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Research Article

Promoting psychosocial and mental health care through community-based educational workshops for teachers and parents

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ABSTRACT

Introduction: This study aimed to address the needs of children affected by wars in South Lebanon. This is a second phase of a larger study, whereby in the first phase focus groups with teachers and parents were conducted to identify their mental health needs.

Method: This second phase employed a quantitative, quasi-experimental pre-post design in which school-based educational programs with the same sample were implemented. The Strengths and Difficulties Questionnaire (SDQ), General Health Questionnaire (GHQ-28) and Attitudes Towards Mental Illness Questionnaires (ATMIQ) were administered before and after the intervention, and at 1.5 years follow-up.

Results: Parents reported significantly lower levels of emotional difficulties (p=0.004), conduct difficulties (p=0.05), and hyperactivity difficulties (p=0.014) after the educational program and at follow up. Attitude scores remained the same. Conversely, teachers' GHQ-28 and ATMIQ scores did not significantly change at follow up. **Discussion:** Both parents and teachers should be involved in mental health interventions targeted at youth.

Keywords: Children, war, lebanon

Introduction

Enduring over 20 years of occupation, havoc, and wars, the South of Lebanon has experienced pronounced continuous trauma with great consequences to civilians' psychological and psychosocial well-being. Specifically, a myriad of traumas stemmed from the 15-year civil war that had begun in 1975, as well as the occupation of the South by Israel during which hundreds of civilian casualties ensued on the border [1]. Additionally, another violent armed conflict occurred in July of 2006 on the Lebanese-Israeli border, which had lasted approximately one month and had resulted in thousands of Lebanese civilian casualties, injuries, displacements and other atrocities [2,3]. It is therefore not surprising that prevalence rates for psychiatric morbidity amongst civilian populations in the South were consistently found to be high, with total mean GHQ-28 scores ranging from 6.7 to 10.46 – scores significantly higher than the internationally established mean score of 5.0 [4,5]. Nevertheless, very few actually seek treatment [6,7]. In a study conducted on a South Lebanese civilian sample, Farhood and Dimassi [4] reported that as few as 9.7% actually sought psychiatric treatment. This alarming situation deserves further scrutiny and highlights the need for providing education on mental health care to empower individuals with knowledge and enable them to adopt healthy coping mechanisms in the face of these war atrocities.

It is crucial to emphasize that children are not exempt from facing the psychological and psychosocial consequences that stem from experiencing and witnessing these war-related traumas. Unfortunately, children have been considered as one of the most neglected groups in mental health even though adverse events could impair their normal development, which can progressively deteriorate if intervention measures are not immediately taken [8,9]. According to the developmental traumatology model, children who experience trauma are at greater risk of developing posttraumatic stress (PTS) symptoms, which in turn, could yield poor developmental outcomes [10]. PTS symptoms have specifically been found to mediate the impact of children's exposure to violence on the development of internalizing behavior problems – depression and anxiety [10]. These findings accentuate the need for implementing

interventions that target this high-risk group; any potential subsequent internalizing behavior problems could thereby be prevented.

Exposure to war traumas during childhood should not be investigated in isolation of any potential long-term outcomes. Specifically, it has been found that children who are exposed to war traumas are at increased risk for developing Post-traumatic Stress Disorder (PTSD), as well as affective and interpersonal self-regulatory disturbances that could surface after exposure to a subsequent trauma experienced during adulthood [11]. Thus, exposure to traumatic events in childhood contributes to the compounding of PTS symptoms, which subsequently influences the individual's responses to future traumas [12]. Not only does early exposure to war traumas influence individuals' vulnerability to develop PTSD in adulthood, but it also influences children's physical health and school performance, which could similarly pose long-term detrimental outcomes. In fact, at-risk, sub-clinically and clinically impaired children have been found to be more vulnerable to develop a variety of medical problems. As a result, those children are more likely to fail in school [13,14]. Research has shown that traumatic experiences can influence children's brain chemistry and development, such that learning, and concentration are subsequently impaired [15]. Mental health problems may also interfere with children's interactions with peers [14]. Therefore, it is crucial that children's major social circles – parents and teachers – identify children's problems to ultimately enhance mental and physical health, and their subsequent school performance [14-18].

