

Evaluation of an Education Program for Elementary School Teachers Regarding Post-Traumatic Stress Disorder among Pupils in Mosul City

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Abstract

Background: The ability of teachers to recognize and respond appropriately to the emotional and social needs of their pupils plays a key role in promoting pupils' mental health. In the absence of teachers' supportive roles, some susceptible pupils may experience unrecognized sadness, despair, and/or anger. As a result pupils can get low academic performance, and loss of control over their lives. Therefore, teachers must be involved in specific education programs and training sessions about common childhood mental health disorders, especially post-traumatic stress disorder. In addition, ensuring that the majority of teachers have benefited from such programs is an important aspect.

Objectives: The study objective is to construct and evaluate an education program for elementary school teachers about post-traumatic stress disorder among pupils.

Materials and Method: A Quasi-experimental design was carried out through the present study with application of pre and post-tests approach. The study sample consisted of (60) teachers participated voluntarily in the study. Teachers were randomly selected from (60) elementary schools inside Mosul (Mosul is the second largest city in Iraq). The study subjects were divided into two equal groups of (30) teachers, study group which was exposed to the education program, while the control group was not exposed to the education program. Data were analyzed by using SPSS version-25.

Results: The results reveal that there are statistically significant differences in teachers' knowledge regarding all (PTSD) related knowledge domains in comparison between pre and post tests for study group compared with control group.

Conclusion: The study concludes that there is a considerable acquisition in teachers' knowledge regarding post-traumatic stress disorder following program implementation.

Recommendations: The study recommends to construct and apply such mental health education programs in most Iraqi governorates elementary schools.

Keywords: *Evaluation, Education Program, Post-traumatic Stress Disorder.*

Introduction

Mental health education programs can provide instructions and advices for teachers to support the pupils

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with mental health disorder at schools. The risk of mental health disorders can be reduced significantly by routine attention, psychological awareness, support, as well as referral for pupils with psychological distress symptoms to mental health professionals. Pupils, especially those at schools located in regions which were exposed armed conflict and wars events, are more vulnerable to get emotional disturbing symptoms¹. To motivate teachers' supportive roles, they should be given proper

and adequate training, and opportunities for continuing mental health education. To achieve that, constructing an education program about post-traumatic stress disorder is necessary to help teachers improving and developing their knowledge and practices to insure mental well-being for pupils ^(1, 2). Post-traumatic stress disorder (PTSD) is a severe mental disorder which develop in response to an unexpected emotional or physical trauma that could not be controlled ³. With PTSD, a person feels distress long after the event is over ⁴. Since classroom teachers spend several continuous hours a day with their pupils, they are often in an excellent position to detect early physical, psychological and behavioral changes in pupils at school. Teachers may observe differences in the usual pattern for a particular pupil ^(4, 5). Education of teachers about the impacts of such traumatic events provides an opportunity for direct treatment of issues affecting the children and his or her environment. Education can help teachers acquire specific knowledge and practices for effective and appropriate interaction with pupils, and for successful management of challenging situations ⁶. Experts believe that the course of mental illness may be less severe if early detection and effective intervention are implemented. In addition, teachers education is particularly effective in relieving children from the burden of traumatic events and their related emotions, as well as in mitigating the consequences and symptoms of the trauma ⁷.

Objectives

The study aimed to construct and evaluate an education program for elementary school teachers about post-traumatic disorder among pupils in Mosul city.

Methodology

A quasi-experimental design was applied to attain the objectives of this study for the period from (1st December 2018 to 30th August 2019). After reviewing reports of mental health disorders in Nineveh directorate of health and consulting many mental health professionals there, it was obvious that post-traumatic stress disorder had high prevalence rates among elementary school pupils

