



A Mental Health Nursing Course to Reduce Discrimination towards People with Mental Illness among Nursing Students: A Quasi-Experimental Study

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How to cite this paper: Qin, S., Zhou, H. and Hu, Y.H. (2024) A Mental Health Nursing Course to Reduce Discrimination towards People with Mental Illness among Nursing Students: A Quasi-Experimental Study. *Open Access Library Journal*, 11: e11585.

<https://doi.org/10.4236/oalib.1111585>

Received: April 18, 2024

Accepted: May 25, 2024

Published: May 28, 2024

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Abstract

Objective: Nursing students were reported to hold discriminatory attitudes towards people with mental illness across various countries. This study aimed to evaluate the impact of the educational intervention, a mental health nursing course on reducing discrimination towards people with mental illness among nursing students. **Methods:** A quasi-experimental study with a before-after design was conducted, involving 57 nursing students from a public university in China. The discrimination attitudes were measured by the Stigma Scale towards people with Mental Illness. The paired Student's t-test was used to compare the discrimination attitudes before and after the course, and the independent two-sample t-test was used in the subgroup analysis to compare the impact of the intervention among different genders. **Results:** No difference in the overall discrimination attitude was found among nursing students before and after the course ($t = 0.395$, $p = 0.694$). There was a significant difference in scores in the social distance ($t = 3.156$, $p = 0.002$) and danger dimension ($t = -3.588$, $p = 0.000$) before and after the course. **Conclusion:** The course improved the attitude toward social distance, whereas increased the discrimination in danger dimension. More effective educational interventions were needed to develop further studies.

Subject Areas

Public Health, Sociology

Keywords

Discrimination, Mental Illness, Educational Intervention, Nursing Students, China

1. Background

In recent years, the trend of mental illness has become more serious, with 1 in 8 people in the world living with a mental disorder [1]. On one hand, mental disorders, as a major social problem, increased the financial burden on patients themselves and the governments in all nations. Increased negative experiences in people with mental disorders, especially discriminatory experiences, were found associated with greater healthcare costs [2]. On the other hand, the discrimination experience was a strong predictor of poor prognostic outcomes, and influenced effective treatment [3].

The most common and impressive discrimination experiences reported by people with mental disorders were the poor attitudes from health professionals [4]. Fear could be generated in health professionals during the contact with the patients, due to the perspective that people with mental disorders were dangerous and unpredictable [5]. This was an important barrier for the health professionals giving good treatments and nursing care to these particular patients. Among different categories of professionals working in mental health facilities, nurses showed more negative attitudes towards the patients [6] [7]. Gender was found to be a predictor of nurses' attitudes towards people with mental illness. A multicenter survey reported that female nurses' attitudes were relatively more positive [8], which was consistent with another study in Jordan [9].

Nursing students, as the future front-line nurses, were reported to hold discriminatory attitudes towards people with mental illness across various countries. Nursing students in Jamaica had a negative attitude in general, with a perception that the patients were dangerous and should not receive the same level of support as those with physical illness [10]. Nursing students displayed similar and even higher levels of discrimination against people with mental disorders than students from non-medical disciplines [11]. Based on these evidences, studies should be conducted among nursing students to improve their discrimination attitudes towards people with mental disorders in nursing schools.

The knowledge about mental disorders was an important influencing factor of discriminatory attitudes. A study involving 384 nurses in South India found a moderately strong correlation between the knowledge and attitude, and nurses with more knowledge about mental disorders showed less negative attitudes [12], which was supported by another survey in Indonesia [13]. According to the knowledge-attitude-practice (KAP) model, widely used in the medical field [14], increased knowledge about mental illness could improve the negative attitude toward the patients. A meta-analysis suggested that contact and education were the common effective methods to reduce the discrimination or stigma in the public towards people with mental disorders [15]. An education-lecture was effective in reducing the stigma attitudes among university or college students, although not as effective as social contact [16]. To our knowledge, a variety of studies were conducted among medical students considering direct contact as the target intervention, whereas studies focusing on the effect of education were li-

mitted. The improved stigma attitudes, especially the attitude toward social distances, towards people with mental illness were found among medical students after one-hour educational program [17]. A study among nursing students in Saudi Arabia found the significant effectiveness of the educational lecture in reducing mental disorder-related stigma [18]. In contrast, the effectiveness of the educational lecture was not shown in the study among nursing students in the United Kingdom [19]. The above evidence with inconsistent results indicated that the effectiveness of educational interventions in improving discrimination attitudes towards people with mental illness among medical students, especially nursing students, was inconclusive.

The mental health nursing course, regarded as a convenient and cost-less educational intervention, was compulsory content for nursing students in China. This study aimed to evaluate the impact of the mental health nursing course on reducing discrimination among nursing students towards people with mental illness, based on the KAP model that knowledge could change the attitude.

2. Methods

2.1. Design and Settings

A quasi-experimental study was performed using the before-after design without a separate control group. This present research was carried out from September to October 2023 in the Medical School of Yangtze University, a public university in Hubei Province, in the central China.