Knowing that adolescence is a sensitive period for the development of mental disorders, the extent to which this population can be affected has been clearly depicted in a study conducted on Lebanese adolescents [19]. The researchers found that the 30-day prevalence of psychiatric disorders was 26.1%, with as many as 13.1% reporting anxiety disorders. These numbers are higher than internationally established rates, whereby 13.4% of children and adolescents exhibited mental disorders [20] and 9% had anxiety and depressive disorders [21]. These alarmingly high numbers need to be examined critically for quick solutions to be sought.

Although the most effective solution would likely be to seek professional help, Maalouf et al. [19] found that only 6% of those with disorders resorted to this solution. Furthermore, Lebanon particularly faces a massive gap between mental health needs and available treatment services, whereby only 30% of the 10 outpatient mental health facilities available cater for children and adolescents [22]. The meagerness of available mental health resources in Lebanon, in addition to alternative factors that may impede this population from accessing these services, could partially explain the vast treatment gap observed.

Efforts aimed at addressing this gap, including the Mental Health Gap Action Program launched by the World Health Organization in 2010, have looked at ways in which primary healthcare centers (PHCs) in Low to Middle-Income Countries (LMICs) can be improved. However, PHCs have not been regarded as the location of choice by these young populations for various reasons that render them less youth friendly. In addition, in such LMICs, psychiatric clinics are often avoided due to the stigma associated with them [23,24]. These findings could be implicative of the need to consider alternative solutions or treatment approaches such that a larger number of children and adolescents could effectively be targeted. In fact, school-based interventions have recently been looked at as key to a comprehensive approach to treatment [25].

Thus, an alternative to the traditional clinic-based mental health services is school-based mental health interventions that simultaneously take into consideration the child's family, school and community environments, while exploiting the non-threatening school vicinity that is relatively free of stigma [26]. Knowing that most parents and teachers are generally ignorant about children's psychosocial development, school-based settings could be the optimal means for enhancing the mental health literacy of children's closest social circles [27]. Prevention and early intervention measures could thereby aid in reducing the incidence of behavioral and emotional problems frequently observed [26]. Specifically, early identification and remediation of children who are at risk, or sub-clinically or clinically disturbed, could be identified through these educational systems of care [14]. Schools are therefore an ideal setting for investigating children's mental health and academic performance, as well as the relationship between the two [28]. School-based mental health interventions are particularly crucial in South Lebanese communities, given the stigma associated with mental health that was reported as a major issue by the focus groups carried out with this sample and which could thereby prevent them from accessing formal mental health care services [29].

Examining teachers' concerns and perceptions of children's mental health needs is paramount for managing the classroom more effectively and, most importantly, for pinpointing the source of the child's problems [30]. Although dealing with children who exhibit externalizing problems is not uncommon, many teachers face major obstacles with effectively managing and dealing with these problems. This has been documented in a study whereby teachers' perceptions of needs, roles and barriers to children's mental health were examined. Ninety percent of the teachers reported having dealt with children who were facing family stressors and who exhibited defiant behavior [31]. Those teachers therefore felt the need for further training in dealing with children who displayed externalizing problems, as well as training in managing the classroom and in involving families effectively to help resolve these issues [31]. In fact, with as many as 89% of teachers reporting the need for addressing children's mental health, only 34% felt that they were qualified to do so [31]. It could be argued that one way the Lebanese government could seek to enhance the standards of educational achievement in its schools is by increasing teachers' awareness of their students' mental health needs as well as increasing their awareness on how to manage, hand in hand with the respective parents, problematic behaviors exhibited.