in Mosul city, so, the researchers selected this disorder to construct an education program regarding it and apply it on the elementary school teachers. Therefore, the researchers constructed PTSD related lectures and a special questionnaire after reviewing many PTSD related literatures. The questionnaire was composed of two main parts: **Part-I:** Teachers' socio-demographical data such as (age, gender, marital status, years of employment, and educational level)., **Part-II:** This part is concerned with multiple choice questions (MCQs) to evaluate the teachers' post-traumatic stress related knowledge which included six domains as follow: **Domain-1:** Eight (MCQs) about concepts of childhood mental health., **Domain-2:** Eight (MCQs) about the psychological trauma., **Domain-3:** Eight (MCQs) about the impacts of psychological trauma., **Domain-4:** Eight (MCQs) about Post-traumatic Stress Disorder and its symptoms., **Domain-5:** Eight (MCQs) about DSM-5 Criteria for PTSD., **Domain-6:** Eight (MCQs) about protection factors and prevention. The program lectures and questionnaire were exposed to (15) experts for validation. The questionnaire reliability was measured through a technique of test-retest after application that on ten teachers out of the study sample, the reliability was ($r= 0.83$). The study sample consisted of (60) teachers who participated voluntarily in the study. Teachers were randomly selected from (60) elementary schools inside Mosul city after dividing the city into two sides (Right side and left side of Tigris River), then selected (30) schools from each side and one teacher was selected from each school in a probable manner. The sample was divided randomly into two equal groups of (30) teachers, one group was exposed to the education program; **study group**, while the second was not exposed to the education program; **control group**. The education program was consisted of five major sessions, it has been implemented on (30) teachers of study group only through six classroom sessions. All sessions were conducted in a special hall in Nineveh directorate of education- department of preparation and training which located in left side of Mosul city. The educational program was started in 13th April till 30th April, 2019.

Results

Table(1): Distribution of Socio-demographical Characteristics of the Study Subjects and Homogeneity between Study and Control Groups:

Characteristics	Groups	Study (n = 30)		Control (n=30)		Total (n=60)		Homo-geneity
		F	%	F	%	F	%	t
Age	30-40 years	17	56.7	15	50.0	32	53.4	-.167
	41-50 years	7	23.3	10	33.3	17	28.3	
	51-60 years	6	20.0	5	16.7	11	18.3	
	Mean (SD)	42.23 (7.66)		42.57 (7.79)		42.40 (7.66)		
Gender	Group	F	%	F	%	F	%	χ^2
	Male	14	46.7	17	56.7	31	51.7	.601
	Female	16	53.3	13	43.3	29	48.3	
Marital Status	Single	5	16.7	4	13.3	9	15.0	.137
	Married	19	63.3	20	66.7	39	65.0	
	Widowed	4	13.3	4	13.3	8	13.3	
	Divorced	2	6.7	2	6.7	4	6.7	
Years of Employment	1-5 years	4	13.3	3	10.0	7	11.7	1.190
	6-10 years	6	20.0	6	20.0	12	20.0	
	11-15 years	11	36.7	10	33.3	21	35.0	
	16-20 years	1	3.3	3	10.0	4	6.7	
	≤ 21 years	8	26.7	8	26.7	16	26.7	
Educational levels	Preparative	8	26.7	10	33.3	18	30.0	Z = -.482
	Institute	12	40.1	11	36.6	23	38.3	
	University	10	33.3	9	30.0	19	31.7	

N: Number, F: Frequency, %: Percent, t: t-test, χ^2 : Chi-square, z: Mann-Whitney U Statistics.

This table illustrates that the total number of teachers who participated in the study were (60) teachers. Their age ranged between (30-60) years old. The overall mean age for the participants is 42.40 (SD=7.66). The table also shows that the highest percentage of the sample (53.4%) was at the age group of (30-40) years old, while the lowest percentage of them (18.3%) was at the age group

of (51-60) years old. Concerning other demographical variables; the table shows that about (51.7%) of the sample were male. On the other hand, the majority of teachers (65%) were married. Regarding teacher's work experience, the table indicates that (35%; n=21) of the sample were having years of employment ranged between (11-15) years. Finally, the table demonstrates

that the highest percentage (38.3%) of sample were possess a diploma degree and approximately (31.7%) were having bachelor’s degree.

