School Mental Health (2016) 8:268–277
DOI 10.1007/s12310-015-9159-7

ORIGINAL PAPER

Opinions About Mental Illness Among Adolescents: The Impact of a Mental Health Educational Intervention

Evanthia Sakellari[1,2] · Andre Sourander[3] · Athena Kalokerinou-Anagnostopoulou[4] · Helena Leino-Kilpi[1,5]

Published online: 17 October 2015

Abstract Mentally ill people are among the most stigmatized, discriminated against and marginalized society members. The aims of this study were to explore adolescents' opinions about mental illness and determine whether these change after a mental health educational intervention. Two randomly selected schools took part in this study: one serving as intervention group and one as comparison group. Data were collected from both groups, before and after the intervention, using the Opinion about Mental Illness scale. Social Discrimination decreased significantly at the post-test in both groups. Score on Social Care factor significantly increased in the intervention group, and the overall change from pre-post to post-test period was significantly different between the groups. Social Integration significantly increased in the intervention group. A significant interaction effect was found indicating that the overall change was different between the two study groups. Thus, mental health educational interventions can positively influence the perceptions towards mental illness among adolescents.

✉ Evanthia Sakellari
evasak@utu.fi

[1] Department of Nursing Science, University of Turku, Turku, Finland

[2] Department of Public Health and Community Health, Technological Educational Institute of Athens, Athens, Greece

[3] Department of Child Psychiatry, University of Turku, Turku, Finland

[4] Department of Nursing, University of Athens, Athens, Greece

[5] Turku University Hospital, Turku, Finland

Keywords Mental health education · Schools · Adolescents · Opinions about Mental Illness

Introduction

Mental health is a basic human right, it is fundamental to all human and social progress, and it is a basic requirement in order to live a happy and fulfilled life (Weare, 2007). The WHO (2011) defines mental health as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community. According to the WHO (2012a), mental disorders comprise a broad range of problems with different symptoms. However, they are generally characterized by a combination of abnormal thoughts, emotions, behaviour and relationships with others.

Community-based epidemiological studies have estimated lifetime prevalence rates of mental disorders in adults from 12.2 to 48.6 %, and 12-month prevalence rates from 8.4 to 29.1 % (WHO, 2008). One recent meta-analysis estimates the prevalence of child and adolescent depression rates of 5.7 % for adolescents, and 2.8 % for children (Costello, Erkanli, & Angold, 2006).

Most people who suffer from severe mental illness live within the community (Stark, Paterson, & Devlin, 2004), but this physical presence does not mean that they are included as part of those communities (Perkins & Repper, 2005). People suffering from mental illness and other mental health problems are among the most stigmatized, discriminated against, marginalized, disadvantaged and vulnerable members of society (Johnstone, 2001). Stigmatized individuals are aware that they are different from

others, and this has implications to their identity: their overall sense of who they are (Blaine, 2007). Researchers have identified stigma and discrimination as important obstacles to people with mental illness being integrated into society (Bjorkman, Angelman, & Jonsson, 2008).

Stigma is understood to mean a social construction whereby a distinguishing mark of social disgrace is attached to others in order to identify and to devalue them, and thus, stigma and the process of stigmatization consist of two fundamental elements: the recognition of the differentiating "mark" and the subsequent devaluation of the person (Arboleda-Florez, 2002). The meaning of stigma is an unwelcome attribute which deprives the person of the right of complete social acceptance, undermines radically his/her social status and opposes human dignity (Malliori, Ekonomou-Lalioti, Ploumpidis, & Kourea-Kremastinou, 2007). Social stigma has a tremendous impact on the daily lives of people with a mental disorder (Bos, Kanner, Muris, Janssen, & Mayer, 2009). Stigma is a reality for many people with a mental illness, and they report that how others judge them is one of their greatest barriers to a complete and satisfying life (Canadian Mental Health Association, 2013). Stigma undermines social adaptation and leads to reduced adherence to treatment, non-disclosure and secrecy, reduced supportive social networks, self-esteem and psychological well-being (Harrison & Gill, 2010). While Greek society has moved towards the integration of individuals with mental health problems into society through deinstitutionalization and political attention to mental health issues (Ministry of Health and Welfare, 2001), stigma remains a major barrier to full inclusion of individual with mental health problems in society.

Mental Health Europe (2011) recommends that public awareness should be raised, stressing the need to carry on developing anti-stigma campaigns and education, in order to measure their impact and to further publicize the issue. The starting point for diminishing stigmatization, claimed by Byrne (2000) for all target groups and at every level, is education. Corrigan and Penn (1999) support that education provides information so that the public will be able to make informed decisions concerning mental illness, and further, persons who have a better understanding of mental illness are less likely to endorse stigma and discrimination. It is targeted not only to inform and prevent, but also to form the attitudes towards mentally ill people in order not to marginalise them (Papageorgiou-Vasilopoulou, 2005). Thus, mental health should be a priority within the framework of health promotion and health education (Sakellari, 2010). In addition, promoting respect, tolerance, empathy and an appreciation of diversity should begin early in life (Sabir Ali & Iftikar, 2006). Moreover, as Pinto-Foltz and Logsdon (2009) support, adolescence is an opportune time to encourage positive attitudes, reduce stigma related to mental disorders and reduce the illness burden across the life span.

Most adults with a psychiatric disorder had a diagnosable disorder as children (Kim-Cohen et al., 2003). Mental and behavioural disorders are present at any point in time in about 10 % of the adult population worldwide (WHO, 2004). Although adolescents are generally perceived as a healthy age group, 20 % of them, in any given year, experience a mental health problem (WHO, 2012b).

