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Health Care Professionals' Knowledge about Clinical Nutrition Implications in Health Education in Makkah Al-Mokarramah City, Saudi Arabia 2022

Suha Khalil Elyas Qasim[1], Rana Omar Ali Khashab[2], Samar Mohammed Sharqawy[3], Shuruq Saeed Almehmadi[4], Raniyah Saleh Alansari[5], Asheaq Saleh Ahmad Hthwt[6], Mymonah Mohammed Altukruni[6], Abeer Mohammad Aladwani[7], Wejdan Ahmad Alharbi[8], Israa Ahmad Qutub[8], Linah Yasin Al-Hakim[9], Zubaydah Taher Alhindi[10]

[1]General nutrition, King Fiasl Hospital, Makkah, Saudi Arabia.
[2]Clinical Dietitian Specialist, Qiya General Hospital- Taif, Saudi Arabia.
[3]Nutrition technician, King Abdullah Medical City, Makkah, Saudi Arabia.
[4]clinical Dietitian, Ajyad Hospital, Makkah, Saudi Arabia.
[5]Technical Nutrition, king Abdullah Medical City, Makkah, Saudi Arabia.
[6]Nutrition specialist, Maternity and children hospital, Makkah, Saudi Arabia.
[7]Nurse specialist, Ibn Sina hospital, Makkah, Saudi Arabia.
[8]Clinical Dietitian, Alnoor Specialist Hospital, Makkah, Saudi Arabia.
[9]Clinical Dietitian, King Abdullah Medical City, Makkah, Saudi Arabia.
[10]Technical Nutrition, Alnoor specialist hospital, Makkah, Saudi Arabia.

Abstract

Background: Clinical nutrition education is a key component of medical nutrition therapy self-management practices. Several research studies have documented the effectiveness of clinical nutrition education when delivered as a component of a comprehensive plan of care by a multidisciplinary team, and current expert consensus suggests that the primary instructors on the any team should have specialized and educational training at or beyond basic academic preparation. This consensus opinion has been used to shape policy for reimbursement of and to any disease Self- Management Education and Clinical nutrition therapy programs, although empiric evidence for the effectiveness of clinical nutrition education in a national health care system and the role of discipline of the educator. Clinical nutritional therapy should follow evidence-based practice, thus several societies regarding nutrition and critical care have developed specific Clinical Practice Guidelines (CPG). However, to be regarded as trustworthy the quality of the Clinical Practice Guidelines for critically ill patients and its recommendations need to be high.

Aim of the study: To explore the knowledge of the Health care Professionals' knowledge about clinical nutrition implications in health education in Makkah al-mokarramah City, Saudi Arabia 2022.

Methods: A cross-sectional study community based study was adopted, was conducted, in September -November 2022, among 200 healthcare Professionals, using an questionnaire was conducted Health care Professionals were contacted to participate in the survey a list of all clinics providing clinical nutrition health education, random sample was selected. The

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questionnaire tool consists of items that explore the knowledge among healthcare Professionals about clinical nutrition implications in health education.
Results: the present study shows that most of the of participant in the average were (42.0%) followed by weak were (37.0%) but high were (21.0%) while a significant relation were < P-value= 0.001 and X^2 14.44 while Range (3-14) and Mean± SD (8.24+2.771).
Conclusion: clinical nutrition and a call for action on research focusing on explore the knowledge about clinical nutrition implications in health education, the impact of body composition assessments on targeted nutrition interventions, and consequently their ability to improve patient outcomes.
Keywords: Health care Professionals, knowledge, clinical, nutrition, implications, health education, Makkah.

