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Original Article

Effect of Educational Program on Nurses' Attitudes and Practices Regarding Provision of Physical Health Care for Patients with Severe Mental Illness

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ABSTRACT

Background: Recent studies have shown that patients with mental illnesses have higher mortality and morbidity rates due to long-term physical conditions and lifestyle diseases. **Aim of the study:** The study aimed to examine the effect of educational program on nurses' attitudes and practices regarding provision of physical health care for patients with severe mental illness. **Setting:** The study was conducted at Tanta Mental Health Hospital in Tanta city; Egypt, which affiliated to General Secretariat of Mental Health. **Research design:** Quasi-experimental research design (single-group, pre/post-test) was utilized in this study. **Subjects:** 60 nurses were constituted in this study using convenient method of sampling. **Tools**: the study data was collected using two tools: Tool I: Socio-demographic and professional characteristics Questionnaire, tool II: Physical Health Attitude Scale (PHASe) **Results:** After attending educational program, studied nurses' total scores of attitude and practice regarding provision of physical healthcare were found to be significantly increased, and also result in reduction of training needs. **Conclusion:** Educational program regarding provision of physical health care for patients with severe mental illness has a positive effect on improving nurses' attitude and practice. **Recommendation:** Continuous educational training programs related to physical health care to patients with mental illness should be recommended for nurses.

Keywords: Educational program, Physical health care, Severe mental illness, Nurse attitudes, Practices.

Introduction

Mental and physical health is interchangeably linked and it is indicator to a person's overall wellbeing. People with long term mental health problems can be a significant risk factor for the development of physical illness **(Luo et al., 2020)**. So, patients with severe mental illness (SMI), (like bipolar disorder, schizophrenia, major depression), are very high risk for many medical problems than general population **(Liu et al., 2017).** The risk of presence of coexisting long term conditions like diabetes (type 2), cardiovascular disease, respiratory problems, metabolic syndrome, and cancer is elevated two to three times among patients with a mental illness than others whom are mentally well **(Vancampfort et al., 2016).**

The physical health of patients with SMI is frequently ignored, both by themselves and those around them as well as by health systems,

which leads to obvious physical health inequities and restricted access to medical services **(De-Hert et al., 2011**). **Correll et al., (2017),** stated that patients with mental illness are not as likely to benefit from improvements in physical health care as the overall population. These health disparities have a variety of causes. These include harmful lifestyle choices and health practices including smoking, eating unhealthy food, and not exercising enough. The disabling nature of mental illness, poor utilization of health screening, and self-stigma are likely to be risk factors for the poor physical health of patients with SMI. Additionally risk factors include the side effects of psychotropic medications, and difficulties in healthcare access due to the effect of their symptoms and/or an inadequate social support **(Brown et al., 2010; Bressington et al., 2016).**

There is a significant lack of physical healthcare for SMI patients, which increases the risk of premature death. People with serious mental illnesses have shorter life spans (10–20 years) due to physical health issues that cause premature death. However, by ensuring that those with serious mental illnesses receive care, many lives can be preserved **(Howard & Gamble, 2011; Bradshaw & Pedley, 2012).** The demands of those with a mental health issue's physical health can best be met by mental health nurses. The re-organization of health care services to better help persons with mental health issues in recovery and wellbeing depends in large part on nurses, who are regarded as a prominent professional group in mental health care (**Chee et al., 2018; Tosh et al., 2014).** It identified key areas of action that mental health nurses should take to improve physical health outcomes in patients with SMI. Each of these areas is associated with specific risk factors that can adversely affect physical health and reduce life expectancy. These areas of activity are: prevention of certain communicable diseases, smoking cessation support, obesity management, improved physical activity, alcohol and drug use reduction, sexual and reproductive health, medical optimization, dental and oral health, and fall reduction **(Amal et al., 2017; Sharma et al., 2018).**

Nurses in mental health settings have the most face-to-face contact with people with SMI, it is reasonable to assume that nurse-related factors may present barriers to the effective delivery of physical health care. Therefore, it is hypothesized that poor knowledge/skills and negative attitudes of mental health nurses and lack of confidence in routine screening and delivery of physical health care are the causes of poor physical health in patients with SMI **(Happell et al., 2012; Robson & Haddad, 2012).**