Adolescents form many attitudes about life and discover various meanings of the concept of mental health (Fitzgerald, Joseph, Hayes, & O'Regan, 1995). Negative attitudes towards mental illness emerge early in childhood (Wahl, 2002). In addition, Wahl, Wood, Zaveri, Drapalski, and Mann (2003) found that characters labelled as having a mental illness depicted in children's films have a violent and threatening behaviour and are feared by others, which reinforce the conception of people with mental illnesses as aggressive and as people with whom it is appropriate to be afraid. Regarding young people, the results of a study on sex differences towards mental illness of secondary school students showed that girls exhibited more benevolence than boys and boys held more stereotyping, restrictive, pessimistic and stigmatizing attitudes (Ng & Chan, 2000). An interventional study with secondary students in the UK reported that female participants after the intervention were less likely than males to be embarrassed by being in the same class as someone with mental health problems (Pinfold et al., 2003). In the same way, another interventional study found that girls had lower mean stigma scores than boys after the intervention (Rickwood et al., 2004).

Rose et al. (2007), in a qualitative study that took place in five secondary schools in England, identified 250 labels used by 14-year-old English students to stigmatize people with mental illness, such as nuts, psycho, crazy, and weird. Furthermore, a study showed that adolescents are more likely to describe a mentally ill person as dangerous and violent after reading news reports of persons with mental illness committing violent crimes, compared to adolescents who read a factual article about mental illness (Dietrich et al., 2006). Another study asked young persons to recall news stories about mental health problems during the past 12 months, and they found that the most common stories recalled among others were those stories involving crime or violence (Morgan & Jorm, 2009).

Wei and Kutcher (2012) argue that school-based mental health programming needs to be considered as part of standard child and youth mental health policies and plans. It is supported by a school-based awareness programme that young people can be important sources of information and have a positive impact on the community (Rahman et al., 1998). Furthermore, DeSocio, Stember

and Schrinsky (2006) showed that children who participated in a mental health education programme realized a significant gain in their knowledge about mental health and mental illness. School plays an important role in health and social-emotional development (Hosman & Jane-Llopis, 2005), mental health awareness can be taught in school (Brown & Bradley, 2002), and mental health instruction should be highlighted in school health education (Lahtinen et al., 1999).

Today's adolescents are the future adults who, through participation, can have an impact on the quality of life of the entire community. Adolescence is a time when young people are acquiring lifetime habits and attitudes (Naidoo & Wills, 2000). It is a time characterized by rapid advances in cognitive skills and intense acquisition of new information, which helps establish the basis for a productive adult life (Golub, 2000). It is also the age when they are developing views on a range of topics that will impact their future adult behaviour (Pinfold, Thornicroft, Huxley, & Farmer, 2005). Hence, adolescents, having the cognitive level in order to comprehend, and being in the age period when educational interventions can have an impact, are a promising target group for mental health educational interventions.

The purpose of this study was to explore the impact of a mental health educational intervention on the perceptions about mental illness among adolescents. Further, this study aims to stimulate health professionals and health educators to consider mental health educational interventions and provide implications for planning and implementing future interventions among adolescents for the promotion of mental health.

The research questions in this study are as follows:

1. Do the opinions about mental illness positively change after the mental health educational intervention?
2. What are the changes in opinions about mental illness in relation to sex, parents' educational level of the parents and the previous contact with a mentally ill person?

Methods

Setting and Participants

Two random schools in the area of Athens were selected for this study. These schools follow the same curriculum as it is the same for all pupils by the state (World Education Encyclopedia, 2002). Determining which of the two schools would be offered the intervention was also done randomly. The intervention group was provided with the mental health educational intervention, whereas the comparison group attended standard curriculum which did not include any health education classes.

The study population consisted of 59 adolescents. From the two schools almost 20 % of the students were randomly selected and invited to participate. The response rate was over 90 %, and finally the sample consisted of 31 participants in the comparison group and 28 participants in the intervention group. Two participants from each group decided not to participate in the post-test. Analysis is presented in the final sample without missing data. Among the background questions, the participants' parents' were asked whether they have ever met a mentally ill person. Demographics and other characteristics (their parents' educational level and their previous contact with a mentally ill person) of the two study groups were not significantly different (Table 1).

Mental Health Educational Intervention

The mental health educational intervention was implemented for the intervention group after the first data were collected. The teaching was conducted by the primary researcher. It lasted for two 45-min teaching periods and was held during a school day in a classroom. The content of the mental health educational intervention was developed using suitable literature (Schulze, Richter-Werling, Matschinger, & Angermeyer, 2003; Ng & Chan, 2002) and other material by national and international bodies such as the WHO Mental Health, the Greek University Research Institute, the Greek Psychiatric Reform Programme "Psychargos", the National Mental Health Strategy of Australia, the US National Institute of Mental Health and the UK Institute of Mental Health. The content of the mental health education intervention was developed in such a way that it would be easy for the pupils to comprehend. The language used was adapted to the pupils' age and cognitive level, and terminology used among health professionals was avoided.

Firstly, the educator presented herself and presented the content of the mental health education session. Papers and pencils were provided to all participants allowing them to make notes and possible questions. Participants were encouraged to pose questions at any time, and the understanding of the participants was ensured by stopping throughout the presentation and asking the participants whether they understood what was just said and whether they had any questions.

Details of the intervention have been described previously (Sakellari, Sourander, & Leino-Kilpi, 2014). In short, the mental health educational intervention (60 min), included definitions of mental health and mental illness, descriptions of different types of mental illnesses, as well as issues on experiences and different forms of treatment.

