An-Najah National University
Faculty of Graduate Studies

Health Care Providers' Knowledge, Attitude and Practice Toward Quality of Nutrition Care in Hospitals Settings in the North West Bank, Palestine: A Cross-Sectional Study

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Dedication

I dedicate this dissertation to my father who always encouraged me to continue my studies and to achieve higher degree of education. He will always be my hero, my source of power and success.

Acknowledgement

I am most grateful to my wonderful small and extended family who has given me their absolute support throughout my entire life, as always. My mere expression of being grateful will not be enough. It would not have been possible to do my master's degree without their care, assistance, patience and unconditional love.

I would like to express the deepest appreciation to my supervisor, Dr. Adbusalam Khayyat. This dissertation would not have been possible without his support.

الاقرار

انا الموقعة أدناه، مقدمة الرسالة التي تحمل عنوان:

Health Care Providers' Knowledge, Attitude and Practice toward Quality of Nutrition Care in Hospitals in the North West Bank, Palestine: A Cross-Sectional Study

أقر بأن ما اشتملت عليه هذه الرسالة هي من نتاج جهدي الخاص، باستثناء ما تمت الاشارة اليه حيثما ورد، وأن هذه الرسالة ككل أو أي جزء منها لم يقدم من قبل لنيل درجة أو لقب علمي أو بحثي لدى أي مؤسسة تعليمية أو بحثية أخرى.

Declaration

The work provided in this thesis unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

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Signature: **التوقيع:**

Date: **التاريخ:** ١٢/١١/٢٠٢٠

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List of Abbreviations

Abbreviations	Full Name
ASPEN	American Society for Parenteral and Enteral Nutrition
ANOVA	Analysis of Variance
BMI	Body Mass Index
IRP	Institutional Review Board
ICU	Intensive Care Unit
KAP	Knowledge, Attitude, Practice
LOS	Length of Stay
M2E	More-to-Eat
MIS	Malnutrition Infection Score
NCP	Nutrition Care Process
NOURISH	Nutrition effect On Unplanned Readmission and Survival in Hospitalized patients
NPO	Nothing by Mouth
NNUH	Najah National University Hospital
SGA	Subjective Global Assessment
SPSS	Statistical Package of Social Sciences
SD	Standard Deviation

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Abstract

Background: Hospital staff plays an important role in nutrition care process which refers to any practice undertaken by a health professional to improve patient's food related behavior and subsequent health outcomes. However, nutrition care quality measures among hospitals are lacking in Palestine. Planning and formulating strategies and interventions require more than just measuring nutritional status; they require a thorough understanding of what health staff actually know and practice in the routine nutritional care and what personal factors and barriers affect the nutrition practice and attitude.

Objectives: To evaluate the nutritional knowledge, attitude and practice (KAP) of physicians and nurses in the routine clinical care. Also to determine the relation between KAP score and specialty, types of hospitals, and gender, and to determine reasons for insufficient nutrient intake and other factors.

Methods: A cross - sectional study was conducted in governmental and non-governmental hospitals in the North West-Bank, Palestine from April 1st, 2019 to June 31, 2019. Data were collected using structured self-administered questionnaire by physicians and nurses to collect information on knowledge, attitude and practices related to malnutrition and nutrition care, alongside sociodemographics characteristics.

Results: Four-hundred and five (n=405) physicians and nurses were interviewed. The median knowledge score was 53.00 with an interquartile range (IQR) of 49.00-57.00. The median attitude score was 18.00 with an interquartile range of 16.00-20.00. The median knowledge/ attitude score was 71 with an interquartile range of 65.00-75.00. The median practice score was 15.00 with an interquartile range of 13.00-18.00 and the mean knowledge attitude practice score was 85. 62/128 with SD (±9.50).

Significance positive correlations were found between respondents' knowledge/attitude and practice scores regarding quality of nutrition care in hospitals (r = 0.384, p-value < 0.05). Respondents with younger age categories and who work in the ICU showed the highest knowledge level of nutrition score (p-value < 0.05). Respondents in non-governmental hospitals showed higher attitude score (p-value < 0.05). Respondents who work in the intensive care unit (ICU) showed highest Knowledge/attitude score (p-value < 0.05). Respondents who work in non-governmental hospital showed higher practice score (p-value < 0.05), while staff nurses and ICU workers showed the highest practice score (p-value < 0.001). Respondents with younger age categories, work in non-governmental hospitals, in the ICU as a practical and staff nurse showed the highest KAP score (p-value < 0.05).

Conclusions: The research revealed that inadequate knowledge were perceived to be a barrier for effective nutrition care to patient in addition that many beliefs and attitude don't always translate in to practice. Establish nutrition task force in hospitals elaborated by dietitians as the unique provider of nutrition care will assure to implement standardized nutrition care process.

Chapter One
Introduction

1.1 Background

Nutritional care is a multidisciplinary responsibility of hospital staff including managerial level, its integration within healthcare workforce activities is absolutely essential [1]. Nutrition care process (NCP) is a significant issue to dietetics professionals and there are rising needs for implementation across the Globe [2]. NCP refers to any interactive step by step pathways undertaken by a health professional and documented in the medical record to promote patient's food related behavior and subsequent health outcomes. NCP can be considered as a problem- solving method and a systematic approach to foundation of medical nutrition therapy which provides the ability to screen, assess, diagnose, treat and evaluate nutrition-related problems and malnutrition related processes [3], as a result poor nutrition care can cause harm or has the potential to cause harm to patients including malnutrition.

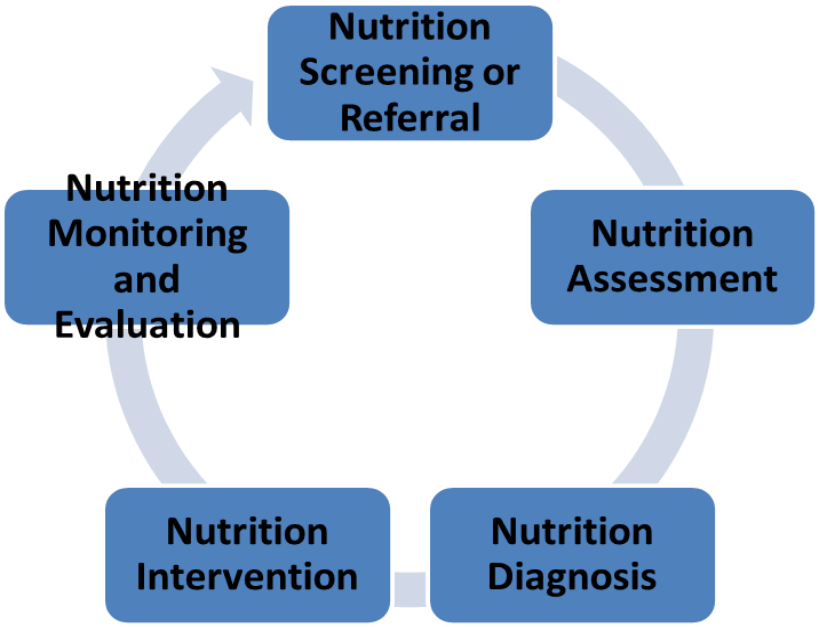

Figure. The Nutrition Care Process. Adapted and modified from "Understanding Normal and Clinical Nutrition", Ninth Edition. By Sharon Rady Rolfes, Kathryn Pinna, Ellie Whitney

Malnutrition, on the other hand, is an independent risk factor that negatively affect patient's clinical outcome, quality of life and body functions [4]. Malnutrition is prevalent globally, considered as a burden on patients, families and hospitals, moreover, on health care system, including economic burden [5]. Malnutrition refers to any over or under nutrition which can lead to diminish of body functions as consequence of: deficiency in nutrient and dietary intake, increase requirements associated with disease state and inflammatory activity, complications of underlying disease that induce poor absorption, excessive nutrient loss, increasing in metabolic demand, decreasing appetite, gastrointestinal problems, and difficulty in chewing and swallowing, or from combinations of the above mentioned factors. All of which can decrease lean body mass (Sarcopenia) and increase the risk of complications during treatment of the primary disease

[6-8]. European Society Of Parenteral and Enteral Nutrition (ESPEN) defines malnutrition seen in hospitalized patients as a combination of cachexia (disease related) and malnutrition (inadequate consumptions of nutrients) as opposed to malnutrition alone [9].

Malnutrition is common and highly prevalent condition among patients in acute hospital settings [10], however, it continues to be under diagnosed and largely under- recognized health problem in many hospital settings [6, 11-13]. Hospitalized patients, regardless of their Body Mass Index (BMI), may suffer from under nutrition because of reduced dietary intake due to illness-induced poor appetite, gastrointestinal symptoms, reduced ability to chew or swallow, or patients have missed meals due to interruptions or investigation, and nothing by mouth (NPO) status for diagnostic and therapeutic procedures [6].

It is suggested that malnutrition to be considered and treated as additional disease, as it has shown that failure to acknowledge the risk of malnutrition seriously impact on mortality and morbidity rates thus causing additional cost [14-18]. Malnutrition is associated with negative outcome for patients including increase risk of immune suppression [19], higher infection and complicated rate, increased muscle loss [20], increase risk of pressure ulcer and impaired wound healing [19], longer hospital stay, higher treatment costs and increased morbidity and mortality [19, 21-26].

Several patients' characteristics indicative of malnutrition can be detected during comprehensive assessments that are used to diagnose moderate and

severe cases of malnutrition such as weight loss, loss of muscle fat and micronutrient deficiencies such as Cheilosis [6]. Thus, a clear nutrition care pathway (NCP) is a key role in prevention and control of malnutrition, which indicates the action required based on the nutritional screening by health care providers to identify patients at risk of malnutrition and to distinguish malnourished patients according to the related cause of malnutrition, which may be a consequence of primary (inadequate intake of nutrient) or secondary (caused by disease or iatrogenic affects factor) or both [6].

Deterioration of nutrition status in the early stage can be identified by a nutrition risk screening process that carried out by well-trained nursing or medical staff which include 1. Inadequate nutrients due to poor food intake, increased nutrients requirements, reduced utilization or excessive loss of nutrients. 2. Depletion of nutrient stores resulting in further weight loss and impairments of physiological and biochemical process. 3. In the last stage, severe nutrient deficiencies result in deterioration of cells and change in organ function which require formal nutritional assessment carried by expertise individuals such as dietitian [27].