Previous researches has shown that nurse' skills, knowledge, and attitudes influence the physical health of service users **Blythe & White, 2012**; **Robin et al., 2019).** Nurses who possess a high level of skill, knowledge, and a positive attitude towards providing physical health care leading to reduced morbidity and early mortality in SMI patients (**Quinn et al., 2018; Walker et al., 2015).** Comprehensive Mental Health Action Plan according to WHO outlines a vision that patients

with mental illness have right for timely access to quality, culturally appropriate health and social care to exercise the full spectrum of their human rights which subsequently facilitate patient 'recovery. To realize this vision, by providing nurses with professional training opportunities and resources, which will advance their knowledge and skills and become aware of the importance of comprehensive physical health care for patients with SMI **(World Health Organization, 2018).**

Significance of the study:

Mental health nurses can prevent physical health problems before symptoms occur in individuals with SMI by making necessary physical health measurements, intervening appropriately, and embracing healthy lifestyle behaviors through health education programs. Improved physical healthcare in mental health facilities aids in early identification and treatment of medical illnesses and reduces the possibility of long-term negative physical health issues of patients with SMI **(Quinn et al., 2018; Bressington et al., 2018)**.

Exploration and modification of nurse attitudes that can lead them to ignore the physical health requirements of patients with severe mental illness is the emphasis of physical health care education programs**.** Additionally, educational interventions aim to increase nurses' levels of confidence by imparting knowledge and allowing them to practice their skills for managing the common physical health issues that this patient has**(Walker et al., 2015; Bressington et al., 2018).** Therefore, the purpose of this study was to examine the effect of educational program on nurses' attitudes and practices regarding provision of physical health care for patients with severe mental illness.

Aim of the study:

The purpose of this study was to examine the effect of educational program on nurses' attitudes and practices regarding provision of physical health care for patients with severe mental illness.

Research hypothesis:

After attending an educational program sessions, it is anticipated that psychiatric nurses' attitudes and practices regarding provision of physical health care for patients with severe mental illness will improve.

Research design:

Quasi-experimental study design (single-group pre/posttest) was utilized in this study.

Study setting:

The study was conducted at Tanta Mental Health Hospital. This hospital under the supervision and direction of the Ministry of Health and Population. It can accommodate 107 beds, which are distributed among four wards: two for women each with (40 beds), and two for men (67 beds). Additionally, it offers medical health services to the governments of El-Gharbeya, El-Menofeya, and Kafr-El-Sheikh.

Study subjects:

In this study, a convenience sample of 60 nurses was constituted. The sample size was determined using Epi-Info software statistical

package created by World Health organization and center for Disease Control and Prevention, Atlanta, Georgia, USA version 2002. So, the sample size was calculated through adjusting the power of the test to 80% and the confidence interval to 95% with margin of error accepted adjusted to 5% using the following equation:

Type I error (α) = 0.05%
Type II error (B) = 0.20%
With power of test 0.80%

$$n = \frac{N \times p(1-p)}{\left[\left[N-1\times\left(d^2 \div z^2\right)\right] + p(1-p)\right]}$$

Nxp(1-p)	=(70*(0.5*(1-0.5)))/
N-1	=(70-1)*
d^2/z^2	=0.0025 / 3.8416+
p(1-p)	=0.5*(1-0.5)
n	=60

Tools of data collection:

Using two tools to collect the data from the study participants:

Tool I: Socio-demographic and professional data questionnaire:

After reviewing related literatures, the researcher develops study tool. It was developed for the aim of assessing the socio demographic and professional data of the studied nurses. It contains following items; (age, sex, marital status, residence, level of educational, job categories, experience at general and psychiatric nursing in years, and previous courses related to physical health care).

Tool II: The Physical Health Attitude Scale (PHASe):

The scale was adopted from **Robson & Haddad (2012).** It was used to assess the attitudes, practices, and physical care-related training needs of nurses. Nine basic physical health-related topics were covered by the questionnaire, including food and exercise, smoking, eye and dental health, hygiene, weight, glucose abnormalities, cardiovascular health, bowel function, and reproductive health. There are three sections of the study's questionnaire's items which were as follows:

Subscale One: Nurses' attitude regarding physical health care.

