Original Article

Struggling with Negative Beliefs, Stigmatization and Social Distancing towards Schizophrenia:The Contact Hypothesis

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Abstract

Background: Negative attitudes and beliefs toward people who have a mental health condition are common.

Aim: It aimed to determine the effect of a training program based on the "Contact Hypothesis" on nursing students' beliefs, stigmatization and social distancing behaviors towards schizophrenia.

Material and Methods: This study is an intervention study consisting of repeated measures and a control group. The participants of the study were 81 first year nursing students. The data were collected using the Information Form including socio-demographic characteristics, the Beliefs about Mental Disorders Scale, the Social Distancing Scale, and the Stigmatization Scale. The scales were administered four times before the training program which is based on the contact hypothesis, after theoretical training, after applied contact training, and three months after the training. Cochran's Q was used to evaluate the data and two-way analysis of variance was used for repeated measurements. The findings were tested at p <0.05 significance level.

Results: The training program based on the contact hypothesis was effective in decreasing negative beliefs, stigmatization and social distance towards person with schizophrenia who are believed to be dangerous (p <0.05).

Conclusions: It is recommended to use this method in the training of focus groups in the community in cooperation with the media and related institutions.

Keywords: Belief, Contact Hypothesis, Schizophrenia, Social Distance, Stigmatization

Introduction

Studies on mental illness have shown that the level of knowledge about these illnesses has increased. On the other hand, negative and intolerant attitudes and prejudices against people with mental illness still persist in the society (Abdullah and Brown, 2020; Dighe, 2020; Krendl and Pescosolido, 2020; Kudva et al., 2020; Saavedra et al., 2020). This situation is similar for healthcare students and workers (Janoušková et al., 2017; Ozer et al., 2017; Shehata and Abdeldaim, 2020; Sonmez et al., 2018; Murat et al., 2020).

Schizophrenia is the disease group most affected by negative behaviors such as negative beliefs, stigmatization and social distancing. The fact that persons with schizophrenia are exposed to unfair practices as a result of the restrictions on their legal and individual rights such as voting, parenting, and participation in treatment is an important indicator of this process (Collins et al., 2012; Thornicroft, 2014; Paul, 2018). The person with schizophrenia, who feel worthless and despair, fear rejection, and have decreased self-confidence and serious levels of stress, experience the disease more severely, have problems in their relationships, and have decreased quality of life (Egbe et al., 2014; Thornicroft, 2014, Avcil et al., 2016; Yildiz, 2018), which all adversely affect patients' relatives and social support (Thornicroft,

2014; Ceylan and Cilli, 2015; Ozer et al., 2017).

Studies aiming to change the negative attitudes towards persons with schizophrenia emphasize the importance of informing the society about the disease and the patients correctly, ensuring social contact and cooperating with the media (Cam et al., 2014; Sewilam et al., 2014; Thornicroft, 2014; Arslantas et al., 2019; Demir-Gokmen & Okanli, 2019). Studies are generally aimed at evaluating the impact of education. However, new research studies report that contact with persons with schizophrenia is more effective on attitude and behavior change (West et al., 2014; Corrigan et al., 2015; Morgan et al., 2018; Heim et al., 2020).

As contact increases knowledge and empathy about other groups, anxiety, prejudice, and thus social distance and discrimination decrease (Pettigrew & Tropp, 2008). Based on this view, Allport proposed the "Social Contact Hypothesis" in 1954. According to the hypothesis, as a result of interacting with the groups suffering from prejudice, people become aware of their erroneous generalizations, discover similarities between people, and begin to perceive patients with their human characteristics (Aronson et al., 2012). Our study aims to examine the effect of a training program based on contact hypothesis on the negative beliefs and behaviors of nursing students towards persons with schizophrenia.

Study Hypotheses

Before and after the hypothesis-based training program in the experimental and control groups,

H_{01}: There is no difference emotions between about mental illnesses.

H_{02}: There is no difference between beliefs and attitudes toward schizophrenia.

H_{03}: There is no difference between social distances from schizophrenia.

H_{04}: There is no difference between stigmatization behaviors.

Material and Methods

In our study, we preferred to work with persons with schizophrenia, as schizophrenia is prevalent and it is a disease most commonly associated with mental disorders in the eyes of the society. The participants were first year nursing students studying in the health sciences faculty of a university. The reason for choosing this group is that nursing is one of the professions that could struggle with negative beliefs and stigmatization tendency towards schizophrenia in the society, and first year nursing students represent the values, beliefs and tendencies in the society since they have not yet received professional education.

A computer program was used while calculating the sample size. 190 students enrolled in the Nursing Department in the 2015-2016 academic year. Foreign students were not included in the study to avoid language problems. The students were numbered and 43 students (39 permanent, 4 reserve) were selected through drawing for each group by an independent person based on the size of the experiment. Then the two groups were randomly designated as experimental and control groups. Two students from the experimental group and three from the control group withdrew from the study. A training program based on the contact hypothesis was administered to the experimental group for ten weeks outside of class (Box 1). The control group followed the standard curriculum.

Data Collection Tools

Information Form: It is a form consisting of 11 questions (age, gender, family structure, longest living place, parent education, perception of income level, whether there is an individual with a mental illness in their environment, whether they have previously learned about mental illness, how they feel towards individuals with mental illness, etc.).