Introduction

Clinical nutrition can be defined as the study and overall analysis of the relationship between ingested food and the overall wellbeing of the human body. The World Health Organization (WHO) describes clinical nutrition as can be defined as the study and overall analysis of the relationship between ingested food and the overall wellbeing of the human body and also a 'fundamental pillar of health and development across the entire life span' human life and protect it from complications of diseases [1]. The rise in poor dietary habits, underpinned by the consumption of energy-dense foods high in saturated and trans-fats, refined sugars, and excess salt, has precipitated a worldwide epidemic of non-communicable diseases. [2] Clinical nutrition is a key modifiable determinant of non-communicable diseases, for which evidence illustrates the impact of changing dietary patterns on health outcomes.[3] More specifically, clinical nutrition interventions play a crucial role in the prevention and treatment strategy of chronic diseases, including diabetes, cardiovascular disease and hypertension.[4] In 2017, dietary risk factors accounted for 11 million deaths globally.[5]
The "ESPEN guidelines on definition and terminology of clinical nutrition" [6] . The defined terms of the consensus are part of the clinical nutrition discipline. This discipline was defined as 'a discipline that deals with the prevention, diagnosis and management of nutritional and metabolic changes related to acute and chronic disease and conditions caused by a lack or excess of energy and nutrients. [7] First, it is possible to define a domain or a scope of knowledge and activity, i.e. the interaction between food deprivation and the catabolic process related to disease and aging. This includes the nutritional care of several diseases such as CVD, obesity, T2DM, and the knowledge about body composition and metabolic disturbances that cause abnormal changes in body composition and function during acute and chronic disease.[8] Second, it is possible to conclude to a main object of knowledge: malnutrition/under nutrition. Third, clinical nutrition was classified as a sub-discipline of human nutrition science together with preventive nutrition. This could mean that clinical nutrition is considered as the application of scientific knowledge on human nutrition to "clinics" [9]

Clinical nutrition interventions impact the health and wellbeing of many individuals, especially older adults and patients with acute and chronic diseases. As such, early detection and intervention are essential to counteract the detrimental effects of these conditions. The

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advent of body composition assessment has allowed registered dietitian to define important characteristics and consequences of low muscle mass. Since low muscle and malnutrition are often hidden in patients with normal weight . [10]

On the contrary, I think that clinical nutrition cannot be considered as a sub-discipline but rather should be considered as an autonomous discipline, which is the outcome of the integration of medicine and nutrition, underpinned by a primary transformation of the "nutrient" concept [11]. Since the sixties, the concept of nutrient has evolved to be understood as an "artificial" nutrient. This means a particular method of administration and production of nutrients. Moreover, "artificial" nutrients are not the outcome of agronomic production, and their availability does not depend on agricultural policies: nutrients are now the outcome of pharmacological industrial production, putting this new actor on stage. This implies a major change in medical practice since artificial nutrients are administered not only for feeding, but to improve host defenses and clinical outcomes [12]. The novelty is that we attribute a pharmacological-type action to nutrients, and that they are investigated [13].

Literature Review

One study conducted in KSA and Egypt compared problem and case-based learning during the clinical clerkship. This study showed that both methods were feasible and applicable. However, 70% of students reported that case-based learning was more effective during clinical training, in particular.[14] One post-test experimental study carried out at the University of Nebraska–Lincoln found that case-based teaching enhanced students' perceptions of the physiology course. That study showed a real increase by $P < 0.04$ in CBL students' performance over traditional education.[15] In comparison, the significance of this study's improvement, which was implemented in the United Arab Emirates, was 0.0. The College of Medicine at the University of Colorado has included vertically integrated nutrition or clinical nutrition in its curriculum during clinical training years since 2001 and has stressed the importance of learning clinical nutrition by practicing in the clinical field.[16]

Stayed by Caccialanza et al (2022) "The ultimate test of a good clinical nutrition program in medical education lies in the enthusiastic, knowledgeable, and effective application of nutrition in the management of patients ." This nationwide survey of nutrition related attitudes and clinical practices clearly demonstrates the need for improving both the base of knowledge of clinical nutrition and its application to patient care by all primary-care physicians. The attitudes, practices, and demographic characteristics that we have identified suggest these educational approaches for improving the competence of primary-care physicians and medical students in clinical nutrition. [17]

Numerous international studies have shown that primary care doctors consider clinical nutrition treatment to be an essential component of their clinical practice [18]. To be able to change their eating behaviors, doctors must establish trust with their patients and explain and comprehend their issues effectively [19].

