

## Effect of Educational Guidelines on Nurses' Performance for patients with Chronic Pancreatitis

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### Abstract

**Background:** Chronic pancreatitis is complex conditions that are requiring multi-faceted care with a range of interventions from a variety of specialists. **Aim:** This study was aimed to evaluate the effect of implementing educational guidelines on nurse's performance for patients with chronic pancreatitis. **Subjects and Method:** A quasi-experimental research design was used with a purposive sample of nurses (50) of both sexes, who directly caring for pancreatic patient in medical department at Tanta University. **Tools:** Tool (I) Nurses knowledge assessment questionnaire sheet, it was be divided into two part: part (A) sociodemographic characteristics of nurses , part (B) nurses' knowledge questionnaire Tool (II) nurses practice observational checklist, and Tool (III) the comprehensive pain assessment tool (full COMPAT questionnaire). **Results:** The results revealed highly significant differences were observed in the mean score of nurses' knowledge, and practice in relation to nursing management throughout periods of the study since  $P < 0.001$ . according to the nurse total practice score throughout period of study, this result reveals that more than half (58%) had unsatisfactory score of practice about chronic pancreatitis care in the pre-program implementation compared with the majority (88%) of nurses had satisfactory practice score immediately and respectively (84%) after one month of program. Also, it was observed that the mean score increased immediately after program compared to pre-program and decreased gradually after one month of the study. **Conclusion and Recommendations:** it can be concluded that majority studied nurses had a high level of practice and good knowledge immediately and one month after program than pre implementation of educational program.

**Keywords:** *Chronic Pancreatitis, Educational program, Guidelines, Nurses' Performance.*

### Introduction

Chronic pancreatitis (CP) is a syndrome that are characterized by chronic progressive pancreatic inflammation, fibrosis, and scarring, resulting in damage to and loss of exocrine (acinar), endocrine (islet cells), and ductal cells. Chronic pancreatitis often develops among patients between the ages of 30 and 40 and is more common in men than

women (Reyad, Mahmoud, & Eldriny, 2022).

Poor prognosis is associated with continued smoking, and the presence of end-stage liver disease. At 10 years, there is a survival of 70%, which drops to 45% at 20 years. The incidence of chronic pancreatitis is 5 to 12 per 100 000 adults in industrialized countries,

and the incidence is increasing. (**Stephanie M. et.al, 2023**) The prevalence of chronic pancreatitis is 50/100,000 people in the united states, Diabetes mellitus develops in 20-30% of patients within 10-15 years of onset Pancreatic cancer develops in 3% to 4% of patients and through the study found that incidence rate was admitted at Tanta university hospital is ranged from 150-200patient per year (**El Sayed, Abd EL-Rahman, & Belal, 2021**).

The TIGAR-O (toxic-metabolic, idiopathic,genetic, autoimmune, recurrent and severe acute pancreatitis, obstructive) is the classification of common risk factors for chronic pancreatitis that may interact to produce pancreatic disease. (**Kwon, 2019**) Chronic pancreatitis can present with prolonged abdominal pain with intermittent pain-free periods, weight loss and relief of abdominal pain when leaning forward. However, in some cases, patients can be asymptomatic (**Barry, 2021**). Nausea, vomiting, and greasy, foul-smelling, difficult-to-flush stools can also occur, a rigid or board like abdomen may develop and cause abdominal guarding, Ecchymosis or bruising in the flank or around the umbilicus. Glucose intolerance or pancreatic diabetes is another finding later in the disease process, other symptoms include weight loss, diarrhea, and steatorrhea, and Signs of malnutrition are common in long-standing cases (**Ramsey, Conwell, & Hart, 2022**). Individualized treatment of symptoms and exocrine and endocrine insufficiency is necessary. Finally, ongoing monitoring provides opportunities to detect complications at earlier stages.(**Houmkoua, Mbouemboue, Oumarou, Essome, & Balep, 2021**).

**The aim of this study**

Treatment strategies include pharmacological agents, nutritional therapy, lifestyle guidance, endoscopic treatment, and surgery depending on symptoms, pancreatic exocrine and endocrine function, and various complications .

Abstinence from smoking may also prevent progression of CP; therefore, the recommendation is to provide guidance on smoking cessation (**Cai et al. 2021**) .

The nurse has important role for managing pain by investigate verbal reports of pain, note factors that aggravate and relieve pain, Maintain bed rest. Provide quiet, restful environment, promote position of comfort on one side with knees flexed, sitting up and leaning forward, provide alternative comfort measures (**Abd ElgiliTalaat&Mahmoud, 2020**)

Follow a low-fat diet, which for chronic pancreatitis is often restricted to 50 grams of fat but could also range between30-50 rams of fat depending on tolerance. Take g pancreatic enzymes as prescribed or to treat mal absorption. Take the enzymes before each meal and t work if 'snack. They didn taken at the end of the meal. giving discharge instruction to the patient about diet, exercise and medication and family teaching (**Desouky&Abdelaziz (2022)**).

**Significance of the study:** Chronic pancreatitis is a complex condition requiring multi-faceted care with a range of CP interventions from a varietyis associated with structural and functional damage to the pancreas, causing pain, maldigestion and weight loss and thus worsening the oflife. (**Hayduchok, Tukhar, & Shapovalov, 2022**).

The aim of this study To evaluate the effect of educational guidelines on nurse's performance for patients with chronic pancreatitis.

