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Research Article

A Theory-Based Intervention in Health Visiting Students in Order to Reduce Mental Illness Stigma: A Quasi-Experimental Study

Abstract

Background: Stigma of mental illness is an important barrier to treatment and recovery of mental illness. Schizophrenia represents the most common mental disorder for the public and it is connected with the highest stigma due to misconceptions of dangerousness. Stigmatizing attitudes have been found not only among general population but also in health care providers.

Objectives: A randomized trial was conducted in order to evaluate a short duration theory–based intervention programme to reduce potential stigma of mental illness, specifically schizophrenia, in a sample of Health Visiting students. The intervention involved education combined with video based contact with people with mental illness; this specific intervention scheme has proved to be the most effective intervention strategy and has been proposed as a good practice for stigma reduction.

Methods: In 2015, fifty seven Health Visiting students of the Athens Technological Education Institute who accepted to participate in the research were randomly assigned in two groups: an intervention group which received education and video-based contact with people with experience of mental illness and a control group which received education but no contact. The Mental Health Knowledge Scale (MAKS), the Attitudes to Severe Mental Illness (ASMI) Scale and the Social Distance Scale (SDS) were used to evaluate students' knowledge, attitudes and desired social distance from people with schizophrenia respectively, at three points of time (pre, mid, post).

Results: Although no cut-off points exist for any of the scales, health visiting students were found to hold relatively positive attitudes towards mental illness. As expected, stigma-related mental health knowledge increased in both groups after the intervention. The intervention group also improved their scores on the factor "Optimism" of the ASMI scale and decreased their stigma scores on the factor "Close Relations" of the SCD scale.

Conclusions: Our results indicate that stigma-related mental health knowledge can be increased with a short duration intervention, whilst negative attitudes and increased desired social distance from people with mental illness are more resistant to change. Further research is needed to explore the specific components as well as the features of effective short duration antistigma intervention programs.

Abbreviations

MAKS: Mental Health Knowledge Scale; ASMI: Attitudes to Severe Mental Illness; SDS: Social Distance Scale

Introduction

Stigma of mental illness is an important barrier to treatment and recovery of mental illness [1] . Stigma consists of negative stereotypes, prejudice and discriminatory behavior towards people with mental illness [2]. Stigma is distinguished in public stigma and self-stigma, depending on whether it is perceived by the person who does the stigmatizing or by the person who is being stigmatized, respectively [3,4]. Reviews of the literature have highlighted the adoption of stigmatized attitudes against people with mental illness not only by the general population but also by health professionals [5-7] . The above finding is particularly important if we take into account the high rate of comorbidity of physical diseases with mental disorders, which actually reflects the daily contact of health professionals with people with mental illness [8,9].

During the last fifty years there have been considerable efforts to combat the stigma of mental illness [10]. Given the fact, that the mental illness stigma seems to have a particularly adverse effect when adopted by groups of people in key power roles [11], antistigma interventions were proposed and implemented in key power groups in society i.e, employers, health professionals, judges, police officers and employees in media [12]. The provision of suitable skills for professionals is considered to be an important component of antistigma interventions; appropriate training is recommended in order to build the capacity for empathy as well as the skill to avoid over-identification with people they serve [13].

Literature review indicates that, the social stigma of mental illness may be reduced in three ways: through protest, through education and through contact with a person with mental illness [14-16].

The stigma reduction strategies through social protest refer to the organized efforts to prevent dissemination -e.g. through mass media – of inaccurate and misleading information about mental illness. Intervention strategies focusing on education refer to the provision of accurate and proper information about the reality of mental illness, as well as the myths that have been created around it. Last, but not least, contact with a person with mental illness is particularly important since it increases the familiarity with mental illness.

Particularly important are the results of a recent meta-analysis of 72 research papers on the effectiveness of antistigma interventions to reduce the stigma of mental illness [17]. The studies analyzed included a total of 38,364 participants from 14 countries in Europe, South America, Asia and Australia. Interventions included all three types of strategies to reduce mental illness stigma i.e. protest, education and contact. Findings of the meta-analysis demonstrate that the most effective intervention strategy involves the combination of education with contact. As far as the type of contact is concerned, face-to-face contact with people with mental illness, seemed to have better results, followed by video-based contact.

