن التعليم والتدريب الخاص بالتغذية)

1. هل كانت التغذية جزءًا من تدريبك في الكلية؟
أ. ☐ نعم
ب. ☐ لا
ت. ☐ غير متأكد
2. ما هو الوقت الذي أمضيته في التغذية خلال التدريب؟
أ. ☐ لا يوجد
ب. ☐ أقل من أسبوع واحد
ت. ☐ من أسبوع واحد الى أسبوعين
ث. ☐ من أسبوعين الى أربع اسابيع
ج. ☐ أكثر من شهر واحد
3. هل تشعر/تشعرين أنه من الضروري الحصول على مساقات تعليم التغذية في الكليات الطبية أو كليات التمريض؟
أ. ☐ نعم
ب. ☐ لا
4. هل تلقيت أي دورات / حلقات دراسية / تدريبات خلال الخدمة في مكان العمل؟
أ. ☐ نعم
ب. ☐ لا
5. هل تود/تودين الحصول على دورات / حلقات دراسية / تدريبات خلال الخدمة؟
أ. ☐ نعم
ب. ☐ لا
6. إذا كان جوابك نعم، ما هي التدريبات أو الورشات التي تعتقد انها ستساعدك في عملك في المستشفى؟

القسم الثالث (معلومات حول جزء التغذية في رعايتك لمرضاك)

1. هل تقدم/تقدمين أي مشورة غذائية/ حمية لمرضاك ؟
أ. ☐ دائما

ب. ☐ أغلب الأحيان

ت. ☐ أحيانا

ث. ☐ مطلقا

2. كم مرة طلب منك مرضاك تقديم نصيحة غذائية خلال الأشهر الستة السابقة؟

أ. ☐ مطلقا

ب. ☐ أقل من 25% من المرضى

ت. ☐ (25-50%) من المرضى

ث. ☐ (50-75%) من المرضى

ج. ☐ أكثر من 75% من المرضى

3. أي من الأمور التالية تعتبرها عائق أمام تقديم المشورة الغذائية/الحمية الى مرضاك؟

أ. ☐ لا يوجد وقت كافٍ أثناء الاستشارة

ب. ☐ نقص المعلومات / المعرفة الكافية في مجال التغذية

ت. ☐ المشورة الغذائية غير ضرورية

ث. ☐ عدم اهتمام المرضى بذلك

ج. ☐ المشورة الغذائية أمر بالغ التعقيد

ح. ☐ أمور أخرى _____

4. إلى من تتوجه/ين طلبا للمساعدة عند مواجهة صعوبات في تقديم المشورة الغذائية لمرضاك؟

أ. ☐ إلى أخصائي/ة تغذية

ب. ☐ إلى المسؤول المباشر عني

ت. ☐ إلى المكتبة (الكتب)

ث. ☐ إلى الانترنت

ج. ☐ أماكن أخرى _____

القسم الرابع (المعرفة التغذوية للطبيب والممرض)

الرجاء تقييم موافقتك على البيانات التالية باستخدام إحدى العبارات التالية:		أوافق بشدة	أوافق إلى حد ما	محايد	لا أوافق إلى حد ما	لا أوافق بشدة
1	التغذية غير مهمة لشفاء كل مريض في المستشفى					