School-based mental health programs generally consider the family as the primary support system. The family plays a particularly influential role in young children's lives; it can

act as a means of protection against traumatization and could subsequently empower the child to become more resilient by being emotionally and physically available [32]. In addition, early in life social support networks have a particularly strong influence on the child's ability to deal with stressful situations, and in endorsing the psychological and biological capacities to cope with similar situations [33]. Alternatively, parents with poor mental health could detrimentally influence their children's mental health [17]. This has been documented in a study whereby poor maternal psychological health was associated with poor child psychological health, physical health and interpersonal problems [34]. Families are therefore often incorporated within these interventions. Through parents' school involvement, interventions could strengthen and empower them by offering education and support that could subsequently enhance their knowledge and child-rearing practices [26,35].

Although it has been established that schools are an optimal setting to provide mental health services to children, evidence that supports their efficacy is scarce [14,18]. A synthetic review that targeted this chasm in the literature found that a substantial number of school-based mental health programs positively influenced children's emotional and behavioral problems [18]. The effectiveness of these interventions has been documented in LMICs, as well as higher-income countries (HICs) [25,36]. In a randomized trial that assessed the impact of a school-based, four-month mental health intervention implemented in rural Pakistan, significant changes in the mental health literacy of students, parents, friends, and neighbors were observed [35]. Additionally, in the largest school-based mental health intervention ever implemented – the Skills for Life (SFL) program – which screened and provided services to over one million students in Chile, a significant positive association between the number of sessions attended and behavioral and academic outcomes has been documented [37]. Findings from these school-based mental health services enabled Rones and Hoagwood [18] to discern the important features that render such programs effective and sustainable. These include – but are not limited to – consistent program implementation and involvement of teachers and parents within these programs.

Objective

Although school-based mental health interventions have been implemented in HICs [38], the effectiveness of these interventions in LMICs has not been sufficiently investigated. Thus, this study addressed this gap by assessing the efficacy of a school-based mental health intervention provided to teachers and parents of students from different school levels (elementary, middle, and secondary). Questionnaires were administered before and after the educational program to observe changes, if any, in reported mental health problems, attitudes, and practices. On the longer term, such school-based interventions may ultimately prevent chronic symptoms and long-term effects of disorders [22,39]; combat stigmas; promote self-care; and provide knowledge for the care and support of children and adolescents with mental health concerns [40]. We hope that educational workshops will help teachers and parents deal with issues inherent to living and caring for their children in an unstable area and foster better psycho-education skills in the classroom and encourage parent-teacher communication. If this educational model is successful, we hope to continue conducting and promoting such workshops in other areas throughout Lebanon.

Methods

Study overview

This study is a second phase of a larger study, whereby in the first phase we conducted audio taped focus groups with teachers and parents of students separately in order to identify their attitudes and beliefs towards mental illness, symptoms and treatment [29]. This study follows the recommendations of Rones and Hoagwood [18] proposed for effective and sustainable community-based educational programs. The content of the educational workshops that we conducted with teachers and parents of students was based on the major themes that had emerged from the focus groups:

1) Mental health care is a priority for overall health and there is a need for mental health awareness and services in the region;

2) Mental illness is a cultural taboo associated with fear of social isolation and stigmatization; and

3) There is a need for better education and cultural understanding about mental health care.

By administering self-report questionnaires before and after the educational programs, as well as at 1.5 years follow-up, we were able to test the efficacy of these school-based mental health educational interventions.

This second phase employed a quantitative, quasi-experimental pre-post design in which community-based educational programs with teachers and parents were implemented. Two private schools in the center of the Kaza region in the south of Lebanon were contacted and asked to participate in the mental health education workshops. Each school held approximately 600 students. These two schools were chosen because they are particularly known to attract students of different sociocultural backgrounds from different regions in the South.

Workshop and lecture materials contained outlines of the presentations, useful information on various mental health and psychosocial topics, as well as information on available mental health services and referrals in the area. Self-report questionnaires were administered to teachers and parents of students before and right after the educational programs, and at 1.5 years follow-up. Notably, we had originally planned to complete the final evaluation earlier than that, but due to some logistic problems, this step had to be delayed for over one year. Moreover, the final evaluation was done just prior to the booster session in order to avoid any response biases that may subsequently arise. Interviews and assessments were conducted by interviewers from the American University of Beirut. Training and on-site activities were performed by the principal

and co-coordinators. Ethical approval for this study was granted by the American University of Beirut Institutional Review Board and from the two private schools that were contacted.