Beliefs toward Mental Illness (BMI) Scale: The scale was developed by Hirai and Clum (1998), and its validity and reliability test was performed by Bilge and Cam (2008). It is a 6-point Likert-type scale, with 21 items arranged under the following three subscales: 'Dangerousness', 'Hopelessness and Distortion in Interpersonal Relationships' and Shame.

Box 1. The content of the training program based on the social contact hypothesis

Contact Hypothesis-based Training Program	Preparation Process for the Study	
	SESSION I	-Explanation of the aim of the study, obtaining approval from and administering the measurement tools to the first-year nursing students, and randomization,
		-Inviting students included in the study group to meet and inform them about the content of the program and to plan training hours.
	Start of Theoretical Training	
	SESSION II	-What is mental health? -What are the criteria for being mentally healthy and unhealthy? -What is mental illness?
		-What is schizophrenia? -What are the causes of schizophrenia? -What are the symptoms of schizophrenia? -What are the treatment options for schizophrenia?
	SESSION III	-Watching and assessing the film "A Beautiful Mind" with the students
	SESSION IV	- Watching the documentary named "Biz Siz Onlar Sizofreni (We, You, They, and Schizophrenia)" (Homework) [It is a 55-minute documentary film prepared by the Federation of Schizophrenia Associations. It shows the problems that individuals with mental illness and their relatives experience, societies' point of view, alienation and stigmatization.]
	SESSION V	- The documentary titled "Biz Siz Onlar Sizofreni (We, You, They, and Schizophrenia)" was assessed with the students. - Wrong beliefs and attitudes, stigmatization process and social distance notions were assessed.
	Start of Contact Hypothesis-based Training	
	SESSION VI	- Conversation with the relatives of patients with schizophrenia
	SESSION VII	- Visiting Community Mental Health Centers (CMHC) and meeting the patients
	SESSION VIII	- Activities (painting, ceramics, music, handiwork, sports) with the patients in CMHC

Total scale scores can range between 0-105. For this study, the scale was interpreted based on total score and individual subscale scores, with high scores indicating negative belief. There was no cut-off point in the scale. The

Cronbach's alpha coefficient of this scale for this study was .77.

Social Distance Scale (SDS): Developed by Arkar in 1991, the SDS includes 14 questions, under two sample cases involving Paranoid Schizophrenia and Anxiety Disorder, to measure the social distance maintained against individuals with mental disorders. Total scale scores can range between 14-98. Cases did not get medical diagnosis. Arranged as a 7-point Likert-type scale, SDS is assessed according to the total scale, where high scores indicate a high level of social distance. For this study, only paranoid schizophrenia cases were assessed, as the study was oriented towards persons with schizophrenia. The Cronbach's alpha coefficient of this scale for the study was .91.

Stigmatization Scale (SS): Developed by Yaman & Gungor (2013), the SS is a 5-point Likert-type scale, with 22 items arranged under the 4 subscales of 'discrimination and exclusion', ''labeling', 'psychological health' and 'prejudice'. Total scale scores can range between 22-110, with high scores indicating a high level of hope. Scores below or over 55 indicate low and high stigmatization tendency, respectively. The Cronbach's alpha coefficient of this scale for the study was .80. In addition to the scales, a form including six emotions to determine how students feel about individuals with mental illness was applied in this study.

Data Analysis: The statistical analysis of the data obtained from the data collection tools, which were administered before hypothesis-based training, after the theoretical information, after the contact training, and 3 months after the trainings, were analyzed using computer software. Two-way analysis of variance and Cochran Q test were used for repeated measures to assess data. The obtained data were tested at the p<0.05 significance level. Repeated measures and variance analysis were used when assessing the effect size of the training program. The effect coefficients were calculated for effect size level classification indicated by Thalheimer & Cook (2002).

Ehical Issues: An official approval to perform the research was obtained from the Non-Invasive Clinical Research Ethics Committee and the Nursing Head of Department (IRB approval number=2015/46). Permissions to use the scales applied in the study were also obtained from the relevant parties, and written consent to participate in the study was received from the students and relatives of the patients.

Findings

In the first measurement before the training, no significant difference was found between the feelings of the experimental and control groups towards schizophrenia. This finding shows that the feelings of both groups were similar (p> 0.05). An increase was observed in the feelings of curiosity and compassion (p <0.05) and a decrease in the feelings of fear (p <0.05) in the experimental group as of the second measurement after the training. In the control group, there was an increase only in the feelings of uneasiness (p <0.05) and there was no significant difference in other feelings.In the experimental group, the difference between the total score of the Beliefs about Mental Disorders Scale and the mean scores of "dangerousness", "incurability", "poor interpersonal relations" and "embarrassment" was found to be significant in all measurements (p <0.05). In the control group, the difference between the total score of the Beliefs about Mental Disorders Scale and the mean scores of the sub-dimensions of "dangerousness", "incurability" and "poor interpersonal relations" was not statistically significant (p> 0.05). The difference was significant only in the "embarrassment" sub-dimension (p <0.05). At the end of the program, the effect size pertaining to the sub-dimensions of beliefs about the mental disorder (0.62), dangerousness (0.61) and incurability and poor interpersonal relations (0.49) in the experimental group was moderate, while it was low in the sub-dimension of embarrassment (0.29). When the differences in the scores obtained by the students in the experimental and control groups from the Beliefs about Mental Disorders Scale during the process are evaluated, it was seen that the difference in the total score of the scale and in all sub-dimensions was significant (p <0.05). It was observed that the difference started in the experimental group after theoretical training. When the intergroup change was examined, it was found that the difference in the Beliefs about Mental Disorders Scale total score and the mean scores of the dangerousness, incurability, and poor