**Research hypothesis:** Nurses performance is expected to be improved after implementation educational guidelines about chronic pancreatitis.

**Research design:** A quasi-experimental design, pre and post –test design was used in this study.

**Setting:** - The study was conducted in the medical department at Tanta Main University hospitals

**Subjects:** A purposive study sample of nurses (50) of both sexes, who directly caring for pancreatic patient in medical department at Tanta University. Participants were selected randomly aimed to ensure the sample's representativeness and sufficient participation.

**Exclusion criteria:** Nurses who were taken previous educational guidelines about chronic pancreatitis. Nurses were being able to participate in the study.

**Tools of data collection:** Three tools were used in this study:

**Tool (I) Nurses Knowledge Assessment Questionnaire Sheet:** This structured questionnaire was developed by the researcher after reviewing related literature (Gupte, Goede, Tuite, & Forsmark, 2018) & Mohammed, Mohammed, & Mehany, (2019) .It was consisted of two parts.

**-Part A: Socio-demographic Characteristics of Nurses** which includes nurses' age, sex, marital status, years of experience in medical department, level of education and previous training about care of patients with chronic pancreatitis.

**Part B: Nurses' Knowledge Questionnaire:** To assess nurses' level of

knowledge before and after implementation of educational guidelines regarding chronic pancreatitis

**Tool II: part (A) Nurses self-reported practice :** This tool was developed by the researcher after reviewing relevant literature, (Mohammed, Mohammed, & Mehany, (2019) to assess nursing practice before and after implementation of educational guidelines regarding the care of chronic pancreatic patient for relieving pain and improve nutrition.

**Part (B); Nurses Observation Checklist for Prevention of Patients Malnutrition;"** This tool was adopted by (Todorovic et al. 2021), the malnutrition universal screening tool (MUST) was developed to identify malnourished individuals in all care settings (hospitals, nursing homes, home care, etc.). Recent food intake is not included, and calculations of the weight loss percentage may be a barrier for the busy healthcare staff on the wards.

**Tool III: The Comprehensive Pain Assessment Tool (full COMPAT questionnaire)**

This tool was adopted from (Teo, et al. 2017), it was used to determine pain assessment in chronic pancreatitis, including the possibility to assess pancreatitis-specific domains, including pain-provoking factors. The full COMPAT clear scoring system 5 pain dimensions in 5 subscales (pain severity, pain pattern, pain provocation, spreading pain, and qualitative pain description); each subscale contains six (6) questions.

## Method

**1. Administrative process:** An Official Permission to carry out the study was obtained from the responsible authorities.

- 2. Ethical consideration:** Ethical committee of the Faculty of Nursing and Faculty of medicine at Tanta university approval was obtained. code of ethical approval was (28/1/2022) and (35258/2/22). Consent was obtained from every nurse included in the study after explaining the aim of the study and assuring them of confidentiality of collected data. The nature of the study caused no harm to the patient. Confidentiality and anonymity were maintained by the use of code number instead of name and the right of withdrawal is reserved.
- 3. Tool development:** Three tools were used in this study: Tool I, tool II part A was developed by the researcher after reviewing the relevant literature.
  - 4.** All tools were reviewed for content validity by a panel of (5) expertise in the field of Medical Surgical Nursing. Their opinions were elicited regarding tools format and consistency, it was calculated and found to be three tools. The reliability for the study tools was calculated by A test –retest test; it was applied on the three previously mentioned tools.
  - 5. A pilot study** was conducted on 10% of the studied nurses to test the applicability of the tools and to determine any obstacles that may encountered during the period of data collection and those subjects was excluded from actual study if major modification was done.
  - 4.** Duration of data collection: - Data collection was be taken in about 6 months from February to June.
  - 5.** The educational guidelines were conducted for nurses through four phases

(Assessment, planning, implementation, and evaluation).

**A. Assessment phase:** -Initial interview was done for the nurses, explain the aim of the study, obtaining official approval to participate in the study, obtain basic data through pre-test questionnaire using tool I part (A) .-Nurses performance was assessed before educational guidelines using tool I, II, III.

**B. Planning phase:** Chronic pancreatitis program was planned according to nurses' educational needs assessment and based on literature review which included the following:

**a. Setting the goals and objectives of the instructional guidelines**

**- The goals of the instructional guidelines were to:**

- Enhance nurses' performance regarding pancreatic patient pain.
- Improve practice of nurses after the program.

**Objectives of the instructional guidelines:**

After implementation of the instructional guidelines the nurses will be able to: - Identify types and stages of chronic pancreatitis.

- Recognize routes of pain drugs administration.

- Demonstrate and re-demonstrate the nursing intervention for chronic pancreatic patient.

**b. The instructional guidelines included two main parts:**

**- Theoretical part:** It was prepared based on the instructional guidelines objectives and assessment of nurses knowledge before conducting the educational session and was guided by relevant literature. The theoretical part included ( definition,

causes, risk factors, types and stages ,complications, treatment).

- **Clinical part:** It was prepared based on the instructional guidelines objectives and assessment of nurses practice before conducting the educational session and was guided by relevant literature. The clinical part included (monitoring blood glucose , i. Administration of IV infusion and medication, Nasogastric tube (NG) guidelines.

- **Prepare the content of the instructional guidelines**

- An educational booklet was developed by the researcher based on nurses' performance regarding chronic pancreatitis.
- Different methods of teaching were used to conduct the instructional guidelines such as; lecture, group discussion, posters, power point, demonstration and re-demonstration and video scenarios presentation .

