



Investigating the Knowledge and Attitude of Nurses Regarding Hypoglycemia of Diabetic Patients Hospitalized in Marjan Teaching Hospital in 2022

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ABSTRACT

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Background: Diabetes is the most common disease caused by carbohydrate metabolism disorder that causes damage to many organs including kidney, eyes and heart. Increasing the knowledge and attitude of nurses can reduce the chronic complications of the disease.

Objectives: the present research was conducted with the aim of determining the knowledge and attitude of nurses regarding hypoglycemia of diabetic patients admitted to Marjan teaching hospital in the year.

Methodology: In this cross-sectional descriptive study, 172 nurses working in Marjan teaching hospital in Babylon city were selected by available purposive sampling method. Information was collected using three parts of questionnaire, including first part of demographic data, and tow part about knowledge assessment, and last part of questionnaire to assess nurses' attitudes regarding hypoglycemia in diabetic patients.

Results: results of the study showed that among 172 participating nurses, the majority were women (55.8%), with the largest number falling into the age group of 20-29 years. Regarding knowledge assessment, nurses scored an average of 57.47 out of a total possible score ranging from 41 to 70, indicating a moderate level of knowledge about hypoglycemia in diabetic patients. Specifically, nurses in this department scored an average of 59.86% of knowledge points related to hypoglycemia. The average score among nurses regarding hypoglycemia in diabetic patients was 17.41 out of a possible range of 9 to 24, suggesting a generally positive attitude towards managing hypoglycemic episodes in diabetic patients.

Conclusion: The study highlights the importance of improving nurses' knowledge and attitudes regarding hypoglycemia in diabetic patients. While most nurses showed moderate knowledge levels, there's room for enhancement, especially in managing hypoglycemic episodes effectively. Although nurses generally displayed a positive attitude, continuous education could bolster their confidence and skills in diabetic care, potentially reducing chronic complications.

Keywords: knowledge, attitude, hypoglycemia, diabetes, Nurse.

INTRODUCTION

Diabetes mellitus is a chronic metabolic disease characterized by hyperglycemia and high glycosylated hemoglobin ⁽¹⁾ with or without glycosuria. Glucose metabolism disorder (GMD) results from defects in insulin secretion by the pancreas, insulin

action on target tissues (or insulin resistance), or both ⁽²⁾. Diabetes mellitus (DM) is a chronic disease that requires continuous medical care and self-management education to prevent acute

complications and prevent the risk of long-term complications (3).

According to the International Diabetes Federation, the prevalence of diabetes worldwide in 2017 was estimated at 8.8% (425 million people) among the adult population. Among the regions of the International Diabetes Federation, the Middle East and North Africa region has the second highest rate of diabetes with a prevalence of 9.2% (4). The reported prevalence of type 2 diabetes in Iraq ranges from 8.5% (International Diabetes Federation - age-adjusted) to 13.9%. A local study in the city of Basra, southern Iraq, reported a prevalence of 19.7% of diabetes in people aged 19 to 94 years (5).

Diabetes can cause serious health complications, including heart disease, blindness, kidney failure, and amputation, and even death, and is the seventh leading cause of death in the United States (6). Diabetes has two types of chronic and acute complications. Long-term complications are divided into small vessel complications (such as retinopathy, nephropathy, neuropathic) in addition to diabetic foot ulcers, acute complications include hypoglycemia, diabetic ketoacidosis (DKA) (7), and non-ke-ton hyperosmolar hyperglycemia syndrome (8). Hypoglycemia is the main limiting factor in the management of blood glucose in a diabetic with a sulfonylurea, a glinide, or insulin (9) (all of which increase circulating insulin levels regardless of plasma glucose concentration) and the physiological and behavioral defenses against lowering plasma glucose concentration (10).

It is important to develop programs to reduce the risk of hypoglycemia in patients. This program includes education about symptoms and risk factors of hypoglycemia, as well as patient self-monitoring of blood sugar levels; For example, the patient should know that when the glucose level has dropped a little, he should start consuming food or glucose; an unconscious or comatose patient should be treated with emergency glucagon (11).

Important nursing care in patients with hypoglycemia includes: "Ensuring a stable airway, turning the patient to the side, especially to the left, to reduce the risk of aspiration, starting treatment with intravenous fluids containing glucose, etc. (11).

