

Original Research Article

Depression and suicide in chronic medical illness: train the nurses for a mental health preparedness

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ABSTRACT

Background: Depression and suicide occur as a comorbidity in chronic medical illness. The poor knowledge and attitude of staff nurses in general practice greatly impacts the identification and treatment of these patients. Training nurses on this will reduce the mortality related to this. The current study identified the effectiveness of a structured educational program in improving the knowledge and attitude of nursing personnel.

Method: A true experimental study was performed on 120 staff nurses working in different medical units of a hospital in Saudi Arabia. The samples were randomly selected and allotted 60 in experimental and 60 in control group by randomization. Pretest posttest control group design was adopted, and a video assisted structured planned training program was provided for the interventional group and the mean difference was compared.

Results: The knowledge of nurses on caring for patients with depression increased from preprogram to post program. ($M = 3.90$ to 5.17 ($t = 6.469$, $p < .001$ and for suicide, from ($M = 2.13$ to 2.53 . The attitude towards depression increased from 24.60 to 27.03 and for suicide from ($M = 20.83$, $SD = 3.75$) to ($M = 23.37$, $SD = 3.85$); $t = 5.443$, $p < 0.001$. The mean post-test knowledge was higher in experimental group for all measures except for attitude on depression with a slight increase in control group.

Conclusion: Our findings suggest PTP was effective in developing knowledge and attitude for nurses on managing depression and suicide in chronic medical areas.

Keywords: Depression, Suicide, Training, Nurses, Chronic medical illness, Mental health, Mental illness

INTRODUCTION

More than 350 billion individuals worldwide, of all age groups have faced depression in their life.¹ According to Behera et al by the year 2030, depression will be a leading disease in global burden of disease among the DALY (disability-adjusted life years).² It develops in patients with chronic medical conditions as reported by Tshomo & Chaimongkol, the incidence of depression among Bhutanese people with chronic medical conditions was about 41% ranging from mild to severe.¹

This condition is common in chronic conditions like cancer, cardiovascular, metabolic, inflammatory, and neurological problems, that ultimately results in suicide according to Korkmaz et al.³ There is a significant prevalence of (80%) depression among the chronic medical conditions reported by Belsiyal et al.⁴

Development of depression and suicide in these chronic conditions can be of various reasons like hereditary similarities, convergence of biochemical pathways, social factors, health-related behaviors, and psychological factors.³ Gold et al also reported medications used as a

treatment for the certain medical conditions also leads to this co-morbidity sometimes leading to suicide and also has a detrimental impact on the quality of life (QOL) for the one who is affected, and it increases the illness burden, chronicity, and disability of their medical condition.⁵

Diagnosing depression in people with a medical disease can be particularly difficult mainly due to overlap of symptoms Park et al in a study discovered 91.1% of surveyed nurses had never utilized a depression screening tool for patients with chronic diseases in a hospital environment, demonstrating an extremely poor practice of depression and suicide screening in medical and surgical units.^{5,6} Suicide as a consequence for depression is a major factor urging this deadly mental condition to be screened at the earliest in all the hospital unit according to Ni et al.⁷

This is supported by Jackson et al, by finding that despite the huge prevalence, depression is hardly identified in primary care settings and therefore protocols on implementing universal screening for depression and suicide must be available in these settings.⁸ Lea states the importance of identifying depression at the earliest among heart failure patients to provide prompt therapy for suicide prevention.⁹ According to belsiyal et al liaison psychiatric nurses can effectively perform depression management among chronic patients.⁴ Chauliac et al suggested skilled healthcare professionals in the same settings can be trained for a better management of suicide prevention measures in their own units.¹⁰