**C. Implementation Phase:** The nursing guidelines were presented by the researcher by power point presentation, video presentation and finally hard copy was given to each nurse. The educational guidelines were given to all nurses at their work hours at the morning and afternoon shift while patients were given during care. Educational guidelines: Nurses were divided into (5) subgroups, each subgroup was consisting of 10 nurses and the researcher was to attend the sessions that were scheduled in the morning. The time for each session was about 30 – 45 minutes. The session was given as following: -Four sessions was given two theoretical two practical and every week, the studied nurses was taking two sessions was explained as following: -

1) The First session included the knowledge about the definition of pancreatitis, risk

factors, clinical manifestations, investigations medical and nursing management of the disease.

2) **The second session** it was including the knowledge about: Nutrition for pancreatic patients Assessment of pain for patient: Investigate verbal reports of pain, noting specific location and intensity (0–10 scale), note factors that aggravate and relieve pain, promote position of comfort on one side with knees flexed, sitting up and leaning forward, provide alternative comfort measures (back rub) , encourage relaxation techniques, administer analgesics in timely manner (smaller, more frequent doses), discharge instructions and home care for the patient; it included the medications, warning signs, follow-up and physical exercises.

3) **The third session practical:**

A-The nurse was educated maintaining normal breathing pattern. B- It included measuring blood glucose with a finger stick.

4) Fourth session - it included: Nasogastric tube insertion, nasogastric tube irrigation, nasogastric tube removal.

**D- Evaluation phase:** The evaluation was 3 times; 1st time pre implementing the educational guidelines on nurses' performance for patients with chronic pancreatitis, 2nd time was post implementing the educational guidelines , 3rd time was after one month of implementing the educational guidelines on nurses' performance for patients with chronic pancreatitis.

**Results**

**Table (1)** Show the Distribution of the studied nursing regarding their socio demographic characteristics , concerning age, the table illustrated that nearly less than fifty (44%) of the nurses were in the age group (21-30) years, whereas (26%) of them

were in the age group (31-40) years. Regarding to gender and marital status, most of the studied nurses were females and about (58%) of them were married where (18%) of them are male. In relation to educational level, the table showed that (44%) of nurses had nursing institute. In addition to, it was found that the majority (34%) of the studied nurses had (<10) years of experience. According to their previous training regarding chronic pancreatitis, the majority of the studied nurses (84%) did not have previous training regarding chronic pancreatitis.

**Table 2** Show the Distribution of the studied nurses according to their total knowledge level regarding chronic pancreatitis throughout periods of study, depicted that more than half (52%) of nurses reported low level knowledge before implementation of educational program. On the other hand, the result revealed that more than three quarters of the study group (84%, 80%) respectively of them had high level of knowledge immediately and after one month post program implementation.

**Table 3** Show the Distribution of the studied nurses according to their total practice level throughout periods of study. In this table, according to the nurse total practice score throughout period of study, this result reveals that more than half (58%) had unsatisfactory score of practice about chronic pancreatitis care in the pre-program implementation compared with the majority (88%) of nurses had satisfactory practice score immediately and respectively (84%) after one month of program. Statistically highly significant reference was observed in the score of total nurses before, immediately and after one month of the program as  $p < 0.001^*$ .

**Figure 1** illustrated distribution of the studied nurses' assessment of total pancreatic pain throughout their period of study. In this figure, according to nurses' assessment of the severity of pain throughout period of study, this result reveals that nurses' assessment found that more than three quarter (72%) had high risk of severe pain about chronic pancreatitis in the pretest compared with the more than three quarter (68%) had low risk of severe pain after one month of program. Statistically highly significant reference was observed in the score of total nurses' assessment before, immediately and after one month of the program as  $p = < 0.001^*$ .

**Table 4** Show the Relation between sociodemographic characteristics of the studied nurses and their total knowledge score throughout periods of study, demonstrated that there was statistically significant relation between total knowledge score and age of the studied nurses ( $P = 0.003^*$ ,  $0.010^*$ ,  $0.019^*$ ) pre intervention, immediately, post one month of the program, respectively with high total mean score for nurses with age (41-<50) ,mean  $\pm$ SD(16.56 $\pm$ 1.33, 22.17 $\pm$ 3.71, 21.22 $\pm$ 1.92) . Regarding educational level , there was statistically highly significant relation with total score of knowledge ( $P = < 0.001^*$  ,  $< 0.001^*$ ,  $0.005^*$ )pre ,immediately, post one month of the program, respectively with high total mean score for nurses with postgraduate(19.00 $\pm$ 0.00,25.00 $\pm$ 0.00,23.00 $\pm$ 0.58)of total mean score pre, immediately ,post one month of the program , Regarding years of experience 10 or more, there was significance difference in relation to knowledge ( $P = < 0.001^*$ ,  $< 0.001^*$ ,  $< 0.001^*$ ) pre, immediately, post one month of the program, respectively with high total mean score for nurses with 10 or more years of



experience (18.14±1.46,23.86±1.86,22.71±1.60) of total mean score pre, immediately ,post one month of the program. Regarding previous tanning workshop had a great difference in relation to knowledge (P= <0.001\*, <0.001\*, <0.004\*) pre, immediately, post one month of the program, respectively with high total mean score for nurses had previous tanning workshop (18.38±0.74,24.13±1.13,22.38±1.15) of total mean score pre, immediately, post one month of the program.