Normal saline bolus in case of hypotension, replacing electrolytes based on the results of

laboratory tests, helping to determine the cause of hypoglycemia by interviewing the patient and reviewing his history. The nurse should be sure to inquire about common causes of hypoglycemia, such as inadequate food intake, medication changes, alcohol, or other recreational activities (11).

The known symptoms of hypoglycemia may range from increased appetite or hunger before eating to severe symptoms such as sweating, blurred vision, abnormal behavior, seizures, anesthesia, and coma (12).

In previous studies, it has been shown that the patients did not have enough knowledge in the field of self-care, because the nurses did not give them enough training. For example, in the city of Tabuk, Al-Montashiri and his colleagues conducted a cross-sectional study on 100 DM diabetic patients; They found that high body mass index (BMI), fast food consumption, fruit consumption, and eating breakfast occur significantly more among DM patients compared to the non-DM population, or in the study of Aljodi and Taha 19, a cross-sectional study. performed on a sample of 300 patients referred to the relatives' primary care center in Saudi Arabia. This study showed that age, gender, and education level were associated with knowledge of DM risk factors and preventive measures. The level of education was found to be a statistically significant predictor of patients' knowledge about diabetes, and 35.8% of participants stated that obesity is an important risk factor for diabetes and weight loss is an effective measure to prevent diabetes (13).

Also, the attitude of nurses plays an important role in specialized care for some diseases. Considering that most nurses have encountered diseases that are considered more deadly than diabetes, there is a weaker understanding and attitude among nurses of the seriousness of type 2 diabetes. This means that nurses have a weaker attitude about providing appropriate care services to people with diabetes (14).

Recognizing the significance of nurses possessing sufficient knowledge and the right attitude towards preventing, diagnosing, and treating hypoglycemia in diabetic patients, coupled with the absence of reliable data on nurses' knowledge and attitudes in Iraqi hospitals, prompted researchers to undertake this study. The aim is to investigate the

current knowledge and attitudes of nurses in Iraqi hospitals regarding the prevention, diagnosis and treatment of hypoglycemia in diabetic patients, since no reliable documents were found about the level of knowledge and attitude of nurses working in some Iraqi hospitals regarding hypoglycemia; the researchers decided to conduct research in this field.

AIMS OF THE STUDY

To Determining the knowledge and attitude of nurses regarding hypoglycemia of diabetic patients admitted to Marjan teaching hospital in 2022.

RESEARCH QUESTION:

1. What is the average score (level) of the nurse's knowledge about hypoglycemia?
2. What is the average score (level) of the nurse's attitude about hypoglycemia?

METHODOLOGY

RESEARCH DESIGN

This is a cross-sectional descriptive study. Descriptive research describes and interprets what is. In this research, the necessary information has been collected to describe the current situation. The samples were taken from 10/11/2022 to 05/12/2022.

RESEARCH ENVIRONMENT

The research environment in this study was Marjan Teaching Hospital.

SAMPLE SIZE

This study was conducted in Marjan teaching hospital, which has a capacity of 350 beds and consists of many departments such as emergency department, C.C.U, consultation departments and DM center. The total number of nurses working in Marjan teaching hospital is more than 300 nurses. The minimum sample size based on Morgan's table was 169 people with 95% confidence and 5% margin of error. The sampling method was easy and available. Due to the possibility of errors in completing the questionnaires, 172 nurses from different departments who had the conditions to enter the research; participated in the study.

INFORMATION GATHERING METHOD

In this research, according to the collection of information related to the literature of the subject and the background of the research, library methods have been used. In order to collect information to answer the research questions, the field method has been used.

INFORMATION GATHERING TOOL

The data collection tool in this research is a standard questionnaire that has been validated by Al-Tahan and Fadhil (2016). The questionnaire includes the following two questionnaires:

A. Assessing nurses' knowledge about hypoglycemia in diabetic patients

To measure awareness, a 48-question questionnaire with the answers of "I don't know", "I'm not sure" and "I know" was used on a 3-point Likert scale (15). In order to score the answer "I don't know" a score of 0, the answer "I'm not sure" a score of 1 and the answer "I know" a score of 2. The total score of 48 questions was considered as a knowledge score. The range of possible scores is 0 to 96, and a higher score means more knowledge. Knowledge questions in six categories: definition, epidemiology and classification (5 questions), causes and risk factors (11 questions), signs and symptoms (12 questions), complications (5 questions), nursing care and treatment (11 questions). and prevention (4 questions) and the range of possible scores for these six sections were 10-0, 22-0, 24-0, 10-0, 22-0 and 8-0, respectively. In order to categorize the knowledge points into three categories: weak, average and good, the percentage of points obtained by each person was calculated to the total possible points. People with a score of less than 50% were classified as people with poor knowledge, people with a score of 50 to 75 as people with average knowledge, and people with a score of 75 to 100 as people with good knowledge.

