Effectiveness of Psychoeducational Program on depression among Suicidal Patients at EL Minia Poisoning Control Center

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Abstract: This study aimed at assessing, planning, and implementing a psycho-educational program and to evaluate its effectiveness on depression of suicidal patients. A pre-post test research design was utilized in this study. A sample of convenience of 50 suicidal patients was recruited from EL Minia Poisoning Control Center. A personal and medical assessment data sheet, Hamilton depression scale, and Pierce suicide intent scale were used to achieve the purpose of the study. A structured interview method was used to collect data from patients. Psychoeducational program was developed and implemented in about eight sessions for each group of the patients, and follow up was done after one month. Results revealed that, almost two thirds of the sample was females, unemployed, residing rural areas, and most of them were in the age group ranged from 20<30 years old. The majority of the sample had a high intent for suicide. Statistically significant differences were found between pre, post, and follow up test regarding depression. Statistically significant positive correlations were detected between depression and suicide intent. In conclusion suicidal patients had a high level of depression so, this group of patients were in a great need for continuous psychological treatment and educational program for them and their families. It was recommended that, structured group activity sessions are needed for suicidal patients, and creative non competitive activity for teaching them the social skills for interaction with others, and how to cope with depression and suicidal ideation.

1.Introduction

According to **Masih & Davilly (2005)**, depression is one of the most common and serious mood disorders which interfere with a person's mood (the internal emotional state of a person). In addition, depression can affect all aspects of a person's life including work, leisure, relationships, and future goals and plans. Furthermore, the authors identified that, there is a great impact on the family of the person suffering from depression as the person may find it difficult to communicate feelings and concentrate. In general, the depressed person may find it very difficult to be involved and enjoy the company of others and activities, including sleeping and eating, as they did prior to the depression.

Depression is one of the most common psychiatric problems, is marked by a recurrent course and elevated psychiatric comorbidity, and increases risk for future suicide attempts, academic failure, interpersonal problems, unemployment, and legal problems **(Klein *et al.*, 2008)**. Thus, numerous researchers have designed and evaluated depression prevention programs. Most prevention programs have targeted factors that have been found to increase risk for future onset of depression or increases in depressive symptoms that have emerged from prospective studies, including negative cognitions, infrequent pleasant activities, social skill deficits, and problem solving skill deficits **(Hankin *et al.*, 2001)**.

Suicide is a global problem, resulting in approximately 1 million deaths each year. According to the **Centers for Disease Control (CDC)(2009)**, suicide is the eleventh leading cause of death in the United States, occurring at a rate of 10.8 per 100,000 persons and claiming more than 30,000 lives annually. However, suicide rates vary by time and across populations. For instance, during the past 15 years, the annual rate of suicide has been anywhere between 10.7 and 12.0 per 100,000. Moreover, the occurrence of suicide varies with environmental, demographic, personal, and other characteristics influencing the rate of suicide within certain cohorts, communities, and contexts. Occupation, gender, and health, for example, are each substantial factors in the epidemiology of

suicide **(John, 2002)**. About the last statistics of suicidal poisoning in Egypt males in the age group of 15-40 years old about (2121) case, and female in the same age group were (6002) case (Ain shams center, 2008). In the same respect, Mohammed Amr (2006) reported that, there is no definite number of suicide cases, but the center of poisoning in Cairo university have about 200 cases each month, it about 2400 cases each year, and the center was reported about 2335 suicide case among the Egyptian youth in the age group between 22-32 years old during the year of 2006.

Although suicidal behavior represents a serious mental health problem, few psychosocial interventions have been empirically demonstrated to reduce future suicidal behavior **(Rudd *et al.*, 2001)**. In a study about the effect of cognitive therapy for adolescent and young adult suicide attempters the result was that, the intervention has a positive impact on reducing subsequent suicidal behavior **(Henriques *et al.*, 2003)**. Therefore, there is a great need for implementing a psychoeducational program for suicidal patients to reduce their stress and depression.

Significance of the study

Data generated from this study would help in planning and managing care of suicidal patients as well as training adequately the personnel responsible for the provision of such care. Moreover, delineating problems of such patients will help nurses and the family of those patients to institute appropriate measures for reducing these problems. It is also hoped that this study will generate attention and intervention for further investigation in this topic that might be helpful in providing evidence-based data that can promote treatment regimen, nursing practice and research. Also, the lack of local research that concern with such a problem help the conduction of this study.