Table 1 Demographic characteristics for comparison and intervention group

	Comparison group *N* (%)	Intervention group *N* (%)	*P*
Age (years), mean (SD)	14.3 (0.9)	13.8 (0.5)	0.125**
Sex			
Males	13 (44.8)	11 (42.3)	0.851*
Females	16 (55.2)	15 (57.7)	
Contact with a mentally ill person			
No	17 (58.6)	17 (65.4)	0.606*
Yes	12 (41.4)	9 (34.6)	
Educational level of the mother (years)			
≤12 years	16 (55.2)	14 (53.8)	0.921*
>12 years	13 (44.8)	12 (46.2)	
Educational level of the father (years)			
≤12 years	15 (51.7)	14 (53.8)	0.875*
>12 years	14 (48.3)	12 (46.2)	
Highest educational level of the parents			
≤12 years	13 (44.8)	11 (42.3)	0.851*
>12 years	16 (55.2)	15 (57.7)	

* Chi-square test; ** Mann–Whitney test

Moreover, "myths and truths" about mental health and mental illness were discussed and issues on help-seeking (and available mental health care services in Athens), facing difficulties and mental health promotion as messages to take home. At the end, there was a discussion session (30 min) in which participants had the chance to ask questions (e.g. how people with mental illness experience the symptoms, asking whether several symptoms providing examples means that someone is mentally ill, diagnosis labels, etc.). During this session, participants were provided the opportunity to correct misunderstandings.

Data Collection

First, the primary researcher contacted the schools' principals, explained the purpose of the study to the school staff, and sought their cooperation in conducting the study. Once informed consent was obtained, the study was initiated.

Data were collected from both groups the week before (baseline) and the week immediately after (post-test) the mental health educational intervention. The instrument used, in order to explore the perceptions about mental illness, was the Opinion about Mental Illness (OMI) scale by Cohen and Struening (1962), standardized for the Greek population by Madianos, Madianou, Vlachonikolis, & Stefanis (1987). Factor analysis of the Greek study data identified the five factors below with associated eigenvalues of >1 and which accounted for 66.4 % of the total variance in the data (Madianos et al., 1987). It consists of 51 Likert formatted items (from "totally agree" to "totally disagree") and yields five factors which have been defined previously by Madianos et al. (1987):

A. Social Discrimination includes 16 items (total scoring ranging from −14 to 66, more positive opinion is −14)
B. Social Restriction includes 13 items (total scoring ranging from −4 to 61, more positive opinion is −4)
C. Social Care includes 8 items (total scoring ranging from 30 to −10, more positive opinion is 30)
D. Social Integration includes 8 items (total scoring ranging from 33 to −7, more positive opinion is 33)
E. Aetiology includes 6 items (total scoring ranging from 26 to −4, more positive opinion is 26).

The scores found in studies among nursing students or general population can be seen in previous studies (e.g. Evagelou et al., 2005, Madianos et al., 1987; Madianos, Economou, Hatjiandreou, Papageorgiou, & Rogakou, 1999; Madianos, Priami, Alevisopoulos, Koukia, & Rogakou, 2005, Tomaras et al., 2011). For the purposes of this study, we have analysed the four first factors, since it was seen after data collection that the items included in the factor of aetiology were not very well perceived by the participants of the study which belong to a special age group of adolescence. The Cronbach's alpha coefficient for all four factors exceeds the minimum of 0.7. For already tested existing instruments, a score of at least 0.70 is required (Burns & Grove 2009). Specifically, Cronbach's alpha was 0.74 for Social Discrimination, 0.76 for Social Restriction, 0.81 for Social Care and 0.79 for Social Integration.

Data Analysis

The analysis was conducted and presented for participants with full data ($N = 55$). Continuous variables are presented with mean and standard deviation (SD). Qualitative variables are presented with absolute and relative frequencies. For the comparison of proportions Chi-square tests were used. For the comparison of study variables between the comparison and intervention group, the student's t test was conducted. Mann–Whitney test was used to compare age between the two study groups. Differences in changes of OMI factors at the post-test between two groups were evaluated using repeated measurements analysis of variance (ANOVA). Effect sizes (ES) were also calculated for the difference in scale scores between baseline and post-test measurements of the intervention group and the difference in scale scores between the comparison and intervention group at post-test measurements. All p values reported are two-tailed. Statistical significance was set at $p < 0.05$ and analyses were conducted using SPSS statistical software (version 18.0).

Ethical Considerations

Permission from the Greek Ministry of Education was obtained before conducting the study. Written informed consent forms were signed by both the participants and their parents or guardians. The information for the study was provided to them orally and in a letter that was taken home to the parents/guardians of potential participants, concerning the research process, its objectives, and how the results will be used in the future, emphasizing the anonymity and confidentiality, and their right to withdraw at any time. The participation in the research was voluntary and no identifying information has been used.

Results

The changes at the post-test for the OMI factors for the comparison and intervention group are presented in Fig. 1a–d. The Social Discrimination factor score significantly decreased from baseline to post-test ($p < 0.05$) in both study groups (ES = 1.31 for the intervention group). The intervention group had higher levels on Social Discrimination at baseline compared to the comparison group, but this difference was not significant at post-test (ES = 0.80). No significant changes were found for Social Restriction for either study group (ES = 0.87 for the intervention group) and at post-test measurements the two groups had similar scores (ES = 0.48). The Social Care factor had a significant increase only in the intervention group (ES = 0.91 for the intervention group), and a significant interaction effect was found indicating that the change in mean scores at the post-test was different between the comparison and intervention group ($p = 0.049$). Also, a significant increase in Social Integration was found only for the intervention group (ES = 0.69) and a significant interaction effect was found indicating that the change at post-test was different between the two study groups ($p = 0.038$). The effect size was 0.85 (for the difference between the two groups at post-test measurements). Overall, these results indicate that the mental health educational intervention had a positive impact on the perceptions about mental illness among the intervention group.