B. Nurses' attitude regarding hypoglycemia of diabetic patients

To measure nurses' attitudes, a 12-question questionnaire with agree, neutral and disagree answers in a 3-point Likert scale was used. In order to score the negative answer, "zero score", "1 score" was assigned to the neutral answer, and "2 score" was assigned to the positive answer. The sum of scores from 12 questions was considered as attitude score. The range of possible scores is 0 to 24 and a higher score means a more favorable attitude. In order to categorize the attitude scores into three categories: "opposite, neutral and agree", the percentage of each person's score to the total possible score was calculated. People with a score of less than 33.3% as people with an opposing attitude, people with a score of 33.3 to 66.6 as a neutral attitude, and people with a score of 66.6 to 100 as people with a favorable attitude.

The validity of the questionnaire in Altahan's study was checked by giving it to 20 specialists and using their opinions in the final draft of the instrument, and its reliability was checked by Cronbach's alpha using 10 working nurses who were removed from the final sample of the study. Is Pearson's correlation coefficient was obtained for knowledge and attitude domains, 0.82 and 0.79, respectively.

Due to the fact that the platform of our research and Altahan's study were Iraqi hospitals, which are similar in terms of cultural, educational, etc. situations, therefore, in the present study, Altahan's standard questionnaire was used.

STATISTICAL ANALYSIS METHOD

In this study, the participants were 317, and according to Morgan's table ⁽¹⁶⁾ to calculate the sample size, only (172) participants were used. Statistical analysis was performed on 172 complete questionnaires at two descriptive and inferential levels. At the descriptive level, mean and standard deviation indicators, frequency distribution tables and statistical charts were used. At the inferential level,

independent parametric t-tests and one-way analysis of variance were used in the knowledge score variable due to the normality of the data distribution in general and in all the investigated subgroups. Non-parametric Man-Whitney and Kruskal-Wallis tests were used in the attitude score variable due to the non-normality of data distribution in general and in all subgroups. The tests were performed at the five percent error level using SPSS software version 26.

Inclusion criteria:

1. Nurses working in Marjan Teaching Hospital.
2. Nurses directly involved in the care of diabetic patients.
3. Nurses with a minimum of six months of experience in caring for diabetic patients.
4. Nurses willing to participate voluntarily in the study.
5. Nurses proficient in the language used for data collection (e.g., Arabic, local language).

Exclusion criteria:

1. Nurses not directly involved in the care of diabetic patients.
2. Nurses with less than six months of experience in caring for diabetic patients.
3. Nurses on temporary assignment or temporary employment contracts at Marjan Teaching Hospital.
4. Nurses unwilling to participate voluntarily in the study.
5. Nurses unable to comprehend or communicate effectively in the language used for data collection.

Ethical Considerations:

The research process adhered to ethical guidelines, as approved by the Ethics Committee (IR.IAU.KHUISF.REC.1401.352) of Isfahan Islamic Azad University (Khorasgan branch). The researcher provided a clear explanation of the study's objectives to all participating units, ensuring confidentiality of information. Participation was voluntary, with informed, written consent obtained from each unit. Furthermore, units were assured they could withdraw from the research at any time. The principle of

trustworthiness was maintained in citing research sources. Finally, gratitude was extended to all individuals who contributed to the research, and a

comprehensive list of sources was included in the thesis.

RESULTS

In this study, the participants were 317, and according to Morgan's table to calculate the sample size, only (172) participants were used, working in Marjan teaching hospital were investigated in order to investigate the knowledge and attitudes of nurses regarding hypoglycemia of diabetic patients. The results of this study are reported in this chapter in the form of 12 tables and 3 graphs.