Study in Indian Health Service found that documentation of clinical nutrition education provided in the was associated with improvements in HbA1c values. In this setting, in which care is delivered by a multidisciplinary team, HbA1c values improved when the education team included a registered dietitian but not when clinical nutrition education was provided by a non-registered dietitian. This observation provides evidence that the effectiveness of

clinical nutrition education found in clinical trials is translatable into routine clinical practice in a large national health care program. [20] Our observation also uniquely confirms the relative importance of the registered dietitian compared with the non-registered dietitian in achieving desired glycemic control outcomes from the clinical nutrition education process.[21] There is reason to believe that the observed effect of clinical nutrition education on the difference between the two most recent HbA1c values in this study is clinically and statistically significant. The Indian Health Service Standards of Care for Diabetes Mellitus recommends measurement of HbA1c quarterly and clinical nutrition education annually.[22] Tion by both an registered dietitian and a non-registered dietitian would result in a 0.96-unit decrease. This magnitude is comparable to the decrease in HbA1c seen in clinical trials of education in diabetes and would be comparable to some medication interventions [20].

Physicians had the lowest scores in the components relating to confidence in their knowledge and abilities in clinical nutrition. Dumas et alreport is on low clinical nutrition knowledge may be found at [23].

Also, the results of Al-Gassimi et al. [24] According to the study, measures that emphasize improving physicians' clinical nutrition abilities and knowledge would result in the largest rise in proficiency. Prospective approaches include a stronger emphasis on care delivery and its critical role in health and ailments in seminars and divisional discussions, the adaptation of dietary assessment methods and standards [25], and a wider assimilation of nutrient skill-building and

Knowledge into medical experience . Study's in Saudi Arabia findings that the published results in the literature on case-based and integrated learning. Harvard Medical School has introduced an integrated nutrition curriculum to enhance the way students handle clinical nutrition sciences. It was found that active case-based learning and student-centred educational initiatives were good strategies for delivering the message.[26] Educating using integrated case studies reinforced the attainment of clinical nutrition care process learning outcomes.[19] Boston University of Health and Rehabilitation also considered the integrated clinical nutrition model to attain learning outcomes related to human nutrition.[28] Using integrated case studies enables clinical nutrition students to acquire knowledge from different clinical nutrition topics and utilize that knowledge for a better understanding of the cases.[19]

Al-Gassimi et al. [24] also indicated that doctors' levels of clinical nutrition expertise varied depending on their professional backgrounds. Among all doctors, FM experts had the highest mean knowledge scores (even higher than FM consultants). Subsequent schooling and completion of their boards (specialist) accreditation, which incorporates best diet instruction, may be to blame for this [24].

Rationale:

Consider that clinical nutrition is the outcome of a new vision, typical of the twentieth century school of thought: a vision defining the way the patient must be fed, establishing a close relationship between malnutrition and disease, and relying on a new concept of the nutrient. It cannot be subsumed under human nutritional science, as it is not to be considered as an organism-environment interaction but as an autonomous science, with a proper core of knowledge, domain, and mode of intervention, under the patient health care provider interaction. Determining the epistemological status of clinical nutrition may help to

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consolidate the discipline, face and integrate the on-going production of knowledge, and address the accelerating social, technological, environmental and ethical challenges raised by this science. The recognition of clinical nutrition as an autonomous discipline is a new phenomenon that needs further analysis and discussion.

Aim of the study:

To explore the knowledge of the Health care Professionals' knowledge about clinical nutrition implications in health education in Makkah al-mokarramah City, Saudi Arabia 2022

Objectives:

To explore the knowledge of the Health care Professionals' knowledge about clinical nutrition implications in health education in Makkah al-mokarramah City, Saudi Arabia 2022.