**Table 5** shows the Relation between sociodemographic characteristics of the studied nurses and their total practice score throughout periods of study,demonstrated that there was statistically significant relation between total practice score and age of the studied nurses (P=0.018\*, 0.008\*, 0.009\*) pre intervention ,immediately ,post one month of the program, respectively with high total mean score for nurses with age (41-<50) ,mean ±SD(41.56±4.07, 71.50±10.67, 69.78±2.11 ) . Regarding educational level , there was statistically highly significant relation with total score of practice

(P=<0.006\* , <0.012\*,0.006\*) pre ,immediately, post one month of the program, respectively with high total mean score for nurses with postgraduate(45.00,77.00,71.00)of total mean score pre, immediately ,post one month of the program. regarding education about chronic pancreatitis there was statistically highly significant relation with total score of practice (P=<0.001\* , <0.005\*,0.001\*) pre ,immediately, post one month of the program, respectively with high total mean score for nurses knowledge(44.38,73.63,71.13) of total mean score pre, immediately ,post one month of the program. Regarding Years of experience at Medical Department 10 years or more there was statistically highly significant relation with total score of practice (P=<0.001\*, <0.001\*, <0.001\*) pre, immediately, post one month of the program, respectively.

**Table 6** In this table there was a statically positive correlation was observed between total knowledge level and total practice level, both immediately and one month after session with r, (0.716, 0.681) and P= (<0.001\*,<0.001\*) respectively.

**Table 1: Distribution of the studied nursing regarding their socio demographic characteristics:**

| Characteristics   | The studied nurses<br>(n=50) |      |
|---|------------------------------|------|
|   | N                            | %    |
| <b><u>Age</u></b>   |                              |      |
| ▪ 21-30   | 22                           | 44.0 |
| ▪ 31-40   | 13                           | 26.0 |
| ▪ 41-50   | 9                            | 18.0 |
| ▪ 51-60   | 6                            | 12.0 |
| <b>Range</b>  | <b>(21-60)</b>               |      |
| <b>Mean ±SD</b>   | <b>36.57±4.12</b>            |      |
| <b><u>Gender</u></b>  |                              |      |
| ▪ Male  | 9                            | 18.0 |
| ▪ Female  | 41                           | 82.0 |
| <b><u>Marital status</u></b>  |                              |      |
| ▪ Single  | 15                           | 30.0 |
| ▪ Married   | 29                           | 58.0 |
| ▪ Divorce   | 3                            | 6.0  |
| ▪ Widow   | 3                            | 6.0  |
| <b><u>Educational level</u></b>   |                              |      |
| ▪ Diploma   | 11                           | 22.0 |
| ▪ Nursing institute   | 22                           | 44.0 |
| ▪ Bachelor  | 13                           | 26.0 |
| ▪ post graduate   | 4                            | 8.0  |
| <b><u>Years of experience at Medical Department</u></b>                                   |                              |      |
| ▪ <1  | 11                           | 22.0 |
| ▪ <5  | 15                           | 30.0 |
| ▪ 5- <10  | 17                           | 34.0 |
| ▪ 10 or more  | 7                            | 14.0 |
| <b>Mean ±SD</b>   | <b>8.64±5.31</b>             |      |
| <b><u>Previous training workshops related to education about chronic pancreatitis</u></b> |                              |      |
| ▪ Yes   | 8                            | 16.0 |
| ▪ No  | 42                           | 84.0 |

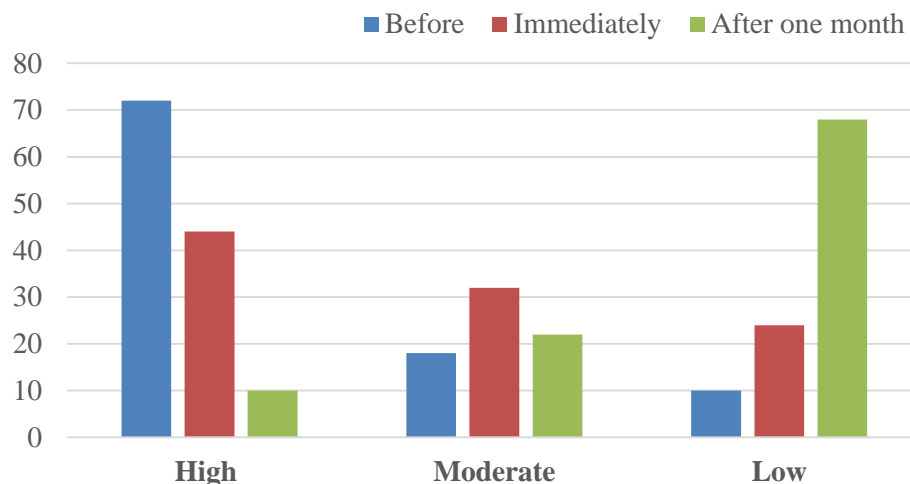


**Table 2: Distribution of the studied nurses according to their total knowledge level regarding chronic pancreatitis throughout periods of study.**

| Total knowledge | The studied nurses (n=50) |    |             |    |                 |    | Chi-square |         |         |         |
|-----------------|---------------------------|----|-------------|----|-----------------|----|------------|---------|---------|---------|
|                 | Before                    |    | Immediately |    | After one month |    | P1         |         | P2      |         |
|                 | N                         | %  | N           | %  | N               | %  | X2         | P-value | X2      | P-value |
|                 | High                      | 8  | 16          | 42 | 84              | 40 | 80         | 48.237  | <0.001* | 0.326   |
| Moderate        | 16                        | 32 | 6           | 12 | 7               | 14 |            |         |         |         |
| Low             | 26                        | 52 | 2           | 4  | 3               | 6  |            |         |         |         |
| Mean± SD        | 13.96±3.55                |    | 18.86±3.93  |    | 18.44±3.76      |    | 6.542      | <0.001* | 0.546   | 0.586   |