When changes in OMI factors for the intervention group were investigated according to gender, parents' highest educational level and whether the participant ever had contact with a mentally ill person (Table 2), it was found that Social Discrimination had a significant reduction only in girls, but that the non-significant interaction effect indicated that change at the post-test was not different between boys and girls. Additionally, girls had lower score on Social Integration at baseline and a significant increase at post-test, in contrast to males whose scores on the aforementioned factor remained unchanged ($p = 0.021$). Interestingly, Social Discrimination had a significant reduction only in adolescents whose parents' educational level was 12 years or less, and the interaction effect did not reach statistical significance. Score on Social Care at baseline was significantly higher for those whose parents' educational level was 12 years or less, and they also had a significant reduction in Social Care at post-test. The significant interaction effect ($p = 0.025$) showed that the change of Social Care was significantly different according to the highest educational level of the parents. Furthermore, Social Discrimination decreased both in adolescents who had ever had contact with a mentally ill person and in those who had never had contact with a mentally ill person. Adolescents who had ever had contact with a mentally ill person had lower scores on Social Restriction at baseline, and at post-test they had lower scores on Social Discrimination factor. Social Integration increased significantly only in those that had never had contact with a mentally ill person, but the interaction effect was not significant.

Discussion

The present study explored the adolescents' perceptions about mental illness and examined the changes in these perceptions following a mental health educational intervention. The results suggest that educational interventions can have a positive impact on the opinions about mental illness. Overall the findings of the study indicate that the

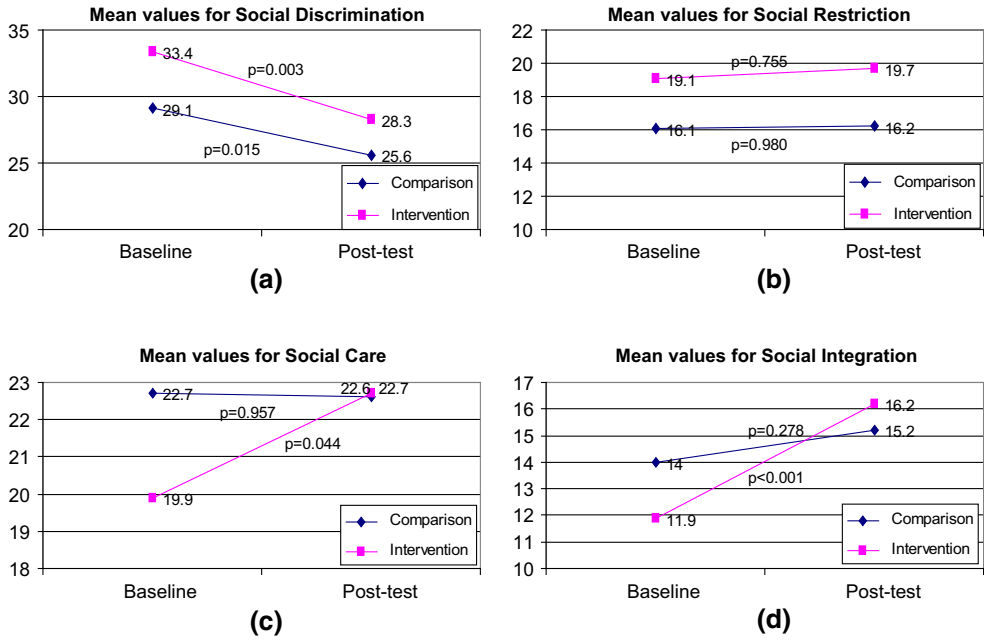

Fig. 1 **a** Mean values for Social Discrimination at baseline and post-test measurements for both study groups. **b** Mean values for Social Restriction at baseline and post-test measurements for both study groups. **c** Mean values for Social Care at baseline and post-test measurements for both study groups. **d** Mean values for Social Integration at baseline and post-test measurements for both study groups

perceptions towards mental illness, which are expressed through Social Care, Social Restriction, Social Discrimination and Social Integration, show positive changes after the mental health intervention. Specifically, in our study there was an increase in the score of Social Care only in the intervention group at the post-test, and the overall change was significantly different between the two groups. In addition, a significant increase was found in Social Integration only for the intervention group, and a significant interaction effect was found indicating that the overall change was different between the two study groups. Similarly, another study found that the mental health promotion and stigma reduction programme targeting secondary school students had positive impact on acceptance and social inclusion of people with mental illness (Yau, Pun, & Tang, 2011). In addition, the impact of educational interventions is also supported by the Naylor, Cowie, Walters, Talamelli, & Dawkins (2009) study which showed that after a mental health teaching programme, pupils in an intervention group compared with those in comparison group expressed significantly more sensitivity and empathy towards people with mental health difficulties.

The limited literature is in line with the results of the current study; studies among adolescents of the same age as the current study have shown positive changes in attitudes towards mental illness after educational interventions (Essler, Arthur, & Stickley, 2006; Pinfold et al., 2003; Watson et al., 2004; Spagnolo et al., 2008). Moreover, studies indicated improvements in stigmatization after educational interventions among adolescents (Rickwood et al., 2004; Ng & Chan, 2002; Bronwyn & Dale, 1993), or showed positive effects on dispelling negative stereotypes (Schulze et al., 2003). Finally, older Greek adolescents after an educational intervention adapted more positive attitudes towards mentally ill people, and they also obtained significant more knowledge and an integrated opinion about the deinstitutionalization, psychiatric reform and the community rehabilitation settings at the area where they live (Asimopoulos et al., 2007).