Methodology:

Study design:

This study is descriptive type of cross-sectional study was conducted among (200) candidates this study included Health care Professionals', in Makkah Al Mukarramah at Saudi Arabia

Study Area

The study has been carried out in the city of Makkah Al-Mokarramah Makkah is the holiest spot on Earth. It is the birthplace of the Prophet Mohammad and the principal place of the pilgrims to perform Umrah and Hajj. It is located in the western area in Kingdom of Saudi Arabia and called the Holy Capital. Contains a population around 2 million. This study has been conducted in Makkah Saudi Arabia. During the September -November 2022, and it reflects a diversified demographic profile with a considerable portion of the population comes from rural descent, while others come from an urban one. This difference translates into biological, socioeconomic and lifestyle differences in the Makkah population.

Study Population

The study has been conducted regarding health care Professionals', in Makkah Al Mukarramah. During the September -November 2022 the period of study in 2022

Selection criteria:

Inclusion criteria

- Health care Professionals' in Makkah Al Mukarramah.
- All nationalities

Exclusion criteria :

No specific exclusion criteria.

Sample size

Healthcare workers in Makkah Al Mukarramah around ,the sample size has been calculated by applying Raosoft sample size calculator based on (The margin of error: 5%,

Confidence level: 95%, and the response distribution was considered to be 20%) accordingly the Sample size is (200) after official communication with the health care center in the Makkah and adding 10 more to decrease margin of error. After adding 5% oversampling, the minimum calculated sample has been 200. Computer generated simple random sampling technique was used to select the study participants.

Sampling technique:

Systematic random sampling technique is adopted. After that, by using random number generator, then simple random sampling technique has been applied to select the health care sector. Also, convenience sampling technique will be utilized to select the participants in the study. By using systematic sampling random as dividing the total students by the required sample size; (200).

Data collection tool

The self-administered questionnaire is designed based on previous studies and frameworks to Health care Professionals' knowledge about clinical nutrition implications in health education in Makkah al-mokarramah City, Saudi Arabia 2022. The questionnaire has been developed in English. The questions were first pre-tested and were revised and finalized after it has been pilot tested. Before completing the survey, participants were required to indicate their consent using a forced response question followed by the survey questionnaires. The survey is estimated to take 6 min to complete .

To collect the information, a set of questions were constructed and developed. All questions were closed-ended, with tick boxes provided for responses; participants answered the questionnaires from the September -November 2022 the period of study in 2022.

The questionnaire consisted of questions that

First part The questionnaire consisted of questions that

First part General and Socio demographic information. These variables included contact data (email or mobile phone number),(age, gender, Sources of information). Other variables were education level, economic level.

A questionnaire has been developed that had Socio demographic data and questions related to knowledge. The two senior faculty members checked the questionnaire's validity and comprehension, and it was revised according to their suggestions. A pilot study has been conducted on 20 particpent to check the questionnaire's understanding and responses further, and its Cronbach's alpha was 0.05. The results of the pilot study were not included in the final analysis.

The Knowledge of Health care Professionals' about clinical nutrition regarding about clinical nutrition implications in health education in Makkah al-mokarramah City, Saudi Arabia 2022 clinical nutrition implications in health education as per each topic/question, and also as per each response/answer . Data entry and analysis were carried out using the Statistical Package for the Social Sciences.

Data collection technique:

Researcher has been visits the selected centere after getting the approval from the ministries of health. The researcher has been obtained permission from participants.

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After the arrival of the participants has been explained the purpose of the study to all participants attending .

Data entry and analysis:

The Statistical Package for Social Sciences (SPSS) software version 24.0 has been used for data entry and analysis. Descriptive statistics (e.g., number, percentage) and analytic statistics using Chi-Square tests ($\chi 2$) to test for the association and the difference between two categorical variables were applied. A p-value ≤ 0.05 has be considered statistically significant.