**Table 3: Distribution of the studied nurses according to their total practice level throughout periods of study.**

| Total practice | The studied nurses (n=50) |    |             |    |                 |    | Chi-square |            |             |           |
|----------------|---------------------------|----|-------------|----|-----------------|----|------------|------------|-------------|-----------|
|                | Before                    |    | Immediately |    | After one month |    | P1         |            | P2          |           |
|                | N                         | %  | N           | %  | N               | %  | X2         | P-value    | X2          | P-value   |
|                | Satisfactory              | 21 | 42          | 44 | 88              | 42 | 84         | 23.25<br>3 | <0.001<br>* | 0.33<br>2 |
| Unsatisfactory | 29                        | 58 | 6           | 12 | 8               | 16 |            |            |             |           |
| Mean±SD        | 35.64±8.35                |    | 66.18±8.35  |    | 64.96±5.60      |    |            |            |             |           |



**Figure 1: Distribution of the studied nurses in relation to nurses' assessment of the severity of pain throughout period of the study.**

**Table 4: Relation between sociodemographic characteristics of the studied nurses and their total knowledge score throughout periods of study.**

| characteristics                 | The studied nurses (n=50)<br>Total knowledge score<br>Mean±SD |               |                 |
|---------------------------------|---|---------------|-----------------|
|                                 | Before  | Immediately   | After one month |
| <b><u>Age</u></b>               |   |               |                 |
| • (21-<30)                      | 12.18±2.91  | 17.27±3.13    | 17.23±3.38      |
| • (31-<40)                      | 14.15±3.91  | 18.62±4.29    | 19.46±4.10      |
| • (41-<50)                      | *16.56±1.33   | *22.17±3.71   | *21.22±1.92     |
| • (51-<60)                      | 16.17±4.07  | 21.00±3.50    | 20.67±4.23      |
| <b>f (P-value)</b>              | 5.353(0.003*)   | 4.206(0.010*) | 3.637(0.019*)   |
| <b><u>Sex</u></b>               |   |               |                 |
| • Male                          | 14.11±2.37  | 19.22±3.15    | 18.22±2.77      |
| • Female                        | 13.93±3.78  | 18.80±4.11    | 19.10±3.95      |
| <b>t (P-value)</b>              | 0.140(0.890)  | 0.286(0.776)  | 0.628(0.533)    |
| <b><u>Marital status</u></b>    |   |               |                 |
| • Single                        | 13.87±3.64  | 18.27±3.92    | 18.80±3.88      |
| • Married                       | 14.07±3.51  | 19.34±3.94    | 19.07±3.86      |
| • Divorce                       | 11.00±3.46  | 14.67±.58     | 15.67±1.53      |
| • Widow                         | 16.33±3.06  | 21.67±3.06    | 21.67±1.53      |
| <b>f (P-value)</b>              | 1.166(0.333)  | 2.028(0.123)  | 1.328(0.277)    |
| <b><u>Educational level</u></b> |   |               |                 |
| • Diploma                       | 11.64±2.91  | 16.55±2.25    | 16.36±3.35      |

|   |                 |                 |                 |
|---|-----------------|-----------------|-----------------|
| ▪ Nursing institute   | 13.55±2.60      | 18.09±3.32      | 18.82±3.35      |
| ▪ Bachelor  | 15.08±4.19      | 20.31±4.33      | 19.92±3.82      |
| ▪ postgraduate  | *19.00±0.00     | *25.00±0.00     | *23.50±0.58     |
| <b>f (P-value)</b>  | 6.352(<0.001*)  | 7.555(<0.001*)  | 4.950(0.005*)   |
| <b><u>Years of experience at Medical Department</u></b>                                   |                 |                 |                 |
| ▪ <1  | 10.27±2.76      | 15.36±1.29      | 15.09±2.51      |
| ▪ 1- <5   | 12.33±2.82      | 16.07±2.15      | 16.80±2.68      |
| ▪ 5- <10  | 16.06±1.39      | 21.59±2.53      | 21.76±1.71      |
| ▪ 10 or more  | *18.14±1.46     | *23.86±1.86     | *22.71±1.60     |
| <b>f (P-value)</b>  | 25.627(<0.001*) | 41.460(<0.001*) | 31.715(<0.001*) |
| <b><u>Previous training workshops related to education about chronic pancreatitis</u></b> |                 |                 |                 |
| ▪ Yes   | *18.38±0.74     | *24.13±1.13     | *22.38±1.51     |
| ▪ No  | 13.12±3.23      | 17.88±3.44      | 18.29±3.71      |
| <b>t (P-value)</b>  | 4.540(<0.001*)  | 5.039(<0.001*)  | 3.048(0.004*)   |