The participants among the intervention group, in our study, revealed a significant positive change in Social Discrimination after the intervention. Although the intervention group had a higher score than the comparison group on Social Discrimination before the intervention, at the post-test the decrease was greater. In addition, girls showed less Social Discrimination after the intervention compared to boys ($p = 0.005$). Thus, the intervention had a positive impact on Social Discrimination, which is also supported by several other studies. Conrad et al. (2009) found a positive effect of a school programme on students' desire for social distance towards people with mental illness which was assessed by a questionnaire regarding students' readiness to enter different types of social relationships with someone who has had a mental illness. In

Table 2 Changes in OMI factors at the post-test period for the intervention group according to sex, highest educational level of the parents and whether they had ever had contact with a mentally ill person

	Baseline Mean (SD)	Post-test Mean (SD)	Change Mean (SD)	P*	$P^{\ddagger}$
Social Discrimination					
Gender					
Males	33.1 (5.0)	29.5 (6.8)	−3.5 (9.0)	0.234	0.371
Females	34.4 (7.4)	27.4 (8.2)	−6.4 (7.4)	0.005	
P**	0.588	0.505			
Social Restriction					
Males	20.2 (5.2)	22.9 (10.9)	3.4 (9.0)	0.243	0.198
Females	18.8 (5.8)	17.3 (9.1)	−1.5 (9.4)	0.553	
P**	0.529	0.163			
Social Care					
Males	18.4 (5.6)	22.4 (5.4)	4.1 (8.7)	0.149	0.458
Females	20.9 (4.5)	23 (3)	2 (5.4)	0.176	
P**	0.206	0.717			
Social Integration					
Males	13.4 (3.7)	16 (3.9)	2.1 (4.0)	0.113	0.021
Females	9.9 (3.8)	16.3 (5.1)	5.9 (3.8)	<0.001	
P**	0.021	0.887			
Educational level of the parents					
Social Discrimination					
≤12 years	35.8 (5.7)	26.6 (8.1)	−8.6 (8.3)	0.007	0.067
>12 years	32.2 (6.7)	29.5 (7.1)	−2.7 (7.3)	0.176	
P**	0.143	0.329			
Social Restriction					
≤12 years	19.2 (4.9)	18.1 (11.3)	−0.4 (9.1)	0.897	0.669
>12 years	19.5 (6.2)	20.8 (9.3)	1.3 (9.8)	0.624	
P**	0.888	0.509			
Social Care					
≤12 years	18.9 (5.3)	24.9 (2.4)	6.4 (5.9)	0.005	0.025
>12 years	20.5 (5)	20.9 (4.4)	0.3 (6.7)	0.849	
P**	0.429	0.006			
Social Integration					
≤12 years	11.5 (4.8)	15.9 (3.5)	3.2 (4.4)	0.037	0.271
>12 years	11.3 (3.6)	16.3 (5.3)	5.0 (4.1)	<0.001	
P**	0.865	0.820			
Participants' contact with a mentally ill person					
Social Discrimination					
No	35 (5.8)	30.4 (7.0)	−4.6 (8.1)	0.033	0.635
Yes	32.1 (7.1)	24.2 (7.3)	−6.2 (8.5)	0.049	
P**	0.246	0.045			
Social Restriction					
No	21.1 (5.1)	22.2 (9.5)	1.1 (9.4)	0.631	0.693
Yes	16.8 (5.3)	14.9 (9.9)	−0.4 (9.7)	0.894	
P**	0.044	0.079			
Social Care					
No	19.8 (5.4)	22.8 (3.2)	2.9 (6.4)	0.077	0.956
Yes	19.9 (4.6)	22.7 (5.4)	2.8 (8.2)	0.338	
P**	0.976	0.982			

Table 2 continued

	Baseline Mean (SD)	Post-test Mean (SD)	Change Mean (SD)	P^*	$P^{\ddagger}$
Social Integration					
No	11 (3.6)	16 (4.9)	5 (4.0)	<0.001	0.234
Yes	12 (5.0)	16.4 (4.1)	2.9 (4.6)	0.098	
P^{**}	0.539	0.819			

* p value for time effect; ** p value for group effect; ‡ p value for time × group effect

other studies, participants were less socially distanced after the educational intervention, where social distance was assessed through items of self-reported behaviours towards people with schizophrenia by Stuart (2006) or through attitude statements by Pinfold et al. (2003) and Schulze et al. (2003).

Our intervention had a significant positive change in the Social Care factor, while Ng and Chan (2002) showed no reinforcement of benevolence among adolescents after an educational intervention. Social Integration had a significant positive change after the mental health educational intervention. The positive change is remarkable among girls, who started with lower scores than boys, but they reached the same scores with the boys after the intervention.

Finally, it is supported that people who have met, talked or worked with a psychiatric patient show more positive attitude suggesting that stigmatization may be reduced by increasing social activities with psychiatric patients (Vezzoli et al., 2001). In our study, at post-test adolescents who had ever had contact with a mentally ill person showed less Social Discrimination. However, Social Discrimination decreased both in adolescents who had contact with a mentally ill person and in those who never had contact with a mentally ill person. Adolescents who had ever had contact with a mentally ill person had lower scores on Social Restriction at baseline. While Social Integration increased significantly only in those who had never had contact with a mentally ill person, but the overall change at the post-test was not different between the two groups.