interpersonal relationships sub-dimensions was found to be significant (p <0.05). No significant difference was observed in the embarrassment sub-dimension (p> 0.05). The difference between the mean scores of the Social Distancing Scale (SDS) in the experimental group was found to be significant in all measurements (p <0.05). In the control group, the measurement after contact training was found to be different from other measurements (p <0.05). It is thought that this difference may be due to the interaction between the experimental and control groups throughout the training. The effect size of the training program was found to be high in the experimental group (0.82). When the change in the scores of the students from the SDS according to time and the change between the groups were examined, it was seen that the difference between the measurements was significant (p <0.05) and this difference started from the theoretical education onwards. In the experimental group, the difference between the total score of the Stigmatization Scale and the mean scores of the sub-dimensions of labeling, psychological health, and prejudice was found significant in all measurements (p <0.05). Although the "discrimination and exclusion" sub-dimension score decreased during the training period, it increased again in the last measurement after three months. The difference between the total score and the sub-dimension mean scores in the control group was not statistically significant (p> 0.05). The effect size of the training program was found to be moderate in the stigmatization tendency (0.49) and prejudice sub-dimensions (0.46); low in labeling (0.22) and psychological health (0.17) sub-dimensions; and insignificant in discrimination and exclusion sub-dimensions (0.14). It was observed that the difference between the mean scores of the students in the experimental and control groups according to time was significant (p <0.05). The study revealed that in the experimental group, the mean scores of "labeling", "psychological health" and "prejudice" sub-dimensions decreased during the theoretical training, and the mean scores of "discrimination and exclusion" decreased after the contact training. When the intergroup change during the program was observed, it was found that the difference between the total score of the Stigmatization Scale and the mean score of the prejudice sub-dimension was significant (p <0.05).

Discussion

Attitudes and behaviors towards individuals with mental disorders have been a widely-researched topic for a long time, and the research results show that these attitudes are still mostly negative. In the new research studies conducted to prevent negative attitudes and behaviors, the emphasis is on increasing contact between people diagnosed with schizophrenia and society (West et al., 2014). In this study, training and the social contact approach are addressed together and their effects are evaluated.

Feeling about Mental Disorders

In our study, the feeling of "curiosity" was one of the most changing feelings. It can be said that the information given during the theoretical training process aroused the curiosity of the students. This is a positive effect, and the knowledge acquired during the theoretical training and the interactions experienced in the process of contact provided students with the opportunity to learn about the persons with schizophrenia and the disorder. This may explain some reduction in curiosity.

The continuity of curiosity in the last measurement may be an indication of the interest in the subject. The decrease in the feelings of "fear" and "uneasiness" in the contact process while the feeling of compassion increases may indicate how effective contact with the patient is in eliminating negative feelings. The decrease in the feeling of uneasiness in the experimental group, but the increase in the control group support this view.

No difference was observed between the experimental and control groups in terms of feelings of sympathy and embarrassment (Table 1). In their study examining the effect of medical education on attitudes towards individuals with mental disorders, Paksoy-Erbaydar and Cilingiroglu (2010) found that medical students experienced more "uneasiness" in their first years, and that there was a change in the six-year period; however, the feeling of uneasiness was replaced by "sympathy".

Table 1. Change of the students' feelings about mental illness throughout the education program