In Greece, the first study on the attitudes of the general population towards people with mental illness took place in 1979. The study surveyed the attitudes of a sample of 1,574 adults in two municipalities of Athens, just before the provision of relevant services from the local Community Mental Health Centre (KKPSY) [18]. The survey was repeated 14 years later. Improved attitudes, less authoritarianism, more tolerance and parallel tendency to accept the integration of mental illness were noted and attributed to the operation and effect of KKPSY services- the latter seemed to shape more positive attitudes to the community for the mentally ill persons [19]. In a recent survey of a randomly selected sample of 1,119 Greek adults, on knowledge and attitudes about schizophrenia, the Greek population appears to have restricted knowledge and rather stigmatized opinions about schizophrenia. [20]. Other studies conducted in Greece in order to investigate health professional students attitudes towards people with mental illness [21-23], prior to their undergraduate training in psychiatry and after the completion of it, have demonstrated improved attitudes after psychiatric education of students. Although the Greek research literature provides data about attitudes of different groups on mental illness, there are no much data on the implementation and evaluation of antistigma interventions.

Promotion of mental health and reduction of the impact of mental disorders inevitably includes the strengthening of primary care services' staff in order to be able to recognize, assess and address similar problems [21]. The current research aims to compare the results of two types of intervention (education vs. education combined with video-based contact) to decrease stigma of schizophrenia in Health Visiting students. Health visitors are key members of the primary health care team and are the most accessible health professionals in the community. The intervention address the three dimensions of stigma, that is, knowledge, attitudes and desired social distance from people with schizophrenia. The focus was on the stigma of schizophrenia, since it is closely linked to fear and misconceptions that people with schizophrenia are violent, unpredictable and dangerous [24].

We expected that:

a) The knowledge of participants will increase in both groups as they both receive education about mental illness,

b) Combined intervention in intervention group will have better results in improving Health Visitors' attitudes towards people with severe mental disease, regarding stereotypes, optimism, coping and understanding.

c) Combined intervention in intervention group will have better results in the reduction of the desired social distance with people with schizophrenia in the dimensions of stable social relations, close relations and transient relations.

Material and Methods

Research design

We carried out a randomised trial with two conditions: a combined intervention which included education and video-based contact with people with experience of mental illness and an active control condition, which included education but no contact with pre-test-mid-test-post-test measurements.

Participants and procedures

The intervention study was conducted in collaboration with the Centre of Health Services Research, Medical School of Athens and approved by the institutional Review Board. Participants were students, of the Community Health Unit of the Department of Public and Community Health of the Faculty of Health Professions of the Technological Educational Institute of Athens. For the purpose of the study, third year students were informed by leaflets and invited to participate in the study. A total of 57 students accepted to participate, signed the informed consent form, and completed the baseline assessment questionnaires. After the baseline measurement, assignment to either intervention or comparison condition was conducted by using a random number table.

Questionnaires

According to the social cognitive model, the stigma consists of three main components: the knowledge (misinformation / intercultural or religious differences), the attitudes (prejudice) and the behavior (discrimination) [2]. The components of this intervention covered all these three key elements and were measured with appropriate questionnaires administered at baseline, mid and post intervention. The questionnaires included questions about socio-demographic characteristics (gender, age, marital status), lifestyle patterns (existence of relatives/personal friends with a mental disease, weekly hours of watching TV), and examined knowledge and attitudes about severe mental illness as well as desired social distance from people with mental illness.

Participants' *knowledge* related to mental illness stigma was assessed by the Greek version of the questionnaire MAKS, Mental Health Knowledge Scale [25], which has proved to have a test-retest reliability of 0.71 [25]. The MAKS questionnaire consists of 12 items. The first six items relate to knowledge about the following components: counselling, recognition, support, work, treatment and

recovery and the rest six involve knowledge about mental illness diagnosis; questions on mental illness diagnosis were not included in this research. The MAKS questionnaire is rated at a five-point Likert scale. Responses range from 1 (=strongly disagree) to 5 (=strongly agree). The answer "do not know" is scored with the value 3. The total scale score was calculated by adding the values of the answers to questions 1-6. Total score ranged from 6-30, with higher scores indicating better knowledge.