Limitations

A possible limitation of our study was that the mental health educational intervention was short (due to the schools' tight curriculum). Nevertheless, our results support the positive impact of a mental health educational intervention and demonstrate the applicability of our approach in future interventions targeting the group of adolescents. Other limitations could be that the instrument used to collect the data is a self-report measure, and there is a possibility that social pressure influenced the way participants responded to the questions.

Further research is needed since the two study groups had different scores at baseline. However, for example in Social Discrimination, no significant interaction effect was found, or in Social Care scores the significant interaction effect was an indication that the degree of change was different between the two groups. Another limitation is that there is no behavioural data collected, and therefore, it is not possible to know whether these self-reported attitude changes lead to behavioural changes in the real world too. Furthermore, a follow-up test was not included which would allow us to explore whether the changes remain in time. However, the aim of this study was to explore the impact of the intervention itself and not other factors that may influence the participants' perceptions by time. Although the study demonstrated positive impact of the intervention on the adolescents' opinions towards mental illness, overall generalization of the results should be taken with care as the number of participants was limited, and there could be a self-selection bias.

Conclusion

Our study supports the fact that mental health educational interventions can be implemented in order to positively influence the perceptions about mental illness among adolescents who form the future adults of our community. Thus, the results of our study which highlight the adolescents' perspectives should be taken into account when planning and implementing similar interventions to this target group. Health professionals and health educators should be more aware of the need to give emphasis to mental health education among adolescents and introduce initiatives that promote mental health. Educational mental health interventions which strengthen an understanding of mental health and mental illness and enhance the positive perceptions of mental health and mental illness, as well as reduce negative views of mental illness, seem to be possible. Future educational mental health interventions could target specific mental illnesses each time in order to improve understanding and reduce negative perceptions towards different mental illnesses. The results of this study can be used in the context of different cultures, since

similar results have been found in other studies as it is discussed in the previous section and they can be further tested. Finally, related strategies and policy guidelines should be developed in order to ensure the implementation of successful interventions in schools.

However, further research is needed to explore what long-term impact mental health educational interventions can have among the group of adolescents as well as to examine the remarkable differences we observed between male and females adolescents. The use of different tools which will assess the effect of mental health educational interventions, including the one presented in this study, will provide useful information for those planning and implementing mental health interventions in schools.

References

Arboleda-Florez, J. (2002). What causes stigma? *World Psychiatry, 1*(1), 25–26.

Asimopoulos, Ch., Apostolopoulou, A., Vasilikopoulos, A., Varvaressou, X., Tsalamanios, E., Flios, A., & Tsiantis, I. (2007). Οι στάσεις των εφήβων προς τους ψυχικά ασθενείς και την ψυχιατρική μεταρρύθμιση: ένα πρόγραμμα έρευνας-παρέμβασης σε μαθητές Λυκείου [Adolescents' attitudes towards mentally ill and the psychiatric reform: A research-intervention program among high school pupils]. *Tetradia Psychiatrikis, 99*, 13–29.

Bjorkman, T., Angelman, T., & Jonsson, M. (2008). Attitudes towards people with mental illness: A cross-sectional study among nursing staff in psychiatric and somatic care. *Scandinavian Journal of Caring Sciences, 22*, 170–177.

Blaine, B. E. (2007). *Understanding the psychology of diversity*. Great Britain: Sage Publications.

Bos, A. E. R., Kanner, D., Muris, P., Janssen, B., & Mayer, B. (2009). Mental illness stigma and disclosure: Consequences of coming out of the closet. *Issues in Mental Health Nursing, 30*, 509–513.

Bronwyn, M., & Dale, B. (1993). Beyond the cuckoo's nest: A high school education program. *Psychosocial Rehabilitation Journal, 16*(3), 146–150.

Brown, K., & Bradley, L. J. (2002). Reducing the stigma of mental illness. *Journal of Mental Health Counselling, 24*(1), 81–87.

Burns, N., & Grove, S. K. (2009). *The practice of nursing research. Appraisal, synthesis, and generation of evidence* (6th ed.). St. Louis: Saunders Elsevier.

Byrne, P. (2000). Stigma of mental illness and ways of diminishing it. *Advances in Psychiatric Treatment, 6*, 65–72.

Canadian Mental Health Association. (2013). Stigma and discrimination. Retrieved September 8, 2015 from http://ontario.cmha.ca/mental-health/mental-health-conditions/stigma-and-discrimination/

Cohen, J., & Struening, E. L. (1962). Opinions about mental illness in the personnel of two large mental hospitals. *Journal of Abnormal and Social Psychology, 64*(5), 349–360.

Conrad, I., Dietrich, S., Heider, D., Blume, A., Angermeyer, M. C., & Riedel-Heller, S. (2009). Crazy? So What!: A school programme to promote mental health and reduce stigma—results of a pilot study. *Health Education, 109*(4), 314–328.

Corrigan, P. W., & Penn, D. L. (1999). Lessons from social psychology on discrediting psychiatric stigma. *American Psychologist, 54*(9), 765–776.

Costello, E. J., Erkanli, A., & Angold, A. (2006). Is there an epidemic of child or adolescent depression? *Journal of Child Psychology and Psychiatry, 47*(12), 1263–1271.

DeSocio, J., Stember, L., & Schrinsky, J. (2006). Teaching children about mental health and illness: A school nurse health education program. *The Journal of School Nursing, 22*, 81–86.

Dietrich, S., Heider, D., Matschinger, H. A., & Angermeyer, M. C. (2006). Influence of newspaper reporting on adolescents' attitudes toward people with mental illness. *Social Psychiatry and Psychiatric Epidemiology, 41*, 318–322.