Pilot study

A pilot study has been conducted in the same sector due to the similarity to the target group using the same questionnaire to test the methodology of the study. As a feedback, the questionnaire has been clear and no defect has been detected in the methodology

Ethical Approval

This study was approved from regional research center in Makkah. Each participant gave a verbal consent prior to recruitment and confidentiality was assured for each situation.

Budget: Self-funded

Results

Table 1— Distribution of characteristics of Health care Professionals' participated in this study (n=200)

	N	%
Age		
<20	42	21
30-39	58	29
40-49	66	33
>50	34	17
Gender		
Male	114	57
Female	86	43
Marital status		
Unmarried	46	23
Married	78	39
Divorced	52	26
Widowed	24	12
Profession		
General Physician	76	38
Registered dietitian	62	31
Non-registered dietitian	44	22
Other	18	9
Hospital based training for the dietitian's for health education		

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Yes	88	44
No	112	56
Years of health education practice about clinical nutrition		
< 7 years	54	27
7–10 years	62	31
11–15 years	58	29
> 15 years	26	13
Do you have a dietitian's support for health education		
Yes	130	65
No	70	35
Duration of completed years working in the Health care Professionals'		
< 5	62	31
5–10	62	31
> 10	58	29
20 and above	18	9
Years of practice at medical center		
< 5	58	29
5–10	62	31
> 10	80	40

Table 1 shows that most of the participants (33.0%) were in the age group (40-49) years follow by the age (30-39) were (29.0%) followed by <20 years were (21.0%) but >50 were (17.0%) , the majority of them males was higher compared to female (57.0% and 43.0%) , regarding the marital status most of participants married were (39.0%) while divorced were(26.0%) but Unmarried were (23.0%), regarding Profession of the health care workers the majority of participant are general Physician were (38.0%) while registered dietitian were(31.0%) while non-registered dietitian were (22.0%), regarding Hospital based training for the dietitian's for health education majority of participant answer No were (56.0%) while Yes were (44.0%), regarding the years of health education practice about clinical nutrition majority of participant 7-10 years were (31.0%) while 11-15 years were (29.0%) while <7 years were (27.05), regarding you have a dietitian's support for health education the majority of participant answer Yes were(65.0%) while answer No were (35.0%), regarding Duration of completed years working in the Health care Professionals' the majority of participant answer between <5 and 5-10 were (31.0%) while answer > 10 were (29.0%) , regarding Years of practice at medical center the majority of participant answer in >10 were(40.0%) while answer between 5-10 were (31.0%) while <5 were (29.0%).

Table 2: Distribution of the knowledge about clinical nutrition in health education

	N	%
1. What type of clinical nutrition fiber is helpful in lowering the blood cholesterol level		
Soluble fiber.*	96	48
Insoluble fiber.	64	32
Cellulose.	20	10
I don't know	20	10
2. Excess of which nutrient may increase body calcium loss		

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Protein.*	98	49
Saturated fat.	44	22
Sugar.	24	12
I don't know	34	17
3. A nutrient believed to help prevent thrombosis is:		
Omega-3 fat.*	78	39
Monounsaturated fat.	42	21
Vitamin C.	42	21
I don't know	38	19
4. The adequate intake level of calcium for adult aged 51-70 years is		
500 milligrams/day.	32	16
1200 milligrams/day.*	78	39
2000 milligrams/day.	42	21
I don't know	48	24
5. The major type of fat in olive oil is:		
Saturated fat.	40	20
Polyunsaturated fat.	112	56
Monounsaturated fat.*	40	20
I don't know	8	4
6. Compared with unprocessed vegetable oil, hydrogenated fats contain		
More polyunsaturated fat	74	37
More trans fats.*	98	49
More cholesterol	24	12
I don't know	4	2
7. Which nutrient is protective against hypertension?		
Potassium.*	62	31
Chlorine.	58	29
Iron.	44	22
I don't know		18
8. Which vitamin is likely to be toxic if consumed in excess amount for long period of time		
Vitamin C.	82	41
Vitamin A.*	78	39
Vitamin D.	38	19
I don't know	2	1