Participants' *attitudes* towards people with mental illness was assessed by the Attitudes to Severe Mental Illness (ASMI) scale which has proved to have good psychometric properties [26]. The scale includes 30 items in the form of statements. The analysis of factors have resulted in four dimensions, stereotypes (factor A), optimism (factor B), coping (factor C) and understanding (factor D). Agreement with the statements of factors B, C and D shows non stigmatized opinions and attitudes, while agreement with the statements of factor A shows stigmatized attitudes and are reverse coded. The ASMI scale is rated at a 4-point Likert scale ranging from 4 [= agree] to 1 [= disagree]. For factor A (stereotypes), the lowest score of negative attitude is 11 while the maximum score of positive attitude is 44. For the factor B (optimism), the lowest score of negative attitude is 6 and the maximum positive attitude is 24. For the factor C (coping) the lowest score of negative attitude is 7 and the maximum score of positive attitude is 28. Finally, for the factor D (understanding) the lowest score of negative attitude is 6 and the maximum positive score is 24.

Social distance is considered to be the most widespread social stigma index (30) and assessed by the Greek version of the Social Distance Scale (SDC) which has proved to have good reliability and validity properties [27]. It consists of 14 items and the responses follow a five-point Likert scale ranging from 1 [= definitely no] to 5 [= definitely yes]. The minimum score for each factor is 5 and the maximum is 25 with lower scores indicating lower desired social distance from people with schizophrenia. The social distance scale includes three factors. The first factor relates to stable social relations and includes items describing relations of moderate proximity with duration and continuation in contact. The second factor relates to close relations with trust and includes items describing relations with emphasis on safety feelings during contact with a person with schizophrenia. The third factor describes transient relations and includes items which describe temporary relations.

Intervention description

Intervention scheme for decreasing the stigma of mental illness included the following components:

1) Education on Mental health and mental illness

2) Education on causes, symptoms, treatment, and recovery of schizophrenia

3) Education on Stigma of severe mental illness

4) Education on schizophrenia myths and facts

5) Video presentation with people with mental illness

Education components (1-4) aimed to provide accurate information against the myths of mental illness and the contact via video presentation (5) aimed to familiarize students with mental illness.

The intervention group received the whole intervention (1-5) in two meetings which lasted 3 hours totally. The control group received all the education components (1-4) but not the video presentation.

The material used for the intervention was based on the material of the global program "Open the Doors" of the World Psychiatric Organization which aimed to reduce the stigma and discrimination of schizophrenia [30]. For the video presentation two videos were presented. The first video lasted 15 minutes and it presented the experience of a woman with schizophrenia [28]. The second video was developed under the cooperation program of the IWK Health Centre and the Mental Health Commission of Canada to combat the stigma of mental illness in health professionals [29]. It lasted 11 minutes and it presented the experience of people with mental health problems during their contact with health professionals.

Statistical analysis

The statistical analysis was conducted using SPSS statistical software (version 19.0). Initially, mean values, Standard Deviations (SD), median and interquartile ranges were calculated for the quantitative variables. Absolute (N) and the relative (%) proportions were calculated for the qualitative variables. The Fisher's exact test was used to compare proportions and the Student's t-was used to compare mean values. For the comparison of hours watching TV the nonparametric Mann-Whitney test was used. Repeated measurements analysis of variance (ANOVA) was used to examine differences between groups and assessments in MAKS Total Score, in ASMI Factor Score and in SDS Factor Scores. Bonferroni correction was used in case of testing for time effect in order to control for type I error.All reported p values are two-tailed. Statistical significance was set at $p < 0.05$.

Results

Sample included 57 students, 28 (49.1%) in intervention group and 29 (50.8%) in comparison group. Sample characteristics for both groups are presented in Table 1. Analyses did not reveal any statistically significant differences between the two groups prior to the

Table 1: Sample characteristics.