Participants

A convenient sample – collected via announcements from each school's administration –that consisted of both teachers (employed at one of the two private schools in the South) and parents (of students aged 4-11 or 12-16), who were 18 years or older were asked to participate in the mental health education workshops. Exclusion criteria for participation involved those who were not currently employed as teachers or non-parents, those who were under the age of 18, those who were severely impaired physically or mentally such that they could not attend the workshops, and those who were not legally responsible. These schools and towns were particularly selected because of the melting pot of sociocultural backgrounds of students that they attract from various community villages, religions, and social class levels.

Procedure

Mental health educational workshops were conducted by mental health professionals in psychiatry and psychology over the course of six weeks (two per weekend) in one venue (Marjeyoun National School) for both schools. Both teachers and parents participated in the same workshops, which sought to address various topics on mental health and psychosocial care. Originally, we had planned to conduct workshops separately for teachers and parents; however, due to the low number of participants who were parents only (not teachers), we had to include both groups in the same workshops.

The outline for administering mental health education was adapted from the World Health Organization project entitled "Mental Health and Psychosocial Care for Citizens Affected by War in Lebanon: Training Projects for Healthcare Professionals" [38]. The educational package consisted of six modules:

- Introduction (What is mental health? Myths about mental illness)
- Children and Adolescent Development (Effects of trauma on psychological, emotional, behavioral and social development of children and adolescents)
- Psychosocial Interventions (Developing psycho-educational skills in the classroom and at home; enhancing social support systems)
- Care of Special Groups (Children and adolescents affected by war and trauma)
- Common Mental Health Disorders (Description and management)
- Preventive Mental Health Care (Social support, relaxation techniques, stress management, dangers of substance abuse).

Both School Administrations were notified of the project, study date and activities via official letters from the Principal Investigator. Parents of students and teachers were informed about the activity through the school notification system.

The Attitudes towards Mental Illness Questionnaire (ATMIQ) was administered to parents and teachers before and after the sessions were over to allow investigators and individuals to assess and observe participants' levels of mental health literacy, attitudes and practices. Mental health literacy was assessed to create a benchmark of mental health knowledge before the educational workshops, and to test the efficacy of the program and its impact, if any, on changes to knowledge, beliefs and attitudes towards mental illness. Additionally, two measures assessing mental health were similarly administered before and after the educational workshops. These involved: The General Health Questionnaire (GHQ-28), which was administered to both parents and teachers to assess their level of psychiatric morbidity, as well as the Strengths and Difficulties Questionnaire (SDQ), which was administered only to parents to screen for any behavioral difficulties observed in their children. Each questionnaire needed a maximum of 15 minutes to complete. Evaluation forms following the workshops were administered to evaluate presenters' dissemination of information, workshop materials, topics, and general opinion of the program.

A follow-up at 1.5 years was conducted using the ATMIQ (adapted for follow-up assessment), the GHQ-28 and the SDQ, with evaluation forms similarly attached in the end. Findings were compared to baseline scores collected directly after the workshops. Thus, changes, if any, to current mental health status of participants and children, and lifestyle changes (e.g. changes in reported symptoms, levels of social support, substance use, etc.) were addressed.

It is important to note that all questionnaires were administered and collected by trained interviewers with Collaborative IRB Training Initiative (CITI) certification. They were available on-site at all times to answer participants' questions and help those who may need assistance in filling out the forms. Following data collection, all questionnaires were compiled and kept in a secure place under lock and key to ensure that all participant responses and information remain strictly confidential.