**Table5: Relation between sociodemographic characteristics of the studied nurses and their total practice score throughout periods of study.**

| Characteristics              | The studied nurses (n=50)<br>Total practice level<br>Mean±SD |               |                 |
|------------------------------|--|---------------|-----------------|
|                              | Before   | Immediately   | After one month |
| <b><u>Age</u></b>            |  |               |                 |
| ▪ 21-30                      | 32.00±7.37   | 61.91±7.55    | 62.86±5.25      |
| ▪ 31-40                      | 36.38±9.30   | 68.15±6.38    | 64.23±4.82      |
| ▪ 41-50                      | *41.56±4.07  | *71.50±10.67  | *69.78±2.11     |
| ▪ 51-60                      | 38.50±9.44   | 70.22±7.00    | 67.00±7.80      |
| <b>f (P-value)</b>           | 3.686(0.018*)  | 4.458(0.008*) | 4.325(0.009*)   |
| <b><u>Sex</u></b>            |  |               |                 |
| ▪ Male                       | 35.67±7.91   | 63.22±9.35    | 62.33±4.87      |
| ▪ Female                     | 35.63±8.54   | 66.83±8.09    | 65.54±5.63      |
| <b>t (P-value)</b>           | 0.010(0.992)   | 1.179(0.244)  | 1.579(0.121)    |
| <b><u>Marital status</u></b> |  |               |                 |
| ▪ Single                     | 34.80±8.67   | 63.67±8.97    | 64.00±5.98      |
| ▪ Married                    | 36.48±8.07   | 67.03±8.24    | 65.48±5.71      |
| ▪ Divorce                    | 28.67±5.51   | 62.00±1.00    | 61.00±1.73      |
| ▪ Widow                      | 38.67±11.85  | 74.67±1.15    | 68.67±1.53      |
| <b>f (P-value)</b>           | 0.976(0.412)   | 1.946(0.135)  | 1.185(0.326)    |

| <b><u>Educational level</u></b>   |                 |                 |                 |
|---|-----------------|-----------------|-----------------|
| ▪ Diploma   | 30.45±7.29      | 62.27±6.96      | 61.36±4.34      |
| ▪ Nursing institute   | 34.59±7.31      | 65.05±8.29      | 64.55±5.89      |
| ▪ Bachelor  | 38.92±8.91      | 68.08±7.92      | 66.69±4.61      |
| ▪ post graduate   | *45.00±0.82     | *77.00±2.71     | *71.50±1.29     |
| <b>f (P-value)</b>  | 4.764(0.006*)   | 4.037(0.012*)   | 4.637(0.006*)   |
| <b><u>Years of experience at Medical Department</u></b>                                   |                 |                 |                 |
| ▪ <1  | 27.00±4.05      | 58.36±4.43      | 61.00±5.23      |
| ▪ 1- <5   | 30.93±6.32      | 60.47±6.27      | 60.67±3.92      |
| ▪ 5- <10  | 41.76±4.74      | 72.00±3.04      | 68.82±2.10      |
| ▪ 10 or more  | *44.43±0.98     | *76.57±2.07     | *71.00±1.63     |
| <b>f (P-value)</b>  | 32.871(<0.001*) | 41.557(<0.001*) | 25.514(<0.001*) |
| <b><u>Previous training workshops related to education about chronic pancreatitis</u></b> |                 |                 |                 |
| ▪ Yes   | *44.38±2.00     | *73.63±4.75     | *71.13±1.13     |
| ▪ No  | 33.98±8.06      | 64.76±8.16      | 63.79±5.33      |
| <b>t (P-value)</b>  | 3.599(<0.001*)  | 2.963(0.005*)   | 3.850(<0.001*)  |

**Table 6: Correlation between total knowledge level of the studied nurses and their practice level throughout periods of study.**

| Total practice level   | The nurses studied(n=50) |    |          |         |     |    |
|------------------------|--------------------------|----|----------|---------|-----|----|
|                        | Total knowledge level    |    |          |         |     |    |
|                        | High                     |    | Moderate |         | Low |    |
|                        | N                        | %  | N        | %       | N   | %  |
| <b>Before</b>          |                          |    |          |         |     |    |
| Satisfactory           | 8                        | 16 | 11       | 22      | 2   | 4  |
| Unsatisfactory         | 0                        | 0  | 5        | 10      | 24  | 48 |
| r / P-value            | 0.902                    |    |          | <0.001* |     |    |
| <b>Immediately</b>     |                          |    |          |         |     |    |
| Satisfactory           | 42                       | 84 | 2        | 4       | 0   | 0  |
| Unsatisfactory         | 0                        | 0  | 4        | 8       | 2   | 4  |
| r / P-value            | 0.716                    |    |          | <0.001* |     |    |
| <b>After one month</b> |                          |    |          |         |     |    |
| Satisfactory           | 37                       | 74 | 4        | 8       | 1   | 2  |
| Unsatisfactory         | 3                        | 6  | 3        | 6       | 2   | 4  |
| r / P-value            | 0.681                    |    |          | <0.001* |     |    |