2	يجب اجراء مسح تغذوي لجميع المرضى عند دخولهم المستشفى للكشف عن سوء التغذية				
3	يجب أخذ وزن المريض عند دخول المستشفى				
4	بإمكان جميع الموظفين المشاركين في رعاية المرضى المساعدة في إعداد الطبق، وفتح العبوات ، إلخ وذلك لمساعدة المريض في تناول طعامه.				
5	بإمكان جميع الموظفين المشاركين في رعاية المرضى المساعدة في اطعام المريض عند الضرورة				
6	تعتبر سوء التغذية أولوية كبيرة في المستشفى				
7	يعتبر اعطاء مرضى سوء التغذية الكمية الكافية من الغذاء أمر يعزز من سرعة شفائهم				
8	جميع مرضى سوء التغذية بحاجة لعناية فردية من قبل أخصائي التغذية				
9	لدي دور هام في تعزيز تناول المريض للطعام				
10	إن مراقبة تناول الطعام هي طريقة جيدة لتحديد الحالة التغذوية للمريض				
11	قد تؤثر الانقطاعات أثناء الوجبة سلبيًا على مدخول الغذاء للمريض				
12	يعتبر تشجيع المريض على تناول الطعام من وظيفة جميع أفراد الطاقم				
13	تعتبر رعاية المريض غذائيا من واجب أخصائي التغذية فقط				
14	يحتاج مرضى سوء التغذية الى متابعة في المجتمع بعد خروجهم من المستشفى				
15	لا يعتبر وزن المريض أمر هام عند الخروج من المستشفى				

القسم الخامس (سلوكيات وممارسة الأطباء والممرضين تجاه تغذية المريض)

الرجاء تقييم موافقتك على البيانات التالية باستخدام إحدى العبارات التالية:	أوافق بشدة	أوافق إلى حد ما	محايد	لا أوافق إلى حد ما	لا أوافق بشدة
1 أعرف جيداً متى ينبغي علي الرجوع إلى أخصائي التغذية					
2 أعرف كيفية الرجوع والوصول إلى أخصائي التغذية					
3 أعرف متى يكون المريض معرضاً لخطر سوء التغذية أو يعاني من سوء التغذية					
4 أعرف بعض الاستراتيجيات لدعم تناول الطعام في الوجبات					
5 إنني بحاجة لتدريب أكبر من أجل تقديم دعم أفضل يتعلق بحاجات المرضى الغذائية					

القسم السادس

يرجى تقييم عدد المرات التي تقوم فيها بما يلي	مطلقاً	أحياناً	غالباً	دائماً
1 التحقق من امتلاك المريض لكل ما يحتاج إليه عند تناول الطعام (على سبيل المثال ، أطقم الأسنان والنظارات)				
2 مساعدة المريض في فتح عبوات الطعام				
3 مساعدة المريض في تناول الطعام إذا كان بحاجة للمساعدة				
4 إذا كان ذلك مسموح به، تشجيع عائلة المريض لجلب الطعام للمريض من البيت				
5 زيارة وفحص المريض خلال تناول وجبات الطعام لمعرفة كيف يأكلون بشكل جيد				
6 تنظيم مهامي حتى لا أقطع المريض أثناء وقت الوجبة				
7 عند خروج مريض يعاني من سوء التغذية، يتم تزويد المريض أو العائلة بنشرة غذائية.				

Annex3: Consent form

الزملاء والزميلات المحترمون،

نشكر لكم مشاركتكم في تعبئة الاستمارة التالية التي تعنى بجمع بيانات من الأطباء والمرضى العاملين في الضفة الغربية والقدس حول المعرفة والسلوك والممارسة المتعلقة بالتغذية، وأهم العوامل الفردية التي تؤثر على هذه المتغيرات.

تعتبر هذه الدراسة جزءاً من استكمال درجة الماجستير في الإدارة والسياسات الصحية مسار الجودة وسلامة المريض"- أبو ديس.

تتكون الاستمارة من خمسة أقسام، تشمل أسئلة اختيار من متعدد عن المعلومات الفردية وطبيعة تعاملك مع أهم الأمور المتعلقة بتغذية المريض، وكذلك عن رأيك حول بعض السلوكيات والمواضيع المتعلقة بذلك، ونتمنى من حضرتك إكمال جميع الأسئلة.

نؤكد في هذا البحث أن جميع البيانات التي يتم جمعها سيتم التعامل معها بسرية ومصداقية تامة، حيث أنه لن يتم جمع اسمك أو أي معلومات حساسة، وأن هذه البيانات سيتم التعامل معها من قبل الباحث ولأغراض البحث العلمي فقط، كما ويمكنك الانسحاب من المشاركة في أي وقت كان.