- It had 26 items representing the personal nurses' attitudes about providing physical health care, divided into four subscales:

(i) Nurses' attitudes to involvement in physical health care (8 items); such as" Giving nutritional advice to clients should be part of a mental health nurse's role".

(ii) Nurses' confidence in delivering physical health care (6 items) like" I am confident that I can measure a client's blood pressure accurately".

(iii) Nurses' perceived barriers to physical health care delivery (7 items) for example" Clients are not motivated to exercise".

(iv) Nurses' attitudes to smoking (5 items) such as" Clients should be banned from smoking on all health-care premises"**.**

- Items were assessed on a Likert scale of 1 to 5, where 1 represents strongly disagree and 5 represents strongly agree. Negative items included items 2, 4, 7, 8, 13, 15, 17, 19, 20, 24, 25, and 26; these items were reverse-coded for analysis. Scores were arranged as follow:

- Scores between 50% and 75% (65-98) were neutral,
- Scores over 75% (99-130) were positive,

- Scores below 50% (65) were negative.

Subscale Two: Nurses' practice regarding physical health care delivery.

It consisted of 14 items to assess current practice in the provision of physical health care as reported by the nurse on a 5-point Likert scale, ranging from 1 (never) to 5 (always). Example of statements; " assisting clients to attend to their personal hygiene is part of my current role and "helping clients manage their weight is part of my current role".

Score of less than 50% (<35) was **Never**, score between 50% to 75% (35-53) was **Sometimes** and the score more than 75% (54-70) was **Always done**.

Subscale Three: Nurses' physical health care training needs.

It composed of 7 items such as "How to care for mental health patients with diabetes". Each statement was rated as Yes or No.

Scoring system: (**Need** =1, **Don't need** =0), the total score of needs was ranged from 0-7 point. Score of less than 75% (<6) was **Don't need** and the score equal or more than 75% (6-7) was need.

Method:

1. **An official authorization** for the study to be conducted was obtained firstly from the Ethics Committee, then the Dean of Faculty of Nursing, Tanta University, to the manager of the study setting after describing the aim of the current study.

2. **Ethical considerations**:

a. All of the nurses taking part in the study provided oral consent for their voluntary involvement.
b. The subjects were made aware of the study's objectives and assured that any information acquired would be kept private and confidential and would only be utilized for the purposes of the study.
c. It was highlighted that the study subjects' right to reject participation or to leave the study at any time must be respected.
d. The nature of the study does not cause any harm to the study subjects.

3. **Developing tools:**

The researchers translated Tool (II) of the study into Arabic and conducted a back translation. Both tools were then tested for content validity by a jury of five experts in the field of psychiatric nursing to determine whether the items were appropriate for measuring the things they were intended to measure, and both tools were proved to be valid.

Using Cronbach's alpha to test he reliability of Physical Health Attitude Scale tool which was 0.87.

A pilot study on a sample of 10% of nurses was conducted to determine the applicability and clarity of the study tools. Additionally, it attempted to determine the approximate amount of time needed for the subject being studied as well as any potential barriers that might be faced

during data collection. After completing the pilot study, it was discovered that each nurse took 25–30 minutes to finish all tools, and that tool II had not been modified because it was applicable and understandable to the nurses in the pilot study. Later, the pilot subjects were taken out of the study sample.

4. The actual study:

The actual study took place over the course of four phases:

Phase one: Assessment phase (pretest).

The data was collected by the previously mentioned tools through distributing the questionnaire on each studied subject individually in the presence of the researchers for any clarification from subjects. This phase was the baseline data that determines the studied subjects' needs as a pre-intervention assessment. The filling of questionnaire was ranged from 25-30 minutes.

Phase two: (Educational program development).

The researchers constructed the educational program after examining recent related literature and phase one's findings. The general goal of program was to enhance nurses' attitudes and practices in providing physical health care for patients with severe mental illness. The educational program composed of 8 sessions; the first session was introductory session and performs pre-test, the second and third sessions were theoretical, from fourth to seven sessions were practical and the final session was summary for all previous sessions and perform the post-test. Each session lasted for 45 minutes.

Phase three: (Educational program implementation).

- The educational program was implemented in 8 sessions. The studied nurses were divided into eight subgroups (4 subgroups composed of 7 nurses for each, and other 4 subgroups composed of 8 nurses for each). Each subgroup attended 8 sessions; two sessions/week for 4 weeks (Saturday/Tuesday) in morning shift.