Lack of awareness about screening measures and the unawareness about the dangers of not screening is preventing the identification of this disease in the medical areas and creates a negative attitude towards this care as reported by Mulango et al, and their study reported just 1.8% of nurses recognized a standard tool is used to identify depression, many (66%) nurses felt uncomfortable working with depressed patients and only about half of them (49.1%) had a formal training in care of patient with depression and suicide.¹¹ Lack of skill among nurses was supported by park et.al and mentioned their limited expertise was a barrier to treat such patients.⁶ According to Kumar et al, there exists a positive association between knowledge and attitude.¹²

It is necessary to improve nurses' knowledge of depression and suicide in chronic care settings as Ni et al, found nurses in Taiwan had a limited understanding of this and thereby overlooked some significant symptoms of depression and could not provide the necessary care.⁷ An urgent need for mental health education was reported among Filipino nurses who lacked appropriate understanding and attitude about depression as per Cruz et al.¹³ This is supported by Bolster et al by stating even though nurses are in the foremost position to act upon preventing complication like suicide they lack training to initiate such prevention.¹⁴ Saini et al, supported this and

stated nurses are essential for the prevention of suicide by closely monitoring the status of patients identifying any development of suicidal ideation and must keep the risk ones under careful monitoring. However, some nurses other than psychiatric nurses lacks the necessary information, skills, or attitudes towards suicide prevention.¹⁵

The importance for nurses to be trained for depression and suicide as a comorbidity is highlighted by aljedaani et al as 79.3% of nurses in their study felt themselves a need to increase their knowledge, attitude, and behaviors about suicide prevention and management.¹⁶ Granek et al found the health care practitioners have hurdles to identify depression, to distinguish between mental health distress and suicidal, anxiety of bringing up the subject of suicide, and a lack of coping mechanisms for dealing with suicidal patients as they lack knowledge and training.¹⁷

Training programs are found to be effective as in a pretest and post-test intervention study on depression, attitudes, and confidence in delivering treatment for depression significantly improved in the intervention group after the training program according to Lee et al.¹⁸ Moreover, in India, training programs for nurses have shown to enhance nurses' knowledge and attitude about suicide. Saini et al, supported by researchers who found an immediate gain in skills, attitudes, and knowledge after such training programs, Ferguson et al.^{15,19} In the intensive care units many of them were disappointed in caring patients with mental illness, and they felt it as a waste of time and are such patients are underprivileged to be in the ICU and thereby needs training.²⁰

Researchers identified a gap in the existing knowledge of nurses providing care for these psychiatry conditions and the current study was performed with the objective to identify the knowledge and attitude of nurses on managing depression and suicide.

METHODS

The study design was a quantitative study and adopted a true experimental pretest post-test control group design. Hundred and twenty (120) staff nurses working in the chronic medical units of king Khalid University Hospital. were selected under simple random method for the research study between June to November 2018. Sixty (60) out of the total sample were randomly allocated to the experimental group and another (60) in the control group. The nurses were unaware of which groups they belong to and who would undergo training program as well as also about the second stage assessment. Randomization was implemented by computer, random draw method to allot nurses in experimental and control group.

The inclusion criteria were all staff nurses who were willing to participate in the study. Nurses who were not

willing were excluded from the study. The registered nurses from different medical units like cardiac, diabetes, oncology, neurology, and respiratory units were selected for the study. The chronic units were selected as the prevalence of depression and suicide is high in these medical conditions.

The Ethical Committee of the University approved the research. Investigators gave the participating nurses, a description of the procedures and informed them that they could participate this survey voluntarily and that they had a right to refuse this survey. All participants and investigators provided informed consent before the initiation of study.

The tools used were demographic profile, knowledge questionnaire on depression and suicide, attitude scale on depression and suicide. The tools were developing reliability using split half method and was validated and piloted before the actual study.

The whole 120 samples were provided with a demographic profile, following this, a structured validated knowledge questionnaire and attitude scale were administered. At the first assessment stage, the whole 160 nurses accomplished a socio-demographic profile, a general survey questionnaire, a structured knowledge questionnaire on depression and suicide assessing the knowledge of managing patient with depression and suicide in chronic medical areas and an attitude scale assessing the attitude towards caring for a patient with depression and suicide in these medical units.