Table 2 shows regarding what type of clinical nutrition fiber is helpful in lowering the blood cholesterol level most of the participants answer Soluble fiber were (48.0%) follow by Insoluble fiber were (32.0%) followed by Cellulose and I don't know were respectively (10.0%) , regarding excess of which nutrient may increase body calcium loss the majority of participant answer Protein were (49.%) followed by Saturated fat were (22.0%) while I don't know were (17.0%), regarding the a nutrient believed to help prevent thrombosis is most of participants answer Omega-3 fat were (39.0%) while monounsaturated fat and Vitamin C were respectively (21.0%) while I don't know were (19.0%), regarding the adequate intake level of calcium for adult aged 51-70 years is the majority of participant answer 1200 milligrams/day were (39.0%) while I don't know were (24.0%) while 2000 milligrams/day

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were (21.0%), regarding the major type of fat in olive oil is majority of participant answer Polyunsaturated fat were (56.0%) while monounsaturated fat were (20.0%), regarding the Compared with unprocessed vegetable oil, hydrogenated fats contain majority of participant answer more trans fats were (49.0%) while more polyunsaturated fat were (37.0%) while I don't know were (2.0), regarding which nutrient is protective against hypertension the majority of participant answer Potassium were(31.0%) while answer Chlorine were (29.0%) but the Iron were (22.0%) while I don't know were (18.05) regarding which vitamin is likely to be toxic if consumed in excess amount for long period of time the majority of participant answer Vitamin C were (41.0%) while Vitamin A were (39.0%) while answer Vitamin D were (19.0%) while I don't know were (1.0%).

Table 2: Distribution of the knowledge about clinical nutrition in health education

(continue)	**N**	**%**
9. The most concentrated source of vitamin B is: 12		
Fruit.	38	19
Whole grain cereals.	40	20
Meat.*	106	53
I don't know	16	8
10. Which substance raises the blood HDL-cholesterol level?		
Animal protein.	16	8
Riboflavin.	24	12
Alcohol.*	150	75
I don't know	10	5
11. In general, clinical nutrition recommendations are intended to:		
Maximize food efficiency	38	19
Maintain public health.*	106	53
Increase athletic performance.	24	12
I don't know	32	16
12. Type of food believes to have a preventive effect on various types of cancer is:		
Fruit and vegetable.	162	81
Milk	24	12
None of the above.	14	7
I don't know		
13. The number of kilocalories in one gram of fat is		
4	6	3
7	18	9
9 *	138	69
I don't know	38	19
14. Which of the following is not an antioxidant nutrient?		
Vitamin E.	36	18
Beta-carotene	30	15
Zinc.*	112	56

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I don't know	22	11
15. The nutrient strongly associated with the prevention of neural tube defects is:		
Beta-carotene.	8	4
Folate.*	132	66
Vitamin C.	24	12
I don't know	36	18
16. Short-term (clinical nutrition) plans are usually successful at achieving weight loss because they		
Decrease appetite	22	11
Cause the body to lose water.*	144	72
Burn large amount of stored fat	18	9
I don't know	16	8

Table 2 continue shows regarding The most concentrated source of vitamin B is: 12 most of the participants answer meat were (53.0%) follow by whole grain cereals were (20.0%) and I don't know were respectively (8.0%) , regarding Which substance raises the blood HDL-cholesterol level the majority of participant answer Alcohol were (75.%) followed by Riboflavin were (12.0%) while I don't know were (5.0%), regarding In general, clinical nutrition recommendations are intended to most of participants answer maintain public health fat were (53.0%) while Maximize food efficiency were (19.0%) while I don't know were (16.0%), regarding Type of food believes to have a preventive effect on various types of cancer is the majority of participant answer Fruit and vegetable were (81.0%) while None of the above were (7.0%), regarding the number of kilocalories in one gram of fat is majority of participant answer 9 were (69.0%) while I don't know were (19.0%), regarding the Which of the following is not an antioxidant nutrient majority of participant answer Folate were (66.0%) while I don't know were (18.0), regarding Short-term (clinical nutrition) plans are usually successful at achieving weight loss because they the majority of participant answer Cause the body to lose water were(72.0%) while answer decrease appetite were (11.0%) while I don't know were (8.0) .