لأي استفسار أو مراجعة يمكنك مراسلة الباحثة عبر الهاتف: 0598590448

مع الشكر

الباحثة: مرجريت زايد

المشرف: الدكتور حازم آغا

Annex 4: Ethical committee approval



التاريخ: 31/1/2023

عزيزتي الطالبة مارجريت زايد المحترمة
برنامج ماجستير السياسات والادارة الصحية

الموضوع: موافقة لجنة اخلاقيات البحث العلمي

قامت اللجنة الفرعية لأخلاقيات البحث التابعة لكلية الصحة العامة بمراجعة مشروع الرسالة بعنوان:

" Nutrition Knowledge, Attitude and Practice among Nurses and Physicians
working at Private Palestinian Hospitals in the West Bank."

المقدم من (مشرف البحث/د. حازم الاغا).

يعتبر مشروعك مستوفياً لمتطلبات أخلاقيات البحث في جامعة القدس.

نتمنى لكم كل التوفيق في تسيير المشروع.

ملاحظة: في حالة الحاجة الى موافقة من اللجنة المركزية في الجامعة، تستطيع التقدم باستخدام هذه

الموافقة على الرابط: <https://research.alquds.edu/en/ethics/48-how-to-apply.html>

رئيسة اللجنة الفرعية لأخلاقيات البحث

كلية الصحة العامة

د. نهى الشريف

نسخة/ أعضاء لجنة البحث

نسخة/ الملف

Annex 5: Approval letters

Al-Quds University
Jerusalem
School of Public Health

بسم الله الرحمن الرحيم



جامعة القدس
القدس
كلية الصحة العامة

التاريخ: 2022/5/11

حضرة الدكتور عاطف الريماوي المحترم
المدير التنفيذي في المستشفى الاستشاري العربي

الموضوع: تسهيل مهمة الطالبة مرجريت زايد

تحية طيبة وبعد،،

تقوم الطالبة مرجريت زايد، برنامج ماجستير سياسات ادارة صحية/ مسار جودة وسلامة المريض/كلية الصحة العامة/
جامعة القدس، لاعداد بحث رسالة باشراف الدكتور حازم اغا بعنوان:

**“Nutrition Knowledge, Attitude and Practice among Nurses and Physicians working at
selected Palestinian Hospitals in the West Bank”**

وهي بحاجة لمعلومات أحصائية تخص عدد العاملين في قسم التمريض وكذلك الاطباء المقيمين في المستشفيات التالية:
المستشفى الاستشاري العربي، المستشفى العربي التخصصي، مستشفى نابلس التخصصي.
نرجو من حضرتكم تسهيل مهمة الطالبة للحصول على المعلومات، وذلك لانجاز هذه المرحلة من البحث. علما بان
المعلومات ستكون سرية ولاغراض البحث العلمي فقط.

شاكرين لكم حسن تعاونكم ،،،



نسخة: الملف

Jerusalem
P.O.Box 51000

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ص.ب. 51000 القدس

Al-Quds University
Jerusalem
School of Public Health



جامعة القدس
القدس
كلية الصحة العامة

التاريخ: 2023/5/13

حضرة الدكتور هاني عابدين المحترم
المدير الطبي لمستشفى المطلع

الموضوع: تسهيل مهمة للطالبة مارجريت زايد

تحية طيبة وبعد،،

تقوم الطالبة مارجريت زايد برنامج ماجستير السياسات والإدارة الصحية/ كلية الصحة العامة/ جامعة القدس بإجراء بحث الرسالة بإشراف د. حازم اغا ويعنوان:

Nutrition Knowledge, Attitude and Practice among Nurses and Physicians working at
Selected Palestinian Hospitals in the West Bank.