Essler, V., Arthur, A., & Stickley, T. (2006). Using a school-based intervention to challenge stigmatizing attitudes and promote mental health in teenagers. *Journal of Mental Health, 15*(2), 243–250.

Evagelou, H., Adali, E., Koukia, F., Katostaras, M., Priami, G., & Toulia, G. (2005). The influence of education on nursing students on the formation of attitudes toward psychiatric illness. *ICUs Nursing Web Journal*, *23*, 1–8.

Fitzgerald, M., Joseph, A. P., Hayes, M., & O'Regan, M. (1995). Leisure activities of adolescent schoolchildren. *Journal of Adolescence, 18*, 349–358.

Golub, M. S. (2000). Adolescent health and the environment. *Environmental Health Perspectives, 108*, 355–362.

Harrison, J., & Gill, A. (2010). The experience and consequences of people with mental health problems, the impact of stigma upon people with schizophrenia: A way forward. *Journal of Psychiatric and Mental Health Nursing, 17*, 242–250.

Hosman, C. & Jane-Llopis, E. (2005). The evidence of effective interventions for mental health promotion. In Herrman H., Saxena S. & Moodie R. (Eds.), *Promoting mental health, concepts-emerging evidence-practice*. WHO (online). Retrieved September 8, 2015 from http://www.who.int/mental_health/evidence/MH_Promotion_Book.pdf

Johnstone, M. J. (2001). Stigma social justice and the rights of the mentally ill: challenging the status quo. *Australian and New Zealand Journal of Mental Health Nursing, 10*, 200–209.

Kim-Cohen, J., Caspi, A., Moffitt, T. E., Harrington, H., Milne, B. J., & Poulton, R. (2003). Prior juvenile diagnoses in adults with mental disorder. *Archives of General Psychiatry, 60*, 709–717.

Lahtinen, E., Lehtinen, V., Riikonen, E., & Ahonen, J. (Eds.). (1999). *Framework for promoting mental health in Europe*. Finland: STAKES.

Madianos, M. G., Economou, M., Hatjiandreou, M., Papageorgiou, A., & Rogakou, E. (1999). Changes in public attitudes towards mental illness in Athens area (1979/1980-1994). *Acta Psychiatrica Scandinavica, 99*, 73–78.

Madianos, M. G., Madianou, D., Vlachonikolis, J., & Stefanis, C. N. (1987). Attitudes towards mental illness in the Athens area: implications for community mental health intervention. *Acta Psychiatrica Scandinavica, 75*, 158–165.

Madianos, M. G., Priami, M., Alevisopoulos, G., Koukia, E., & Rogakou, E. (2005). Nursing students' attitude change towards mental illness and psychiatric case recognition after a clerkship in psychiatry. *Issues in Mental Health Nursing, 26*, 169–183.

Malliori, M., Ekonomou-Lalioti, M., Ploumpidis, D. & Kourea-Kremastinou, J. (2007). Ψυχική Δημόσια Υγεία [Mental public health]. In J. Kourea-Kremastinou (Ed.), *Δημόσια Υγεία. Θεωρία. Πράξη. Πολιτικές [Public health. Theory. Action. Policies.]* Athens: Technogrammamed.

Mental Health Europe. (2011). Good practices for combating social exclusion of people with mental health problems. Retrieved September 8, from http://old.mhe-sme.org/assets/files/Good%20Practices%20Publication_Final.pdf

Ministry of Health and Welfare. (2001). *Ψυχαργώς 2001–2010, Πρόγραμμα ανάπτυξης δομών και υποδομών στον τομέα της ψυχικής υγείας* (Book in Greek) *[Psychargos 2001–2010,*

Programme for the settings development in mental health sector], (D. Hondros, K. Folia, S. Gratsani. Eds.). Athens.

Morgan, A. J., & Jorm, A. F. (2009). Recall of news stories about mental illness by Australian youth: Associations with help-seeking attitudes and stigma. *Australian and New Zealand Journal of Psychiatry, 43*, 866–872.

Naidoo, J., & Wills, J. (2000). *Health promotion. Foundations for practice*. UK: Bailliere Tindall, Royal College of Nursing.

Naylor, P. B., Cowie, H. A., Walters, S. J., Talamelli, L., & Dawkins, J. (2009). Impact of a mental health teaching programme on adolescents. *British Journal of Psychiatry, 194*, 365–370.

Ng, P., & Chan, K. F. (2000). Sex differences in opinion towards mental illness of secondary school students in Hong Kong. *International Journal of Social Psychiatry, 46*(2), 79–88.

Ng, P., & Chan, K.-F. (2002). Attitudes towards people with mental illness. *Effects of a training program for secondary school students, International Journal of Adolescence Medical Health, 14*(3), 215–224.

Papageorgiou-Vasilopoulou, A. (2005). *Κοινωνική-Κοινοτική Νοσηλευτική Ψυχικής Υγείας [Social-Community Mental Health Nursing]*. Athens: Beta Publications.

Perkins, R., & Repper, J. (2005). Social exclusion, discrimination and social isolation. In B. Hannigan & M. Coffey (Eds.), *The handbook of community mental health nursing*. London: Routledge.

Pinfold, V., Thornicroft, G., Huxley, P., & Farmer, P. (2005). Active ingredients in anti-stigma programmes in mental health. *International Review of Psychiatry, 17*(2), 123–131.