Feelings	Groups	Presence of Feeling	First Measurement	Measurement after theoretical training	Measurement after contact training	Final Measurement	Test and Significance Value
			Number (%)	Number (%)	Number (%)	Number (%)	
Fear	Study	Yes	13 (31.7)	10 (24.4)	4 (9.8)	5 (12.2)	Cochran's Q=12.96 p=0.005
		No	28 (68.3)	31 (75.6)	37 (90.2)	36 (87.8)	
	Control	Yes	11 (27.5)	10 (25.0)	15 (37.5)	11 (27.5)	Cochran's Q=2.43 p=0.489
		No	29 (72.5)	30 (75.0)	26 (63.4)	29 (72.5)	
			X^2 = 0.172 p=0.678	X^2 = 0.004 p=0.949	X^2 = 8.289 **p=0.004**	X^2 = 2.992 p=0.084	
Pity	Study	Yes	13 (31.7)	16 (39.0)	15 (36.6)	15 (36.6)	Cochran's Q=1.629 p=0.653
		No	28 (68.3)	25 (61.0)	25 (62.5)	26 (63.4)	
	Control	Yes	15 (37.5)	12 (30.0)	14 (35.0)	12 (30.0)	Cochran's Q=1.373 p=0.712
		No	25 (62.5)	28 (70.0)	26 (65.0)	28 (70.0)	
			X^2 = 0.300 p=0.584	X^2 = 0.729 p=0.393	X^2 = 0.054 p=0.816	X^2 = 0.395 p=0.530	
Anxiety	Study	Yes	24 (58.5)	13 (31.7)	11 (26.8)	11 (26.8)	Cochran's Q=17.73 **p<0.001**
		No	17 (41.5)	28 (68.3)	30 (73.2)	30 (73.2)	
	Control	Yes	29 (72.5)	13 (32.5)	33 (82.5)	32 (80.0)	Cochran's Q=35.16 **p<0.001**
		No	11 (27.5)	27 (67.5)	7 (17.5)	8 (20.0)	
		Yes	X^2 = 1.745 p=0.186	X^2 = 0.006 p=0.939	X^2 = 25.289 **p<0.001**	X^2 = 22.984 **p<0.001**	
Shame	Study	No	2 (4.9)	-	2 (4.9)	1 (2.4)	Cochran's Q=2.54 p=0.468
		Yes	39 (95.1)	41 (100)	39 (95.1)	40 (97.6)	
	Control	No	1 (2.5)	-	-	-	Cochran's Q=3.00 p=0.392
		Yes	39 (97.5)	40 (100)	40 (100)	40 (100)	
		No	X^2 = 0.321 p=0.571	*	X^2 = 2.001 p=0.157	X^2 = 0.988 p=0.320	
Affection	Study	Yes	17 (41.5)	27 (65.9)	31 (75.6)	31 (75.6)	Cochran's Q=20.68 **p<0.001**
		No	24 (58.5)	14 (34.1)	10 (24.4)	10 (24.4)	
	Control	Yes	14 (35.0)	30 (75.0)	12 (30.0)	11 (27.5)	Cochran's Q=32.19 **p<0.001**
		No	26 (65.0)	10 (25.0)	28 (70.0)	29 (72.5)	
		Yes	X^2 = 0.358 p=0.550	X^2 = 0.812 p=0.367	X^2 = 16.912 **p<0.001**	X^2 = 18.771 **p<0.001**	
Wonder	Study	No	24 (58.5)	35 (85.4)	31 (75.6)	30 (73.2)	Cochran's Q=10.33 **p=0.016**
		Yes	17 (41.5)	6 (14.6)	10 (24.4)	11 (26.8)	
	Control	No	21 (52.5)	20 (50.0)	21 (52.5)	19 (47.5)	Cochran's Q=0.48 p=0.924
		Yes	19 (47.5)	20 (50.0)	19 (47.5)	21 (52.5)	
			X^2 = 0.299 p=0.585	X^2 = 11.619 **p=0.001**	X^2 = 4.705 **p=0.030**	X^2 = 5.583 **p=0.018**	

*= Since the number of observations is not enough, the analysis value can not be calculated.

Table 2. The change of the beliefs towards mental illness scale of the students in the experiment and control groups according to the time of the first, after the theoretical training, after the contact education and last measurement points and the change between the groups during the program

	Beliefs towards Mental Illness Scale	Groups	First Assessment x±sd	Assessment after theoretical training x±sd	Assessment after contact training x±sd	Final Assessment x±sd	Group	Time	Group &Time	Partial Eta-squared
			Assessment				**Statistical Assessment**			
Subscales	Dangerousness	Study	22.80±9.93	10.70±5.53	11.12±6.66	13.80±6.29	**F=1280.4**	**F=12.95**	**F=11.591**	0.61
		Control	23.15±5.86	23.90±6.59	21.70±6.70	22.02±6.82	**p<0.001**	**p<0.001**	**p<0.001**	
	Hopelessness and Distortion in Interpersonal Relationship	Study	25.78±10.10	17.29±8.21	16.56±9.83	19.44±8.00	**F=1067.6**	**F=5.36**	**F=10.44**	0.49
		Control	24.13±8.39	29.05±9.02	24.23±9.24	26.02±8.91	**p<0.001**	**p<0.001**	**p<0.001**	
	Shame	Study	0.85±1.44	0.41±0.89	0.29±0.78	1.29±2.43	**F=109.6**	**F=8.78**	F=1.35	0.29
		Control	1.50±1.78	1.38±2.10	1.68±2.04	3.03±2.24	**p<0.001**	**p<0.001**	p=0.265	
	Scale Total Score	Study	49.44±18.03	28.41±13.03	27.98±16.07	34.54±14.27	**F=1239.9**	**F=13.507**	**F=11.75**	0.62
		Control	51.08±12.23	54.33±14.96	47.60±14.94	51.13±15.97	**p<0.001**	**p<0.001**	**p<0.001**	

Table 3. The change of the social distance scale of the students in the experiment and control groups according to the time of the first, after the theoretical training, after the contact education and last measurement points and the change between the groups during the program

Social Distance Scale	Groups	First Assessment x±sd	Assessment after theoretical training x±sd	Assessment after contact training x±sd	Final Assessment x±sd	Group	Time	Group &Time	Partial Eta-squared
		Assessment				**Statistical Assessment**			
Scale Total Score	Study	62.85±17.70	36.05±16.07	35.49±16.85	38.34±15.03	**F=1393.3**	**F=37.81**	**F=12.79**	0.82
	Control	72.75±14.77	67.70±18.10	63.13±20.67	67.55±19.91	**p<0.001**	**p<0.001**	**p<0.001**	

Table 4. The change of the stigmatization scale of the students in the experiment and control groups according to the time of the first, after the theoretical training, after the contact education and last measurement points and the change between the groups during the program