Measures

The measures used in this study included:

Demographics and lifestyle, social support and life events

Basic demographic data, including age, education, marital status, availability and utilization of human and financial resources, sleeping hours per day, working hours (including domestic work) per day and number of children and number of residents in the house were collected. Perceived social support was assessed by eight questions such as whether they felt that they had somebody to rely on, or whether they felt needed and respected, and the answers were summed to yield a total social support score. Furthermore, the participants were asked about their lifestyle (i.e. exercising, smoking cigarettes and "argileh" (water-pipe), alcohol consumption, sleeping and working hours per day). Finally, they were asked about having had received psychiatric treatment or having had used tranquilizers or illicit drugs.

Strengths and difficulties questionnaire

The SDQ is used to screen for behaviours or perceived difficulties and positive traits of children and adolescents aged 4-16 as reported by parents [41]. Supplemental questions were additionally included which asked whether the respondent thought the child had a problem: perceived impact of the problem, chronicity, distress, social impairment and burden on others. Items were answered using a three-point Likert scale: 0 (Not True), 1 (Somewhat True), 2 (Very True). Five of the items were reverse scored and individual items were summed to yield a total score. SDQ yielded five scores for difficulties: Conduct Problems, Inattention-Hyperactivity, Emotional Symptoms, Peer Problems and Total Difficulties; and one score for Strengths: Prosocial Behaviour. Its validity and reliability have been reported to be satisfactory across community and psychiatric samples from various cultures [41-43]. The current study used the Arabic version of the SDQ, which has been validated among a sample of Yemeni children. The Arabic SDQ showed good predictive ($p<0.001$) and discriminant validity as it effectively differentiated between clinical cases and non-cases [44].

General health questionnaire

The Arabic GHQ-28 was used to establish a baseline of psychiatric morbidity. The GHQ-28 items can be divided into four categories: (1) somatic symptoms, (2) anxiety and insomnia, (3) social dysfunction, and (4) severe depression. The GHQ-28 has been used with Arabic-speaking populations and has been found to be a valid instrument in assessing mental distress [4-5,39,45]. The questions in the anxiety, insomnia and severe depression categories have been validated for assessing anxiety and depression [46]. The correlation coefficient with a clinical rating was found to be .70 for the anxiety subscale and .56 for the depression scale [46].

Attitudes towards mental illness questionnaire

An Arabic version of the ATMIQ was used to capture beliefs, attitudes, perceptions and level of knowledge of mental illness, symptoms and treatment. It consisted of four questions scored on a four-point Likert scale: 0 (Totally disagree), 1 (Disagree), 2 (Agree), and 3 (Totally agree). Questions assessed whether respondents believed that (1) mentally ill people are dangerous for others; (2) the behaviour of mentally ill people cannot be predicted; (3) mentally ill people have only themselves to blame; and (4) whether mentally ill people cannot be cured.

Workshop evaluation

The Workshop Evaluation was used to assess the efficacy of the workshop. The evaluation covered effectiveness of the presenter, mental health topics, and the overall organization of the workshop. This evaluation consisted of two types of questions: open-ended and Likert-scale questions, from which answers were summed to yield an overall score.

Data analysis

Respondents were "parents only", "teachers only" or "both" and were categorized for the analysis as "parents/both" and "teachers only". The analyses were carried out separately for each group. Data were collected at three different time points: 1) before the educational program, 2) after the educational program and 3) 1.5 years after the educational program. Means, medians, standard deviations, counts and percentages were computed to summarize the study variables. Background characteristics of the participants were gender, age (less than 40 / 40 and above), education (did not complete college/college and above), religion (Christian/Muslim/Druze), monthly salary (below $500/ $500-$1000/ above 1000$) and were compared across the three times by the Fisher's exact test. Kruskal Wallis test followed by Dunn's multiple comparisons was used to compare participant's SDQ scores, GHQ-28 scores and ATMIQ across the three times. Statistical analyses were carried out using SPSS version 23 for Windows. All tests were two tailed and a p-value of less than or equal 0.05 was considered significant.