Aim of the study

The aim of the present study is to assess, plan, and implement a psychoeducational program and to evaluate its effectiveness on the degree of depression among suicidal patients.

Research hypothesis

- The psychoeducational program will have a positive effect in reducing level of depression among suicidal patients
- The psychoeducational program will have a positive effect in reducing suicidal attempts among suicidal patients

2.Subjects and Methods

Research design: A pre-post test research design was utilized in this study

Setting of the study: The study was conducted at EL Minia Poisoning Control Center which was developed in 2003 in EL Minia University hospital, the capacity of the center is 20 beds for inpatients and 5 beds for emergency. This center serves EL Minia governorate.
Subjects & sample: A convenience sample consisted of 50 adult male and female suicidal patients admitted to the inpatient at EL Minia Poisoning Control Center were included in the study. The patients' age ranges from 20-50 years old and they attempted suicide once or more by drugs and/or insecticide.

Tools of data collection
1- Personal and clinical data questionnaires:

This questionnaire was developed by the researcher, it included personal data such as patient age, gender, level of education, occupation, marital status, residence, phone number if available, diagnosis, date of admission, number of suicidal attempts, and methods of suicide.

2- Hamilton Depression Scale

The scale was developed by Max Hamilton (1960) for measuring depressive symptoms and their intensity. It consists of 17 items. The scoring system was as follows: items from 1-8 have five points likert scale ranging from 0-4, and items 9-17 have three points likert scale ranging from 0-2. The total score of the scale was classified as normal (0-7), mild depression (8-13), moderate depression (14-18), severe depression (19-22), and most severe depression (23 and more). The scale was translated to Arabic language in (1996) by Fatieem. The Arabic version was used and its test-retest reliability was done and equal to 0.95.

3-Pierce Suicide Intent Scale:

The English version of this scale was developed by Pierce (1977); this scale was a modified version of the Beck Suicide Intent Scale (1974). It consists of 12 items, divided into three subscales: the first six items described "*circumstances score*", from "items 7 through 10 describe *self-report score*, and the last two items describe "*medical risk score*". It was translated into Arabic version by the researcher and was revised by supervisors in psychiatric nursing and medicine for content validity, and professors in English and Arabic languages. Subjects were asked to use 3-point likert scale ranging from 0-2 except for the item of premeditation that ranges from 0-3. The total score was 25; the grades were distributed as low intent (0-3), medium intent (4-10), and high intent (more than 10) test-retest reliability of translated and back translated versions was 0.96.

Description of the educational program

The educational program has been developed by the researcher based on the relevant literature, and the available resources.

General objective of the program:

The overall objective of the developed educational program was to decrease the degree of psychological distress of suicidal patients.

Development of the educational program:

The proposed program was conducted through the following phases:

1-Assessment phase (early phase):

This phase was aiming at assessing the patients' level of stress, depression, and their suicidal intent. Based on the assessment phase, the program, and media were prepared by the investigator in the form of booklet, and audiovisual materials. The program content was revised by a group of experts for content validity and relevancy. Based on the opinion of the experts some modifications were done to ensure clarity of the tools and feasibility of the program.

2-Planning (preparatory phase)

The planning phase included the program strategy time, number of sessions, teaching methods, media used, and learning activities). In addition, the teaching place and the program facilities were checked for appropriateness. Numbers of sessions were 8 sessions for each subgroup, one session every day. Teaching sessions of the program were conducted at a room of the center, in EL Minia University Hospital.

Program teaching methods

A variety of teaching methods were included in this program lectures, group discussion, and role play were utilized in the program.

3-Implementation of the program

Oral agreement for participation was obtained from patients. Each patient was interviewed to obtain the socio-demographic data such as age, gender, marital status, education, method and the number of suicidal attempts, and the assessment of level of depression and stress, and the intent of suicide through its scales. The same program was implemented for each subgroup of patients. A total of eight sessions were conducted for each group in addition to the pre assessment session.

Procedure

- A review of the related literature which covering various aspects of the problem was done, using available books and journals, to get acquainted with the research problem and to implement the study.
- An official permission was granted from hospital authorities to proceed with the study.
- The purpose of the study was explained to the subjects and verbal consent was taken from each participant for participation in the study. The investigator assured the voluntary participation and confidentiality to each subject who agreed to participate.
- The investigator collected data and applied the program over a period of nine months through interviewing participants; the studied sample were divided into five subgroups, each includes ten patients, each session was conducted for about one to two hours every day for each group in one of the rooms of the poisoning control center.
- Pre/post assessment tools were utilized to collect the desired data by the investigator and the follow up of the patients was done after one month of implementing the proposed program.