وهي بحاجة الى توزيع استبانة الدراسة على موظفي المستشفى الاطباء والتمريض لاستكمال إجراءات البحث، ارجو من حضرتكم تسهيل مهمة الطالبة والسماح لها بتوزيع استبانة على عينة الدراسة الكترونيا، علما بان المعلومات ستكون لأغراض البحث العلمي فقط.

وتفضلوا بقبول فائق الاحترام،،

د. حازم اغا
عميد كلية الصحة العامة
Faculty of Public Health
Al-Quds University

نسخة: الملف

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Al-Quds University
Jerusalem
School of Public Health



جامعة القدس
القدس
كلية الصحة العامة

التاريخ: 2023/5/13

حضرة الدكتور أكرم شحرور المحترم
المدير التنفيذي للمستشفى العربي التخصصي

الموضوع: تسهيل مهمة للطالبة مارجريت زايد

تحية طيبة وبعد،،

تقوم الطالبة مارجريت زايد برنامج ماجستير السياسات والإدارة الصحية/ كلية الصحة العامة/ جامعة القدس بإجراء بحث الرسالة بإشراف د. حازم اغا ويعنوان:

Nutrition Knowledge, Attitude and Practice among Nurses and Physicians working at
Selected Palestinian Hospitals in the West Bank.

وهي بحاجة الى توزيع استبانة الدراسة على موظفي المستشفى الاطباء والتمريض لاستكمال إجراءات البحث، ارجو من حضرتكم تسهيل مهمة الطالبة والسماح لها بتوزيع استبانة على عينة الدراسة الكترونيا، علما بان المعلومات ستكون لأغراض البحث العلمي فقط.

وتفضلوا بقبول فائق الاحترام،،

د. حازم اغا
عميد كلية الصحة العامة
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AL-QUDS UNIVERSITY

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التاريخ: 2022/10/9

حضرة السيد احمد الصيفي المحترم
المدير التنفيذي لمستشفى نابلس التخصصي

الموضوع: تسهيل مهمة للطالبة مارجريت زايد

تحية طيبة وبعد،،

تقوم الطالبة مارجريت زايد برنامج ماجستير السياسات والإدارة الصحية/ كلية الصحة العامة/ جامعة القدس بإجراء بحث الرسالة بإشراف د. حازم اغا وبمعنوان:

Nutrition Knowledge, Attitude and Practice among Nurses and Physicians working at
Selected Palestinian Hospitals in the West Bank.

وهي بحاجة لمعلومات إحصائية تخص العاملين في قسم التمريض وكذلك الأطباء المقيمين في مستشفى نابلس التخصصي لاستكمال إجراءات البحث، ارجو من حضرتكم تسهيل مهمة الطالبة والسماح لها بجمع المعلومات، علما بان المعلومات ستكون لأغراض البحث العلمي فقط.

وتفضلوا بقبول فائق الاحترام،

د. حازم اغا
عميد كلية الصحة العامة
Faculty of Public Health
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المعرفة والسلوكيات والممارسات التغذوية للأطباء والمرضى العاملين في المستشفيات الفلسطينية في الضفة الغربية والقدس

إعداد: مرجريت زيد عايد زايد

المشرف: د. حازم آغا

ملخص:

خلفية البحث: حوالي ثلثي المرضى المدخلين للمستشفيات يعانون من سوء التغذية. ويعتبر سوء التغذية احد عوامل الخطر للإصابة بعدوى المستشفيات ومضاعفات ما بعد العمليات، مما يسبب ذلك فترات إقامة أطول في المستشفيات وترتفع بذلك تكلفة العلاج. العناية التغذوية بحاجة لفريق متعدد التخصصات لتحقيق الهدف الأمثل. الأطباء يشخصون المرضى ويقدمون المشورة لهم ويتعاونون مع أخصائيي التغذية لتقديم المشورة الغذائية بشكل أمثل. اما المرضى تقع على عاتقهم مسؤولية مسح المرضى للكشف عن سوء التغذية او ان كان المريض معرض لذلك، كما أنهم يدعمون المرضى ويتأكدون من نيلهم احتياجاتهم من خلال مراقبتهم عن قرب ومن خلال التواصل مع باقي الفريق الطبي من اطباء وأخصائيين تغذية.