Table(2): Distribution of Baseline(pre-test) Among Post-Traumatic Stress Disorder Related Knowledge domains and Homogeneity Between Study and Control groups:

	Groups	Study (n =30)		Control (n=30)		Total (n=60)		t
	Domains	M	SD	M	SD	M	SD	
PTSD Related Knowledge	Domain One	3.53	1.43	3.47	1.33	3.57	1.267	.187
	Domain Two	2.97	1.32	3.30	1.05	2.97	1.221	-1.077
	Domain Three	3.00	1.20	3.30	1.14	3.03	1.057	-.987
	Domain Four	2.87	1.45	2.80	1.42	2.93	1.233	.179
	Domain Five	3.17	1.39	3.17	1.41	3.12	1.223	.000
	Domain Six	3.37	1.15	2.90	.923	3.38	1.027	1.725
	Total Knowledge	18.90	4.83	19.10	3.18	19.00	4.058	-.189

M: Mean, SD: Standard deviation, t: t-test, Maximum PTSD domains knowledge Score= 8; Minimum PTSD domains knowledge Score= 0; Maximum PTSD total knowledge Score=48; Minimum PTSD total knowledge Score= 0, All group differences $p > 0.05$.

This table indicates that there were no statistically significant differences in baseline (pre-test) among post-traumatic stress disorder related knowledge domains between study and control groups.

Table(3): Descriptive Statistics and Results of Mixed ANOVA Measuring Change in Post-Traumatic Stress Disorder Related Knowledge over Time across Study Groups:

PTSD Related Knowledge	Groups	M (SD)			Multivariate F
		Time-1	Time-2	Time-3	
Domain One	Study	3.53 (1.43)	4.67 (1.64)	4.40 (1.40)	F (2, 57) = 9.682, $p < .001$, $\eta^2 = .254$
	Control	3.47 (1.33)	3.93 (1.11)	3.83 (1.08)	
Domain Two	Study	2.97 (1.32)	4.27 (1.43)	3.90 (1.42)	F (2, 57) = 6.375, $p = .003$, $\eta^2 = .183$
	Control	3.30 (1.05)	3.20 (1.34)	2.90 (1.29)	
Domain Three	Study	3.00 (1.20)	5.80 (1.56)	5.50 (0.93)	F (2, 57) = 9.698, $p < 0.001$, $\eta^2 = .554$
	Control	3.30 (1.14)	3.50 (1.30)	3.40 (1.10)	

Cont... Table(3): Descriptive Statistics and Results of Mixed ANOVA Measuring Change in Post-Traumatic Stress Disorder Related Knowledge over Time across Study Groups:

Domain Four	Study	2.87 (1.45)	5.17 (1.55)	5.37 (1.15)	F (2, 57) = 17.433, p < 0.001, η^2 = .380
	Control	2.80 (1.42)	3.00 (1.01)	2.80 (0.96)	
Domain Five	Study	3.17 (1.39)	5.23 (1.87)	5.27 (1.72)	F (2, 57) = 13.736, p < 0.001, η^2 = .325
	Control	3.17 (1.41)	3.13 (0.81)	3.27 (1.17)	
Domain Six	Study	3.37 (1.15)	4.97 (1.75)	4.63 (1.67)	F (2, 57) = 11.006, p < 0.001, η^2 = .279
	Control	2.90 (.923)	3.27 (1.17)	3.23 (1.30)	
Total Knowledge	Study	18.9 (4.83)	30.1 (3.60)	29.0 (3.95)	F (2, 57) = 67.654, p < 0.001, η^2 = .704
	Control	19.1 (3.18)	20.0 (3.03)	19.4 (3.15)	

Study group (n = 30); Control group (n = 30); M: mean, SD: standard deviation, minimum domain score = 0, maximum domain score = 8, minimum total PTSD knowledge score = 0, maximum total PTSD knowledge score = 48, p < 0.000 indicated in bold, η^2 : Eta Squared.

This table shows the results for Mixed design analysis of variance (ANOVA). For this analysis, there was one between subjects' factor (group with two levels; [study (intervention) and control (non-intervention)]) and one within subject factor (time of testing with three levels: Time-1, Time-2, Time-3). All effects reported as significant at P < 0.05. This test showed that the changes among knowledge mean scores were a result of time, not of condition (group) or interaction between time of test and types of groups.