Pilot Study

A pilot study was conducted at the beginning of the study. It included 10 cases of the total sample to investigate the feasibility of data collection tools for their content validity as well as clarity. A total of 10 subjects were recruited for the pilot study. All subjects recruited in the pilot study met the criteria for the inclusion in the study. Subjects included in the pilot study were excluded from the actual study sample and results of the pilot study were not included in the current study.

Statistical Analysis

Data were analyzed using the statistical package for social science (SPSS) version 11.5 Numerical data were expressed as mean and SD. Qualitative data were expressed as frequency and percentage. For quantitative data, comparison between two variables was done using t-test, and comparison between more than two variables used ANOVA test. Probability (p-value) less than 0.05 was considered significant and less than 0.001 was considered highly significant.

Ethical consideration

Participation in the study was voluntary; each subject had the right to withdrawn from the study when he or she wanted. And oral informed consent was obtained from participant. Confidentiality and anonymity of the subject were assured through coding.

3.Results:

Table (1) showed that, the studied sample consisted of 50 patients, 70% of them their age ranges from 20 <30 years old. 48% were illiterate, while 68% of the sample was unemployed, 52% of the sample were married, 60% of the sample were females, and 82% were residing rural area.

This table (2) illustrated that, at pre test, it was found that, 70% had most severe level of depression and 96% of them had high intent for suicide. However, immediately post test, it was noticed that, 74.9% had moderate level of depression. At follow up, it was found that 60% had moderate level of depression.

Table (3) revealed that the mean score of depression was 29.00±8.11 at preprogram. However, it was 16.94±2.31& 15.30±2.71 immediately post program and at follow up respectively. This indicates that the level of depression improved immediately post test and this improvement was slightly decreased at follow up. Moreover, statistically significant differences were found between pre, post program, and at follow up regarding depression (f=94.64 at p=.000).

Table (4) revealed that, the total mean score for depression was higher among female than male patients at pre, post program, and follow up (30.90±7.46, 17.60±1.95, 15.83±2.25 respectively). In addition, statistically significant differences were found between males and females regarding depression at pre, and post test (t=2.09& 2.72 at p=.041 & .009 respectively).

Table (5) described that, the mean scores of depression were higher in single than married patients at pre and post test(29.67±7.40, 17.00±2.54 respectively).

Table (6) illustrated that, the total mean score of depression was higher among unemployed patients at pre, post program, and at follow up it was (30.38±7.53, 17.21±2.26, 15.38±2.35 respectively). There were no statistically significant differences found between employed and unemployed regarding depression during pre, post program, and at follow up.

Table (7) showed that, the total mean score of depression were higher among rural patients at pre, post program, and at follow up (30.32±8.01, 17.23±3.31, 15.47±2.87 respectively). Statistically significant differences were found between urban and rural groups regarding depression at pre program (t=2.58, at p=.01).

Table (8) reflected that, the mean score for depression was higher in the patients who ingested insecticides than patients who received oral drugs in the preprogram (29.31±8.44). No statistically significant differences were found between methods of attempting suicide regarding depression in the pre post program and at follow up.

Table (1): distribution of the studied sample according to personal data (n= 50)

Items	No	%
1-Age		
• 20 <30	35	70.0
• 30<40	9	18.0
• 40 or more	6	12.0
• Mean±SD	28.38±9.28	
2-Level of education		
• Illiterate	24	48.0
• Secondary school	21	42.0
• University	5	10.0
3-Occupation		
• Employed	16	32.0
• Unemployed	34	68.0
4-Marital status		
• Married	26	52.0
• Single	24	48.0
5-Gender		
• Male	20	40.0
• Female	30	60.0
6-Residence		
• Urban	9	18.0
• Rural	41	82.0
7-Method of suicide		
• Insecticide	39	78.0
• Drugs	11	22.0

Table (2): Frequency distribution of the levels of depression, and suicide intent among the studied sample during pre-post-test and at follow up (n=50)

Items	Pre-test n=50		Post-test n=48		Follow up n=40	
	No	%	No	%	No	%
2- Depression						
• Normal	-	-				
• Mild	-	-	4	8.4.0	11	27.5.0
• Moderate	5	10.0	36	74.9.0	24	60.0
• Severe	10	20.0	8	16.7.0	5	12.5.0
• Most severe	35	70.0	-	-	-	-
3- Suicide intent						
• Low intent			-	-	-	-
• Medium intent	2	4.0	-	-	-	-
• High intent	48	96.0	-	-	-	-