Pinfold, V., Toulmin, H., Thornicroft, G., Huxley, P., Farmer, P., & Graham, T. (2003). Reducing psychiatric stigma and discrimination: Evaluation of educational interventions in UK secondary schools. *British Journal of Psychiatry, 182*, 342–346.

Pinto-Foltz, M. D., & Logsdon, M. C. (2009). Conceptual model of research to reduce stigma related to mental disorders in adolescents. *Issues in Mental Health Nursing, 30*(12), 788–795.

Rahman, A., Mubbashar, M., Gater, R., & Goldberg, D. (1998). Randomised trial of impact of school mental-health programme in rural Rawalpindi, Pakistan. *Lancet, 352*, 1022–1025.

Rickwood, D., Cavanagh, S., Curtis, L., & Sakrouge, R. (2004). Educating young people about mental illness: Evaluating a school-based programme. *International Journal of Mental Health Promotion, 6*(4), 23–32.

Rose, D., Thornicroft, G., Pinfold, V. & Kassam, A. (2007). 250 Labels used to stigmatise people with mental illness. *BMC Health Services Research, 7*, 97. Retrieved September 8, 2015 from http://www.biomedcentral.com/1472-6963/7/97

Sabir Ali, B., & Iftikhar, R. (2006). Promotion of mental health in developing countries: A conceptual system. *Primary Care Mental Health, 4*, 29–36.

Sakellari, E. (2010). Προαγωγή και αγωγή ψυχικής υγείας [Mental health promotion and mental health education]. In D. K. Anagnostopoulos & A. Papageorgiou-Vasilopoulou (Eds.), *Νοσηλευτική ψυχικής υγείας του παιδιού και του εφήβου [Child and adolescent mental health nursing]*. Athens: Beta Publications.

Sakellari, E., Sourander, A., & Leino-Kilpi, H. (2014). Perceptions of mental health among adolescents in Greece. *British Journal of Mental Health Nursing, 3*, 126–131.

Schulze, B., Richter-Werling, M., Matschinger, H., & Angermeyer, M. C. (2003). Crazy? So what! Effects of a school project on students' attitudes towards people with schizophrenia. *Acta Psychiatrica Scandinavica, 107*, 142–150.

Spagnolo, A. B., Murphy, A. A., & Librera, L. A. (2008). Reducing stigma by meeting and learning from people with mental illness. *Psychiatric Rehabilitation Journal, 31*(3), 186–193.

Stark, C., Paterson, B., & Devlin, B. (2004). Newspaper coverage of a violent assault by a mentally ill person. *Journal of Psychiatric and Mental Health Nursing, 11*, 635–643.

Stuart, H. (2006). Reaching out to high school youth: The effectiveness of a video-based antistigma program. *Canadian Journal of Psychiatry, 51*(10), 647–653.

Tomaras, V. D., Ginieri-Coccossis, M., Vassiliadou, M., Malliori, M., Ferentinos, S., Soldatos, C. R., & Tylee, A. (2011). Education in mental health promotion and its impact on the participants' attitudes and perceived mental health. *Annals of General Psychiatry*. doi:10.1186/1744-859X-10-33.

Vezzoli, R., Archiati, L., Buizza, C., Pasqualetti, P., Rossi, G., & Pioli, R. (2001). Attitude towards psychiatric patients: A pilot study in a northern Italian town. *European Psychiatry, 16*, 451–458.

Wahl, O. F. (2002). Children's views of mental illness: A review of the literature. *Psychiatric Rehabilitation Skills, 6*(2), 134–158.

Wahl, O., Wood, A., Zaveri, P., Drapalski, A., & Mann, B. (2003). Mental illness depiction in children's films. *Journal of Community Psychology, 31*(6), 553–560.

Watson, A. C., Otey, E., Westbrook, A. L., Gardner, A. L., Lamb, T. A., Corrigan, P. W., & Fenton, W. S. (2004). Changing middle schoolers' attitudes about mental illness through education. *Schizophrenia Bulletin, 30*(3), 563–572.

Weare, K. (2007). Linking education and mental health—A European priority. *Health Education, 107*, 245–249.

Wei, Y., & Kutcher, S. (2012). International school mental health: Global approaches, global challenges, and global opportunities. *Child and Adolescent Psychiatric Clinics of North America, 2*, 11–27.

WHO. (2004). *Prevention of mental disorders. Effective interventions and policy options*. Retrieved September 8, 2015 from http://www.who.int/mental_health/evidence/en/prevention_of_mental_disorders_sr.pdf

WHO. (2008). *Mental health gap action programme: Scaling up care for mental, neurological and substance use disorders.* Retrieved September 8, 2015 from http://whqlibdoc.who.int/publications/2008/9789241596206_eng.pdf?ua=1

WHO. (2011). *Mental health: a state of well-being*. Retrieved September 8, 2015 from http://www.who.int/features/factfiles/mental_health/en/index.html

WHO. (2012a). *Development of a global mental health action plan 2013–2020. Draft mental health action plan. An overview.* Retrieved September 8, 2015 from http://www.who.int/mental_health/mhgap/mental_health_action_plan_EN_27_08_12.pdf

WHO. (2012b). *Adolescent mental health. Mapping actions of nongovernmental organizations and other international development organizations*. Retrieved September 8, 2015 from http://whqlibdoc.who.int/publications/2012/9789241503648_eng.pdf

World Education Encyclopedia. Marlow-Ferguson R. (Ed.) (2002). *A survey of educational systems worldwide*. USA: Gale Group.

Yau, S. S. W., Pun, K. H. W., & Tang, J. P. S. (2011). Outcome study of school programmes for reducing stigma and promoting mental health. *Journal of Youth Studies, 14*(1), 30–40.