## Discussion

Chronic pancreatitis pain patients have important causes including wiring problems, plumbing problems, pancreatic and extra-pancreatic complication, procedures and treatments and emotional and mental conditions. The educational guidelines are an important means to provide nurses with theoretical and technical information needed to acquire skills and competencies necessary to continually evaluate the effect of implementing educational guidelines on nurse's performance for patients with chronic pancreatitis (Hussein, & Khudair, 2019) In the current study demographic characteristics of the nurses, the current study illustrated that nearly less than fifty of the nurses were in the age group ranged from (21-30) years old, this finding is justified by the fact that about half of the nurses graduated from the nursing institute, which explains their young age, which is the best time to learn and change an individual's behavior through education and education in order to enhance the sense of self and establish satisfactory intimate relationships. This is in the same line with Reyad et al, (2022) who reported that most of studied nurses' ages ranged between 20 to 30 years old. On the other hand, Houmkoua et al, (2021) who found that about one third of nurses were aged from 30 to 35 years old. In relation to sex, the present study clarified that most of the studied nurses were females. This is due to the recent entry of males into nursing field so that most of the studied samples were females because there dominant for this occupation. This result is in line with Abdelgilil, Talaat, and Mahmoud, (2020) who reported that about two thirds of the study sample of nurses was females. On the other hand, these results are

against with Desouky, Abdelaziz, and Mahgoub, (2021), who reported that most of the studied nurses were males. Concerning marital status, in this study more than half of the studied nurses were married. From the researcher's point of view, this may be due to the young age of most of the studied sample, which ranges between 20-30 years and because most of the sample were female in the current study. This in the same line with El Sayed et al. (2021) who reported that most of participants were married. In relation to educational level, the table showed that about half of nurses had nursing institute. This is because health technical institutes take place in designated post-secondary educational institutions, and this program involves two years of education after graduating from high school, which takes a short time to the labor market due to the shortage in the nursing profession. This is in line with Atia, Younis, Salama, and Fouad, (2022) who noted that about two thirds of studied nurses had a technical institute. This result was in contradiction with Reyad et al. (2022) who reported that half of nurses had a bachelor's degree. As regards years of experience in the nursing field, the findings of the current study it was found that more than one third of the studied nurses had less than 10 years of experience. From the researcher's point of view, this difference is due to the appointment of the nursing staff at early age starting from 20 years old. Similarly, Reyad et al. (2022) illustrated that about two thirds of studied nurses had less than ten years of experience. This finding was in contrast with Abdelhafiez et al. (2021) who depicted that more than two thirds of studied nurses had more than ten years of experience.

regarding chronic pancreatitis, the majority of the studied nurses did not have previous training regarding chronic pancreatitis. Supporting this finding Mohammed et al. (2019) who noted that all studied nurses did not have previous training regarding acute pancreatitis. On the other hand, these results are against Mamdouh, Mohamed and Mohamedm, (2022) who reported that less than two thirds of nurses had pervious training program before implementation of educational program.

Concerning the acquisition of knowledge, the findings of the current study showed that more than half of nurses reported low level of knowledge regarding chronic pancreatitis before implementation of educational program. This might be because they aren't attending any programs for continuing education or in-service training for specialized nursing knowledge. Also, the shortage of nurses' number that didn't let them have time to attend courses or lack of awareness about the effect of training courses on performance of the nurses, resulted in poor knowledge in caring of patient with chronic pancreatitis. This results with the same line with Mohammed, Mohammed, and Mehany, (2019), who reported that the level of knowledge about acute pancreatitis of the majority of the studied nurses generally was poor before implementing of educational program.

Moreover, regarding nurses' knowledge, the result revealed that more than three quarters of the studied nurses had high level of knowledge immediately and after one month post program implementation. From the researcher's point of view educational programs for nursing staff play an important part in increase knowledge as it designed to assist nurses in developing and enhance the

skills needed to standards care, which led to increasing their knowledge. Also, effective education guidelines programs in nursing had been credited with improving the knowledge base of nursing staff.

This result is nearly in line with, Sailors, and Whitmire, (2018) who found that an improvement in participant knowledge on the post-intervention educational program when compared to the pre-intervention educational program related to the following: anatomy, physiology of the pancreas and chronicity, progression of CP. chronic pancreatitis care management expectations, including pain management, strategies for disease management using home interventions. This study is contraindicated with El Sayed Mahedy et al, (2021) who illustrated that two fifth of nurses had unsatisfactory level of knowledge after implementing the educational program.

According to the nurse total practice score, the findings of the present study revealed that more than half of the studied nurses had unsatisfactory score of practice about chronic pancreatitis care in the pre-program implementation compared with the majority of nurses had satisfactory practice score immediately and respectively after one month of program. This may be due to they didn't have any previous training or educational program and moreover, about half of the nurses were graduates of the Nursing Institute, as its courses do not include the study of chronic pancreatitis. Also, due to no pre-employment orientation, courses increased workload which may hinder the ability to read and upgrade their knowledge. This results with the same line with Mohammed et al, (2019) who reported that the level of practice regarding acute

pancreatitis of the majority of the studied nurses generally was poor before implementing of educational program.