Table (3): The impact of the training program on stress and depression(n=50)

Variables		Depression
Pre-test (n=50)	Mean ±SD	29.00±8.11
post-test (n=50)	Mean ±SD	16.94±2.31
Follow-up (n=50)	Mean ±SD	15.30±2.71
F		94.64
P		.000
Pre-post	Mean ±SD	11.71±7.60
	T	10.66
	P	.000
Pre-follow up	Mean ±SD	11.70±7.15
	T	10.34
	P	.000
Post-follow up	Mean ±SD	1.52±2.42
	T	3.97
	P	.000

Table (4): The impact of the program on stress, and depression in relation to gender during preprogram, post program and at follow up(n=50).

Items	Pre-test (n=50)			Post-test (n=48)			Follow up (n=40)		
	Mean ±SD	T	P	Mean ±SD	T	P	Mean ±SD	t	P
Depression									
Males	26.15±8.41	2.09	.041	15.83±2.50	2.72	.009	14.50±3.20	1.54	.130
Females	30.90±7.46			17.60±1.95			15.83±2.25		

* P<0.05;   ** P<0.000

Table (5): The impact of the program on stress, and depression in relation to marital status during preprogram, post program and at follow up(n=50).

Items	Pre-test (n=50)			Post-test (n=48)			Follow up (n=40)		
	Mean ±SD	t	P	Mean ±SD	T	P	Mean ±SD	t	P
Depression									
Married	28.38±8.82	.554	.582	16.88±2.16	.170	.866	15.48±3.04	.477	.636
Single	29.67±7.40			17.00±2.54			15.06±2.27		

* P<0.05

Table (6): The impact of the program on stress, and depression in relation to occupation during preprogram, post program and at follow up(n=50).

Items	Pre-test (n=50)			Post-test (n=48)			Follow up (n=40)		
	Mean ±SD	T	P	Mean ±SD	T	P	Mean ±SD	t	P
Depression									
Employed	26.06±8.77	1.79	.079	16.33±2.41	1.22	.227	15.14±3.39	.265	.792
Unemployed	30.38±7.53			17.21±2.26			15.38±2.35		

* P<0.05;   ** P<0.00

Table (7): The impact of the program on stress, and depression in relation to residence during preprogram, post program and at follow up(n=50).

Items	Pre-test (n=50)			Post-test (n=48)			Follow up (n=40)		
	Mean ±SD	t	P	Mean ±SD	T	P	Mean ±SD	t	P
Depression									
Urban	23.00±5.78			15.67±2.00			14.63±1.99	.781	.440
Rural	30.32±8.01	2.58	0.01	17.23±3.31	1.87	.068	15.47±2.87		

*P<0.05;   ** P<0.00

Table (8): The impact of the program on stress, and depression in relation to methods of suicide during preprogram, post program and at follow up(n=50).

Items	Pre-test (n=50)			Post-test (n=48)			Follow up (n=40)		
	Mean ±SD	T	P	Mean ±SD	T	P	Mean ±SD	t	P
Depression									
Insecticides	29.31±8.44	.501	.619	16.78±2.50	.840	.406	15.45±2.80	.650	.520
Drugs	27.91±7.10			17.45±1.50			14.78±2.48		

4.Discussion

The present study revealed that, the majority of the sample had a most sever level of depression, and the highest level of suicide intent (Table 2). This result is in agreement with **Sharaf (2002)** who reported that, comorbid depression was found to be a significant risk factor for suicide, since a positive association between degree of depression and suicidal risk was profound. In other words, the severity of depression significantly increased the probability of suicide.

The current study revealed that, the patients' levels of depression were highly significantly improved after the implementation of the training program at the post test and at follow up (Table 3). This result might be related to the positive impact of the program in which the patients were actively attending the program sessions, explain their problems and held feeling openly, discusses their abilities and disabilities in solving problems, learn how to deal with depressive symptoms, and when asking for medical advice and to whom, and learn how to develop a plan to prevent suicide attempt.

This result was in agreement with **Eric Stic et al., (2010)** who reported that, in a study about brief cognitive behavioural depression prevention program, the result showed significantly greater reductions in depressive symptoms at post test and 6 month follow up. In the same context **Nordentoft (2007)** reported that, in a study about the prevention of suicide and attempted suicide in Denmark, there were reduction on the risk of repeated suicide in the intervention group, and significant improvement in Beck's Depression Inventory.