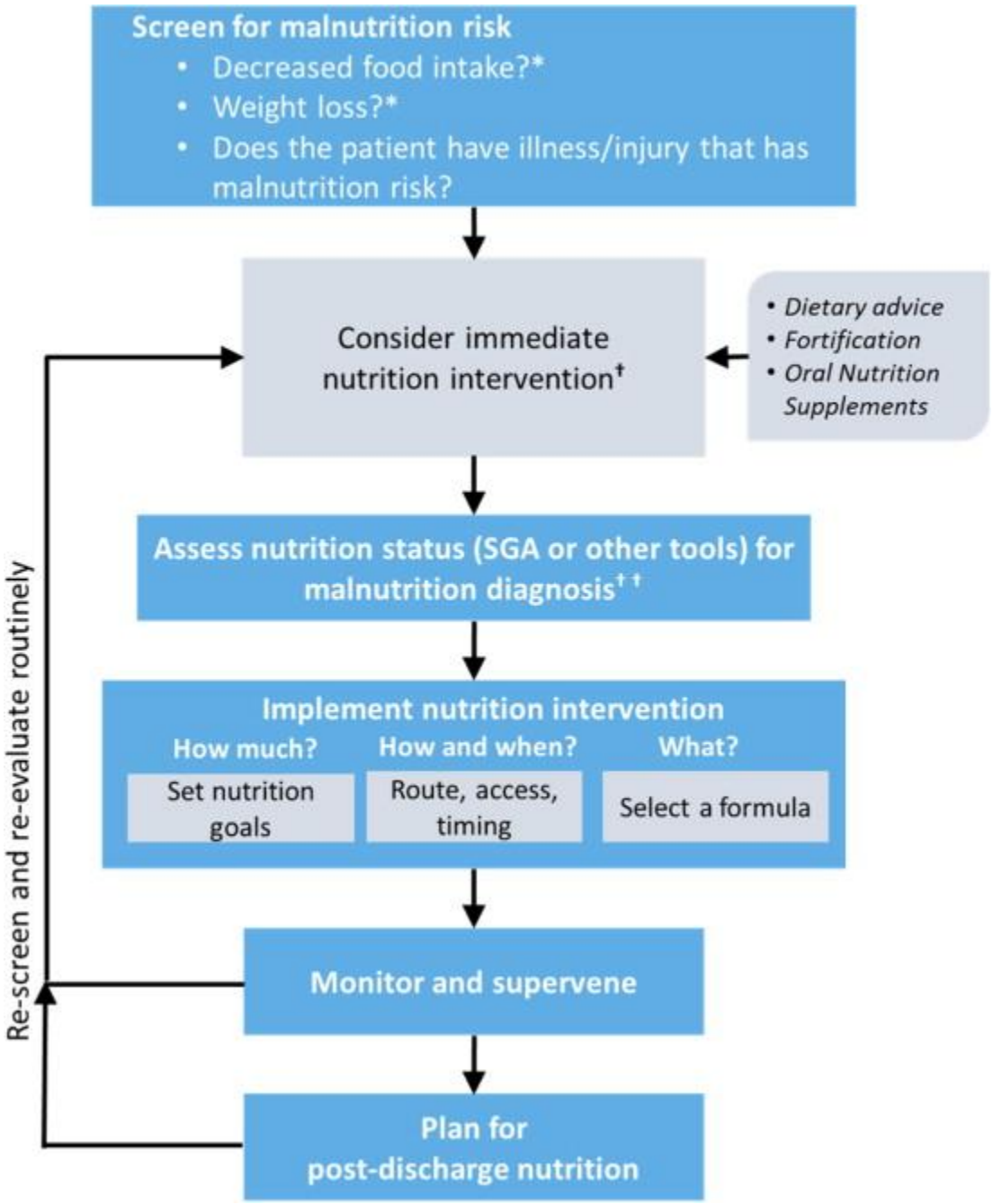

Figure. The Nutrition Care pathway. ∗Ferguson et al.68 †For individuals capable of oral intake. ††Detsky et al.74

Ensuring routinely and carefully performed of various assessments is vital for accurate nutrition diagnoses. Nutrition diagnosis falls into three main categories. Intake- related diagnoses that could be a result from inadequate or excessive intake of nutrients, energy, fluid, alcohol, dietary supplements

and food ingredients. Clinical diagnose involve medical or physical conditions that affect nutrition status such as body weight problem, altered nutrient metabolism, mechanical functions and food-medication interaction. Behavioral – environmental diagnosis include problem related to knowledge , attitude or beliefs such as undesirable food choices, physical inactivity, self-feeding difficulty, impaired ability to prepare meals, limited access to food, physical environment and food safety [6, 28].

Improve meal intake and minimize barriers to inadequate food intake is essential and relevant to patients and hospitals outcomes [29]. Meal service to patient is an integral part of nutrition care. Food can have a major impact on quality of life especially at hospital settings; individuals have their own behavior with food including social, cultural and religious characteristics. Therefore, poor nutrition care pathway have the potential to cause decreased patient satisfaction which may in turn lead to decreased food consumption, unintended weight loss and other complications.

Meal time barriers can be reduced by implementing standard of nutrition care procedures for patients [30]. Low meal intake represents an independent risk factor for hospital mortality [31], It occurs for about a third of patients and predicts length of stay (LOS) when adjusting for other variables [32]. Findings were contributed to the fact that optimal nutrition therapy is heavily dependent on ensuring its optimal delivery at the bedside and personalized meal service system, for example, an appropriate nutrition screening must include essential elements such as the ability of patients to

feed themselves, chew and swallow and offering assistance when needed, a role which the nursing staff have to accept and be responsible for [33]. However, short term experimental studies have demonstrate benefits of giving assistance at meal time and monitoring food intake [34].

As a result, nutrition care plan should be performed in multidisciplinary approach to maintain and improve patients' nutritional condition. Adequate and timely implementation of nutrition support has been linked to favorable outcomes such as decrease length of stay (LOS), reduce morbidity and mortality, improve quality of life and functional status [4].

In order to achieve well-structured nutritional management and clear nutrition care pathway, health care providers should have sufficient knowledge to screen for malnutrition and ensure good practice and attitude to prioritize the patient's nutrition status. The American of Nutrition and Dietetics Academy and the American Society for Parenteral and Enteral Nutrition (ASPEN) recommends that a standardized set of diagnostic characteristics to be used for identification and documentation of adult malnutrition in routine clinical care practice [35, 36].

Standardized nutrition process elaborated by dietetics professionals as the unique provider of nutrition care should assure doing the right thing at the right time, in the right way, for the right person to achieve the high quality of nutrition care [37]. However, physicians and nurses are often the first health professionals with whom hospitalized patient comes in to contact with, they can play an important role to identify patients in need for

nutrition services by using information gathered during screening and make dietitian referral as appropriate.

‘Team effort’ is needed from all staff involved in nutritional care, including hospital managers to prevent under nutrition [38]. Physicians are responsible for writing admission orders regarding to current patient’s status, including diet. And nurses are often perform initial nutrition screening include unintentional weight loss, low appetite, inability to chew or swallow which are red flags for nutrition decline [39], furthermore, nurses are the direct-care staff in hospital wards who have the most day-to-day contacts with patients. As such, they have important roles in the ongoing detection of patients who are at risk of malnutrition due to poor food intake and in the delivery of interventions that support nutrition for patients in their wards [40].

1.2 Literature review

Much of the literature since 1977 showed that surgical patients have signs of malnutrition. An earlier study has shown that 50 % of surgical patients and 40 % of medical patients were malnourished and patients would be benefit from improvement in nutrition status and minimize the likelihood of complications [41].

A whole body of literature reported high prevalence of malnutrition in hospital (acute) settings to be between 20% and 50% depending on the patient population, type of hospitals and the criteria used to diagnose [7].

Australian and international studies reported that almost 40 % of patients admitted to hospitals are malnourished on admission or at high risk to demonstrate malnutrition during their hospitalization with longer hospital stay, higher infection and mortality rate [11, 19]. In addition, a Spanish study, published in 2009, reported that 30-55% of patients is malnourished with increasing rate among patients with longer LOS, and is associated with a higher rate of complications, prolonged hospitalization and increase cost of health services [42-46].

Several studies have estimated the medical cost of disease related malnutrition on national and international level. A European study found that the direct medical cost burden of the disease related malnutrition in Europe was over €31 billion in 2009, and a similar American study published in 2016 found that medical burden of disease related malnutrition vary among states in the united states from an annual cost of $36 per capita in Utah to $65 per capita in Washington, D.C. Nationally the annual cost of disease-associated malnutrition is over $15.5 billion.

[5, 47, 48] .

Australian study published in 2009 found that malnutrition patients has significantly longer Length of Stay (LOS) by 4.5 days compared to well-nourished patients while the dietitian was involved in 45 % of malnutrition cases [49]. Another study on elderly hospitalized patients published in 2008 found poor documentation to the two major risk factors for malnutrition;

weight (19 %) and loss of appetite (53 %). Dietitian referral were only done to 9 % of patients who needs further dietetics assessment [50].

In Palestine, the prevalence of malnutrition in hospitalized patients have not been documented, however, two cross sectional Palestinian study in hemodialysis center at An-Najah National University Hospital (NNUH) in 2016 and in 2017 has shown that malnutrition is prevalent among hemodialysis patients (almost half were mild to moderate malnourished according to Subjective Global Assessment (SGA) score and 65% were moderately malnourished according to Malnutrition Inflammation Score (MIS) in two different studies in the same center, and supported to increase nutritional awareness of health care providers to perform nutritional screening, assessment protocols, consultations, dietary follow up and make the appropriate early intervention in order to enhance the nutrition status and avoid further depletions [51, 52].

Findings suggest that health workers use nutritional assessment criteria poorly in clinical settings; Australian and New Zealand study published in 2012 indicated poor level of adherence to recommended guidelines on patient's admission for optimum nutrition care and large numbers of acute care hospitals don't complete the evidence based practice guidelines for nutritional management of malnourished patients [53]. A qualitative and quantitative Australian journal, 2008 reported that implementation of evidence based screening tool within patients admission procedure doesn't

automatically translate in to nursing practice. Nurses time and nutrition screening knowledge were the main barriers to efficient screening [54].

A Swedish cross sectional study in 2017 indicated that adequate nutritional status in elderly patients, was positively associated with availability of clinical dietitians, energy and nutrients calculated menus, while meals satisfaction for patients, were associated positively with availability of foodservice and clinical dietitians, and with the process of quality indicators, meals choices, satisfaction survey and meals council [55].

A large randomized controlled clinical trial (N=652) by the Nutrition effect On Unplanned Readmission and Survival in Hospitalized patients (NOURISH) Study Group investigated the effectiveness of oral nutrition supplements and they found older, malnourished patients randomized to high protein oral nutrition supplement for 90 days had improved nutritional status and decreased mortality compared to those randomized to a placebo [56].

Although the dietitian should be at the center of nutrition management and education[37], previous studies indicated that nurses and physicians have an important crucial critical role to play in the multidisciplinary team including dietetics referral process due to their availability to patients 24 hours per day and due to regular contact with patients compared to other nutrition staff [40, 57]. Occupational outlook of In the united states reported that nurses are 40 times more than dietitians and 100 times more than certified diabetes educators to meet diabetic patients in wards [58].

However, an Australian qualitative cross sectional study based on open ended questions survey in 2017 reported that there are many barriers to nutrition care starting from the moment the patient is hospitalized and the screening of malnutrition is initiated; On organization level, lack of time, lack of funding, lack of formalized policy and procedure and lack of training and education were mentioned. On staff level, lack of other staff knowledge, lack of management support, poor communication, and other staff think that nutrition including screening is a burden and not a part of their responsibility[59] were reported as the main barriers.

Nutritional status often declines while the patient is in hospital. A Swiss study published in 2003 used a prospective comprehensive survey on 1707 patients who consume regular meals without any nutrition support reported that one in five patients doesn't have an adequate food intake to meet their energy and protein needs [60]. Furthermore, a prospective cohort Canadian study in 2015 on 409 patients has shown that 20% of previously well-nourished patients showed deterioration in nutritional status and 25% of patients had > 5% of weight loss during their hospital stay and has suggested the role of nutrition care in reducing LOS [32].

It is estimated from several lines of evidence that at least one third of patients in developed countries are malnourished on admission to the hospitals or may be become malnourished, if left untreated, almost two thirds of those patients will experience a further decline in their nutrition status during hospital stay [6, 19, 46].

A systematic review study of eleven publications and case studies in Canadian hospital have reported that limited hospital resources were considered as key barriers to best practice nutrition care. Too little time and not enough money were considered as most commonly constraints to staff training on how to recognize and treat malnutrition [61, 62].

Barriers to food intake is commonly in acute care patients and can develop to malnutrition, a report of Canadian Malnutrition Task Force revealed that common barriers to eat were not being given food when a meal was missed (69.2%), loss of appetite (63.9%) , not wanting ordered food (58%), feeling too sick (42.7%), being interrupted during the meal time (41.8%), and tired (41.1%) [29].While Case studies at four Canadian ICUs have found that resistance to change, lack of awareness, lack of critical care experience, clinical conditions of patients, workload main barriers to guideline implementation of nutrition support [62].

Another studies from Denmark and Canada published in 2002 and 2014 respectively have shown that contributors to this malnutrition and low nutrition care during hospital stay are many as once hospitalized, patient may not receive adequate nutrition because of interruptions due to scheduled medical test or procedures during meal times, food may not be available when the patient is hungry, inability to reach food tray and open packages, lack of staff awareness and basic knowledge with respect to dietary requirements, and lack of instructions to deal with these problems [40, 63].

From Dietitians point of view, an Australian study 2012 reported that lack of feeding assistance and lack of flexibility of food service that are out of their control are the main barriers to adequate hospital nutrition in addition to lack of food choices and patients boredom due to increase length of hospital stay [64].

However, few studies internationally have shown that improving standard of care for patients can influence outcomes [34, 65]. A Mexican study published in 2008 emphasized on the importance to make improvements in the health system in order to provide adequate nutrition care as the study was found statistically significant difference between malnourished and normal patients in relation to BMI, energy adequacy, protein intake and patient's LOS [66].