Results

Sample characteristics

Before the first educational program data were collected from 102 participants, 24 (23.5%) of which were parents only, 47 (46.1%) were teachers only and 31 (30.4%) were both teachers and parents at the same time. At the end of the workshops, data were collected from 76 respondents in total, 15 (19.7) were parents only, 36 (47.4%) were teachers only and 25 (32.9%) were both. The last follow up workshop consisted of a total of 46 teachers, 30 (65.2%) of which were also parents. Parents only and both were later grouped for the analysis. Characteristics of each group of subjects (parents/both and teacher) are summarized in Tables 1,2 and were similar across the three occasions. Most of the respondents were females, completed college, Christians and earned a $500-$1000 salary. Many of the teachers were single.

Changes in SDQ, GHQ-28 and attitudes of parents

Participants who were parents (parents only and both parents and teachers) reported significantly lower levels of emotional difficulties after the educational program and at the 1.5 year follow up compared to baseline ($p=0.004$), lower levels of conduct difficulties at the 1.5 years follow up compared to baseline ($p=0.05$) and lower levels of hyperactivity difficulties ($p=0.014$) at the 1.5 years follow up compared to baseline and to immediately after the educational program in their identified children. They also showed significantly lower GHQ-28 total score after the educational program, indicating better reported general health ($p=0.046$); however, the effect no longer remained significant at the follow up after 1.5 years. Attitude scores were similar across the three occasions (Table 3).

Changes in GHQ and attitudes of teachers

Participants who were teachers only had significantly better attitude that the behavior of mentally ill people can be predicted ($p=0.012$) after the first educational session, however this attitude changed and became similar to their baseline attitude after 1.5 years. GHQ-28 scores remained similar for teachers (Table 4).

Table 1. Background characteristics of parents only/both

	Baseline (N=55)	After the educational program (N=32)	At 1.5 year follow up (N=24)	
Variable	**N (%)**	**N (%)**	**N (%)**	**p-value**
Gender				
Male	13 (24.5)	9 (22.5)	2 (6.9)	ns
Female	40 (75.5)	31 (77.5)	27 (93.1)	
Age				
Less than 40 years	23 (44.2)	17 (50.0)	8 (30.8)	ns
40 years or more	29 (55.8)	17 (50.0)	18 (69.2)	
Education				
Did not complete college	12 (21.8)	17 (42.5)	8 (27.6)	ns
Completed college	43 (78.2)	23 (57.5)	21 (72.4)	
Religion				
Christian	34 (63.0)	25 (62.5)	27 (93.1)	0.032
Muslim	8 (14.8)	6 (15.0)	1 (3.4)	
Druze	12 (22.2)	9 (22.5)	1 (3.4)	
Salary				
Below $500	3 (7.3)	6 (18.2)	1 (4.5)	ns
$500-$1000	29 (70.7)	16 (48.5)	12 (54.5)	
More than $1000	9 (22.0)	11 (33.3)	9 (40.9)	

Table 2. Background characteristics of teachers only

Variable	Baseline (N=47)	After the educational program (N=36)	At 1.5 year follow up (N=16)	p-value
	N (%)	N (%)	N (%)	
Gender				
Male	8 (17.8)	7 (20.0)	2 (12.5)	ns
Female	37 (82.2)	28 (80.0)	14 (87.5)	
Age				
Less than 40 years	22 (48.9)	16 (48.5)	7 (50.0)	ns
40 years or more	23 (51.1)	17 (51.5)	7 (50.0)	
Education				
Did not complete college	8 (17.4)	8 (22.2)	3 (18.8)	ns
Completed college	38 (82.6)	28 (77.8)	13 (81.3)	
Marital status				
Single	30 (63.8)	22 (61.1)	10 (62.5)	ns
Married/divorced/widowed	17 (36.2)	14 (38.9)	6 (37.5)	
Religion				
Christian	41 (91.1)	29 (90.6)	14 (93.3)	ns
Muslim	0 (0.0)	1 (3.1)	0 (0.0)	
Druze	4 (8.9)	2 (6.3)	1 (6.7)	
Salary				
Below $500	3 (7.3)	1 (3.4)	1 (7.1)	ns
$500-$1000	25 (61.0)	16 (55.2)	9 (64.3)	
More than $1000	13 (31.7)	12 (41.4)	4 (28.6)	

Discussion

This study sought to investigate the effectiveness of a school-based mental health intervention targeted at parents and teachers in order to observe changes in reported mental health problems in children and adolescents, as well as to identify changes in attitudes and practices towards these problems. After the psychoeducational program, significant changes were observed, particularly for the parents group (parents only or both). Thus, this highlights the substantial difference that educational mental health interventions can do to the community.