The knowledge questionnaire comprised of a total of 13 items in which 8 items focused exclusively on depression and 8 items on suicide. The depression knowledge questionnaire assessed the ability to identify the symptoms and the common causes for depression among medical conditions like heart disease, diabetes etc., medicines as a cause for depression.

The knowledge questionnaire on suicide consisted of 5 items which mainly assessed the causes, warning signs and management of suicide. The attitude scale consisted of 18 items assessing the attitude towards care and management of patients with depression and suicide with 9 items in each category.

After the initial assessment for all participants, an educational video assisted training program focusing on prevention, assessment and management of depression and suicide were provided only to the 60 intervention group nurses. The intervention was withheld for the 60 control group nurses. After a month, when the intervention reached the set samples, the same tools used during the initial stage assessing knowledge and attitude on depression and suicide were applied on the whole 120 nurses.

Final a general awareness questionnaire about the availability of hospital policy were also administered to all the 120 nurses. Participants completed questionnaires under the supervision of trained investigators. The response rate for first and second assessment were 99% and 99% respectively.

Sample size

The sample size was calculated based on the estimated effect size calculation based on the pilot study. The standard deviation obtained in group 1 was 2.54 and group 2 was 2.31, from pilot study. Using the formula the minimum sample size required is set as 60 for each group with a total of 120 nurses.

$$N = \frac{2 \times \sigma^2 (Z_{1-\frac{\alpha}{2}} + Z_{(1-\beta)})^2}{d^2}$$

Socio-demographic data were gathered using a self-constructed questionnaire with 5 items: (1) Age of the staff, (2) gender, (3) years of experience, (4) number of patients taken care with depression or suicide in the previous year, and (5) education program attended on management of depression and suicide previously.

Depression knowledge questionnaire used to assess knowledge on depression management in chronic medical illness which included 8 items: (1) according to (DSM V) diagnostic criteria, how long is required to call a person with depressive symptoms as depressed, (2) The common symptom found in medically ill patient with depression, (3) depression in cardiac patients are mainly manifested by, (4) fact on relationship between depression and diabetes, (5) the main drug responsible for depression among medical areas, (6) risk factors of depression in patient with cancer, (7) common physical disorders associated with depression, and (8) the reason for not using psycho stimulants in patients with known cardiac structural abnormalities, cardiomyopathy or serious heart rhythm abnormalities.

Suicide knowledge questionnaire was used to assess knowledge on suicide management in chronic medical illness which included 5 items: (1) the percentage prevalence of suicide in Saudi Arabia, (2) the global ranking on mortality related to suicide, (3) the warning signs of suicide, (4) the single highest indicator of suicidal risk, and (5) the attitude to possess while caring a patient with an intent to suicide.

The attitude of nurses on managing patients with depression on a 5-point Likert scale, scored 1, 2, 3, 4, 5. The minimum and maximum scores were 1 and 45, respectively. The attitude related to depression consisted of 9 items which included statements as (1) I am comfortable in caring for patient with depression, (2) I seek help from colleague while I get depressed patient in the ward, (3) depression among medical in patients are

alarming and has to be addressed, (4) depression can be treated and can be cured like any other disease, (5) treating depression is important for a better medical prognosis, (6) Nursing care and management helps patient with depression to lead a normal life, (7) becoming depressed is a part of being old, (8) It is difficult to know whether patient is unhappy or have a clinical depressive disorder needing treatment, (9) it is rewarding to look after depressed patients.

The attitude related to caring for suicide comprises of 9 items which included (1) suicide reflects mental illness, (2) suicidal threats are always not real it's a cry for help, (3) once people are suicidal they are beyond help, (4) only health care professionals with psychiatric training should take care of attempted suicide, (5) It is difficult and unpleasant to treat an attempted suicide patient, (6) those people who attempt to commit suicide are trying to get sympathy from others, (7) suicide is a very serious moral transgression, (8) people who commit suicide are as a group less religious, (9) I would feel ashamed if a member of family commits suicide.