A Canadian study published in 2018 has found that the largest change in mean meal intake was found in a site where volunteers implementing eating assistance programs and provide more food on the units [34]. In five Canadian hospitals, the More-2-Eat study confirmed that interventions to improve the standard of care procedures for patients at mealtimes reduced barriers to food intake. Analysis demonstrated that there are many ways in which standard of nutrition care can be improved in hospitals to reduce meal time barriers and the possible corresponding malnutrition [30].

A recent study published in 2019 aimed to determine in the medical patients of Nutrition Day database 2006-2018 the prevalence of simple nutrition related risk factors and their association with outcome and also the

routine use of nutrition care process such as screening, monitoring of food intake and documentation. The study reported that individual risk factor such as weight loss, poor eating before admission and low nutrient intake in hospital were highly prevalent in the medical and surgical patients of the cohort 2006-2015 (45%, 49% and 52% respectively) and overlap between risk categories is already present. And they are associated with poor hospital outcome within 30 days after the nutrition Day. Multivariate analysis in this study has shown that all the above mentioned nutrition risk indicators were independently associated with death in the hospital within 30 days after Nutrition Day. Each additional risk indicator observed was associated with a nearly two times higher mortality in the overall population. The same study has found that nutrition care process such as screening, monitoring nutrition intake and documentation in the related field are applied to less than 50% of patients and has suggested that results may arise from educational gap of healthcare professional in the field of nutrition [67].

In a study on 4512 nurses and physicians across three countries Sweden, Denmark and Norway has shown that the major reason of poor nutritional services is lack of knowledge among the above mentioned health care providers [68]. Another study on 6000 person from each groups in Scandinavia has confirmed that those with better nutrition knowledge provide patients with better appropriate nutrition services and care. Low scores were noted from the few studies on physicians' nutrition knowledge. Mean knowledge scores of physicians and medical students have been

reported as follows: Canada 50 %, America 49 %, Taiwan 59 %, Saudi Arabia 52 % and Turkey 48 % [69]. A cross sectional study on 200 nurses from three randomly selected hospitals in Gana has shown that nurses has poor knowledge as well, over 70% of nurses agreed that patients could exclude major nutrients from their meals. And almost 90% of nurses didn't know the recommended daily calories intake of carbohydrates for diabetic patients[57].

A Korean study 2013, highlighted the reasons for not introducing nutrition care process and has found that more than half of respondents reported that lack of knowledge, difficulties to apply in to practice and lack of human power and time (53.8 %, 42.3 %, 69.2%) are the most important three reasons.[2]

A cross sectional study in 2008 aimed to determine nutrition knowledge level of health care providers in some teaching hospitals in Tahran has found that physicians and nurses have poor knowledge especially in clinical nutrition topics. The study emphasized on ehancing knowledge level of clinical staff as an effective factor in paying attention to the importance of nutrition care as a part of treatment regime of the patients[69].

A prospective study was conducted in a tertiary care hospital between Dec and Feb, 2019 to assess sensitization of Clinical Dietitians' to improve the nutrition care process and has found a significant improvement in the nutritional diagnosis which was attributed to the sensitization of Dietitians.

Dietitian role in bridging the knowledge gap among multidisciplinary team with regular sensitization about the importance of hospital malnutrition has led to the early identification and intervention of nutrition risk[70].

1.3 Problem Statement and Justification of the Study

Quality measures are lacking in Palestine and quality of nutrition care is considered a wide spread challenge as many patients are treated for many medical problems while having their nutritional needs ignored.

Implementation of nutrition screening alone, will not always lead to a adequate patient's need [71]. Planning and formulating strategies and interventions require more than just measuring nutritional status; they require a thorough understanding of what health staff actually know and practice in the routine nutritional care and what personal factors and barriers affect the nutrition practice and attitude.

Despite the fact that inadequate and poor food intake is common in acute care patients and can develop to malnutrition influencing both recovery and outcome[29], little is known about malnutrition in Palestine, and much less is known about assessment of malnutrition knowledge, attitude and practice (M-KAP) toward health care providers and nutrition care quality measures in hospitalized patients.

It has been shown that the main barriers against implementation of good nutrition care to be lack of knowledge, interest and responsibility, limiting their effectiveness in the detection and management of malnutrition [72],

and accepting the responsibility to ensure optimal nutrition delivery at bedside for optimal nutrition care.

1.4 Significance of the study

This is the first study to offer some important insights on malnutrition and quality of nutrition care service for in patients in hospital settings in Palestine. Patient's nutritional status is still not considered a medical priority despite numerous advances in clinical care.

The importance and originality of this study is that it explores the impact of high quality nutrition care on patients' nutritional status. The findings of this work may contribute to the field of nutrition management system in the clinical care practice.

This study is a groundbreaking approach to improve the nutrition process and promote nutrition care plan by measuring KAP of physicians and nurses, highlight reasons of inadequate nutrition in in-patients, and to share concern on the importance of developing and directing change management strategies in hospital settings to complete the integrated cycle of the quality of health care provided.

The present research explores, for the first time, the effect of measuring Hospital staff M-KAP in the routine clinical care as it's a useful method to provide valuable inputs to improve awareness in hospital staff, define each staff responsibility, promote nutrition, identify areas to focus, provide

feedback and direction to optimize the nutrition care process and quality of care strategies [73].

M-KAP of health care provides remain unclear and have not yet been investigated yet in Palestine.

1.5 Aim

The aim of the study is to assess physicians' and nurses' malnutrition knowledge, attitude and practice at hospital settings and to understand the link between KAP of nurses, physicians and quality of nutrition care provided

Specific Objectives:

1. To evaluate the nutritional knowledge, attitude and practice of physicians and nurses in the routine clinical care.
2. To assess the relationship between KAP score and specialty, types of hospitals, gender and other related factors
3. To determine barriers associated with inadequate dietary intake and lack of nutrition support
4. To assess correlations between nutrition knowledge, attitude and practice.

Chapter Tow
Methods

2.1 Study design

This is a cross-sectional study. Data were collected between April 1st, 2019 and June 31, 2019

2.2 Settings

In this study, data were collected from physicians and nurses in two types of hospitals; Non-Governmental Hospitals included An-Najah Hospital in Nablus, Zakah Hospital in Tulkarem, Wakaleh Hospital in Qalqelia, Al Razi Hospital in Jenin. While Governmental Hospitals included; Refedia Hospital in Nablus, Thabet Thabet Hospital in Tulkarem, Tubas hospital in Tubas, Darwish Nazzal in Qalqelia and Jenin Hospital in Jennin across North West-Bank, Palestine

2.3 Sample size

Sample Size was calculated using Raosoft sample size calculator. Using 5% margin of error, 95% confidence interval, 50% response distribution, and population of 19,000. The sample size calculated was 377. Eligible participants were nurses and physicians with clinical role and direct patient contact in any in-patient departments of the selected hospitals.

After meeting sample selection criteria, the participants informed about the study, and the accepted participates in the study voluntarily were included in the sample.

2.4 Population

A convenience sample of (n=405) nurses (practical nurse, registered and midwifery) and physicians (residents and specialists) from Governmental and Non-governmental hospitals in the North West- Bank-Palestine. Subjects recruited based on non-random sample based of Figure 1.0 and Figure 2.0. Dietitians and ancillary services practitioners were excluded as too many questions are not relevant and their results would not be representative of the general staff in the unit.

The questionnaire was applicable for the eligible participants from nurses and physicians with clinical role and direct patient contact in any in-patient departments of the selected hospital in the North West-Bank (Nablus, Tulkarem, Qalqelia, Jenin and Tubas).

After meeting sample selection criteria, the participants informed about the study, and the accepted participates in the study voluntarily were included in the sample.

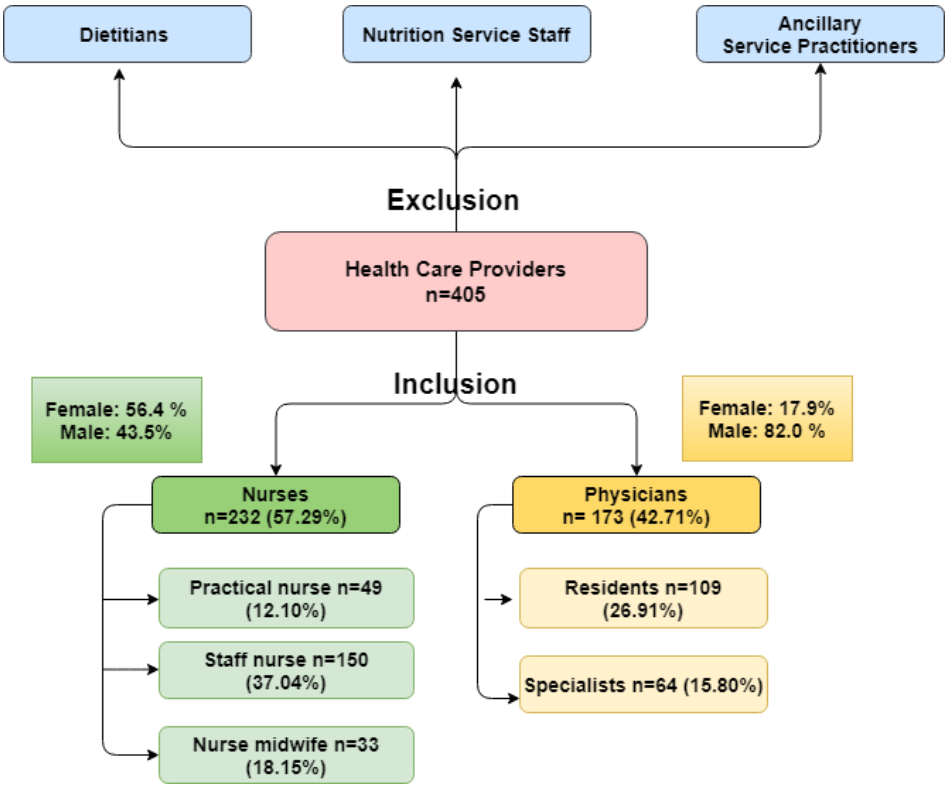

Figure 1.0 – Inclusion and Exclusion Criteria

2.5 Tool (Data collection form)

A questionnaire, adapted from previous study [73], was used after translated to the Arabic language and validated. The original tool was developed by the More-2-eat (M2E) project which measured Malnutrition knowledge, attitude and practice (M-KAP) to meet the objectives of the research.

In this study, no special permission was required from the developers to reuse any part of this questionnaire to measure nurse and physician's knowledge, attitude and practice regarding malnutrition and nutrition care.

This questionnaire consisted of six parts:

1. The first section included sociodemographic information such as participant's age, gender, specialty, years of experience, type of hospital and units they worked in.
2. The second section consisted of 15 questions about knowledge and perception of nurses and physicians with respect to malnutrition and nutrition care. Scores were added from questions 1-15 to get the knowledge score (Range 15-75)
3. The third section consisted of 5 questions about attitude. Scores were added from question 16-20 to get the attitude score (Range 5-25). Scores were added also from question 1-20 to get KA score (Range 20-100)
4. Forth section, consisted of 7 questions about nutrition care practice at patient's bedside. In this section, scores were added from 21-27 to get the practice score (Range 7-28)
5. The last fifth and sixth sections consisted of two questions related to the most common reasons of lack of sufficient ordinary food or nutrition support

For the knowledge and attitude section, the questionnaire provided five choices ranging from 'strongly agree' to 'strongly disagree' as follows: strongly disagree=1, somewhat disagree=2, sometimes= 3, somewhat agree=4, strongly agree=5. Questions (1, 8, 13, and 15) were reverse coded. In practice section, the respondents had 4 options: 'never'; 'sometimes';

‘often’ and ‘always’, for the practice score: never=1, sometimes=2,often=3, always=4.While total KAP score was obtained from questions 1-27 and the subscale total calculated so that higher scores indicated more positive K, A and P.