Also, the present study showed that statistically significant improvement in practice of studied nurses was observed in the score of total nurses before, immediately and after one month of the program as  $p < 0.001$ . This is because the educational guidelines were effective and influential and brought about progress in nurses' practices, and they were needed for an educational program. In the same line, supporting our results Mohammed et al, (2019) who noted that there was statistically significant improvement in nursing staff practice of studied nurses immediately after implementation of the educational program. Regarding total mean score of total pancreatic pain, this result showed that nurses assess the total mean of pancreatic pain and noted reduction from  $\pm SD$  (23.2 $\pm$ 6.8) pre intervention to  $\pm SD$  (12.52 $\pm$ 6.1) and  $\pm SD$  (3.43 $\pm$ 1.53) immediately and after intervention respectively for the study group with statistically high significance difference  $P < 0.001$ . From the researcher's point of view, educational guidelines which conducted for nurses through four phases (assessment, planning, implementation, and evaluation) had a great effect on nurses' practices. Also, this improvement might be related to the fact that most nurses were young age this age and might have good readiness for learning new things. Supporting our result, Abdalrahim, Majali, Stomberg, and Bergbom, (2011) noted that after implementation of the pain management program, the mean score for satisfaction increased to 3.26. Forty-seven of the patients' records included a description of the implementation of nursing plan in

addition to notes about the outcome. Most of patients' records in the post-intervention phase were ranked 3 and above, which reflects improvement. This is in agreement with, Mohammed et al, (2019) who reported that there was statistically significant improvement in nursing staff total mean pancreatic pain score immediately after implementation of the educational program. Regarding the correlation between demographic characteristics and total knowledge score of the studied nurses. In this study there was statistically significant relation between total knowledge score and age of the studied nurses' pre intervention, immediately, post one month of the program, respectively with high total mean score for nurses with age. This may be due to younger nurses increased their opportunity to acquire knowledge. Supporting our study, Shaker, Abdelhady, and Faltas, (2020) who showed that a statistically significant correlation between the nurses' age and their total knowledge immediately after and at follows up program. In addition, this result was agreed with the study carried out by Reyad et al., (2022) who reported that a statistically significant correlation between the nurses' age and their total knowledge immediately after and at follows up program.

This study in contrast with El Sayed Mahedy et al, (2021) who noted that there was no a statistically significant correlation between total nurse's practice and total nurse's knowledge, no a statistically significant relation between total practice and their characteristics as age. Also, Reyad et al, (2022) who reported that there was no statistically significant difference among the studied nurses regarding the correlation of total knowledge and their practice.



Regarding years of experience at medical department, the current study noted that there was statistically highly significant relation with total score of knowledge ( $P < 0.001$ ) pre, immediately, post one month of the program in relation to the years of experience of studied nurses. This may be due to the years of experience of studied nurses act factors affecting on level of nurse's knowledge. In the same line with current study, Shaker et al, (2020) who noted that there was statistically highly significant relation with total score of knowledge ( $P < 0.001$ ) pre, immediately, post one month of the program in relation to the years of experience of studied nurses.

On the other hand, this study in contrast with El Sayed Mahedy et al, (2021) who noted that there was no a statistically significant correlation between total nurse's practice and total nurse's knowledge, no a statistically significant relation between total practice and their characteristics years of experience. Additionally, Reyad et al, (2022) who reported that there was no statistically significant difference among the studied nurses regarding the correlation of total knowledge and their practice.

Regarding the relation between sociodemographic characteristics of the studied nurses and their total practice score throughout periods of study, The present study reported that there was statistically significant relation between total practice score and age of the studied nurses' pre intervention, immediately, post one month of the program, respectively with high total mean score for nurses with age. The current results are in the same line with Mohsen et al., (2020) who indicated that there was a strong statistically significant correlation among age, and practice of nurses. On the

other hand, this result is constructed with Abd ElKareem Ahmed and Desoky, (2021) who found that there was no a statistically significant correlation of nurses' age with nurses' practice score.

Regarding correlation of educational level and total practice, the present study reported that there was statistically highly significant relation with total score of practice pre, immediately, post one month of the program, with high total mean score for nurses with postgraduate educational level. Supporting our result is a study done by Fernando, (2017) who reported that the higher level of performance of the nurses the higher level of education and year of experience. On the other hand, the present study, Shaker et al, (2020) who showed that there is no statistically significant difference in total practice score post and follows up as regards demographic characters as qualifications of nurse.

Regarding correlation of years of experience at medical department and total practice, the present study reported that there was statistically highly significant relation between years of experience with total score of practice pre, immediately, post one month of the program, respectively. The current results are in the same line with Elsayed et al, (2021) who noted that there was a positive correlation coefficient between practice scores, with years of experience. But this study is contrasted with Mostafa, Mehany, and Ahmed (2019) who reported that there was no statistically significant relation between nurses' practice mean score (pre and posttest) and their demographic characteristics as years of experience.

Regarding the correlation between total knowledge level of the studied nurses and their practice level throughout periods of

study. The present study reported that there was a statically positive correlation was observed between total knowledge level and total practice level, both immediately and one month after session. This may be due to the direct effect of the educational program which improved nurses' knowledge and practice. Nurses' knowledge and practice scores turned out to be strongly and positively correlated.

This result is supported by Abd ElKareem et al, (2021) who found that there was a statistically significant positive correlation of nurses' knowledge score with nurses' practice. Also, this agrees with, Mohammed et al, (2019) who illustrated that there was a positive correlation between total knowledge scores and practice after implementation of educational program. This study is in contrast with El Sayed M et al, (2021) who noted that there was no a statistically significant correlation between total nurses' practice and total nurse's knowledge.

### Conclusion

Based on the findings of the present study, the researcher recommend Studying the impact of educational programs on chronic pancreatitis continuously using a wide probability sample in different areas to monitor improvement in nurse performance and points of weakness for developing more educational program to nurses dealing with patients with chronic pancreatitis.

### Recommendations

Based on the findings of the present study, it can be concluded that, most of the studied nurses had high level of practice and majority of them had good knowledge one

month after program than pre implementation of educational program.

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