Statistical analysis

The sample size was calculated using power analysis. Data analysis was done by descriptive and inferential statistics, SPSS version 22 statistical software. Paired t test was performed to determine the effectiveness of the education program given and an independent t test was adopted to find the difference between the experimental and control group. An alpha level of $p < .05$ was set as a level of significance for the study and 95% confidence interval were calculated.

RESULTS

In the experimental group, among the 60 participants, most of them were females (95%). The majority (36.7%) of them were in the age group of 25 to 30 years. About (36.7%) had more than 10 years of professional experience.

A good proportion of the nurses (31.7%) handled about 11 to 20 patients with depression in the last two years. (21.7 %) of nurses had even more than 31 patients in the previous two years. Regarding an educational activity, more than half of them (61.7%) have not underwent an educational program on depression and suicide.

In the control group, among the 60 participants, most of them were females (88.3 %). Nearly half (43.3%) were in the age group of 25 to 30 years. (36.7%) of the nurses were with more than 10 years of professional experience.

Majority (35.7%) of them have handled about 11 to 20 patients with depression in the last two years. More than half of them (58.3%) of them have never underwent any educational program on depression and suicide.

A paired samples t-test showed in the experimental group, participant's mean posttest knowledge on depression increased from (3.90 ± 1.26) to post-program $(5.17 \pm SD=1.50)$ and for suicide from (2.13 ± 1.55) to post-program (2.53 ± 1.29) .

Likewise, the mean attitude score on depression, from pre-program (24.60 ± 6.00) to post-program (27.03 ± 7.22) and for suicide from (20.83 ± 3.75) to (23.37 ± 3.85) . The data shows a significant difference in the mean post-test knowledge on depression ($t = 6.469$, $p = 0.001$) and suicide $t = (2.424)$, $p = 0.018$) similarly the attitude for depression $t = (6.406)$, $p < 0.001$) and suicide $t = (5.443)$, $p < 0.001$.

The independent t test showed a significant difference ($t = 4.589$, $p = 0.001$) in mean knowledge score for depression after planned teaching program among samples in experimental group (5.17 ± 1.50) and control group (3.90 ± 1.53) .

A significant difference ($t = 3.412$, $p < 0.001$) in mean knowledge score for suicide after planned teaching program among samples in experimental group (2.53 ± 1.29) and control group (1.73 ± 1.27) .

A significant difference ($t = 5.318$, $p < 0.001$) was also obtained in overall mean knowledge score after planned teaching program among samples in experimental group (7.70 ± 2.33) and control group (5.63 ± 1.94) (Table 3).

Data also revealed that there was no significant difference ($t = 0.290$, $p > 0.05$) in mean attitude score of depression in experimental (27.03 ± 7.22) and control group (27.37 ± 5.22) whereas a significant difference ($t = 5.051$, $p < 0.001$) was noticed in attitude score on suicide in experimental (23.37 ± 3.85) and control group (19.90 ± 3.66) and also a significant difference ($t = 2.009$, $p < 0.05$) was found in overall attitude score among samples in experimental (50.40 ± 9.85) control group (47.29 ± 7) (Table 3).

General survey questionnaire on awareness of an available hospital policy in medical areas of the hospital, confidence, experience, and the nurse's opinion on the need for a teaching program on depression and suicide for medical surgical nurses for effective handling.

A survey questionnaire was also given to the nurses which identified that just 5 to 25 % of the staff nurses were confident in handling depression and suicide in their units and over 78 % of them were unaware regarding the availability of a policy to prevent suicide.

However, 84.4% of nurses took care of patients with depression in their units. Around 99 % of the samples agreed the importance of a teaching program on depression and suicide.