The validity and reliability of the tool ensured with the following points:

- Back to back translation
- A focus group panel involved 10 qualified nurses and physicians who were meet the inclusion criteria reviewed and evaluated the final questions face and content validity, assessed the definition of wards, medical terminology, clear sequences of statements where the aim, objectives and the tool discussed.
- Before conducting the study, a modified questionnaire was tested with a pilot sample from five physicians and five nurses; data from the pilot sample was not included in the analysis. The questionnaire was revised for clarity and ease to use and no changes were recommended.
- Cronbach alpha was used to check consistency between questions and was found to be accepted as follows: knowledge (68%), attitude (67%), practice (80.5%), KAP(77%), and barriers scale: 86% and 90%.

2.6 Data collection procedure

Volunteer who were trained on collecting data for the knowledge, attitude and practices questionnaire, carried out data collection.

The questionnaire was self-administered, the main researcher however was available for any clarifications.

Each questionnaire took 10 minutes to administer. Statements were explained when necessary. Consent form, explaining the purpose of the research and assuring confidentially was written to participants. The participants had the right to participate or not. The data were collected on weekdays. The collection process occurred from April 1st, 2019 to June 31, 2019.

2.7 Ethical Consideration and Human Subjects Protection

- Permission of the study obtained from An-Najah Institutional Review Board (IRB), Ministry of Health, Hospitals included in the study and any other authorities concerned.
- Participants informed about the purpose and benefits from the research
- All data has been collected confidentiality.
- The research has no harm or any physical risks on participants.

1. Statistical analysis

Data was entered, cleaned, managed and analyzed using IBM SPSS software version (23). For categorical and continuous variables frequencies and means were calculated. Descriptive statistics were used to calculate the response frequency and describe the sample. KAP was presented as total mean, median was presented as individual for K, A, P. Data was presented as mean ± (SD) or median and interquartile range (IQR) for numerical variables, and frequencies with percentages for nominal variables. All scores were tested for normality using the Kolmogorov- Smirnov test. T-test and ANOVA were performed for normal distribution data, while Mann-Whitney U test and the Kruskal-Wallis H test were performed for not normally distribution data . The Pearson correlations coefficient was performed to examine the possible correlation between continuous variables (malnutrition knowledge, attitude and practice scores). Samples were distributed across units to explore any associations between the staff role and specialty, type of hospitals, units and years of experience as these were hypothesized to influence K, A and P and would influence the KAP scores. Statistical tests to measure associations and significance have been used as appropriate. P value of 0.05 or less was considered significant.

Chapter Three
Results

3.1 Socio-demographic data

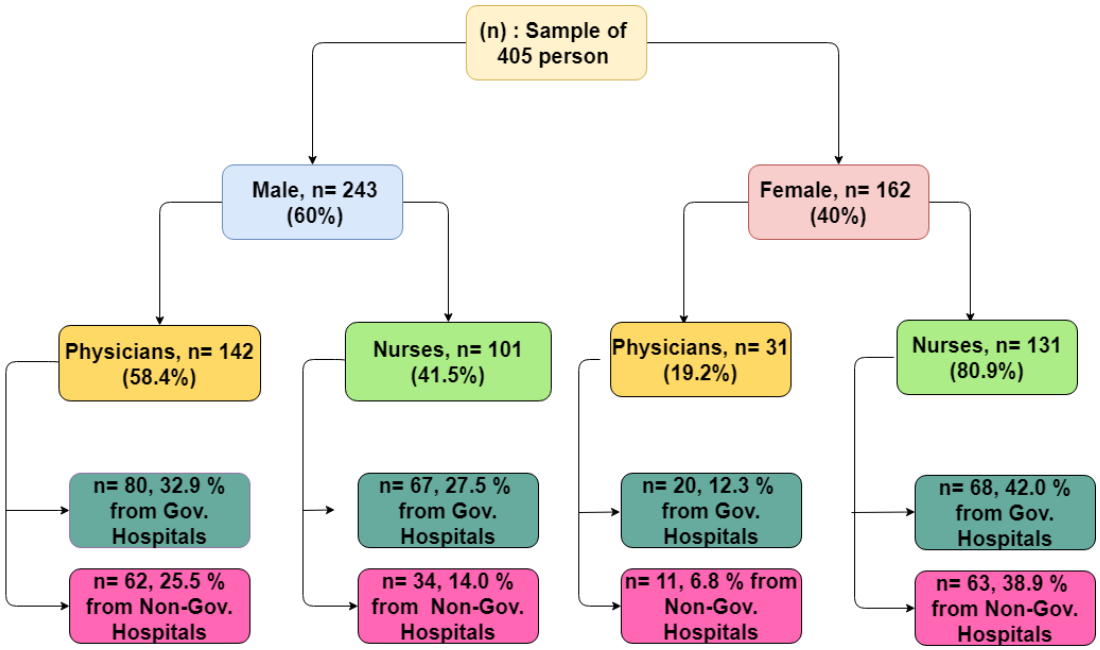

Figure 2.0 - Selection& Sample Size

Demographic information for the sample is presented in Table 1. A total of four-hundred and thirteen questionnaires were collected from the governmental 235 (58.02%) and non-governmental hospitals (41.98%) in seven of hospital units; surgical, internal, pediatric, gynecology and obstetrics , Intensive Care Unit (ICU), emergency and other departments as follows (23.95%, 20.49%, 14.81%, 13.58%, 12.58%, 9.38%, 5.19%, respectively). Eight of the respondents were excluded from the results as they do not have direct contact with patients in wards. Respondents were mostly male (60.00%). The age of respondents was equally distributed between 21 and 69 years old, the mean age of respondents was 32.77 years

(SD ± 9.09 and median was 30 years with an interquartile range of 27.0-36.0).

Physicians (42.71%) and nurses (57. 29%) were asked to complete the survey. Two groups of physicians and three groups of nurses participated in the study: Specialist Physician (15.80 %), Practical Nurse (12.10%) and Nurse Midwife (8.15%), where most respondents from Registered Nurse (37.04%) and Resident Physician (26.91 %). The majority was full-time contract type (92.59%). Half of respondents was with a job experience between three to ten years (49.88%).

Table 1: Demographics data of the sample (n = 405)

Variable	Number (%)
Gender	
Male	243 (60.00 %)
Female	162 (40.00 %)
Age categories	
< 30	194 (47.90%)
30-39	135 (33.33%)
40-49	45 (11.11%)
50-59	24 (5.93%)
60+	6 (1.48%)
Type of hospital	
Non-Governmental	170 (41.98%)
Governmental	235(58.02%)
Units	
ICU	51(12.58%)
Surgical	97(23.95%)
Internal	83(20.49%)
Gynecology & obstetric	55(13.58%)
Pediatric	60(14.81%)
Emergency	38(9.38%)
Others	21 (5.19%)

Job title	
Resident physician	109 (26.91%)
Specialist physician	64 (15.80%)
Practical nurse	49 (12.10%)
Staff nurse/ Registered nurse	150 (37.04%)
Nurse midwife	33 (8.15%)
Contract type	
Full time	375 (92.59%)
Part time	30 (7.41%)
Years of experience	
0-2	89 (21.98%)
3-10	202 (49.88%)
10+	114 (28.15%)

3.2. Knowledge of nurses and physicians with respect to malnutrition and nutrition care

The total knowledge score was 53.31. The mean knowledge score was 52.95/75, 3.55/5 (SD± 6.0, range from (28-70) and the median was 53.00 with an interquartile range of 49.00-57.00.

Both age and hospital's units showed a significant association with knowledge ($p< 0.05$) (Table 2). On the other hand, there was no significant association between gender, type of hospital, job title and years of experience. Respondents in surgical, internal, pediatric and ICU reported better knowledge, in previous order, more so than other hospital units. Respondents in young and middle adulthood showed good knowledge more so than older adulthood. Knowledge increased in critical care units and for high risk group's patients (p value < 0.05)

Distribution of responses to each knowledge question is shown in Appendicies: Table1. In response to question 1, almost half of those surveyed (56 %) indicated that nutrition is important and patient's weight should be taken on admission (50.6 %), while only quarter of respondents (26.9 %) believed that patients should be screened for malnutrition on admission and only (19.8%) believed that patient's weight should be taken on discharge. On the other hand, only (9.6 %) strongly agreed and (39.3 %) somewhat agreed that malnutrition is a high priority in their hospitals; quarter of respondents believed that malnutrition patients needed to follow up in the community after discharge (23.2%), and they are highly needed to be given an adequate amount of food in hospital to enhance recovery (25.7%).

Less than that (12.1 %) strongly agreed that promoting food intake to a patient is every staff member's job.

The minority of respondents agreed that they have an important role in promoting patient's food intake (8.4 %) and accepted that all staff involved in patient care can help set up the meals, open packages(8.6 %) and provide patients hands-on assistant to eat when necessary (7.7 %). However two-thirds of respondents (66.4%) agreed that monitoring food intake is a good way to determine a patient's nutritional status and interruptions during their meals can negatively affect food intake (60.5 %). Around (70 %) of respondents indicated that all malnourished patients require individualized treatment by a dietitian and (30.6 %) indicated that the nutrition care is the

only role of the dietitians who has the only and full responsibility to treat malnutrition patients.

Table 2: Association between socio-demographic factors and knowledge

Variables	Number (%) N=405	Knowledge score Median (Q1-Q3)	P value *
Gender			
Male	243 (60 %)	54 (49.00-57.00)	0. 233
Female	162 (40 %)	53 (49.00-56.00)	
Age categories			
< 30	194 (47.90%)	54 (49.00-57.00)	
30-39	135 (33.33%)	53 (49.00-57.00)	
40-49	45 (11.11%)	54 (50.00-56.00)	0.023
50-59	24 (5.93%)	49 (45.5-54.75)	
60+	6 (1.48%)	43.5 (41.00-53.50)	
Type of hospital			
Non-Governmental	170 (41.98%)	54 (49.00-57.00)	0.373
Governmental	235(58.02%)	53 (49.00-56.00)	
Units			
ICU	51(12.58%)	55 (50.00-59.00)	
Surgical	97(23.95%)	54 (48.50-57.00)	
Internal	83(20.49%)	54 (50.00-58.00)	
Gynecology & obstetric	55(13.58%)	51 (48.00-54.00)	0.008
Pediatric	60(14.81%)	54 (50.00-58.00)	
Emergency	38(9.38%)	51 (49.00-54.25)	
Others	21 (5.19%)	52 (50.00-55.50)	
Job title			
Resident physician	109 (26.91%)	54 (49.00-57.00)	
Specialist physician	64 (15.80%)	52 (49.00-54.00)	0.089
Practical nurse	49 (12.10%)	53 (49.50-55.00)	
Staff nurse	150 (37.04%)	54 (49.00-58.00)	
Nurse midwife	33 (8.15%)	52 (48.50-54.00)	
Contract type			
Full time	375 (92.59%)	53 (49.00-57.00)	0.595
Part time	30 (7.41%)	54 (49.75-57. 25)	
Years of experience			
0-	89 (21.98%)	53 (49.00- 57.00)	
3-10	202 (49.88%)	54 (49.00-57.00)	0.398
10+	114 (28.15%)	52 (49.00-56.00)	

*** Kruskal-Wallis test**

3.3. Attitude regarding malnutrition and nutrition care

The mean attitude score was 17.46/25 (SD± 3.28) with range from 5-25 and the median is 18.00 with an interquartile range of 16.00-20.00. Quarter of respondents perceived how to refer to dietitian (23.2 %) but a minority of respondents knew when to refer (13.1 %) and when the patients is at risk or malnourished (11.9 %). (9.6 %) strongly indicated that they knew some strategy to support patients food intake at meal time while 51.1 % agreed that they need more training to better support the patients' nutrition needs. Table 3 shows that the only significant association was between attitude and type of hospital (Mann-Whitney U test, p value < 0.05). Respondents who works in non-governmental hospitals reported better attitude (median = 18.50) more than those who works in governmental hospitals (median = 17.00). Gender, age, specialty, units, years of experience and contract type didn't show significant association with attitude.