Research findings:

1. Individual characteristics of research units

Table (1): Frequency distribution of nurses based on individual characteristics

Variable	Category	Number	Percent
gender	Man	76	44.2
	Female	96	55.8
Age	Less than 20 years	15	8.7
	20-29	107	62.2
	30-39	30	17.4
	40-49	10	5.8
	50-59	10	5.8
Level of Education	Nursing school	30	17.4
	Nursing diploma	71	41.3
	bachelor of Nursing	64	37.2
	Master's degree in nursing	7	4.1
Workplace section	Internal	40	23.3
	ICU special care	30	17.4
	Kidney	25	14.5
	emergency	37	21.5
	diabetes	30	17.4
	other	10	5.8
work experience	Less than 5 years	108	62.8
	5-10	30	17.4
	11-15	20	11.6
	16-20	8	4.7
	21 years and older	6	3.5
Source of information about diabetes	study	56	32.6
	while working	88	51.2
	Curriculum and other on-the-job items	28	16.3
Have you had hypoglycemia?	no	49	28.5
	1-3 times	65	37.8
	4-6 times	40	23.3
	5 times or more	18	10.5
Total		172	100.0

In this study, 172 nurses including 76 men (44.2%) and 96 women (55.8%) were present. The largest number of nurses were in the age group of 20-29 years. The largest number of them had a nursing diploma (41.3%),

employed in the internal department (23.3%) and had a work experience of less than 5 years (62.8%). The source of obtaining information about diabetes in the largest number of nurses (51.2%) was while working. And the majority of them have suffered from hypoglycemia between 1 and 3 times (37.8%) during their working life.

2. Nurses' knowledge about hypoglycemia of diabetic patients

Table (2): Frequency distribution and descriptive indices of nurses' knowledge score about hypoglycemia in diabetic patients in definition, epidemiology and classification section.

Variable	Category	frequently distribution		Descriptive indicators				
		Number	Percent	The lowest amount	The maximum amount	Average	standard deviation	Scaled mean (percentage)
Consciousness (Definition, epidemiology and classification)	weak	12	7.0	3	10	7.61	1.50	76.10
	medium	62	36.0					
	Good	98	57.0					
	Total	172	100.0					

In the definition and epidemiology section, the knowledge score of nurses about hypoglycemia of diabetic patients was in the range of 0 to 10 with a mean of 7.61 and a standard deviation of 1.50. In this department, nurses obtained an average of 76.10% of the awareness score about hypoglycemia of diabetic patients. In the definition and epidemiology section, the knowledge of nurses about hypoglycemia of diabetic patients was poor in 12 people (0.7%), moderate in 62 people (0.36%), and in 98 people (57.0%). It was observed at a good level.

Table (3): Frequency distribution and descriptive indicators of nurses' knowledge score about hypoglycemia in diabetic patients in the causes and risk factors section.

Variable	Category	frequently distribution		Descriptive indicators				
		Number	Percent	The maximum amount	Average	standard deviation	Scaled mean (percentage)	
Consciousness (causes and risk factors)	weak	88	51.2	17	11.20	2.60	50.92	
	medium	83	48.3					
	Good	1	.6					
	Total	172	100.0					

In the causes and risk factors section, the score of nurses' awareness about hypoglycemia of diabetic patients was in the range of 3 to 17 with an average of 11.20 and a standard deviation of 2.60. In this department, nurses obtained an average of 50.92% of the awareness score about hypoglycemia of diabetic patients. In the causes and risk factors section, the knowledge of nurses about hypoglycemia in diabetic patients was weak in 88 people (51.2%), moderate in 83 people (48.3%) and in 1 person (0.6%).) was observed at a good level.

Table (4): Frequency distribution and descriptive indices of nurses' knowledge score about hypoglycemia in diabetic patients in the complications department

Variable	Category	frequently distribution		Descriptive indicators				
		Number	Percent	The lowest amount	The maximum amount	Average	standard deviation	Scaled mean (percentage)
Consciousness (causes and risk factors)	weak	89	51.7	0	10	5.17	1.93	51.74
	medium	65	37.8					
	Good	18	10.5					
	Total	172	100.0					

In the side of complications, the knowledge score of nurses about hypoglycemia of diabetic patients was in the range of 0 to 10 with an average of 5.17 and a standard deviation of 1.72. In this department, nurses obtained an average of 51.74% of the awareness score about hypoglycemia of diabetic patients. In the side of complications, the knowledge of nurses about hypoglycemia in diabetic patients was low in 89 people (51.7 percent), moderate in 65 people (37.8 percent), and in 18 people (10.5 percent) It was well observed.