Parents reported significantly lower levels of emotional, conduct, and hyperactivity difficulties in their children post-intervention. These results are very promising in light of the fact that children exposed to traumatic events, including wars, may develop severe physical, psychological and interpersonal problems [47]. Knowing that the extent to which this remains

Table 3. SDQ, GHQ scores and attitudes scores of parents only/both across the three occasions

	Baseline (N=44)			After the educational program (N=32)			At 1.5 year follow up (N=24)			p-value
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	
SDQ										
Emotional	3.9	4.00[ab]	2.47	2.22	1.00b	2.59	1.94	1.50[b]	1.92	0.004
Conduct	3.13	3.00[b]	1.57	2.59	2	2.18	2	2.00[b]	1.58	0.05
Hyperactivity	4.39	4.00[b]	2.29	3.79	3.00[c]	2.38	2.39	1.50[bc]	2.33	0.014
Peer problems	2.59	2	1.52	2.54	3	1.86	2.56	2	2.12	ns
Prosocial	7.52	8	1.96	7.5	8	2.53	8.29	9	2.02	ns
GHQ										
Somatic symptoms	0.67	0	1.13	0.42	0	0.71	0.72	0	1.13	ns
Anxiety an insomnia	1.84	2	2	1.26	0	2.13	1.38	0	1.97	ns
Social dysfunction	2.84	3	1.76	2.23	3	1.77	2.2	1.5	2.09	ns
Severe depression	0.29	0	0.73	0.11	0	0.39	0.31	0	0.89	ns
Total	5.63	5.00[a]	3.67	3.81	3.00[a]	3.12	4.7	4	4.48	0.046
Attitudes										
Mentally ill people are dangerous for others	1.56	2	0.9	1.3	1	0.78	1.47	2	0.94	ns
The behavior of mentally ill people cannot be predicted	1.7	2	0.67	1.49	2	0.78	1.76	2	0.74	ns
Mentally ill people have only their selves to blame	0.96	1	0.73	1.06	1	0.75	0.87	1	0.51	ns
Mentally ill people cannot be cured	0.65	1	0.63	0.75	1	0.5	0.73	1	0.45	ns

[a]: Significant difference between baseline and after educational session; [b]: Significant difference between baseline and 1.5 year follow up; [c]: Significant difference between after educational session and 1.5 year follow up

Table 4. GHQ scores and attributes scores of the teachers only across the three occasions

	Baseline (N=47)			After the educational program (N=36)			At 1.5 year follow up (N=16)			p-value
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	
GHQ										
Somatic symptoms	0.73	0	1.38	0.64	0	1.27	1.31	0	1.99	ns
Anxiety an insomnia	1.02	0	1.39	1.09	0	1.86	1.56	0.5	2.16	ns
Social dysfunction	3.16	3	1.64	3.24	4	1.62	2.81	3	1.56	ns
Severe depression	0.18	0	0.49	0.18	0	0.46	0.25	0	0.77	ns
Total	5.03	5	3.54	5.16	4	3.7	5.94	5	3.71	ns
Attitudes										
Mentally ill people are dangerous for others	1.5	2	0.81	1.41	1.5	0.74	1.31	1	0.87	ns
The behavior of mentally ill people cannot be predicted	1.8	2.00[a]	0.65	1.53	2.00[a]	0.61	1.88	2	0.5	0.012
Mentally ill people have only their selves to blame	0.82	1	0.58	0.91	1	0.62	0.81	1	0.66	ns
Mentally ill people cannot be cured	0.65	1	0.6	0.74	1	0.45	0.56	1	0.51	ns

[a]: Significant difference between baseline and after educational session

a burden to this population is not clear, it may be more effective to examine the needs of parents prior to implementing such interventions [19,29]. This may partially explain the effectiveness of this study's intervention, whereby the needs of parents and teachers were considered in the first stage prior to designing the psychoeducational program.