Table 3: Association between socio-demographic factors and attitude

Variables	Number (%) N=405	Attitude score Median (Q1-Q3)	P value
Gender			
Male	243 (60 %)	18 (16.00-19.00)	0.756
Female	162 (40 %)	18 (15.00-20.00)	
Age categories			
< 30	194 (47.90%)	18 (15.00-20.00)	
30-39	135 (33.33%)	18 (15.00-19.00)	
40-49	45 (11.11%)	18 (17.00-20.00)	0.528
50-59	24 (5.93%)	18 (16.00-19.00)	
60+	6 (1.48%)	19 (14.25-19.25)	
Type of hosp.			
Non-Governmental	170 (41.98%)	18.50 (16.00-20.00)	0.001
Governmental	235(58.02%)	17.00 (15.00-19.00)	
Units			
ICU	51(12.58%)	17 (15.00-19.00)	
Surgical	97(23.95%)	18 (16.00-20.00)	
Internal	83(20.49%)	18 (16.00-20.00)	
Gynecology & obstetric	55(13.58%)	17 (14.00-19.00)	0.203
Pediatric	60(14.81%)	18 (17.00-20.00)	
Emergency	38(9.38%)	17 (16.00-19.00)	
Others	21 (5.19%)	17 (15.50-19.00)	
Job title			
Resident physician	109 (26.91%)	18 (16.00-19.00)	
Specialist physician	64 (15.80%)	18 (16.00-19.00)	
Practical nurse	49 (12.10%)	18 (15.00-20.00)	0.465
Staff nurse	150 (37.04%)	18 (15.00-20.00)	
Nurse midwife	33 (8.15%)	17 (13.50-19.00)	
Contract type			0.224
Full time	375 (92.59%)	18 (16.00-19.00)	
Part time	30 (7.41%)	18.50 (15.75-20.00)	
Years of experience			
0-	89 (21.98%)	18 (16.00-20.00)	0.252
3-10	202 (49.88%)	18 (15.00-19.00)	
10+	114 (28.15%)	18 (16.00-20.00)	

Taken together, the results on knowledge and attitude showed that the mean KA score is 70.41/75 (3.5/5), (SD±7.22) and the median is 71 with an interquartile range of 65.00-75.00 with the minimum 38 and maximum 90.

Table 4 below illustrates the significant association between knowledge/attitude and two of the demographics: Types of hospitals (Mann Whitney, $p < 0.05$) and units (kruskal-Wallis test, $p< 0.05$). Respondents who works in non-governmental hospitals reported better knowledge/attitude (median = 71.50), more than those who works in governmental hospital (median = 70.00). Respondents who works in internal (median = 73), pediatric (median = 72), ICU (median =71), surgical (median =71), reported higher knowledge/ attitude level than those who works in other departments, gynecology and emergency (median = 70, 68, 68 respectively).

Table 4: Association between socio-demographic factors and knowledge/attitude

Variables	Number (%) N=405	KA score Median (Q1-Q3)	P value
Gender			0.304
Male	243 (60 %)	71 (66.00-75.00)	
Female	162 (40 %)	70 (65.00-75.00)	
Age categories			0.076
< 30	194 (47.90%)	71.00 (65.00-76.00)	
30-39	135 (33.33%)	70.00 (66.00-75.00)	
40-49	45 (11.11%)	72.00 (68.00-75.00)	
50-59	24 (5.93%)	67.50 (64.00-73.75)	
60+	6 (1.48%)	62.50 (56.00-72.50)	
Type of hospital			0.034
Non-Governmental	170 (41.98%)	71.50 (67.00-76. 25)	
Governmental	235(58.02%)	70.00 (65.00-75.00)	
Units			0.004
ICU	51(12.58%)	71 (68.00-77.00)	
Surgical	97(23.95%)	71 (65.00-76.00)	
Internal	83(20.49%)	73 (67.00-76.00)	
Gynecology & obstetric	55(13.58%)	68 (63.00-73.00)	
Pediatric	60(14.81%)	72 (67.00-76.00)	
Emergency	38(9.38%)	68 (65.00-72. 25)	
Others	21 (5.19%)	70 (66.50-73.00)	
Job title			0.125
Resident physician	109 (26.91%)	72 (67.00-75.00)	
Specialist physician	64 (15.80%)	70 (67.00-73.00)	
Practical nurse	49 (12.10%)	70 (64.00-75.50)	
Staff nurse	150 (37.04%)	71 (65.00-76.50)	
Nurse midwife	33 (8.15%)	69 (63.00-72.50)	
Contract type			0.695
Full time	375 (92.59%)	71 (65.00-75.00)	
Part time	30 (7.41%)	70 (66.75-76.00)	
Years of experience			0.970
0-	89 (21.98%)	70 (65.50-75.00)	
3-10	202 (49.88%)	71 (66.00-76.00)	
10+	114 (28.15%)	71(65.00-75.00)	

3.4. Practice regarding malnutrition and nutrition care

The total practice score was 15.49/28 (2.2/4) with minimum 7 and max 28. The mean practice score is 15.20 (SD± 4.14) and the median is 15.00 with an interquartile range of 13.00-18.00.

Surprisingly, a minority of respondents always provide adequate nutrition care to patient at bedside during the meal time; the most striking observation to emerge that only (14.6 %) of responders are realign their tasks so they don't give interruptions to patient at meal time. From the other hand, (16.8 %) of respondents check if the patient has all that he needs to eat, only (8.4 %) of respondents help a patients with opening food packages and (9.9 %) assist patient to eat if he needs help while almost (5 %) visit and check patients during their meal time to see how well they are eating and give encouragement to a patient's family to bring food from home for patient, if permitted. On discharge only (7.7 %) of the respondents provide malnourished patients nutrition education material.

The results as shown in table 5 indicate that type of hospital was significantly associated with practice toward nutrition care at bed side with $p < 0.05$ (Mann-Whitney U test) in addition to specialty and hospital's units were significantly associated with it (kruskal-Wallis test, $p < 0.05$). Other demographics did not show any significant association with practice like gender, age and years of experience. Higher practice toward nutrition care was detected in non-governmental hospital (median=16) than governmental hospital (median =15). Staff and practical nurses participants reported

higher practice more than resident doctors, nurse midwives and specialist doctors (median = 14, 14, and 13, respectively). ICU participants reported higher practice (median =18) more than other hospital units (median= 16, 15 and 14), with significant difference.

Table 5: Association between socio-demographic factors and practice

Variables	Number (%) N=405	Practice score Median (Q1-Q3)	P value
Gender			
Male	243 (60 %)	15 (13.00-17.00)	0.145
Female	162 (40 %)	15 (13.00-18.00)	
Age categories			
< 30	194 (47.90%)	15 (13.00-18.00)	
30-39	135 (33.33%)	15 (13.00-18.00)	
40-49	45 (11.11%)	15 (13.50-16.50)	0.281
50-59	24 (5.93%)	16 (13.00-17.00)	
60+	6 (1.48%)	11 (5.25-16.75)	
Type of hospital			
Non-Governmental	170 (41.98%)	16 (13.00-19.00)	0.011
Governmental	235(58.02%)	15 (13.00-17.00)	
Units			
ICU	51(12.58%)	18 (15.00-20.00)	
Surgical	97(23.95%)	15 (13.00-17.00)	
Internal	83(20.49%)	15 (13.00-17.00)	
Gynecology & obstetric	55(13.58%)	14 (10.00-16.00)	<0.001
Pediatric	60(14.81%)	15 (12.00-17.00)	
Emergency	38(9.38%)	15 (14.00-17.00)	
Others	21 (5.19%)	16 (10.50-18.50)	
Job title			
Resident physician	109 (26.91%)	14 (12.00-16.00)	
Specialist physician	64 (15.80%)	13 (11.00-15.00)	
Practical nurse	49 (12.10%)	17 (15.00-20.00)	<0.001
Staff nurse	150 (37.04%)	17 (14.00-19.00)	
Nurse midwife	33 (8.15%)	14 (12.00-17.00)	
Contract type			
Full time	375 (92.59%)	15 (13.00-18.00)	0.100
Part time	30 (7.41%)	16 (14.00-19.00)	

Years of experience			
0-3	89 (21.98%)	14 (12.50-17.50)	0.195
3-10	202 (49.88%)	15 (13.00-18.00)	
10+	114 (28.15%)	16 (13.50-17.50)	

3.5. Knowledge, attitude and practice (KAP) regarding malnutrition and nutrition care

Overall, these results indicate that the mean KAP score was 85.62/128 with SD (±9.50), with minimum 45 and maximum 113 and the median 86.00 with interquartile range 79.00-92.00.

Table 6 presented an overview of statistically significant association between socio-demographics data and total KAP together where no statistically differences has shown between gender, years of experience and respondents' contract type. The table 6 below illustrated that age, specialty and units were the significantly associated with knowledge, attitude and practice toward nutrition care (One-Way ANOVA, $p < 0.05$) in addition to type of hospital was significantly associated with it (Student's t- test, $p < 0.05$). Respondents from non-governmental hospitals reported higher scores (mean = 86.95) more than governmental hospitals participants (mean = 84.66). Respondents in adulthood groups (< 30, 30-39 and 40-49 years old) reported higher KAP score (mean = 86.10, 85.85, 86. 22) more than older adulthood groups (50-59 and above 60 years old) (mean =82.16, 73.83 respectively). Respondents in the ICU units reported higher KAP score (mean=89.07) followed by internal unit (mean=87.06), pediatric unit (mean=86.55), surgical unit (mean=85. 23), other departments (mean=

85.09), emergency (mean=83.94) and Gynecology and obstetrics unit (mean=81.30). Staff and practical nurses participants reported higher KAP scores (mean = 87.62, 87.08) followed by resident doctors (mean=84.77), specialist doctors (mean=82.84) and nurse mid wife (mean=82.57).

Table 6: Association between socio-demographic factors and knowledge, attitude and practice

Variables	Number (%) N=405	KAP score Mean (SD)	P value
Gender			0.929
Male	243 (60 %)	85.59 (9.72)	
Female	162 (40 %)	85.67 (9.18)	
Age categories			0.010
< 30	194 (47.90%)	86.10 (9.41)	
30-39	135 (33.33%)	85.85 (9. 23)	
40-49	45 (11.11%)	86. 22 (8.56)	
50-59	24 (5.93%)	82.16 (9.01)	
60+	6 (1.48%)	73.83 (18. 23)	
Type of hospital			0.017
Non-Governmental	170 (41.98%)	86.95 (9.84)	
Governmental	235(58.02%)	84.66 (9.15)	
Units			0.001
ICU	51(12.58%)	89.07 (9.45)	
Surgical	97(23.95%)	85. 23 (8.74)	
Internal	83(20.49%)	87.06 (10.93)	
Gynecology & obstetric	55(13.58%)	81.30 (9.75)	
Pediatric	60(14.81%)	86.55 (8. 26)	
Emergency	38(9.38%)	83.94 (6.61)	
Others	21 (5.19%)	85.09 (10.30)	
Job title			0.001
Resident physician	109 (26.91%)	84.77 (8. 22)	
Specialist physician	64 (15.80%)	82.84 (8.34)	
Practical nurse	49 (12.10%)	87.08 (8.84)	
Staff nurse	150 (37.04%)	87.62 (10.80)	
Nurse midwife	33 (8.15%)	82.57 (8.03)	
Contract type			0.347
Full time	375 (92.59%)	85.50 (9.57)	
Part time	30 (7.41%)	87. 20 (8.61)	

Years of experience			
0-3	89 (21.98%)	85.43 (9.03)	
3-10	202 (49.88%)	85.85 (9.68)	0.893
10+	114 (28.15%)	85.37 (9.60)	

3.6. The correlations between knowledge, attitude and practice scores regarding quality of nutrition care

A significant modest positive correlation was shown between respondents' knowledge and attitude scores ($r = 0.134$, $p < 0.001$). The results mean that respondents who had good knowledge were more likely to have a good attitude toward nutrition care. A significant modest positive correlation was demonstrated between respondents' knowledge and practice scores ($r=0.273$, $p < 0.001$). Taken together, these results indicate that respondents who had good knowledge were more likely to have good practice toward nutrition care. A significant modest positive correlation was shown between Knowledge/ attitude and practice ($r=0.348$, $p < 0.001$). The results mean that respondents who had good knowledge/attitude were more likely to have a good practice toward nutrition care. There was a significant modest positive correlation between respondents' attitude and practice scores regarding nutrition care ($r=0.266$, $p < 0.001$), which means that respondents who have a good attitude were more likely to have more practice.