	Intervention group (*N*=28) N (%)	Control group (*N*=29) *N* (%)	P
Gender			
Men	5 (17.9)	1 (3.4)	0.102[+]
Women	23 (82.1)	28 (96.6)	
Age, mean (SD)	22.0 (2.9)	22.4 (5.5)	0.761*
Marital status			
Unmarried	26 (92.9)	26 (89.7)	1.000[+]
Married/Divorced	2 (7.1)	3 (10.3)	
Existence of relatives/personal friends with a mental disease			
Yes	6 (21.4)	7 (24.1)	0.566[+]
Maybe	6 (21.4)	3 (10.3)	
No	16 (57.1)	19 (65.5)	
Weekly hours of watching TV, mean (SD)	10.3 (8.3)	7.7 (5.6)	0.312**

[+] Fisher's exact test; *Student's t-test; **Mann-Whitney test.

intervention (Table 1) in terms of demographic or relevant lifestyle characteristics --existence of relatives/personal friends with a mental disease, and weekly hours of watching TV ($p > 0.05$).

Mean values of the *knowledge score* for both study groups are presented in Table 2. Intervention group had higher scores at all assessments (pre-, mid- and post-), indicating greater knowledge, compared to the controls. The score increased significantly, in the intervention group, from pre- to post-assessment. Control group's score was significantly greater at post- assessment compared to pre- and mid- assessment, while between pre- and mid- assessment no significant differences were found. The increase of knowledge score was similar in both study groups (F (df_1, df_2) = 0.01 (1,39); p>0.05).

Mean scores in all dimensions regarding participants' *attitudes* are presented in Table 3, for each group separately; higher values indicate better attitudes towards people with severe mental illness. The values in "Stereotyping" and "Coping" scores did not differ significantly between the two study groups in all assessments. Also, in the aforementioned dimensions, participants' scores remained at similar levels throughout follow-up period in both groups. The degree of change in "Stereotyping" and "Coping" scores was similar

in both groups (F (df_1, df_2) = 0.08 (1,37); p>0.05 and F (df_1, df_2)= 0.19 (1,39); p>0.05 respectively). In "Optimism" dimension, when the two groups were compared, it was found that at the pre-assessment the intervention group tended to have significantly greater score compared to the control group while in the mid- assessment the difference was significantly higher. At the post- assessment, the scores were similar between intervention and control group. Also, only in the intervention group there was a significant increase in the aforementioned dimension from pre to post assessment, indicating improvement in participants' optimism. However, there was no significant difference in the degree of change in "Optimism" scores between the two groups (F (df_1, df_2) = 0.36 (1,41); p>0.05). In "Understanding" dimension, when the two groups were compared, it was found that at the pre- and at the mid-assessment the intervention group had significantly greater scores compared to the control group. At the post- assessment, the scores were similar between both groups. Additionally, there were no significant changes in the aforementioned dimension though follow-up period, in both groups. The degree of change in "Understanding" scores was similar in both groups (F (df_1, df_2) = 0.97 (1,41); p>0.05).

Table 2: Changes in knowledge status between control and intervention group at pre-, mid- and post-assessments

	Pre Mean (SD)	Mid Mean (SD)	Post Mean (SD)	Change Mean (SD)	P ** Pre vs Mid	P ** Mid vs Post	P ** Pre vs Post	P‡
Intervention group	22.07 (2.24)	22.91 (2.75)	23.82 (2.06)	1.75 (2.04)	1.000	0.104	0.024	0.837
Control group	20.48 (2.53)	20.88 (2.52)	21.93 (2.66)	1.45 (2.45)	1.000	0.007	0.020	
P*	0.011	0.013	0.015					

*p value for differences between the two groups; **p value for changes among pre-, mid- and post-measures using Bonferroni correction; ‡repeated measurements ANOVA, p value for interaction effect of time with group.

Table 3: Changes in attitudes between control and intervention group at pre-, mid- and post-assessments.