Table (4): Post-hoc Test Using Bonferroni Corrections Procedure:

PTSD Related Knowledge	Groups	Post hoc Using Bonferroni		
		T1 vs. T2	T1 vs. T3	T2 vs. T3
Domain One	Study	.000	.000	.037
	Control	.485	.796	1.000
Domain Two	Study	.000	.003	.446
	Control	1.000	1.000	.708
Domain Three	Study	.000	.000	.791
	Control	.437	.705	1.000
Domain Four	Study	.000	.000	1.000
	Control	1.000	1.000	1.000
Domain Five	Study	.000	.000	1.000
	Control	1.000	1.000	1.000
Domain Six	Study	.000	.000	.544
	Control	1.000	1.000	1.000
Total Knowledge	Study	.000	.000	.105
	Control	.630	1.000	.644

Study group (n = 30), Control group (n = 30), p < 0.05 indicated in bold.

On the basis of these results, the post-hoc procedure by using Bonferroni corrections test was conducted to

determine where the differences among the changed knowledge exactly lies. The test revealed that the scores of knowledge were significantly different among study group over times ($p < 0.05$). Concerning control group, the post-hoc test revealed fluctuation of the knowledge mean score over times. However, no exact improvement or stable continuous significant change in score over time was observed.

Discussion

The most challenges that the researchers faced, were that there were no any related literature and previous studies about such health education program regarding post-traumatic stress disorder among pupils. The study findings revealed that the participants' age is ranged between (30-60) years old. **Table-1** showed that the [mean (\pm SD)] of teachers' age for study (experimental) group was [42.23 (\pm 7.66)] and for control group was [42.57 (\pm 7.79)]. This table also demonstrated that the highest percentage of the study group gender was females(53.3%), while the highest percentage of the control group gender was males (56.7%). **Table-1** also illustrated that the majority of the study and control group subjects were married, they accounted (63.3%, 66.7%) respectively. **Table-1** identified that (35%; n=21) of the study subjects(study and control groups) were having years of employment ranged between (11-15) years.

Table-1 also illustrated that about (38.3% ; n=23) of sample were possess an institute degree certificate and approximately (31.7%; n=19) were having university degree certificate. Finally, **Table-1** revealed that there were no statistically significant differences between study and control groups' demographical characteristics; [$p > 0.05$ for t , χ^2 , and Z]. This means that all teachers were homogenous and they relatively had the same socio-demographical characteristics.

A pretest was carried out for both study and control groups prior to implementation the education program and after that all sessions had been given for the study group only. The results of pretest indicated that there were no statistically significant differences between study and control groups ($p > 0.05$) in the scores of the teachers' knowledge towards all (PTSD) domains at baseline. This means that teachers had the same knowledge about (PTSD) at pretest (**Table-2**). This table also revealed that the mean of total knowledge scores of the participants in study and control groups was

(18.90, 19.00) respectively. That means that teachers' knowledge level was low at pretest.

One week after completion of the education program, a posttest-1 was administrated for both groups. The results of posttest-1 indicated that there were significant differences among all (PTSD) related knowledge domains (**Table-3; 4**). This means that teachers had got a significant improvement in their knowledge regarding post-traumatic stress disorder (PTSD). And then after (3) months of program finishing, a posttest-2 was performed for both groups to investigate the effectiveness of the education program. A comparison of all test scores was carried out (**Table-3; 4**).

The post-hoc results revealed that the score of knowledge were significantly different among study group over times ($p < 0.05$). This indicates that there was a good acquisition in teachers' knowledge regarding post-traumatic stress disorder, while for control group, the post-hoc result revealed there is no exact improvement in teachers' scores over time was observed (**Table-4**).

The findings of this study were relatively compatible with the results of a previous study done by ⁸. He was studied the effectiveness of an education program on primary school teachers' knowledge towards Attention deficit-hyperactivity disorder among pupils at primary schools in AL- Najaf city. In his mentioned study, Al-kraawi proved that there is a considerable lack in teachers' knowledge towards such common childhood mental health disorder among pupils. His study also illustrated that the education program was effective.

Conclusions

The study concluded that there is a significant lack of teachers' knowledge towards post-traumatic stress disorder before implementation of the educational program at pre-program test. The study also concluded that there was a large and obvious effect for the education program on teachers throughout a good acquisition of knowledge after conducting the education program.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Faculty of Nursing, University of Babylon, Iraq and all experiments were carried out in

accordance with approved guidelines.

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