The researchers conducted the educational program in the training room in the hospital. In theoretical sessions the researchers give lecture using power point presentation, videos, and posters. In practical sessions, the researchers use role play, demonstration and re-demonstration. The handout was distributed to all studied nurses; it was supplemented by photos and illustrations to help the studied nurses in the understanding of the content simply.

Brainstorming, group discussions and oral questions were used during each session to encourage nurses' active participation and to stimulate their interest.

The researcher in implementation of the program was acted as the initiator, provider and facilitator for encouraging studied nurses in participation and to be at ease during session.

Each session began with a summary of the information that was presented at the previous session and the goals of the new session in order to make sure that the nurses understood the program's content. At the conclusion of the session, the researcher also provided a summary and let the participants know when the next session would be.

The period from the beginning of July 2021 to the end of February 2022 was around eight months for program implementation.

The program was implemented by the following schedule of sessions:-

Session (1): This session as introductory session to facilitate communication between the group participants and the researchers, as well as to explain the goal, schedule, and general structure of the program's content.

Session (2): This session focused on provision studied nurses with knowledge about definition of physical health; importance of physical heath for patients with mental illness and the common physical disease either communicable or non-communicable diseases among mentally ill patients such as heart disease, diabetes mellitus, metabolic disorders, dental problems and lung disease.

Session (3): This session emphasized on knowledge about prevalence of physical illness and factors predisposing physical illness among persons with mental illness; like factors related to psychiatric disease itself, factors related to side effects of psychiatric medication, others related to patients and family and finally the most important factor is lack of nurse awareness about physical care of patients.

Session (4-7): Providing physical nursing care for patients and nurse's role were the core of theses session. These sessions contained knowledge of how nurse assess physical aspects of patients, detect physical problems, provide nursing intervention for physical illness and its role in providing health education for patients and their families about physical care. In addition to teaching nurses preventive measures for physical illness disease either communicable or non-communicable diseases.

Session (8): Summary of the program and clarification for any points of program as don in this session, in addition posttest was carried out

Phase four: Evaluation phase (Post-test):

The objective of this phase was to assess how the education program about physical health care for patients with severe mental illness affected psychiatric nurses' attitudes and practices. This was done by re-applying the tools twice (post/test):

- First time: Immediately following program implementation.
- Second time: Three months following the program's implementation (follow up). The researchers collect data from the studied nurses during the morning shift. The total duration of collecting data was 6 weeks (from beginning June 2022 to mid of July 2022), two days/week and about 6 nurses /day.

Statistical analysis:

The collected data were organized, tabulated and statistically analyzed using SPSS version 19 (Statistical Package for Social Studies) created by IBM, Illinois, Chicago, USA. For numerical values the range mean and standard deviations were calculated. The differences between mean values before and after intervention were used using student’s paired (t). Correlation between

variables was calculated by Spearman's rank correlation. The level of significant was adopted at $p<0.05$.

Results:

Table (1) depicts socio-demographic and professional data of the nurses under study. Relating to age, about half (50%) of nurses their age ranged from30- <40 years with mean age was 33.45±5.68 years, about two thirds (66.7%) of studied nurses were females and most of nurses had nursing institute and nursing diploma (36.7% &33.3%) respectively. As regard to job status most of nurses (80%) was staff nurse. In relation to years of experience in both general and psychiatric nursing field, it was found that less than half (43.3% and 40%) of the studied subjects had experience ranged from 5-<10 years in general nursing and a range of 1-<5 years in psychiatric nursing field respectively. As for attendance of previous training courses related to study topic, the current results revealed that the majority of nurses had no any previous courses (93.3%).

Table (2) represents nurses' physical health attitude subscales throughout periods of the study. It was found that nurses' attitudes toward providing physical health care and their confidence in doing so have significantly improved immediately and 3 months post program comparing to pre-program.

Table (3) reveals nurses' total physical health-care practice throughout periods of study. the results revealed that total score of mean of nurses' physical health-care practice before program was 43.03±11.52, which increased immediately and follow up with 3 months (54.30±14.16 & 53.74±12.74) respectively. There were a highly difference that is statistically significant, between pre and immediately after program at P (< 0.001).