Table (5): Frequency distribution and descriptive indicators of nurses' awareness score about hypoglycemia of diabetic patients in the nursing care and treatment department

Variable	Category	frequently distribution		Descriptive indicators				
		Number	Percent	The lowest amount	The maximum amount	Average	standard deviation	Scaled mean (percentage)
Consciousness (nursing care and treatment)	weak	33	19.2	7	20	13.55	2.37	61.58
	medium	121	70.3					
	Good	18	10.5					
	Total	172	100.0					

In the nursing care and treatment department, the knowledge score of nurses about hypoglycemia of diabetic patients was in the range of 7 to 20 with an average of 13.55 and a standard deviation of 2.37. In this department, nurses obtained an average of 61.58% of the awareness score about hypoglycemia of diabetic patients. In the nursing care and treatment department, the knowledge of nurses about hypoglycemia in diabetic patients was low in 33 people (19.2%), moderate in 121 people (70.3%), and in 18 people (10.5%).) was observed at a good level.

Table (6): Frequency distribution and descriptive indicators of nurses' knowledge about hypoglycemia in diabetic patients in the protection and prevention department.

Variable	Category	frequently distribution		Descriptive indicators				
		Number	Percent	The lowest amount	The maximum amount	Average	standard deviation	Scaled mean (percentage)
Consciousness protection and) (prevention)	weak	69	40.1	0	8	4.97	1.87	62.14
	medium	70	40.7					
	Good	33	19.2					
	Total	172	100.0					

In the protection and prevention section, the score of nurses' knowledge about hypoglycemia of diabetic patients was in the range of 0 to 8 with an average of 4.97 and a standard deviation of 1.87. In this department, nurses

obtained an average of 62.14% of the awareness score about hypoglycemia of diabetic patients. In the nursing care and treatment department, the awareness of nurses about hypoglycemia of diabetic patients was poor in 69 people (40.1%), in 70 people (40.7%) in moderate level and in 33 people (19.2%) was observed at a good level.

3. Nurses' attitudes regarding hypoglycemia of diabetic patients

Table (7): Frequency distribution and descriptive indices of nurses' attitude scores regarding hypoglycemia of diabetic patients

Variable	Category	frequently distribution		Descriptive indicators			
		Number	Percent	The lowest amount	The maximum amount	Average	Standard deviation
Attitude	Against	9	5.2	9	24	17.41	3.62
	neutral	163	94.8				
	agree on	0	0.0				
	Total	172	100.0				

The score of the attitude of nurses regarding hypoglycemia of diabetic patients was in the range of 9 to 24 with a mean of 17.41 and a standard deviation of 3.62. Attitude about hypoglycemia of diabetic patients was observed in 9 people (5.2%) at the opposite level and in 163 people (94.8%) at the neutral level.

DISCUSSION:

This part is compiled based on the research questions and the answers obtained in each part are explained and analyzed:

1. The relationship between Knowledge, attitude and Socio-demographic

The study, encompassing 172 nurses, indicated a gender distribution of 44.2% men and 55.8% women. Notably, the majority of nurses fell within the age bracket of 20-29 years. A significant proportion possessed a nursing diploma (41.3%), and a considerable portion worked in the internal department (23.3%), with the majority having less than five years of work experience (62.8%). Among the surveyed nurses, the predominant source of information regarding diabetes was through work-related exposure (51.2%). Additionally, a notable fraction reported experiencing hypoglycemia between one to three times during their professional tenure (37.8%).

The knowledge assessment, focusing on the definition and epidemiology of hypoglycemia in diabetic patients, revealed an average score of 7.61 out of 10, denoting a mean awareness level of

76.10%. another study by (Alotaibi, et al. 2016) concluded to With nurses demonstrating significant and long-standing knowledge deficits in many aspects of diabetes care, strategies are urgently required to overcome the identified barriers to knowledge acquisition (17).

Furthermore, analysis of the knowledge distribution unveiled that 0.7% exhibited poor knowledge, 36% demonstrated moderate comprehension, while 57% displayed a commendable understanding of hypoglycemia among diabetic patients. Within the discussion, these socio-demographic variables such as gender, age, education, department, work experience, source of information, and personal experience with hypoglycemia provide a nuanced understanding of their potential influence on nurses' knowledge and attitude regarding hypoglycemia management in diabetic patients. This is what was confirmed by the study conducted in Iran by (Farzaei, et al. 2023) confirmed and demonstrated nurses' knowledge and practice in the nutritional management of diabetes should be increased to help improve the quality of the dietary care and patient education they provide these

patients. Further studies are needed to confirm the results of this study both in Iran and internationally (18).