Table 7: correlations between knowledge, attitude, and practice

Correlations	Pearson correlation	P value
Knowledge/ attitude	0.134	0.007
Knowledge/ practice	0. 273	0.001
Knowledge, attitude/ practice	0.348	0.001
Attitude/practice	0. 266	0.001

3.7 Barriers to adequate in-hospitals nutrition and nutrition support

The results also indicated that almost half of respondents believe that the most important barriers to inadequate intake of food are related to food appearance, taste and aroma of meals served (58.0%), patient medical condition (56.3%), temperature of meals (55.6%), patients need assistant at meal time (54.8%), interruption during the meal time (53.1%), patients are not well positioned to eat (48.4%), lack of documentation (47.9%) and 38.0 % of respondents referred the reason to miscoordination of tray delivery between food service and nursing. The most surprising barriers were to the indifference to the adequate of patient food intake (42.2 %).

On the other hand, the research has touched on the reasons related to insufficient nutrition support in hospitalized patients, the result indicated that most of the respondents believed that the most important reasons related to technically difficult issue (83.0%), complications (82.7%), unaware of the importance of nutrition (82.5%), no clear definition of job description (80.5%), Malnourished patients are not identified (79.0%), lack

of documentation (78.3%), too expensive (68.1%), indifference (67.9%) and time consuming (66.4%).

Chapter Four
Discussion

Hospital malnutrition is still neglected issue in Palestine despite being identified over four decades ago. Nutrition care in hospitals is a preventive intervention for patients at risk of malnutrition and is a treatment for malnourished patients. Nevertheless, nutrition care is still underrated compared to medical and pharmacological interventions in hospitals.

Recognition of malnutrition in hospitalized patients are not often a priority in clinical practice in Palestine. To the best of our knowledge, there is no data was found on the prevalence of malnutrition in hospitalized patients and to date and there is no previous research related to nutrition care management in Palestine.

Inadequate knowledge and confidence were perceived to be a barrier for effective nutrition care to patient. The study was designed to assess and evaluate the level of knowledge, attitude and practices among Palestinian nurses and physicians in hospitals regarding malnutrition and nutrition care and to determine if they have acceptable level of them. As mentioned in the literature review, there are no studies undertaken to discuss physicians' and nurses' knowledge, attitude and practices regarding nutrition care and malnutrition among hospitalized in-patients in Palestine.

Nutrition care in hospitals has received little attention in Palestine, this might be due to the nature of gradual effect of nutrition to be expected. Common barriers include lack of nutrition knowledge among health care

provider, lack of clearly defined nutrition responsibility in planning and managing nutrition care along with the lack of employment of nutrition specialists in hospital. To date, four from the nine hospitals in this study do not include nutrition specialist among their staff. Furthermore, only one hospital from the above mentioned ones screen patients for any possible risk indicator of malnutrition.

In addition, meals and related tasks are not considered part of health care workers responsibilities. Nutrition care process such as screening, assessment, planning and monitoring with documentation of care are not regular part of care in all hospital wards while food catering is a part of administration department where meals, food and equipment are usually a part of administrative budget and not a part of medical budget where cost reduction is not considered to influence directly patient care. Lack of food service management might affect quality, presentation, texture and composition of food and subsequently the nutrition care.

On the global level, several studies have shown that they are many variables affect nutrition knowledge, attitude and practice. Type of hospital, units, specialty and age categories were the most important factors.

All of the nurse respondents were ward nurses rather than from other nursing position and more than half of 232 nurses were female (56.4%). The results seem to be close with other research that has been also found a similar representation from academic and community hospitals [40].

A study has shown a significant relationship between age categories and knowledge in addition to total KAP score, similar to other study that found a significant relationship between nurses' age and level of nutrition knowledge that those older nurses show higher average knowledge score [74] while in this study younger participants showed higher median and mean scores than the other older ones, this could be due to the emerging higher education support system both at school and universities that shed the light on the importance of nutrition care.

Types of hospitals in which respondents work were not significantly associated with nutrition knowledge this might be due to that all of staff obtained came almost from the same educational level. On the contrary, there was a significant correlation between units in which the respondents work and the level of nutrition knowledge, knowledge/attitude, and practice score and total KAP scores. ICU units was obtained the highest median and median score similar to a study conducted in the Middle East which revealed that ICU nurses scored higher than internal medicine nurses toward knowledge and perceived quality of nutrition care [33]. This might be due to nutrition self-courses or awareness as a result of sense of responsibility toward high risk group patients in the ICU that their nutrition status is heavily dependent on what health care provider know and behave to achieve higher level of nutrition care.

It is worth to mention that a significant relationship was found between specialty of the respondents and practice in addition to total KAP score.

Practical and staff nurse showed higher score than physician did. This result verify previous findings that ensure optimal nutrition care is heavily dependent on nurses who play a pivotal role in ensuring that adequate nutritional care is delivered to patient at bedside [33].

In addition, there was a significant association between types of hospital and attitude, knowledge/attitude, practice and total KAP score. Non-governmental hospitals show better attitude, knowledge/ attitude, practice and total KAP score than governmental hospitals, this might be due continuous training, dietitians being involved in the nutrition care and presence of nutrition policy and available screening tool.

On the other hand, there was no significant difference for total KAP score for years of practice similar to these finding were observed [73, 75, 76] and reported that no significant difference between years of nursing experience and clinical nutrition knowledge (p-value=0.827) this may confirm that education is better than clinical experience in case of nutrition care.

The results in this study showed that quality of nutrition care at hospitals are in the early stage; the results has shown that approximately half of respondents (56.0 %) strongly agreed that nutrition is important for patient's recovery and management of disease. The result is lower than similar study that reported most of respondents (88%) believed that the nutrition is important [77]. Similar views have been shown by practical nurse and other health professionals including general practitioners in another studies were they perceived that nutrition is important for chronic

disease management and supported best practice guidelines (Australian Governmental Department of Health and Aging 2003) to improve the nutrition care for the management of patients with chronic diseases [78-80]. The result of KAP score was (85.62/128) (Ranges: 45-113) seems to be less than similar research which found that the score was (93.6/128) (Ranges: 51-124)This finding may be translated to a lower perceived and actual quality of nutrition care [73].

Considering nutrition field is interesting and appreciated field in hospital, results confirmed that lack of nutrition knowledge is a barrier of insufficient and inappropriate nutritional practice. It was observed from several line of evidence that increase knowledge level will lead to increase in examined patients and detection of malnutrition [68, 75] as a result there are a highly need for training courses to improve knowledge, attitude and practice regarding nutrition care in hospitals. Exposure to recent professional training in nutrition care was more likely to make nurses more positive about nutrition care to be a part of their responsibilities [81].

Screening all patients for malnutrition is essential to identify patients at risk of malnutrition and to develop the plan of care, however, only (9.6%) of respondents strongly believed that malnutrition is in a high priority, (26.9 %) strongly agreed that all patients should be screened for malnutrition at admission, while half of respondents (50.6%) strongly agreed that patient's weight should be taken on admission, and (19.8 %) strongly agreed that patient's weight is necessary at discharge. Results are less than similar

research that has conducted in Canada which reported results the above mentioned dependent variables as follows (20%, 49%, 69%, and 28%) respectively [73]. This might be due to lack of hospital nutrition policy, lack of nutrition knowledge, difficult to identify patients at nutritional risk as supported by previous research [68] and absence of evidence based screening and assessment tool.

This research revealed that there is a significantly meaningful positive correlation between nutrition knowledge, attitude and practice regarding nutrition care in hospital. The result is consistent with a previous Croatian study published in 2018 that showed statistically significant difference in the median number of positive attitude of general practitioners based on additional education in nutrition, and also in the implementation of nutrition care practice in every day work with patients. Results indicated that mean KA score (70.83%, 3.5/5) is higher than practice score (55.32%, 2.2/4) [82]

Even though, in this study correlations between knowledge attitude and practice were all positive and statistically significant, unfortunately many beliefs and attitude didn’t always translate in to practice. Several studies included in a systematic review study published in 2013 reported a conflict between nurses’ theoretical recognition and actual implementation of the nutrition guidelines [61]. Similar findings were seen in this study. Although (76.1%, mean = 4.3) of respondents agreed that giving malnourished patients an adequate amount of food will enhance their recovery, only (4.9

%, mean =2.04) visit and check a patient during their meal time to see how well they are eating.

In addition, despite of (60.5%, mean = 3.61) agree that interruption during meal time can negatively affect food intake, only (14.6%, mean =2.56) realign their task so they don't interrupt a patient during meal time.

Furthermore, whereas (66.4%, mean=3.71) believe that monitoring food intake is a good way to determine a patient's nutritional status and (56.5%, mean= 3.55) believe they have an important role in promoting food intake, only (16.8 %, mean=2.48) of respondents reported that they always check if the patient has all that they need to eat, (8.4 %, mean=2.14) help a patient with opening food packages, (9.9%, mean=2.20) assist a patient to eat when they need help, (5.7%, mean=2.08) encourage patient's family to bring food from home if permitted.

Despite that more than half of respondents strongly agree that nutrition is important (56.0%), only(13.1%) always knew when to refer to a dietitian and (23.2%) knew how to refer. while (11.9%) of respondents knew when patients at risk of malnutrition or malnourished

Adequate food and energy intake is an important factor for determining LOS and patient clinical status, however, this was not always done in to practice, energy goals were frequently not met due to many barriers related to insufficient nutritional intake at patient bedside. In this study, similar results have been found. The lowest score was obtained for nutrition

practice at bedside (55.32%) compared to knowledge and attitude scores (71.8%, 68.2%) respectively.

It is worth to mention that respondents showed lower mean scores toward questions related to the nutrition care responsibility compared to other related questions in the questionnaire. Results reported that (78%, mean=1.98) of respondents believed that malnutrition patients should have an individualized treatment by a dietitian while (30.6%, mean=3.11) of respondents believed that nutrition care is the only role of a dietitian. Only (38.7%, mean =3.07) of respondents agreed that all staff involved in patient care can help set up the tray and (45.75 %, mean=3.27) of respondents agreed that they can provide hands-on assistance to eat when necessary.

Results confirmed a highly need for training courses to improve knowledge and practice of nutrition care in hospitals as well. As many beliefs and attitude didn't always translate in to practice. Low staff priority to nutrition care due to lack of time, a lot of job to do and the task is not relevant have been reported in many previous research and is highly needed for further study.

On the other hand there were many barriers affect sufficient dietary intake and nutrition support at bedside. The research revealed that the most common food quality barrier was the taste of food (58 %), while illness effects on food intake (56.3%), patients were unable opening packages/unwrapping (54.8%) and meal interrupted by staff (53.1%). These results were equal to the most common barriers to insufficient food

intake in acute care Canadian hospitals but from a patient's point of view in medical and surgical units of 18 hospitals [29]. On the contrary lack of awareness, lack of experience in critical care (technically difficult with too many complications), resource constraints such as time and money were found to be the most common barriers for insufficient nutrition support similar to a Canadian study in the ICU [62].

The integration of nurses in to multidisciplinary nutrition task force doesn't appear to have succeeded [83]. Implementation of evidence based screening nutritional tool on admission doesn't always translate in to nursing practice and is seldom performed as a routine [61, 84, 85]. Nurse's lack of time and poor knowledge of nutrition care processes with lack of well-defined responsibility and role clarity are considered the main barriers to efficient screening of malnutrition [86, 87] . Furthermore nurses have a lot of priorities to do at mealtimes, which causes a sense of powerlessness to prioritize nutrition in the hospital setting [88]. Furthermore, evidence also suggests that nurses' documentation is often inconsistent and lacks a coherent and standardized approach [89].

A retrospective analysis of 506 nursing records in 2013 have found that only 8% of the patients are referred to dietitian for unclear indicators because of poor documentation and concluded that these patients are most likely not adequately screened for malnutrition as recommended [84].

Both patients and staff were affected by the lack of nutrition care. As for patients, nutritional needs were neglected while being treated for medical

conditions. Besides, Most patients are not aware of the important role that good nutrition plays in their treatment and recovery from illness, patients in need of nutrition therapy were not aware of the appropriate diet and texture of provided food that go well with their medical conditions nor aware of the possible food drug interaction that may negatively affect their medical status. Therefore the topic of nutrition education and information for patients should receive high priority in the educational campaigns at all levels. In this study only 7.7 % of respondents provide malnourished patient with nutrition education material. Even though, a Cochrane review of 36 studies published in 2008 examined evidence surrounding dietary advice and the nutritional intake of adults with illness related malnutrition, the results compared a combination of dietary advice, dietary supplements or no advice with outcome measures and concluded that dietary advice with nutritional supplements may be more effective than advice alone or no advice on the measure of short-term weight gain [90] .