	Pre Mean (SD)	Mid Mean (SD)	Post Mean (SD)	Change Mean (SD)	P ** Pre vs Mid	P ** Mid vs Post	P ** Pre vs Post	P‡
Stereotyping								
Intervention group	31.61 (7.07)	33.91 (5.41)	35.52 (5.70)	3.91 (4.39)	1.000	1.000	1.000	0.777
Control group	32.79 (6.82)	32.13 (7.28)	33.69 (6.83)	0.90 (7.09)	1.000	1.000	0.764	
P*	0.221	0.378	0.342					
Optimism								
Intervention group	18.14 (4.08)	19.91 (3.27)	20.77 (2.83)	2.63 (2.74)	0.519	0.705	0.032	0.552
Control group	17.03 (3.84)	17.42 (3.94)	18.66 (3.87)	1.63 (3.99)	0.988	0.870	0.125	
P*	0.077	0.027	0.110					
Coping								
Intervention group	26.54 (2.24)	27.05 (1.21)	26.50 (2.24)	-0.04 (2.48)	1.000	1.000	1.000	0.668
Control group	26.1 (2.14)	26.42 (2.60)	25.75 (2.66)	-0.35 (2.51)	1.000	0.145	0.319	
P*	0.163	0.302	0.158					
Understanding								
Intervention group	18.5 (3.70)	18.57 (4.00)	17.55 (4.09)	-0.95 (4.37)	1.000	0.407	0.284	0.331
Control group	16.34 (4.45)	15.71 (5.07)	16.28 (5.13)	-0.06 (4.14)	1.000	1.000	1.000	
P*	0.034	0.038	0.323					

*p value for differences between the two groups; **p value for changes among pre-, mid- and post-measures using Bonferroni correction; ‡repeated measurements ANOVA, p value for interaction effect of time with group.

Mean values in the *social distance scores* for the two groups are presented in Table 4. Significantly lower were the mean values in "Stable social relations" factor of the intervention group in all assessments compared to those of the control group, indicating lower desired social distance from people with schizophrenia. There were no significant differences in none of the study groups between assessments. Consequently, the degree of change in "Stable social relations" scores was similar in both groups (F (df$_1$, df$_2$)= 0.13 (1,40); p>0.05). As far as "Close relations" factor is concerned, it was found that values were significantly lower in the intervention group in the pre- and post- assessment, while in the mid one there was no significant difference. Through the follow up period, there was a significant decrease only in the intervention group from mid to post assessment. However, the degree of change in the values of the aforementioned factor was similar in both study groups (F (df$_1$, df$_2$) = 0.01 (1,39); p>0.05). Regarding "Transient relations" factor, there was no significant difference in the pre-assessment between the two groups, while in the mid and post assessment intervention group tended to have lower scores compared to the control group. Between assessments there were no significant differences in none of the study groups. Also, the degree of change in "Transient relations" scores was similar in both groups (F (df$_1$, df$_2$)=1.46 (1,40); p>0.05).

Discussion

This small scale randomized trial was conducted in order to evaluate a short duration theory–based intervention programme to reduce potential stigma of mental illness, specifically schizophrenia, in a sample of Health Visiting students. The study was based on the impact and process evaluation of the intervention program since outcome evaluation would require longitudinal tracking of students who attended the intervention; the latter was not feasible given specific time and financial constraints.

The impact evaluation of the intervention was based on the questionnaires' scores differences and changes between and within intervention and control groups. In this context, students' knowledge related to mental illness stigma–assessed with the MAKS scale- was rather high in both groups even at baseline measurement and increased significantly during assessments. This finding is in line with those derived from other studies, indicating that even a short duration comprehensive education based intervention may have an impact on participants' knowledge [34]. An increase of accurate knowledge, however, does not seem to lead to stigma reduction, since stigmatized attitudes and behavior often coexist with accurate knowledge on mental illness [26].

It is also interesting to note the fact that health professional students hold rather positive attitudes towards mental illness during their studies. This however does not seem to remain stable and may actually change when health professionals' students complete their studies and they start providing services in real settings [32,33]. The explanation to that could be that there is a relationship between the stress the health professionals feel, when they serve people who are in suffer [13]. Specifically Cutler et al. [13], suggest that stress, stigmatization and stereotyping are along an empathic spectrum, and that empathy can entail stress for the health care staff, if they have not developed the capacity for empathy combined with appropriate skills preventing from over identification with the suffer of their patients.