Table (4) illustrates nurses' total training needs about physical health care of patient with mental illness throughout periods of study. It was found that before the program, less than three quarters (71.7%) of nurses reported that they require knowledge/training on all the aspects of physical healthcare of patient with mental illness, while after the program most(80%) of nurses reported that they don't need training related to physical health care of patient with mental illness.

Table (5) reveals correlation between total nurses` attitude, practice and training needs throughout periods of study. A statistically highly positive correlation was found between overall score of attitude and overall practice score of nurses preprogram and follow up with 3 months at P <0.001**. Whereas there is a statistical significant positive correlation was found between total attitude and total practice of nurses immediately post program, which mean that increasing nurses' attitude, increase in their practice of physical health care. A statistical significant negative correlation among total nurses` training needs and both total attitude and total practice, was found immediately and follow up with 3 months after program, where increasing nurses' attitude and practice, decrease in their needs for training

Table (1): Socio-demographic and professional characteristics of studied nurses (n=60).

Socio-demographic and professional characteristics of studied nurses n=60	N	%
Age (years)		
20- <30	24	40.0
30- <40	30	50.0
40-<50	4	6.7
50- ≥ 60	2	3.3
Mean ± SD	**33.45±5.68**	
Sex		
Male	20	33.3
Female	40	66.7
Educational level		
Nursing diploma	20	33.3
Nursing institute	22	36.7
Bachelor of nursing	10	16.7
Postgraduate	8	13.3
Job status		
Staff Nurse	48	80.0
Nursing supervisor	12	20.0
Years of experience in general nursing(years)		
<1	4	6.7
1-<5	12	20.0
5-<10	26	43.3
10-<15	14	23.3
≥ 15	4	6.7
Mean ± SD	**9.23±4.70**	
Years of experience in psychiatric nursing field(years)		
<1	20	33.3
1-<5	24	40.0
5-<10	2	3.3
10-<15	10	16.7
≥ 15	4	6.7
Mean ±SD	**6.57±4.3**	
Attendance training courses about nursing care for the physical health of patient with mental illness		
Yes	4	6.7
No	54	93.3

about physical health care for patients with mental illness (at P<0.001**).

Table (2): Effect of educational program on nurses' physical health attitude subscale among studied nurses throughout periods of study (n=60).

Nurses' physical health attitude subscale	Pre	Immediate	Follow up with 3 months	Paired t-test	
				Pre & Immediately post	Post& Follow up with 3 months
Nurses' attitudes to involvement in physical health care	21.93±4.47	28.13±3.16	27.78±2.54	8.766 (<0.001**)	0.669 (0.505)
Nurses' confidence in delivering physical health care	13.13±2.53	15.93±1.84	15.34±2.76	6.925 (<0.001**)	1.378 (0.171)
Nurses' perceived barriers to physical health-care delivery	13.57±2.81	12.30±2.35	12.04±2.31	2.686 (0.008*)	0.611 (0.542)
Nurses' attitudes to smoking	11.63±2.22	10.33±2.27	9.78±2.42	3.171 (0.002*)	1.284 (0.202)
Total attitude	**59.00±6.49**	**66.97±6.18**	**65.71±7.28**	**6.883 (<0.001**)**	**1.022 (0.308)**

Table (3): Effect of educational program on nurses' total physical health-care practice among studied nurses throughout periods of study (n=60).

Nurses' total physical health-care practice subscale	Pre	Immediate	Follow up with 3 months	Paired t-test	
				Pre & immediately post	Post & Follow up with 3 months
	43.03±11.52	54.30±14.16	53.74±12.74	4.781 <0.001**	0.228 0.820

Table (4): Effect of educational program on nurses' total training needs about physical health care of patient with mental illness among studied nurses throughout periods of study (n=60).