	Stigmatization Scale	Groups	First Assessment x±sd	Assessment after theoretical training x±sd	Assessment after contact training x±sd	Final Assessment x±sd	Group	Time	Group &Time	Partial Eta-squared
					Assessment			**Statistical Assessment**		
Subscales	Discrimination and Exclusion	Study	8.34±2.30	7.73±2.46	7.54±2.32	8.51±3.70	**F=1142.7**	**F=3.22**	F=1.18	0.14
		Control	8.97±2.63	8.62±2.09	9.37±4.30	10.45±4.91	**p<0.001**	**p=0.027**	p=0.325	
	Labeling	Study	13.73±3.26	11.76±3.70	11.34±3.86	12.68±3.83	**F=1355.3**	**F=5.95**	F=1.84	0.22
		Control	15.00±4.40	14.25±4.01	14.42±4.80	15.00±4.95	**p<0.001**	**p=0.001**	p=0.146	
	Psychological Health	Study	11,51±2,72	9.51±2.90	9.73±3.70	9.63±3.46	**F=1715.7**	**F=7.12**	F=0.49	0.17
		Control	13.95±3.10	12.70±3.64	12.90±3.93	12.92±4.20	**p<0.001**	**p<0.000**	p=0.692	
	Prejudice	Study	14.83±3.58	12.20±3.08	11.90±3.81	12.83±3.60	**F=2182.9**	**F=8.22**	**F=2.99**	0.46
		Control	15.50±3.69	14.45±3.24	14.85±4.05	14.57±3.31	**p<0.001**	**p<0.001**	**p=0.036**	
	Scale Total Score	Study	48.41±9.28	41.19±9.51	40.51±11.28	43.66±12.19	**F=2270.8**	**F=10.73**	**F=2.91**	0.49
		Control	53.42±10.05	50.02±9.76	51.55±13.52	52.95±14.57	**p<0.001**	**p<0.001**	**p=0.040**	

Discusion continues

Feeling about Mental Disorders continues

The belief in the society that persons with schizophrenia are dangerous is one of the main factors that lead to discriminatory behavior and has an important contribution to stigmatization. Yuksel et al. (2015) examined the attitudes of faculty members towards mental disorders and found that according to the participants, aggression is observed in one third of the mental disorders and patients are believed to be dangerous. Giandinoto et al. (2018) revealed that the majority of health professionals in general hospitals perceive patients diagnosed with schizophrenia as dangerous. In their study, Lee & Seo (2018) evaluated the effect of direct and indirect contact with people with mental disorders on perception of danger and social distance, and they reported high levels of danger perception as far as individuals with schizophrenia were concerned. Thus, it can be stated that as long as fears and prejudices against mental disorders and patients continue, the society moves away from these patients and discriminatory approaches and exclusion continue.

The Effect on Beliefs

Before the training, the total scores of the students from the Beliefs about Mental Disorders Scale and the mean scores of dangerousness, incurability, poor interpersonal relationships, and embarrassment sub-dimensions were high in both the experimental and control groups (Table 2). This finding is consistent with the results of the studies conducted both in Turkey and in other countries on beliefs and attitudes towards schizophrenia, which state that attitudes are mostly negative (Evans-Lacko et al., 2014; Sewilam et al., 2014; Thornicroft, 2014; Murat et al., 2020; Malas & Kirpinar, 2019; Bradbury, 2020; Magliano et al.,2020).

Our study which was conducted to eliminate negative attitudes towards mental disorders revealed that the training program had a highly positive effect on the attitudes of the students in the experimental group. Along with the decrease in the perception that persons with schizophrenia are dangerous, a positive change was observed in the sense of difficulty and incurability experienced in interacting with these individuals (Table 2). Cam et al. (2014) evaluated the tendency of the elected neighborhood representatives to stigmatize people with mental disorders and found that training positively affected the attitudes of these representatives. Kanaak et al. (2014) evaluated the programs designed for health care providers to prevent stigmatization, and emphasized the necessity of increasing social contact through means such as movie watching, video presentations, voice calls, and direct communication in order to understand individuals with mental disorders. The findings of our study also revealed the positive effects of these methods. Esen-Danaci et al. (2016) conducted a five-year follow-up to investigate the effect of medical education on attitudes towards schizophrenia and revealed that although student attitudes were initially negative, positive changes were observed over the years.

The Effect on Social Distance

It is known that prejudices are the basis of positive and negative attitudes. Prejudices include cognitive (dangerousness-stereotyping about schizophrenia), emotional (fear and anger) and behavioral (social distancing, discrimination, violence etc.) dimensions. The most socially observed finding is establishing and maintaining social distance (Goregenli, 2012). The understanding which suggests the treatment and rehabilitation of individuals with mental disorders in their own settings highlights the importance of evaluating how much the society accepts or rejects these patients and planning the initiatives to prevent undesirable consequences. In the first measurement prior to the training program, we found that the social distance mean scores of the students in both experimental and control groups were high (Table 3). This finding is consistent with the results in the literature (Henock-Blaise, 2015; Afe & Ogunsemi, 2016; Aggarwal et al. 2016; Malas & Kirpinar, 2019).

In our study, which argues that interaction is especially important to decrease social distance, prevent generalizations and discover similarities instead of differences, social distancing towards schizophrenia has decreased significantly and the program has

been found to be highly effective on beliefs and stigmatization tendencies. These two points are the most important findings we obtained in our study (Table 3).

The literature emphasizes the effect of contact with patients on reducing social distance. Afe and Ogunsemi (2016) investigated social distance of university students in southwestern Nigeria towards mental disorders and the victims of sexual violence and revealed that social distance is high, which is a social illness. They recommended future researchers to conduct studies especially with university students for a more tolerant society. In the study investigating the effects of a campaign called "Time for Change" in England, Henderson et al. (2016) found that contact first reduces the attitude of stigmatization about mental health, and then improves knowledge and reduces social distance. Lee & Seo (2018) evaluated the effect of direct and indirect contact with mental disorders on the perception of danger and social distance and revealed that individuals mostly prefer indirect contact with persons with schizophrenia.