Table 3— Distribution the knowledge of Health care Professionals' participated in this study (n=200)

	Knowledge		**Chi-square**	
	N	**%**	**X^2**	**P-value**
Weak	74	37	14.44	0.001*
Average	84	42		
High	42	21		
Total	200	100		
Range	3-14.			
Mean+SD	8.24+2.771			

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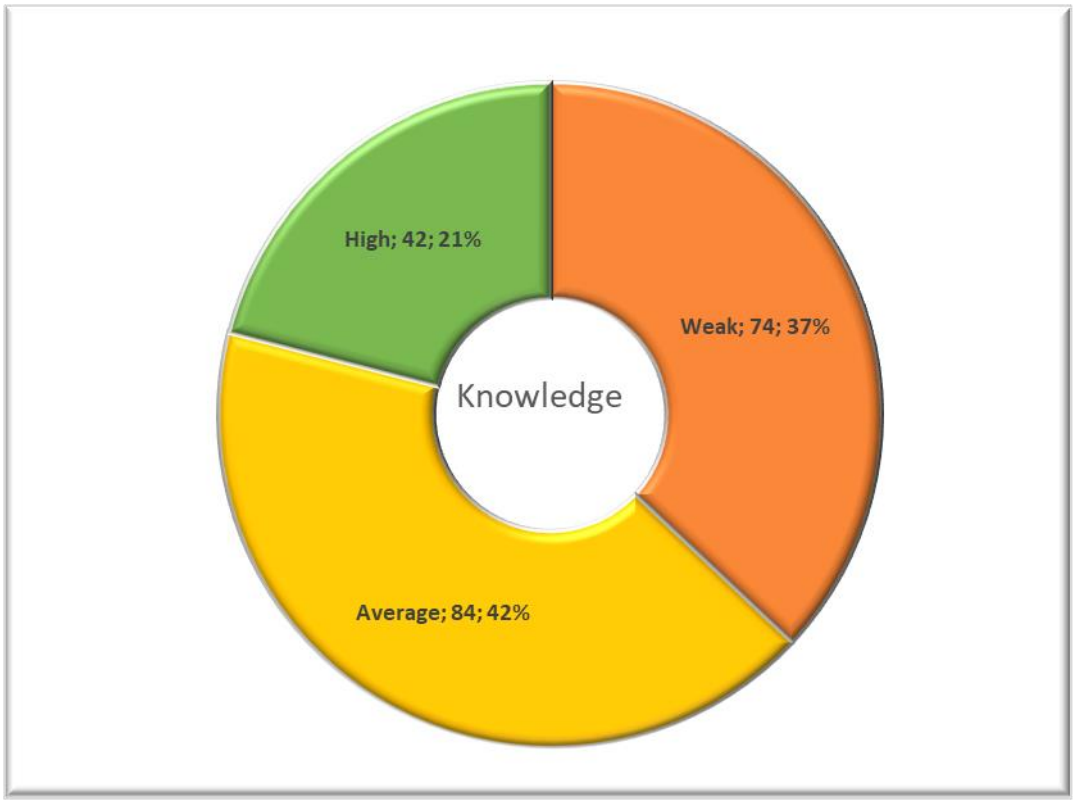
Table 3 regarding distribution the knowledge of Health care Professionals' participated the most of participant in the average were (42.0%) followed by weak were (37.0%) but high were (21.0%) while a significant relation were < P-value= 0.001 and X^2 14.44 while Range(3-14) and Mean± SD (8.24+2.771).