Also, the result was in accordance with **Young (2006)** who reported that, in a study about the efficacy of intervention for depression prevention; the result revealed that, there was significant reduction of depressive symptoms in study group than control group post intervention and follow up. In the same respect **Barker and Natalia (2003)** reported that in a study about coping with depression, the prevention program was effective in reducing depressive symptoms.

Moreover, the present study revealed that, there were statistical significant differences between male and female groups in relation to depression throughout the program, and the mean scores for depression were improved through the program for both male and female groups, but the male patients recorded higher significant improvement at the post program and follow up related to the total scores of depression than females (Table 4). These results indicated that, the program had a positive impact on the patients' depression which related to gaining of knowledge and techniques during the program. But for the higher improvement of males than females this could be attributed to that male are stronger than females in handling the stressful situations. However, females are fragile, more sensitive than males, and they have multiple duties that make them more stressed than males as child bearing, and duties toward their family, and some of them have a job.

This result was not supported by **Kimberly (2002)** who reported that, there was a significant improvement in suicide rate after implementation of suicide prevention program and there were gender differences which significant to females. In another study about the predictors of efficacy in depression prevention program which done by **Jan Liopis (2003),** reported that, there was greater effectiveness on the depression levels post program, and the effectiveness were greater for females than males.

In the current study, it was found that, there was significant reduction in the scores of depression in both married and single groups at the post test and follow up, but the improvement were higher in post test in the married than single group (Table 5). These findings could be attributed to the positive effect of the program sessions, the patient learn the stress management techniques, how to express their feeling freely, how to manage with depressive symptoms, and how to overcome the suicidal ideation, and the married patients may express their feelings with their family, discuss their problems with them, which decreased their feeling of loneliness and their children can relieve their feelings of stress and depression when caring for them. All of these may lead to their improvement after the program.

There was a significant reduction in the level of depression in the employed than unemployed (Table 6). These findings indicated that, employed patients feel less stressed as they have financial support through the work that help them meet their needs and through the work they can express their feelings with their peers and gain support and benefit from their experiences in dealing with various stressful life events. This result was supported by **Nauert (2008)** who studied the relationship between the economy, unemployment and suicide and found that, economic circumstances themselves are insufficient to cause a suicide; in fact, there was no single factor that is sufficient on its own to "cause" a suicide. Stressors such as the loss of a job, a home, or retirement security can result in shame, humiliation or despair, and in that context, can precipitate suicide attempts in those who are already vulnerable or do not have sufficient resources to draw on for support. In most, but not all cases, mental health problems are among the factors that increase vulnerability. Moreover, unemployment (and resulting financial strain) is associated with depression, substance abuse problems and marital turmoil, all of which are independently linked to suicide risk.

As regards residence, it was apparent that there was significant improvement on the total score of depression among both patients who lived in rural and urban areas. Moreover, patients who lived in urban areas recorded higher significant improvement regarding the total score of depression at post program and follow up than those from rural areas (Table 7). This results indicated that the positive impact of the program on improving patients depression regardless their residence, but for more improvement in patients who lived in urban areas which could be due to the life of the urban areas was different somewhat than rural areas in the places where one can go for trip, people in the urban areas have a multiple friends can go even male or female, they have the ability to express their feelings somewhat freely than rural areas and most of them were educated and can find a chance for works than those of rural areas where there a limited resources and health services limited places for time enjoyment, and the cultural beliefs about the psychological problems.

To summarize, suicidal patients are unable to interact well with other people due to feeling of low self-esteem, helplessness, severe feeling of stress and depression those feelings which leads to high intention for suicide. So, they are greatly in need for social support from their significant persons to assist them and improve their ability to cope with their illness, and in a continuous need for psychological counseling for them and for their families for helping them to learn how to cope with stress and depression and how to overcome suicidal ideation.

Conclusion

Based on the result of the present study it can be concluded that, suicidal patients were suffering from multiple stressors with severe depressive symptoms, and they think that death is the only solution for these stressors, which leads to high intention for suicide. So, they need continuous psychological counseling, and social and emotional support from their significant others to maintain their ability to decide, work, interact, and to change their view of life, and cope with stressors positively to decrease their suicidal attempts.

Recommendations
1. A structured counseling program should be developed for patients' families and friends to promote their ability for coping with depression, providing them with needed social and emotional support, in order to prevent symptoms recurrence and suicidal attempts.
2. Further experimental studies involving control groups, and using a large probability sample for generalization of results are needed and recommended.

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