The Effect on Stigmatization Behavior

The stigmatization tendency of the students prior to the training was high in both groups (Table 4). This finding coincides with the findings in the literature. The knowledge and attitude of the first year students who have not yet received professional education can be considered to reflect the values in the society (Thornicroft, 2014; Malas, 2019; Krendl & Pescosolido, 2020; Kudva et al., 2020; Zhang et al., 2020).

Social stigmatization attitude and social perceptions can be altered (Goffman, 2014). In our study, a significant decrease was observed in the stigmatization tendency of the experimental group. Despite the knowledge that attitudes may be difficult to change, it is understood that contact training reduces the stigmatization tendency, given the high effect size. It has been observed that the training program has the highest effect on prejudices (Table 4). Egbe et al. (2014) evaluated the attempts to prevent discrimination and stigmatization in middle and low-income countries and reported that psychiatric stigmatization is maintained by family members, friends, employers, community and healthcare providers. Multi-dimensional initiatives such as education, interaction and mass media campaigns have been proposed to reduce stigmatization. Evans-Lacko et al. (2014) evaluated the results of the education, contact and media stigmatization prevention campaigns between 2003-2013 for mental disorders in England and they concluded that the methods used were particularly effective in reducing prejudice and discrimination. Sewilam et al. (2014) investigated the stigmatization of mental disorders in the Middle East and recommended educating families and relatives, increasing cooperation with traditional healers and religious leaders, educating young people, and using social media to reduce stigmatization. Cerully et al. (2018) reported that stigmatization decreased significantly immediately after participation in contact-based education given across California. Koike et al. (2018) stated that contact is a more effective initiative than theoretical training since it develops the attitude and behavior components in stigmatization. Heim et al. (2020) demonstrated the positive effect of contact attempts in their systematic review, in which they examined the attempts to reduce stigmatization of medical and nursing students in low- and middle-income countries towards mental disorders.

Although the students' mean scores obtained on all the scales in the last measurement of the training program were low, a slight increase was observed in the scores obtained during the program. This situation probably stems from the fact that the students were distanced from the support of instructors and that they maintained their old, strongly-held beliefs and attitudes, which prevented the newly learned information from being transformed into more positive behavior, suggesting that more time was needed for these changes to settle in.

Conclusion and Recommendations

With the implementation of this training program based on the contact hypothesis, it was found that:

—There was a decrease in the students' feelings of fear and uneasiness and an increase in feelings of compassion and

curiosity as far as schizophrenia patients were concerned;

—The training program has positively affected beliefs and attitudes towards schizophrenia,

—Social distancing and stigmatization behavior decreased,

—The program had a considerable effect (0.82) on beliefs and stigmatization tendencies.

In line with these positive effects, community leaders such as healthcare professionals, police officers, religious officials, employers, political leaders, and teachers, and high school and university students, and the society are recommended;

—to disseminate contact-based training activities to fight against stigmatization of disadvantaged groups, and

—to cooperate with media, public and non-governmental organizations.

References

Abdullah, T., & Brown, T. L. (2020). Diagnostic labeling and mental illness stigma among Black Americans: An experimental vignette study. *Stigma and Health, 5*(1), 11-21. https://doi.org/10.1037/sah0000162

Afe, T.O.,& Ogunsemi, O. (2016). Social distancing attitudes toward the mentally ill and victims of sexual violence among college students in Southwest Nigeria. *Indian J Soc Psychiatry,* 32,320-324.

Aggarwal, S., Singh, S., & Kataria, D. (2016). Knowledge, attitude and social distance practices of young undergraduates towards mental illness in India: A comparative analysis. *Asian Journal of Psychiatry*, 23,64–69.

Arkar, H. (1991). Social rejection of mental patients. *The Journal of Psychiatry and Neurological Sciences,* 4,6-9.

Aronson, E., Wilson, T.D., & Akert, R.M. (2012). *How can prejudice be reduced?* In: Gunduz O (Ed). Social Psychology. İstanbul, Kaknus Publishing.

Arslantas, H., Abacigil, F., Adana, F., Karadag, S., & Calik-Koyak, H. (2019). Beliefs of nursing students about mental illnesses and social distance: The effects of theoretical and practical psychiatric nursing education. *New Semposium,* 57(1), 2-9. https://doi.org/10.5455/NYS.20190214084140

Avcil, C., Bulut, H., & Sayar, G.H. (2016). Psychiatric disease and stigmatization. *Uskuar University Journal of Social Science,* 2(2),175-202. https://doi.org/10.32739/uskudarsbd.2.2.4

Bilge, A., & Cam, O. (2008). Validity and reliability of beliefs towards mental illness scale. *Anatolian Journal of Psychiatry,* 9,91-96.