Table 1: Distribution of samples according to demographic variables.

S. No.	Demographic variables	Experimental group (n=60)		Control group (n=60)	
		f	%	f	%
1	Age (in years)				
	25 to 30	16	26.7	26	43.3
	31 to 35	22	36.7	17	28.3
	36 to 40	16	26.7	13	21.7
	Above 40	6	10	4	6.7
2	Gender				
	Male	3	5	7	11.7
	Female	57	95	53	88.3
3	Years of professional experience				
	3 to 5	19	31.7	18	30
	6 to 10	19	31.7	22	36.7
	Above 10	22	36.7	20	33.3
4	Number of patients handled with depression in the last two years				
	Less than 10	17	28.3	20	33.3
	11 to 20	19	31.7	21	35
	21 to 30	11	18.3	17	28.3
	Above 31	13	21.7	12	20
5	Exposure to education program				
	Yes	23	38.3	25	41.7
	No	37	61.7	35	58.3

Table 2: Mean, standard deviation, mean percentage, t value and p value of knowledge and attitude score on depression in chronic medical areas before and after planned teaching program among nurses in experimental group.

Variable	Areas	Time	Mean	Std. deviation	Mean difference	t value	P value
Knowledge	Depression	Pre-test	3.9	1.26	1.27	6.469	<0.001*
		Post-test	5.17	1.5			
	Suicide	Pre-test	2.13	1.55	0.4	2.424	0.018*
		Post-test	2.53	1.29			
	Total	Pre-test	6.03	2.16	1.67	5.352	<0.001*
		Post-test	7.7	2.33			
Attitude	Depression	Pre-test	24.6	6	2.43	6.406	<0.001*
		Post-test	27.03	7.22			
	Suicide	Pre-test	20.83	3.75	2.53	5.443	<0.001*
		Post-test	23.37	3.85			
	Total	Pre-test	45.43	7.99	4.97	7.347	<0.001*
		Post-test	50.4	9.85			

t (59) =2.001, *Significant

Table 3: Mean, standard deviation, mean percentage, t value and p value of knowledge and attitude score on depression in chronic medical areas after planned teaching program among nurses in experimental group and control group.

Variable	Areas	Group	Mean	Std. deviation	Mean difference	t value	P value
Knowledge	Depression	Experimental (n=60)	5.17	1.5	1.27	4.589	<0.001*
		Control (n=60)	3.9	1.53			
	Suicide	Experimental (n=60)	2.53	1.29	0.8	3.412	0.001*
		Control (n=60)	1.73	1.27			
	Total	Experimental (n=60)	7.7	2.33	2.07	5.318	<0.001*
		Control (n=60)	5.63	1.94			

Continued.

Variable	Areas	Group	Mean	Std. deviation	Mean difference	t value	P value
Attitude	Depression	Experimental (n=60)	27.03	7.22	0.33	0.29	0.772 (NS)
		Control (n=60)	27.37	5.22			
	Suicide	Experimental (n=60)	23.37	3.85	3.47	5.051	<0.001*
		Control (n=60)	19.9	3.66			
	Total	Experimental (n=60)	50.4	9.85	3.13	2.009	0.047*
		Control (n=60)	47.29	7			

t (118) = 1.980, *Significant, NS=Not significant

DISCUSSION

The study's main hypothesis was that the nurses who work in chronic medical areas can improve their knowledge and attitude on managing patients with depression and suicide. We assumed a planned teaching program on this for nurses would help to improve their knowledge and attitude. One month after the training program was delivered, the results showed that the knowledge and attitude had increased confirmed by a paired samples t-test which showed that the participant's level of knowledge of depression increased from pre-program (M=3.90) to post-program (M=5.17) and the participant's level of knowledge of suicide increased from pre-program (M=2.13) to post-program (M=2.53). The test also shows the attitude of participants regarding managing depression increased from pre-program (M=24.60) to post-program (M=23.37, and the participant's attitude of suicide increased from pre-program (M=20.83) to post-program (M=23.37).