Figure 1 Distribution the knowledge of Health care Professionals participated in this study (n=200)



Discussion

To our knowledge, this is the first study to explore the knowledge of the Health care Professionals' knowledge about clinical nutrition implications in health education , the aim of the study is to explore the knowledge of the Health care Professionals' knowledge about clinical nutrition implications in health education in Makkah al-mokarramah City, Saudi Arabia 2022 , in our study explore the Deficient clinical nutrition care delivery would have detrimental clinical effects since many patients would eventually lose out on the chance to get clinical nutrition care, which might help them treat their existing diseases and improve their health. Additionally, it could lessen the influence primary care doctors have on public health. To support improved population health, it is advised that medical education incorporate health behavior change principles more comprehensively. These principles include motivational interviewing and the ability and willingness to change concepts. Senior primary care physicians should also serve as positive role models by providing nutrition care as part of regular clinical practices [29].

In the present study shows that most of the participants (33.0%) were in the age group (40-49) years, males was higher compared to female (57.0% and 43.0%) , Profession of the health care workers the majority of participant are general Physician were (38.0%), the years

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of health education practice about clinical nutrition majority of participant 7-10 years were (31.0%), duration of completed years working in the Health care Professionals' the majority of participant answer between <5 and 5-10 were (31.0%) .(See table 1)

Similar studies also indicated that physicians' lack of clinical nutrition counseling was primarily due to a lack of expertise, and there is a clear link between physicians' trust in their clinical nutrition knowledge and communication skills and their provision of nutrition care [30]. These correlations suggest that doctors' behaviors towards clinical nutrition education are most likely to be influenced by their level of clinical nutrition understanding. Therefore, efforts that promote clinical nutrition knowledge and communication are necessary to improve the quality of clinical nutrition care given to patients. Encourage doctors to participate in continuing medical education in clinical nutrition, train them in counseling techniques, and include questions about clinical nutrition care in board and licensure exams for doctors, with a passing score as a minimal standard [24]. Forthcoming research is defensible to improve the clinical nutrition knowledge of physicians through modification of the medical schools' curriculums concerning nutrition and clinical nutrition education, interventions, and professional development through continuing medical education, which results in a greater frequency of clinical nutrition care and improved patient outcomes [28], regarding the distribution of the knowledge about clinical nutrition in health education the most concentrated source of vitamin B is: 12 most of the participants answer meat were (53.0%) , regarding Which substance raises the blood HDL-cholesterol level the majority of participant answer alcohol were (75.%), in general, clinical nutrition recommendations are intended to most of participants answer maintain public health fat were (53.0%) ((See table 2)

Al-Gassimi et al. [24] reported just 29% of doctors said they regularly or frequently advise their clients about eating, which is comparable to the low percentages (22%) found by Khandelwal et al. [31] and (19%) described by Dumic et al. [26]. Additionally, during a typical visit, 59% of the current cohort spent less than 3 minutes providing clinical nutrition treatment. So according to. [24], the approach to service delivery must last at least 8 minutes to be beneficial. Alarmingly, despite their favorable perceptions of clinical nutrition care, this cohort's level of clinical nutrition care is far lower than what may be anticipated.

In our study show distribution the knowledge of Health care Professionals' participated the most of participant in the average were (42.0%) followed by weak were (37.0%) but high were (21.0%) while a significant relation were < P-value= 0.001 and X2 14.44 while Range(3-14) and Mean± SD (8.24+2.771) . (See table 3)

Conclusion

The main evidence demonstrated by most of the reviewed studies is that primary care physicians have just reasonable clinical nutrition knowledge and are aware of the only basic clinical nutrition knowledge for providing nutrition care to their patients. Health care Professionals' knowledge and confidence in offering clinical nutrition counseling to patients all showed how inadequate the clinical nutrition programmed was. So, health care professionals and Primary care physicians need to improve their clinical nutrition knowledge, this will allow them to get the most level of knowledge and skills to provide individuals with the suitable clinical nutrition recommendations and also successfully support patients to

enhance their dietary behaviors and health conditions. PHC physicians should have continuous clinical nutrition educational training programs to ensure the continuous provision of sound clinical nutrition advice to patients and the public leading to a positive impact on public health.

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