Bradbury, A. (2020). Mental health stigma: The impact of age and gender on attitudes. *Community Mental Health Journal,* 56, 933-938. https://doi.org/10.1007/s10597-020-00559-x

Cerully, J.L., Collins, R.L., Wong, E., Seelam, R., & Yu, J. (2018). Differential response to contact-based stigma reduction programs: Perceived quality and personal experience matter. *Psychiatry Research,* 259,302-309. https://doi.org/10.1016/j.psychres.2017.10.027

Ceylan, B., & Cilli, A.S. (2015). The comparison levels of feeling guilty and embarrassment in the family members nursing schizophrenia and chronic renal failure patients, and in individuals having no nursing role. *J Psy Nurs,* 6(2),85-90. https://doi.org/10.5505/phd.2015.40412

Collins, R.L., Wong, E.C., Cerully, J.L., Shults, D., & Eberhart, N.K. (2012). Interventions to reduce mental health stigma and discrimination. Santa Monica: RAND Corporation.

Corrigan, P., Michaels, P. J., & Morris, S. (2015). Do the effects of antistigma programs persist over time? Findings from a meta-analysis. *Psychiatric Services,* 66(5), 543–546.

Cam, M.O., Bilge, A., Engin, E., Baykal-Akmese, Z., Ozturk-Turgut E., & Cakir N. (2014). Investigating the effectiveness of education of the fight against stigma on mental illness to headmen. *J Psy Nurs,* 5(3),129-136. https://doi.org/ 10.5505/phd.2014.22931

Demir-Gokmen, B., & Okanli, A. (2019). The effects of psychoeducation provided to care staff working at special care centers on their beliefs about schizophrenia. *J Psy Nurs,* 10(1),20-27. https://doi.org/ 10.14744/phd.2018.03360

Dighe S.C.V. (2020). Knowledge and attitude of rural people regarding mental illnesses residing in selected areas of Loni Village, Maharashtra. *International Journal of Neurological Nursing*, 6(1), 32-40.

Egbe, O.C., Brooke-Sumner, C., Kathree, T., Selohilwe, O., Thornicroft, G., & Petersen, I. (2014). Psychiatric stigma and discrimination in South Africa: perspectives from key stakeholders. *BMC Psychiatry,* 14(191),1-14. https://doi.org/ 10.1186/1471-244X-14-191.

Esen-Danaci, A., Balikci, K., Aydin, O., Cengisiz, C., & Uykur, A.B. (2016). The effect of medical education on attitudes towards schizophrenia: A five-year follow-up study. *Turkish Journal of Psychiatry*,1-9.

Evans-Lacko, S., Corker, E., Williams, P., Henderson, C., & Thornicroft, G. (2014). Effect of the Time to Change anti-stigma campaign on trends in mental-illness-related public stigma among the English population in 2003–13: an analysis of survey data. *Lancet Psychiatry,* 1, 121-128.

Giandinoto, J., Stephenson, J., & Edward, K. (2018). General hospital health professionals' attitudes and perceived dangerousness towards patients with comorbid mental and physical health conditions: Systematic review and meta-analysis. *International Journal of Mental Health Nursing,* 27, 942–955. https://doi.org/ 10.1111/inm.12433

Goffman, E. (2014). Stigma. Genis, S, Unsaldi, L., Agirnasli, S.N. (Eds.). Ankara: Heredik Publishing.

Goregenli, M. (2012). *Basic concepts: prejudice, stereotype and discrimination.* Discrimination and multidimensional approaches. Ayan Ceyhan M, Cayır K. (Eds.), Istanbul:Istanbul Bilgi University Publishing.

Heim, E., Kohrt, B.A., Koschorke, M., Milenova, M., & Thornicroft, G. (2020). Reducing mental health-related stigma in primary health care settings in low- and middle-income countries: a systematic review Epidemiology and Psychiatric Sciences. 29 (3),1-10. https://doi.org/ 10.1017/S2045796018000458

Henderson, C., Robinson, E., Evans-Lacko, S., Corker, E., Rebollo-Mesa, I., Rose, D., & Thornicroft, G. (2016). Public knowledge, attitudes, social distance and reported contact regarding people with mental illness 2009–2015. *Acta Psychiatr. Scand.* 134 (Suppl 446), 23–33. https://doi.org/ 10.1111/acps.12607

Henock-Blaise, N. (2015). Knowledge and social distance towards mental disorders in an inner-city population: Case of university students in Cameroon. *Trends in Medical Research,* 10(4), 87-96.

Janoušková, M., Weissová, A., Formánek, T., Pasz, J., & Motlová, L.B. (2017). Mental illness stigma among medical students and teachers. *International Journal of Social Psychiatry*, 63(8), 744-751. https://doi.org/10.1177/0020764017735347

Kanaak, S., Modgill, G., & Patten, S.B. (2014). Key ingredients of anti-stigma programs for health care providers: a data synthesis of evaluative studies. *Can J Psychiatry,* 59(10 Suppl 1),19-26. https://doi.org/ 10,1177 / 070674371405901s06

Koike, S., Yamaguchic, S., Ojioc, Y., & Andod, S. (2018). Social distance toward people with schizophrenia is associated with favorable understanding and negative stereotype. *Psychiatry Research,* 261, 264–268. https://doi.org/ 10.1016/j.psychres.2017.12.081

Krendl, A.C., & Pescosolido, B.A. (2020). Countries and cultural differences in the stigma of mental illness: The east–west divide. *Journal of Cross-Cultural Psychology*, 1–19. https://doi.org/ 10.1177/0022022119901297

Kudva, K.G., El Hayek, S., Gupta, A.K., Kurokawa, S., Bangshan, L., Armas-Villavicencio, M.V.C.,… & Sartorius, N. (2020). Stigma in mental illness: Perspective from eight Asiannations. *Asia-Pacific Psychiatry,* 12,(2), e12380. https://doi.org/10.1111/appy.12380

Lee, M., & Seo, M. (2018). Effect of direct and indirect contact with mental illness on dangerousness and social distance. *International Journal of Social Psychiatry*, 64(2),112 –119. https://doi.org/10.1177/0020764017748181

Magliano, L., Ruggiero, G., Read, J., Mancuso, A., Schiavone, A., & Sepe, A. (2020). The views of non-psychiatric medical specialists about people with schizophrenia and depression. *Community Mental Health Journal.* 56, p. 1077–1084. https://doi.org/10.1007/s10597-020-00567-x

Malas, E.M. (2019). Stigma toward to mental illness-review. *MANAS Journal of Social Studies,* 8 (Supp 1), 1170-1188.