The independent t test showed a significant difference in knowledge score after planned teaching program among samples in experimental group than the control group in areas of depression and suicide with a higher mean post-test knowledge in experimental group (M=5.17) than that of control group (M=3.90) and the level of knowledge on managing patients with suicide was higher in the experimental group (M=2.53) than the control group (M=1.73). The attitude on managing patients with depression was slightly higher in the control group (M=27.37) than that of experimental group (M=27.03). However, the level of attitude on managing patients with suicide was higher in the experimental group (M=23.37) than the control group (M=19.90).

This finding accords with convergent studies on nurses that looked at the efficacy of a training program in Mexico to improve primary care providers' awareness of and preparation for managing depression and suicide and the suicide risk reduction was increased after the training according to Robles et al.²¹ Other studies supported this as it was found that the knowledge and confidence of nurses on discussing suicidal thoughts were improved after a training program as informed by Terpstra et al.²² This is corresponding with another study by Fallucco et al, in which a 12-month training given to nurses on managing depression guided them to identify depression.²³ Another study which aligns with this finding

is by Lea, where an educational activity given on depression and suicide resulted an increased likelihood that nurses would routinely screen for depression.⁹ This is further supported by the findings in a train the trainer program by Hemert et al, the training for nurses showed stronger guideline adherence, more self-perceived knowledge of suicidal behavior and more provider confidence in dealing with suicidal behavior.²⁴ In contrast to this a peer training by educators were not effective to enhance knowledge and attitude on depression.²⁵

The finding was in line with the previous studies where the training contributed to the avoidance or reduction of the frequency of suicide attempts in hospitals by increasing suicide surveillance especially rural areas²⁶. In a general practitioners training program, doctors had a moderate increase in attitude and confidence in daily care of suicidal patients which helped in early prevention and treatment.²⁷

The study resulted in an increase in attitude after an education program was delivered and these findings is consistent with experimental studies in nurses where the evidence suggests that providing suicide prevention education is likely to enhance attitudes toward suicide prevention, as well as their understanding of and confidence in their ability to provide treatment for suicidal patients. These advancements could aid in preventing suicide in medical facilities according to Ramberg et al.²⁸ Contradictory to the current study Lea in their research shows that the participants had a positive belief and attitude and there was no increase in attitude after a training program given.⁹

In the current study 99 % of the staff nurses believe they need to improve their knowledge on depression and screening which is in align with the previous study conducted where 78% of the nurses says they need a training program as reported by Aljedaani et al.¹⁶ More than half of the nurses in this study 58.3% never took up any educational program on depression and suicide which corresponds to a previous study by Lee et al in which 63.6% of nurses had not received an in-service training about depression.¹⁸

The primary weakness of the study was that it might have been done on a bigger population. A sizable sample of nurses working in high-risk settings, such as Intensive care unit and emergency departments can be used in the

study's replication. The study can also be taken on long term basis to assess whether the improved knowledge and attitude have developed a better practice in caring for such patients. More qualitative research can be done with focused interviews with the nurses for better clarity. The study can be replicated in multiple research settings across Saudi Arabia to plan a standardized interventional approach.

CONCLUSION

This trial provides the evidence of the effectiveness of an educational program that educators and administrators can implement in the medical units of hospitals. Participating in such a program can increase nurses' understanding, confidence and thereby can provide safe care for patients developing depression as well as if any suicidal emergency arises. For nursing staff, lack of understanding is a major barrier, particularly in non-psychiatric settings including oncology, neurology, and cardiac medicine, where many patients might develop complications of depression and suicide due to a variety of causes. Future research may examine additional techniques for evaluating nurses' screening for depression and suicide in primary care settings. Studies that support our findings are required to demonstrate the value of education in enhancing nursing care for patients with life-threatening diagnoses of depression and suicide in chronic medical units.

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