2. What is the average score (level) of the nurse's knowledge about hypoglycemia?

The results of the study showed that in the definition and epidemiology section, in the causes and risk factors section, in the signs and symptoms section, in the complications section, in the nursing care and treatment section, in the protection and prevention section, the score of nurses' knowledge about hypoglycemia Diabetic patients were average. The total score of nurses' knowledge about hypoglycemia of diabetic patients ranged from 41 to 70 with an average of 57.47 and a standard deviation of 5.39. In this department, nurses obtained an average of 59.86% of knowledge points about hypoglycemia of diabetic patients.

(Mandal and Chinasamy, 2011) in a study titled "Nurses' knowledge of inpatient hypoglycemia and its management" showed that there is insufficient knowledge among ward nurses about hypoglycemia management (19).

(Sara-Layda 2021) in a study entitled "Knowledge, attitude and practice of health care providers in a Philippine general hospital towards inpatient hypoglycemia and its management" showed that health care providers in a Philippine general hospital scored low (20).

(Chinasamy, Mandal and Khant, 2011) in a study titled "Nurses' knowledge of hypoglycemia management in hospitalized patients" showed that ward nurses do not have enough knowledge about hypoglycemia management and more training is necessary (19).

3. What is the average score (level) of the nurse's attitude about hypoglycemia?

The score of the attitude of nurses regarding hypoglycemia of diabetic patients was in the range of 9 to 24 with a mean of 17.41 and a standard deviation of 3.62.

(Altahan, Fazel, 2016) in a study titled "Investigation of knowledge and attitude of nurses about hypoglycemia in Mosul city hospital" showed that nurses had a high attitude towards hypoglycemia (21).

(Mansi, 2022) in a study titled "Evaluation of knowledge, attitude and performance of patients about diabetes in the outpatient department of a university teaching hospital in Saudi Arabia" showed that diabetic outpatients did not have sufficient knowledge, performance and negative attitude towards type 2 diabetes. they had. This puts a heavy burden on health workers and thus the health care system to improve patient scores through diabetes education programs or pharmacists (22).

This difference in the results of knowledge and attitude is due to the time of the study and the difference in the study population, the type of instrument used to measure knowledge, attitude and the sample size is smaller than other studies.

(Sara-Layda, 2021) in a study titled "Knowledge, attitude and practice of health care providers in a Philippine general hospital towards inpatient hypoglycemia and its management" showed that in terms of attitude, the majority (99.31%) of the respondents believed found that fewer hypoglycemic events were associated with better clinical outcomes and were willing to adopt a nurse-centered protocol (20). While direct comparisons cannot be made with certainty between other studies, because the health care environment and social background vary across countries. But it can be said that the difference in knowledge and attitude of healthcare providers around the world has been due to the rapid change in recommendations and evidence related to the disease.

CONCLUSIONS:

The present study was conducted with the aim of determining the knowledge and attitude of nurses regarding hypoglycemia of diabetic patients admitted to Marjan teaching hospital in 2011. The results of the

research showed that the level of knowledge and attitude of nurses about hypoglycemia was average. Despite significant advances in diagnosis and treatment, inadequate metabolic control persists. Poor glycemic control may be reflected by failure of diabetes self-management by patients as well as inadequate intervention strategies by physicians and nurses. Patients' adherence, attitudes, beliefs and knowledge about diabetes may influence diabetes self-management. Culture and language abilities affect the patient's beliefs, attitudes, health literacy, and thus affect diabetes self-management. Nurses' attitudes, beliefs and knowledge about diabetes also affect diabetes management. They may have a greater impact on patient perception through effective communication skills and having an integrated health care system. The results of the research show that the knowledge and attitude are insufficient and neutral, therefore measures and planning should be done to train and change the attitudes of nurses to minimize the occurrence of complications caused by hypoglycemia in patients.

RECOMMENDATIONS:

This is a descriptive study that suggests a deeper exploratory investigation of the phenomenon and relationships between concepts. It is suggested to expand the study sample to include more nurses, doctors with more specialties and other hospitals.

RESEARCH LIMITATION

Among the limitations of the present study, it can be mentioned that the scale is self-reported, that some nurses may be influenced by social desirability and refuse to provide real answers. However, to solve this limitation, the anonymity of the questionnaires and the analysis of the results were emphasized in general. Among the other limitations of this research, we can mention the mental state of the research units when completing the questionnaire, which can affect their accuracy and concentration, which was out of the researcher's control.

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