Malas, E.M., & Kirkpinar, I. (2019). Comparison of attitudes and beliefs about mental disorders between psychology department students and history and literature department students. *Journal of Civilization Studies*, 4(2),101-114.

Morgan, A. J., Reavley, N. J., Ross, A., Too, L. S., & Jorm, A. F. (2018). Interventions to reduce stigma towards people with severe mental illness: Systematiic review and meta-analysis. *Journal of Psychiatric Research,* 103, 120-133.

Morgan, A. J., Ross, A., & Reavley, N. J. (2018). Systematic review and meta-analysis of Mental Health First Aid training: Effects on knowledge, stigma, and helping behaviour. *PLoSONE,*13(5), 1-20.

Murat, M., Oz, A., Guner, E., Kose, S. (2020). The relationship between university students' beliefs toward mental illness and stigmatization. *Florence Nightingale Journal of Nursing,* 28(2), 194-204. https://doi.org/10.5152/FNJN.2020.19069

Ozer, U., Varlik, C., Ceri, V., Ince, B., & Arslan-Delice, M. (2017). Change starts with

us:stigmatizing attitudes towards mental illnesses and the use of stigmatizing language among mental health professionals. *The Journal of Psychiatry and Neurological Sciences*, 30,224-232. https://doi.org/10.5350/DAJPN2017300306

Paksoy-Erbaydar, N., Erbaydar, P.N., & Cilingiroglu, N. (2010). Does medical education influence the attitudes of medical students towards individuals with mental health problems? *Turkish Journal of Psychiatry,* 21(2),114-125.

Paul, S. (2018). Are we doing enough? Stigma, discrimination and human rights violations of people living with schizophrenia in India: Implications for social work practice. *Social Work In Mental Health*, 16(2), 145–171. https://doi.org/10.1080/15332985.2017.1361887.

Pettigrew, T.F., & Tropp, L.R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *Eur. J. Soc. Psychol*, 38,922-934. https://doi.org/10.1002 / ejsp.504

Saavedra, J., Arias-Sánchez, S., Corrigan, P., & Lópezc, M. (2020). Assessing the factorial structure of the mental illness public stigma in Spain. Disability snd Rehabilitation, Ahead-Of-Prınt, 1-7. https://doi.org/10.1080/09638288.2019.1710769

Sewilam, A.M., Watson, A.M.M., Kassem, A.M., Clifton, S., McDonald, M.C., Lipski, R., Deshpande, S,… & Nimgaonkar, V.L. (2014). Suggested avenues to reduce the stigma of mental illness in the Middle East. *International Journal of Social Psychiatry,* 61(2), 111-120. https://doi.org/ 10.1177 / 0020764014537234

Shehata, W.M., & Abdeldaim D.E. (2020). Stigma towards mental ıllness among Tanta University students, Egypt. *Community Mental Health Journal*, 56, 464–470. https://doi.org/10.1007/s10597-019-00502-9

Sonmez, I., Tosun, O., & Kosger, F. (2018). Attitudes of medical faculty students in Northern Cyprus towards mental illnesses. *Cukurova Medical Journal,* 43(1), 115-121. https://doi.org/10.17826/cumj.340627

Thalheimer, W., & Cook, S. (2002). How to calculate effect sizes from published research articles: A simplified methodology. A part of book. Retrieved from http://education.gsu.edu/coshima/EPRS8530/Effect_Sizes_pdf4.pdf

Thornicroft, G. (2014). Discrimination against people with mental illness. Ankara, Federation of Schizophrenia Associations.

West, K., Hewstone, M., & Lolliot, S. (2014). Intergroup contact and prejudice against people with schizophrenia. *The Journal of Social Psychology*, 154,217-232. https://doi.org/10,1080 / 00224545.2014.888327

Yaman, E., & Gungor, H. (2013). Development of stigma scale, reliability and validity study. *Journal of Values Education*, 11(25),251-270.

Yildiz, M.I. (2018). Impact of Stigmatisation of Mental Health, In Kuzugudenlioglu-Ulusoy D, (Ed.) Social Dimension of Mental Health. Ankara: Turkey Clinics.

Yuksel, N., Yilmaz, M., & Temel, O.G. (2015). Opinions of faculty members regarding mental illnesses and patients. *J Psy Nurs,* 6(1),26-32. https://doi.org/10.5505/phd.2015.47955

Zhang, Z., Sun, K., Jatchavala, C., Koh, J., Chia, Y., Bose, J.,…& Ho, R. (2020). Overview of stigma against psychiatric ıllnesses and advancements of anti-stigma activities in six asian societies. *Int. J. Environ. Res. Public Health,* 17,280. https://doi.org/10.3390/ijerph17010280