Strengths and limitations:

This study is the first one in Palestine conducted to evaluate knowledge, attitude, and practice level regarding nutrition care for health care providers in hospital settings. It shed the light on the importance of standardized nutrition care process to manage malnutrition and increase the quality of nutrition care. In addition, the diversity of respondents including different health care sectors

Limitation is that the data were collected by face-to face. The respondents may answer in a manner that makes them well informed and make the work place well-adapted to the nutrition care. Results could be overestimation of the attitude and practice score due to recall bias and it's worth to mention that the questionnaire asked questions related to perception of nurses and physician and self-perceived attitude and practice and may not be representative to what occurs in real life, the actual barriers or their significance. The analyzed results from snapshot timing may not be representative, attitude and behavior needed to be analyzed over a period of time to investigate the effect of training and education among health care providers and to see whether nutrition intervention procedures would affect the nutrition status and the quality of care provided.

The convenience sample methods may have limited the generalizability of the current study.

Conclusions

The main goal of the current study was to evaluate knowledge, attitude and practices regarding malnutrition and quality of care in addition to the most important barriers why patients may not eat or may get insufficient nutrition support in hospital settings, North Palestine.

This study showed that the respondents generally had low of nutritional knowledge, attitude and practice scores. Inadequate knowledge were perceived to be a barrier for effective nutrition care to patient in addition that many beliefs and attitude don't always translate in to practice. Barriers for effective nutrition care are needed to be followed by the administration managers.

Nutrition is an essential component of high quality health care and in promotion and prevention of diseases. KAP score could be used to improve awareness in hospital staff, identify area to focus, and define each staff responsibility which can be used by hospitals' managers to optimize the nutrition care. Establish nutrition task force in hospitals elaborated by dietitians as the unique provider of nutrition care will assure to implement standardized nutrition care process. Dietitian have critical role in management of malnutrition and formulate the nutrition care workflow.

Recommendations

Availability of high quality documentation of nutrition care process is essential from the moment of patient's admission to ward to the time of discharge especially that recognition of malnutrition in hospitalized patients is not often a priority in clinical practice in Palestine.

Its recommend that hospitals to establish nutrition task force which can engage and supervise nutrition care process for patients during their stay from admission to discharge.

Improve nutrition knowledge is a necessary to improve nutrition practice but nutrition knowledge seems to be insufficient factor to change practice in the routine clinical care. Ongoing nutrition education and training programs should be developed to provide adequate knowledge to health care providers and help dietitians to cope with the barriers to NCP implementation. It has shown that the higher level of education of healthcare personnel, the more they examined patients and noticed malnutrition.

All of which there are a raising need for formulating a nutrition management system developed by the nutrition department is the key of success for improvement of the nutrition care. Recruit individuals with different specialties and different educational levels in order to enrich the nutrition department in a way that covers the cycle of nutrition services and

insure detection, diagnose and monitoring the nutrition plan of care in the medical record.

Dietitians should be at the center of the nutrition management as they are in the right position to be responsible for carrying out the entire process in the hospital who could assure to the right thing at the right time, in the right way, for the right person to achieve the high quality of nutrition care.

Finally, In order to provide nutrition care, changing in health care providers' knowledge, attitude and practices toward nutrition and nutritional care are needed. Much more research into the ways people learn and use food-related knowledge is required in the form of experimental interventions and longitudinal studies.

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Appendices

استبيان

Code:

مقدمو الرعاية الصحية في المستشفى المحترمين

تقوم الطالبة منى الشخشير بعمل بحث علمي عن "تقييم مدى معرفة مقدمي الرعاية الصحية وسلوكهم وممارساتهم اتجاه جودة الرعاية الغذائية المقدمة في مستشفيات شمال الضفة الغربيه، فلسطين" وذلك ضمن برنامج ماجيستر الصحة العامة في جامعة النجاح الوطنية.

لقد تم اختيارك للمشاركه في هذا البحث نظرا لأهمية موقعك في تقديم الخدمة الصحية للمرضى.

نرجو من حضرتكم الإجابة على الأسئلة المرفقة بكل شفافية ومصداقية لإصدار نتائج علمية تهدف الى تحسين الوضع الصحي للمرضى.

نحن يهمنا إجاباتكم الصريحة والحقيقية للحصول على نتائج دقيقة علما بأنه لا يوجد أي معلومات قد تدل على هويتكم وتبقى إجاباتكم سرية وسوف نقوم باستخدامها لغايات البحث العلمي فقط.

لأي استفسارات أو ملاحظات يرجى مراسلة الباحث الرئيسي منى الشخشير على العنوان الالكتروني الآتي muna.shakhshir@gmail.com

شاكرين لكم حسن تعاونكم معنا

القسم الاول:

1	معلومات شخصية	
	الجنس : ☐ ذكر ☐ أنثى	
	العمر :	مكان العمل :

2	ما نوع الوحدة أو القسم التي تعمل به في المستشفى؟		
	☐ عناية مكثفة	☐ جراحة	☐ باطني
	☐ نسائية وتوليد	☐ أطفال	أخرى، الرجاء التحديد: _____

3	هل أنت؟		
	☐ طبيب مقيم	☐ طبيب اختصاصي	☐ ممرض مؤهل عملي
	☐ ممرض قانوني	☐ قابلة قانونية	

4	هل أنت تعمل ب؟	
	☐ دوام جزئي	☐ دوام كامل

5	كم سنه تمارس المهنة؟		
	☐ 0-2 سنة	☐ 3-10 سنوات	☐ + 10 سنوات

6	بحكم وظيفتك، هل تتعامل بشكل مباشر مع المرضى ؟	
	☐ نعم، عادة يكون اتصال او احتكاك مباشر مع المرضى	☐ لا، عادة لا يكون لي اتصال او احتكاك مباشر مع المرضى

القسم الثاني:

	يرجى تقييم موافقتك مع كل عبارة من العبارات التالية	موافق بشدة	موافق الى حد ما	أحيانا	لا أوافق	لا اوافق نهائيا
1	التغذية ليست مهمة لتعافي المرضى في المستشفى					
2	يجب عمل مسح للكشف عن سوء التغذية للمرضى عند الدخول					
3	يجب أخذ وزن المريض عند الدخول					
4	يمكن لجميع الموظفين المشاركين في رعاية المرضى المساعدة في إعداد صينية الوجبة الوجبة وفتحها وإحضار اللازم ليتمكن المريض من تناول طعامه					
5	يمكن لجميع الموظفين المشاركين في رعاية المرضى تقديم المساعدة في عملية تناول الطعام للمرضى عند الضرورة					
6	يعطي سوء التغذية أولية عالية في المستشفى					
7	إن إعطاء المرضى الذين يعانون من سوء التغذية كمية كافية من الطعام سيعزز من شفائهم					
8	يحتاج جميع المرضى الذين يعانون من سوء التغذية إلى علاج فردي من قبل اختصاصي تغذية					
9	لدي دور مهم في نعزيز مدخول المريض الغذائي					
10	يعتبر رصد كمية الطعام وسيلة جيدة لتحديد الحالة التغذوية للمريض					
11	يمكن أن تؤثر المقاطعات أثناء الوجبة تأثيراً سلبياً على المدخول الغذائي للمريض					
12	إن تشجيع تناول الطعام للمريض هو وظيفة كل موظف					
13	الرعاية الغذائية للمريض مقتصره على أخصائي التغذية*					
14	يحتاج المرضى الذين يعانون من سوء التغذية الى متابعة في المجتمع بعد الخروج					
15	وزن المريض غير ضروري عند الخروج					
16	انا أعرف متى بالإمكان الرجوع الى أخصائي تغذية					
17	اعرف كيف الوصول الى اخصائي التغذية					
18	أعرف متى يكون المريض عرضة لسوء التغذية أو يعاني من سوء التغذية					
19	أنا أعرف بعض الاستراتيجيات لدعم تناول الطعام في وجبات الطعام					
20	أحتاج إلى مزيد من التدريب لدعم احتياجات التغذية لمرضاي بشكل أفضل					

القسم الثالث:

	يرجى تقييم معدل القيام بما يلي	ابدا	احيانا	غالبا	دائما
1	تتحقق من أن المريض لديه كل ما يحتاجه لتناول الطعام (مثل أطقم الأسنان والنظارات)				
2	تقوم بمساعدة المريض في فتح وجبته				
3	تقوم بمساعدة المريض في تناول طعامه عند الحاجه				
4	عند سماح إحضار الوجبة، تشجه المريض على إحضار الوجبة للمريض من المنزل				
5	تقوم بزيارة المريض خلال وقت الطعام لمعرفه مدى				
6	أقوم بإعادة تنظيم مهماتي حتى لا أقوم بمقاطعة المريض أثناء وقت الوجبة				
7	يتم تزويد المريض بنشره غذائية عند الخروج				

القسم الرابع:

	أسباب تجعل المرضى لا يأكلون في المستشفى (1-9)	نادرا ما تكون مشكله	أحيانا مشكله	عادة مشكلة
1	لا يوجد تنسيق بين التمريض والمطبخ في خدمة إيصال الوجبة			
2	المظهر والذوق ورائحة الطعام غير محببه			
3	درجة حرارة الطعام أو الشراب غير مناسبه			
4	لا يتم وضع المريض بالشكل الصحيح للبدء في تناول طعامه			
5	المريض غير قادر على إطعام نفسه او فتح الوجبة			
6	لا يتم السيطرة على ألم المرض أو الأعراض المصاحبة			
7	خضوع المريض لإجراء طبي او رعايه طبية عند وقت تقديم الطعام			
8	نقص في توثيق البيانات			
9	لا مبالاه			

القسم الخامس:

	أسباب تجعل المرضى لا يحصلون على دعم غذائي كاف مثل استخدام التغذية الصناعية أو الانبوبية (1-9)	لا	نعم
1	لا يوجد إدراك لأهمية التغذية الكافية		
2	صعوبه في تقديم التغذية من الناحي التقنية		
3	لايوجد تحديد للمهام والمسؤوليات		
4	مضيعة للوقت		
5	مكلفة		
6	لايوجد تشخيص للمصابين بسوء تغذية		
7	حدوث الكثير من المضاعفات		
8	نقص في توثيق البيانات		
9	لامبالاة		

Table 1. Proportion of responses for knowledge questions (N=405)

Question no.	Question statement	Strongly agree (%)	Somewhat agree (%)	Sometimes (%)	Somewhat disagree (%)	Strongly disagree (%)	Missing	Mean (Out of 5)	Median (Out of 5)
	Please your rate agreement with the following statements								
1	Nutrition is not important to a patient's recovery in hospital*	7(1.7)	11(2.7)	27(6.7)	133(32.8)	227(56.0)	0	4.39	5
2	All patients should be screened for malnutrition at admission to hospital	109 (26.9)	185(45.7)	87(21.5)	17(4.2)	7(1.7)	0	3.92	4
3	A patient's weight should be taken at admission	205 (50.6)	148(36.5)	42(10.4)	3(.7)	3(.7)	4(1)	4.37	5
4	All staff involved in patient care can help set up the meal tray, open packages etc.	35 (8.6)	122(30.1)	113(27.9)	104(25.7)	29(7.2)	2(.5)	3.07	3
5	All staff involved in patient care can provide hands-on assistance to eat when necessary	31 (7.7)	154(38)	126(31.1)	78(19.3)	15(3.7)	1(.2)	3.27	3
6	Malnutrition is a high priority at this hospital	39 (9.6)	159(39.3)	129 (31.9)	60(14.8)	13(3.2)	5(1.2)	3.38	3
7	Giving malnourished patients an adequate amount of food will enhance their recovery	104 (25.7)	204(50.4)	74(18.3)	17(4. 2)	1(.2)	3(.7)	4.0	4
8	All malnourished patients require individualized treatment by a dietitian *	116 (28.6)	200(49.4)	57(14.1)	21(5. 2)	3(.7)	8(2.0)	1.98	2
9	I have an important role in promoting a patient's food intake	34 (8.4)	195(48.1)	140 (34.6)	23(5.7)	9(2. 2)	4(1)	3.55	4
10	Monitoring food intake is a good way to determine a patient's	47 (11.6)	222 (54.8)	106 (26. 2)	25(6. 2)	2 (.5)	3(.7)	3.71	4

	nutritional status								
11	Interruptions during the meal can negatively affect patient food intake	38 (9.4)	207(51.1)	120 (29.6)	31(7.7)	4(1.0)	5(1.2)	3.61	4
12	Promoting food intake to a patient is every staff member's job	49 (12.1)	157(38.8)	91(22.5)	84(20.7)	19(4.7)	5(1.2)	3.33	4
13	Nutritional care of a patient is only the role of the dietitian*	34 (8.4)	90(22. 2)	94(23.2)	166 (41.0)	19(4.7)	2(.5)	3.11	3
14	Malnourished patients who are discharged need follow up in the community	94 (23.2)	227 (56.0)	66(16.3)	13(3.2)	3(.7)	2(.5)	3.98	4
15	A patient's weight is not necessary at discharge*	14 (3.5)	49(12.1)	84(20.7)	177 (43.7)	80 (19.8)	1(.2)	3.64	4
	Total knowledge score (out of 75)							53.31	56