الهدف: تقييم المعلومات التغذوية للأطباء والمرضى في أربعة من المستشفيات الفلسطينية في الضفة الغربية والقدس، وكذلك معرفة الممارسات والسلوكيات وعلاقتها ببعض العوامل الديموغرافية.

إجراءات البحث: تعتبر هذه الدراسة وصفية تحليلية، أجريت على كل الأطباء المقيمين والمرضى الذين يعملون في أربعة من المستشفيات الفلسطينية. حجم العينة المشاركة 258 ممرض وطبيب. تم جمع المعلومات باستخدام الاستبيان الذاتي احتوى على ستة أجزاء رئيسية حول: المعرفة والممارسات والسلوكيات التغذوية للأطباء والمرضى بالإضافة لبعض الخصائص الديموغرافية، اما باقي الأجزاء فكانت اسئلة تتعلق بالتعليم والتدريب الخاص بالتغذية بالإضافة للعناية التغذوية اليومية للمرضى. 205 من الاستبيانات تم الحصول عليها بنسبة تجاوب 79%. تم التأكد من الموثوقية والصلاحية للاستمارة بنسبة جيدة من الدقة والثبات ($\alpha=0.812, 0.725, 0.901$) للمعرفة والسلوكيات والممارسات على التوالي، وتم التحليل الإحصائي باستخدام برنامج الرزم الإحصائية للعلوم الاجتماعية SPSS27 .

النتائج: معظم المشاركين في الدراسة كانوا من المرضى (76.1%) بأعمار تتراوح ما بين 26-30. الأغلبية في الدراسة كان لديهم معرفة متوسطة تجاه التغذية في المستشفيات، حيث أن معظم وافق على أهمية العناية التغذوية سواء من حيث اعطاء الأولوية لها في المستشفيات (42.9% كان موافق و 35.6% كان موافق بشدة)، اما بالنسبة لأهمية التغذية في التعافي من المرض فكانت الإجابة كالتالي: (44.4% كان موافق و 47.8% كان موافق بشدة)، اما بالنسبة للإجابات بشأن حاجة المريض لعناية فردية من أخصائي التغذية فكانت جيدة أيضاً (40.5% كان موافق و 47.3% كان موافق بشدة). اما بالنسبة لسلوكيات المشاركين فكانت النتيجة محايدة. ولكن، أظهرت الدراسة ضعف الممارسات المتعلقة بالتغذية لدى المشاركين حيث أن 50% من المشاركين لا يقومون بتفقد المريض أثناء تناوله الطعام لتفقد ان كان يتناوله بشكل جيد وكاف. أظهرت الإناث سلوكيات أفضل بالنسبة للذكور تجاه العناية التغذوية ، اما العمر فكان متغير مرتبط بتغير سلوكيات وممارسات المشاركين في كلى الجنسين.

الخاتمة: اظهرت الدراسة معرفة وسلوكيات جيدة تجاه التغذية بين الأطباء والممرضين بينما سلوكياتهم كانت غير كافية. أظهرت الدراسة أيضا ان معظم المشاركين لم يحصلوا على تدريب متعلق بالتغذية داخل اماكن عملهم كما أن معظم أبدى استحياءاً ورغبة تجاه التدريب والتعليم المستمر في أماكن العمل. يوصى بقوة إضافة منهاج وتدريب جيد يتعلق بالتغذية في الكليات التمريضية والطبية، كما انه يوصى بإجراء التدريبات الفعالة ذات العلاقة بالتغذية في جميع المستشفيات وبالأخص للطواقم ذات التواصل المباشر مع المرضى.