Mental health education and psycho-educational skill building initiatives function on the short and long term needs of parents and their child or adolescent. In a study conducted on mothers of children with disabilities in Lebanon, useful strategies for relieving family distress and isolation due to stigmas experienced by the child included acquiring education on the child's needs and developing coping resources [48]. Communities promoting mental health and psychosocial care regarding children and adolescents with behavioral problems or mental disorders in underrepresented areas have been found to be effective in providing much needed support and education to caregivers who, in turn, are equipped to help the child or adolescent cope with his/her mental health needs [49].

Similar to the promising findings observed with parents in our study, other school-based efforts have also been found to be successful. Specifically, Kenny [50] found that such interventions were particularly effective with child sexual abuse (CSA). The Parents as Teachers of Safety (PaTS) program enhanced parents' – as well as children's – knowledge and learned skills about CSA [49]. The effectiveness of psychoeducation was also found to help parents better cope with their children's eating disorders [51]. Such interventions additionally reduced conduct problems in those parents' children [52]. As brief as such psychoeducation interventions may be, they have nonetheless been found to reduce conduct problems. They have also increased parents' understanding and awareness of parenting skills, the undesirability of ill-treatment, and developmental issues and problems that could be observed in their children [52].

Conversely, teachers in this sample did not report significant changes in scores post-intervention. Specifically, GHQ total scores remained similar, and scores in relation to teachers' behavior towards individuals with psychological problems decreased transiently after the first educational session but returned to baseline after 1.5 years follow up. These findings contrast with teachers' voiced concerns about their students' mental health needs being unmet, and their need for professional mental health advice on how to deal with students affected by war and who consequently exhibited behavioral problems [53]. Teachers (and parents) in this sample voiced similar concerns during the focus group sessions conducted initially [29]. The discrepancy could simply stem from the small sample size in this study rather than true differences in parents' and teachers' responsiveness to school-based mental health interventions. Furthermore, attitudes towards mental health may be more resistant to change.

In contrast to our findings, the literature has consistently found that efforts aimed at promoting teachers' mental health literacy of students are effectual. Specifically, efforts aimed at psychoeducation teachers of children and adolescents with ADHD have been found to be effective [54]. Montoya et al. [54] identified seven studies that highlighted the positive outcomes of psychoeducation on several outcome measures, including ADHD symptoms and teacher knowledge and awareness. Thus, similar to parents' responsiveness to interventions aimed at promoting children's mental health literacy, these findings highlight their effectiveness with teachers as well. Teachers are therefore also responsive to school-based interventions targeted at children and adolescents' mental health problems – a finding that was not entirely observed in the current study.

In conclusion, this study has exemplified that school-based mental health interventions –even if brief – could elicit significant changes in parents' general health and attitudes towards mental illness, as well as their children's emotional and conduct behaviors as perceived by them. Although general health did not improve post-treatment for teachers, and their attitudes towards mental health has not changed on the long-term, this does not necessarily entail that they are not responsive to such school-based mental health interventions. In fact, teachers play an influential role in the identification of youth with mental disorders, as well as in the promotion of self-care and in impacting the psychosocial wellbeing of children and adolescents with mental health concerns [55]. This implies the importance of incorporating both parents and teachers in mental health interventions targeted at youth.

Limitations

Due to IRB requirements, we were not able to collect identifiers for the subjects and therefore we used statistical analyses for independent groups instead of dependent groups. However, the characteristics of the groups across the three time points were compared and found to be similar as shown in tables 1, 2 and 3. In addition, this study did not include children and adolescents in the intervention. Greater changes in children's behavioral problems may have been elicited had parents, teachers, and children been simultaneously involved.

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