Regarding attitudes score, it seems that combined intervention -education with video based contact- had better results, in only one of the four factors of the ASMI scale, specifically in the factor "optimism", which reflects more positive views and attitudes for serious mental illness [35]. The rest three dimensions of the scale did not show any improvement at a statistically significant level. This could be due to the fact that attitudes are more resistant to change and need more time and bigger sample sizes in order to be appropriately assessed.

Desired social distance score resulted in statistically significant reduction, for combined intervention, in one of the three dimensions of Social Distance Scale, in this of "Close Relations" compared with the education alone. The "Close relations" dimension involves high

Table 4: Changes in Social Distance between control and intervention group at at pre-, mid- and post-assessments.

	Pre Mean (SD)	Mid Mean (SD)	Post Mean (SD)	Change Mean (SD)	P ** Pre vs Mid	P ** Mid vs Post	P ** Pre vs Post	P‡
Stable social relations								
Intervention group	9.74 (2.44)	9.83 (2.74)	9.64 (3.16)	-0.10 (2.81)	1.000	1.000	1.000	0.723
Control group	11.34 (3.69)	12.17 (4.57)	11.34 (4.65)	0.00 (3.57)	1.000	1.000	1.000	
P*	0.046	0.034	0.050					
Close relations								
Intervention group	14.75 (3.51)	13.77 (3.49)	13.64 (3.82)	-1.11 (2.13)	0.253	0.047	1.000	0.918
Control group	15.55 (3.52)	15.87 (4.07)	15.07 (4.21)	-0.48 (2.57)	1.000	0.937	0.890	
P*	0.012	0.170	0.038					
Transient relations								
Intervention group	8.50 (2.76)	7.45 (2.86)	7.27 (2.59)	-1.23 (1.71)	0.581	1.000	0.790	0.234
Control group	8.41 (3.31)	8.92 (3.2)	8.86 (3.93)	0.45 (2.60)	1.000	1.000	1.000	
P*	0.231	0.058	0.071					

*p value for differences between the two groups; **p value for changes among pre-, mid- and post-measures using Bonferroni correction; ‡repeated measurements ANOVA, p value for interaction effect of time with group.

proximity relations with emphasis on trust and safety feelings when there is close contact with patient with schizophrenia [36]. The rest dimensions of the scale, however, did not show any improvement at a statistically significant level. As in the case of attitudes, this could be due to the fact, that desired social distance is more resistant to change and need more time and bigger sample sizes in order to be appropriately assessed.

Finally, as far as process evaluation of the intervention is concerned, this was based on a satisfaction questionnaire which was completed by participants at the end of the post assessment phase. Concerning participants' evaluation, from the majority of the participants who received the combined intervention video presentation was assessed as the most important component of the intervention.

Despite the limitations of the study, which refer basically to the brief nature of the intervention as well as the rather small study sample used, the strong experimental design and the systematic assessment of participant knowledge, attitudes and desired social distance from people with schizophrenia at three points in time add to the relevant existing literature on the topic, allowing to lead to valuable conclusions regarding the effect of the combined intervention.

The results of this study are not directly comparable with those derived from other studies as the content of the interventions as well as the assessment tools used are different between different studies. Results should be interpreted and used with caution when designing new interventions to reduce the stigma of mental illness, since research shows that he stigma of mental illness is not white or black and seems that negative and positive attitudes may coexist. Further investigation of the stigma nature as well as the ways that people with serious mental illness are faced are needed [26].

Conclusion

Our results indicate that stigma-related mental health knowledge can be increased with a short duration intervention, whilst negative attitudes and increased desired social distance from people with mental illness are more resistant to change. Further research is needed to explore the specific components as well as the features of effective short duration antistigma intervention programs. Although our study contributes to the research on this topic, it also points out the need of further research to explore the specific components as well as the features of effective antistigma intervention programs. [34]. However, it is not realistic to expect substantial changes in the individual level if barriers to higher levels is insurmountable, according to the ecological model [37,38].

Acknowledgement

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