Total Needs	Need		Don't need		Chi-square	
	N	%	N	%	X^2	P-value
Pre	43	71.7	17	28.3		
Immediately post	12	20.0	48	80.0	32.257	<0.001**
Follow up with 3 months	10	16.7	50	83.3	36.801	<0.001**

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Table (5): Correlation between total nurses` attitude, practice and training needs throughout periods of study (n=60)

Periods of study	Total practice/ Total training needs	Total attitude		Total practice	
		R	P-value	R	P-value
Pre	Total practice	0.514	<0.001**		
	Total training needs	-0.208	0.111	-0.389	0.002*
Immediately post	Total practice	0.372	0.003*		
	Total training needs	-0.388	0.002*	-0.478	<0.001**
Follow up with 3 months	Total practice	0.457	<0.001**		
	Total training needs	-0.384	<0.001**	-0.527	<0.001**

Discussion:

The physical health of patients with severe mental illness (SMI) is worse than that of the general population **(Drope et al., 2018; Annamalai et al., 2017).** As a result, recommendations for practitioners in general as well as mental health nurses and other clinical experts particularly have made the physical health of patients with mental disorders a priority. The research literature suggests that lower levels of physical health associated with mental illness are due to inadequate quality of care **(Jordan et al., 2021).**

Mental health nurse may struggle to look after the physical health of people with SMI. It has been hypothesized that the reasons for the poor physical health of people with SMI is the inadequate knowledge/skills and a lack of adequate training, insufficient confidence in providing this aspect of care, a failure to see this as part of their role, and negative attitudes of MHN, which may result in patients' physical health needs being overlooked **(Howard & Gamble, 2011)**. So, mental health nurse must have knowledge, skills and attitudes required to develop and implement prevention, detection and treatment strategies that essential in improving physical health care provision and prognosis **(Hardy et al., 2011).**

Physical health care related educational program for nurses in this study monitor three dimensions namely attitudes, reported practices and perceived training needs of nurses. Concerning attitude about care for physical health of patients with SMI, the current results stated that there is an improvement in nurses' attitudes to involvement in physical health care and nurses' confidence in delivering physical health care. The researchers' view that this may because of the effectiveness of educational program content which focusing on essential knowledge and a positive outlook to encourage and assist patients with major mental illness in making improvements to their physical health. Other reasons for this important outcome include the fact that the current educational program frequently serves as a means of boosting self-assurance, which in turn becomes a distinguishing trait of a mental health nurse's identity. The researcher concentrated on the value of holistic treatment in the program.

This findings was consistent with **Ozaslan et al., (2020)** assertion that the program improved mental health nurses' attitudes on their participation in providing physical health care for mental patients. Additionally, this outcome is congruent with **Chadwick & Withnell, (2016)** who worked with final-year mental health nursing students throughout four days of instructional sessions on structured physical health care. Their confidence rating increased from low to moderate to high level according to the post-learning results. According to the authors study result after completing the training, participants were better able to identify and handle patients' physical health deterioration.

The current study's findings also showed that nurses' attitudes toward smoking and perceived barriers to providing physical health care were

lower immediately after and for the following three months compared to before the program. This result may return to that the interesting educational program content that handle various barriers for delivering physical health care and ways of overcoming it, and nurses participate more in such point as they said" that the only care focus only on mental illness and smoking essential for patient as it make patient more alert". Such result may be also due to that researchers use various interested teaching methods like brain storming and discussion in delivering program content and nurses were more interested and motivated. Content of program was focusing closing the gap in current practice and decrease the health inequalities, which individuals with SMI experience. Also current program helped the nurses to move beyond decrease their worries about physical health care of patient and give high priority to improving patients' physical health.

This result consistent with **Dickens et al., (2020)** stated that statistically improvement of nurses' perceived barriers to physical health-care delivery post program implantation. Health care professionals, especially nurses, were found to be effective in tobacco control and change nurses' attitudes toward smoking in a systematic review by **Ye et al., (2018); & Drope.et al. (2018*)*** on tobacco-nicotine education and training for health care professionals including nurses and students in the United States.

The results showed that there was a highly statistically significant difference between pre-program and immediate and follow-up with three months for the attitude of all nurses toward patients physical health care. It was found that a highly improvement in nurses' physical health attitude. This outcome may be attributable to nurses being better prepared with the necessary skill set to satisfy patients' care demands, which improves their attitude and strongly predicts the level of their involvement in the physical health care of their service-users. The researcher noticed that putting current research participants into small groups helps with group discussion, exchange of experiences, and enhancing sessions with a useful and enjoyable environment. It also gives study participants enough time to profit from the program content that has been learned.