Table 2 Proportion of responses for attitude questions (N=405)

16	I always know when to refer to a dietitian	53(13.1)	183(45.2)	113(27.9)	39(9.6)	16(4.0)	1(.2)	3.54	4
17	I know how to refer to a dietitian	94(23.2)	150(37.0)	84(20.7)	50(12.3)	26(6.4)	1(.2)	3.58	4
18	I know when a patient is at risk of malnutrition or is malnourished	48(11.9)	201(49.6)	120(29.6)	22(5.4)	13(3.2)	1(.2)	3.62	4
19	I know some strategies to support food intake at meals	39(9.6)	151(37.3)	141(34.8)	57(14.1)	14(3.5)	3(.7)	3.36	3
20	I need more training to better support the nutrition needs of my patients	40(9.9)	167 (41.2)	141(34.8)	37(9.1)	20(4.9)	0	3.42	4
	Total attitude score (out of 25)							17.52	19
	Total KA score (out of 100)							70.83	75

*: These are negative questions and the scoring was reversed: Strongly Disagree (5); Somewhat Disagree (4); sometimes (3); Somewhat Agree (2); Strongly Agree (1); Blank (0). A higher score indicates more knowledge/ attitude. For example, in the first question 1, 4.38/5 means that more people think that nutrition is important. For question 8, 2/5 means that more people believe that all malnourished patients require individualized treatment by a dietitian.

Table 3. Proportion of responses for practice questions (N=405)

Question no	Question statement	Never	Sometimes	Often	Always	Missing	Mean	Median
	Please rate how often you DO the following:							
21	Check the patient has all that they need to eat (e.g. dentures, glasses)	47 (11.6)	183 (45.2)	103 (25.4)	68(16.8)	4(1)	2.48	2
22	Help a patient with opening food packages	80 (19.8)	216 (53.3)	66 (16.3)	34(8.4)	9(2.2)	2.14	2
23	Assist a patient to eat if they need help	69 (17.0)	221 (54.6)	70 (17.3)	40(9.9)	5(1.2)	2.20	2
24	If permitted, encourage a patient's family to bring food from home for the patient	90 (22.2)	209 (51.6)	75 (18.5)	23(5.7)	8(2.0)	2.08	2
25	Visit and check a patient during their meal time to see how well they are eating	82 (20.2)	237 (58.5)	59 (14.6)	20(4.9)	7(1.7)	2.04	2
26	Realign my tasks so I do not interrupt a patient during their meal time	33 (8.1)	169 (41.7)	137 (33.8)	59(14.6)	7(1.7)	2.56	2
27	At discharge of a malnourished patient, provide the patient or family with nutrition education material	117 (28.9)	188 (46.4)	55 (13.6)	31(7.7)	14(3.5)	2.00	2
	Total practice score (out of 28)						15.49	14
	Total KAP score (out of 128)						86,33	89

Table 4. Proportion of responses for the most important reasons why patients may not eat in hospital unit

	BARRIERS	Yes (%)	No (%)	Missing
1	Appearance, taste, aroma of food is poor	235 (58.0)	166 (41.0)	4(1.0)
2	Patients pain and symptoms are not well managed	228 (56.3)	174 (43.0)	3(0.7)
3	Food/ fluid temperature is inappropriate	225 (55.6)	177 (43.7)	3(0.7)
4	Patients are not able to feed themselves or open packages	222 (54.8)	177 (43.7)	6 (1.5)
5	Patients meals are interrupted by procedures or medical care	215 (53.1)	185 (45.7)	5 (1.2)
6	Patients are not properly positioned to eat	196 (48.4)	200 (49.4)	9 (2.2)
7	Lack of documentation	194 (47.9)	207 (51.1)	4 (1.0)
8	Indifference	171 (42.2)	229 (56.5)	5 (1.2)
9	Tray delivery is not coordinated between food service and nursing	154 (38.0)	248 (61.2)	3 (0.7)

Table 5. Proportion of responses for the most important reasons why patients may get insufficient nutrition support (tube feeding, artificial nutrition)

	BARRIERS	Yes	No	Missing
1	Technically difficult	336 (83.0)	64 (15.8)	5 (1.2)
2	Too many complications	335 (82.7)	65 (16.0)	5 (1.2)
3	Unaware of the importance of nutrition	334 (82.5)	67 (16.5)	4 (1.0)
4	No definition of responsibility	326 (80.5)	73 (18.0)	6 (1.5)
5	Malnourished patients are not identified	320 (79.0)	80 (19.8)	5 (1.2)
6	Lack of documentation	317 (78.3)	83 (20.5)	5 (1.2)
7	Too expensive	276 (68.1)	123 (30.4)	6 (1.5)
8	Indifference	275 (67.9)	126 (31.1)	4 (1.0)
9	Time consuming	269 (66.4)	131 (32.3)	5 (1.2)

An-Najah
National University
Health Faculty of medicine&
Sciences
IRB

جامعة النجاح
الوطنية
كلية الطب وعلوم الصحة
لجنة اخلاقيات البحث العلمي

REF: MAS

IRB Approval Letter

Study Title: "Health care providers' knowledge, practice and attitude toward quality of nutrition care in hospital settings in the North West Bank, Palestine: A cross-sectional study"

Submitted By:
Mona Hasan Shakhshir

Supervisor:
Dr. Abdulsalam Khayyat

Date Reviewed:
28th March 2019

Date Approved:

31th March 2019

Your Study titled **"Health care providers' knowledge, practice and attitude toward quality of nutrition care in hospital settings in the North West Bank, Palestine: A cross-sectional study"** with archived number (8) March,2019 was reviewed by An-Najah NationI University IRB committee and was approved on **31h March 2019.**

Hasan Fitian, MD

IRB Committee Chairman

An-Najah National University

IRB

جامعة النجاح الوطنية

كلية الدراسات العليا

تقييم مدى معرفة مقدمي الرعاية الصحية وسلوكهم وممارساتهم اتجاه جودة الرعاية التغذوية المقدمة في مستشفيات شمال الضفة الغربية، فلسطين: دراسة مقطعية

إعداد

منى الشخشير

إشراف

د. عبد السلام الخياط

قدمت هذه الأطروحة استكمالاً لمتطلبات الحصول على درجة الماجستير في برنامج الصحة العامة، بكلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس- فلسطين.

2020

تقييم مدى معرفة مقدمي الرعاية الصحية وسلوكهم وممارساتهم اتجاه جودة الرعاية التغذوية المقدمة في مستشفيات شمال الضفة الغربية، فلسطين: دراسة مقطعية

إعداد

منى الشخشير

إشراف

د. عبد السلام الخياط

الملخص

الخلفية: يلعب موظفو المستشفى دورًا مهمًا في عملية الرعاية التغذوية التي تشير إلى أي ممارسة يقوم بها مقدم الرعاية الصحية لتحسين وضع المريض التغذوي والنتائج الصحية اللاحقة. ومع ذلك، فإن مقاييس جودة الرعاية التغذوية بين المستشفيات غير موجودة في فلسطين.

يتطلب تخطيط وصياغة الاستراتيجيات أكثر من مجرد قياس الحالة التغذوية للمرضى؛ إذ نحتاج إلى فهم شامل لما يعرفه مقدمو الرعاية الصحية بالفعل ويمارسونه في الرعاية التغذوية الروتينية والخصائص الديموغرافية والمحددات التي تؤثر على السلوك والممارسات الغذائية المتبعة في عملية الرعاية التغذوية.

الأهداف: تقييم المعرفة التغذوية والسلوك وممارسات الأطباء والتمريض في الرعاية التغذوية السريرية الروتينية. وكذلك تحديد العلاقة بين المعرفة والسلوك والممارسات من جهة والخصائص الديموغرافية من جهة أخرى وتحديد أسباب عدم كفاية المدخول الغذائي.

الطريقة: أجريت الدراسة المقطعية على المستشفيات الحكومية وغير الحكومية في شمال الضفة الغربية، فلسطين من 1 نيسان 2019 الى 31 حزيران 2019. تم تعبئة الاستبيان من قبل الأطباء والتمريض لجمع المعلومات حول المعرفة والسلوك والممارسات المتعلقة بسوء التغذية والرعاية التغذوية، جنبًا إلى جنب مع الخصائص الاجتماعية الديموغرافية.

النتائج: تمت مقابلة أربعمائة وخمسة من الأطباء والممرضين، حيث كان متوسط درجة المعرفة 53.00 مع مئين أول من 49.00– 57.00 مئين ثاني . متوسط نتيجة السلوك فقد بلغت

18.00 مع مئين أول 16.00– 20.00 مئين ثاني. متوسط درجة المعرفة / السلوك هو 71.00 مع مئين أول 65.00– 57.00 مئين ثاني. نتيجة متوسط درجة الممارسة هو 15.00 مع مئين أول 13.00–18.00 مئين ثاني. أما نتيجة متوسط درجة المعرفة والسلوك والممارسات التغذوية فقد كانت 85.62 /128 مع انحراف معياري 9.50.

يوجد علاقة ذو قيمة معنوية إيجابية ذات دلالة إحصائية بين معرفة المستجيبين / سلوكهم ودرجات الممارسة فيما يتعلق بجودة الرعاية التغذوية في المستشفيات (ارتباط = 0.384، دلالة إحصائية أقل من 0.05). يُظهر المستجيبون من الفئات العمرية الأصغر والذين يعملون في وحدة العناية المركزة أعلى مستوى معرفة بدرجات جودة الرعاية التغذوية في المستشفيات (دلالة إحصائية أقل من 0.05). وأظهر الموظفون في المستشفيات غير الحكومية درجة أعلى في السلوك اتجاه جودة الرعاية الغذائية (دلالة إحصائية أقل من 0.05). كما وأظهر المشاركون الذين يعملون في وحدة العناية المركزة أعلى درجات المعرفة / السلوك (دلالة إحصائية أقل من 0.05). يُظهر المشاركون الذين يعملون في المستشفيات غير الحكومية درجات أعلى للممارسات الغذائية (دلالة إحصائية اقل من 0.05) كما ويظهر المشاركين من فئة التمريض وداخل أقسام العناية المركزة أعلى درجات الممارسة للرعاية الغذائية (دلالة إحصائية أقل من 0.001). يظهر المستجيبون مع الفئات العمرية الأصغر، ويعملون في المستشفيات غير الحكومية، في العناية المركزة كممرض قانوني أو مؤهل أعلى درجات المعرفة والسلوك والممارسة التغذوية اتجاه المرضى (دلالة إحصائية أقل من 0.05).

الخلاصة: كشفت الدراسة أن عدم كفاية المعرفة تشكل حاجزًا أمام الرعاية التغذوية الفعالة للمريض بالإضافة إلى أن المعرفة لا تترجم بالضرورة إلى سلوك وممارسات فاعلة لعملية الرعاية التغذوية. إنشاء قسم يعنى بالتغذية في المستشفيات من خلال اختصاصي التغذية كمزود فريد للرعاية التغذوية سيضمن تنفيذ عملية رعاية التغذية الموحدة مبنية على أسس علمية لإكمال حلقة الرعاية الطبية المقدمة.