This finding is in line with a study by **Haddad et al., (2016)** showed that after the education sessions, mental health nurses had more positive attitudes about their role in physical health promotion, involvement, and care activities. Care activities that focus on weight control, quitting smoking, nutritional advice and support, cardiac health, dental, and ophthalmology in particular. The statistical improvement in total PHASe scores for the pre/post-test indicates that current educational program correlates to improvements in knowledge, attitudes, and commitment to practice. Also, this result agreement with **Hardy and Huber, (2014)** conducted a small quantitative study that found support for training nurses in the assessment of SMI patients. They discovered that after a 4-hours SMI-focused training course, nurses reported increased perceived knowledge and skills

as well as a positive attitude toward caring for people with SMI in the primary care sector.

This result is also consistent with **Hemingway et al., (2014)** who reported on five-day education workshops with 89 qualified nurses and 115 student nurses on diabetes care, physical health improvement, oral health, and wound care. When compared to their baseline scores, the nurses who attended these education workshops showed a significant statistical improvement. The study concluded that targeted education and training are clinically relevant and can inspire nurses to incorporate previously absent interventions, such as physical health assessments into their routine practice.

According to the literature, there is a knowledge and skill deficit among mental health nurses, as well as a lack of confidence in providing physical health care **(Howard & Gamble, 2011; & Nash, 2010).** Many mental health nurses fail to provide physical health care in mental health settings because they are not academically prepared at the undergraduate or postgraduate levels **(Nash, 2010; & Ramluggan et al., 2016)**. Such lack of education in physical health care has resulted in these nurses not obtaining the necessary education or skills in physical health care needed to screen, intervene, and support patients with SMI. This was supported by the current study's findings that approximately three-quarters of nurses reported a need for information/training in all areas of physical healthcare.

The second target dimension of the current study was the current practice as reported by nurses before program. The current result revealed low score of total mean before program, which increased immediately and follow up with 3 months after the program. Such result was confirmed by presence of significantly highly statistical difference between pre and immediately post program. This was consistent with a study of **Hardy, & Huber, (2014)** which revealed that, educating mental health nurses in physical health care was moderate or significant value in improving nurses 'practice related to provision of the physical health care of people with mental illness.

This may return to the fact that the current educational program is clinically relevant and can inspire nurses to incorporate previously absent interventions, such as physical health assessments and intervention, into their routine practice. Also the researcher observed that the nurses during sessions were very interested, motivated and enjoyed with intervention content. Also research program was carried out using various methods like video show, role playing, discussion which facilitate to educating mental health nurses.

In explaining the third target dimension of the study, it was found that before the program, less than three quarters of nurses reported that they require information and training on all the aspects of physical healthcare of patient with mental illness particularly in the care of patients with diabetes and cardiovascular disease, while after the program most of nurses reported that

they don't need training related to physical health care of patient with mental illness. Such result was explained by current study result that most of nurses don't attend previously any courses about nursing care for the physical health care of patient with mental illness although the hospital policy was establishing continuous courses for nurses at hospital regularly but previous courses didn't handle such current research topic. In addition to reflective statement of study subjects about program content that "This will help them in their personal and professional life". These findings concur with studies of **Brenda et al., (2013)** revealed that more than half of mental health nurses reported a need for additional education and support after completing an educational program in order to provide evidence-based care to improve the physical health of people with SMI.

Conclusion: -

Based on the study's findings, it was concluded that educational program has a positive effect on improving psychiatric nurses' attitudes and practices regarding providing physical health care for patients with severe mental illness.

Recommendations: -

I- Recommendations to hospital and nursing staff:

- Encouraging nurses regularly to follow recent researches about physical health care of patients with mental illness to ensure high quality of nursing care.

Involving all nurses in regular continuous educational training programs related to physical care to patients with mental illness should be recommended for nurses.

Integrating evidence-based interventions for physical health into routine mental health nursing practice

Revising organization's policies and rules related to nursing care and integrating the assessment of physical health into daily care plans.

II- Recommendations for nursing education and research:

Incorporating the importance of providing physical health care as well as mental health care to patients with mental illnesses into nursing curricula, particularly mental health courses.

It was suggested that conducting interventional studies which address the training needs for mental health nurses in physical health care to patients with mental illnesses and its effect on the level of nursing care as well as patients' outcomes and recovery.

Further quantitative and qualitative research to examine the extent to which patients with mental illnesses are receiving the physical health care they need.

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