2.2. Participants and Sample Size

Before the recruitment, the minimal sample size was calculated according to the bilateral-test formula for the before-after design. According to the formula for paired design $n = (Z_{\alpha/2} + Z_{\beta})^2 \times \sigma^2 / \delta^2$, we determined 40 participants as the minimal sample size with a 90% statistical power ($Z_{\beta} = 0.84$, $Z_{\alpha/2} = 1.96$), 5.69 as mean difference (δ), and considering 12.86 as the standard deviation of the mean difference (σ) [20].

We recruited participants involving in a nursing program for the bachelor's degree in the target university. All nursing students in their third year going to take the course "mental health nursing" could be included in the study. Students quitting the nursing program before the study for any reasons, and attending other training related to mental illness before the course was excluded. Finally, 57 participants were enrolled with convenience sampling.

2.3. Measurement Instruments and Data Collection

A self-administrated questionnaire was used, including the general characteristics (age and gender) and information of discrimination towards patients with mental illness.

We used the Stigma Scale towards people with Mental Illness (SSMI) to measure the discriminatory attitudes among nursing students. This 26-item scale

was widely used among nursing students in China, with good reliability and validity, consisting of 3 dimensions (social distance, danger, and competence) [21]. The social distance dimension (14 items) referred to the attitudes about thinking and behavior related to the social interaction with people with mental illness, which could result in the social isolation. The danger dimension included 8 items, which measured the evaluation the danger tendency of the patients. The competence dimension (4 items) involved contents about the discrimination against patients' ability. Likert 5-level scoring method was used for all items in the scale. The higher the score, the more severe of the discrimination towards people with mental illness existed.

We organized participants to fill in questionnaires together in a classroom at fixed time points both before and after the intervention, and specified the minimum filling time (10 minutes), in order to enhance the measurement quality, such as minimizing the missing information and optionally filling.

2.4. Procedure

We were supported by the teaching administrator of the university for providing a list of eligible students in the recruitment period. Then we explained the purpose and implementation details of this study to the students in a classroom, under the help with the student administrator, and invited them to participant. At this stage, 2 students quit the nursing program. We finally obtained the informed consent for participating of the rest 57 students. All participants were required to complete questionnaires to collect data at the baseline. One week after the recruitment, the mental health nursing course was implemented. Participants were asked to fill in questionnaires for the second time one week after the end of the course.

2.5. Intervention

The mental health nursing course was designed based on the course criteria and syllabus of Yangtze University, including theoretical and experimental contents, with 20 and 4 credit hours respectively. The theoretical contents involved: 1) Common psychiatric symptoms, such as hallucinations, delusions, etc; 2) The related knowledge and nursing points for common mental illness, such as schizophrenia, affective disorder, etc; 3) Knowledge about the prevention and treatment for common clinical adverse events relating to patients in psychiatric ward, such as suicide, violence, etc. The experimental contents referred to the training for 2 common nursing skills in psychiatric ward, including physical restraint and Heimlich methods.

This intervention was delivered by a teacher who was the staff of the university and had experience in the area of mental illness and nursing. Two sessions were conducted per week, with 90 minutes (2 credit hours) per session. The intervention was implemented from September to October, lasting 6 weeks. For the theoretical sessions, students were taught the related knowledge in a class-

room by the teacher. Moreover, the standard operating procedure for each experimental project was shown by the teacher first in a skills laboratory, and then the students were asked to practice in groups.

2.6. Ethics

Ethics approval was obtained from the Ethics Committee of the Yangtze University.

2.7. Statistical Analyses

Data were analyzed by SPSS 26.0 software, after being checked by 2 persons. For all analyses, $p < 0.05$ was considered significant. The paired Student's *t* test was used to compare the means of overall scores and scores in each dimension of the SSMI instrument before and after the course. We also used the Student's *t* test for paired samples in subgroup analyses to compare the difference before and after the intervention in female and male students respectively. The independent two-sample *t* test was used to test whether there were differences in overall scores and scores in each dimension of the scale between students due to various genders at the baseline. In addition, the *t* test for the independent samples was used to compare the effect of the intervention on anti-discrimination between female and male students.

3. Results

We followed up all the participants for 6 weeks and obtained a final sample of 57 subjects, with 100% response rate. The mean age of the participants was 20.27 years, and the proportion of female students was 78.9%.

3.1. Scores at the Baseline

In order to exam the homogeneity of the stigma attitude between female and male students at the baseline, two subgroups were divided and compared. There were no statistically significant differences of overall scores and scores in each dimension of the SSMI instrument between female and male students before the course (Table 1).

3.2. Scores after the Intervention

Table 2 showed the results of scores of the scale before and after the course. The difference of the overall scores of the scale before and after the course was not statistically significant ($t = 0.395$, $p = 0.694$), whereas significant differences of the scores were found in the 2 dimensions (social distance and danger) ($p < 0.05$). After the course, the mean score for the social distance dimension was lower than that in the baseline (mean difference = 5.246, 95% *CI*: 1.952 to 8.539). The mean score for the danger dimension after the course was higher than that before the course (mean difference = -3.895, 95% *CI*: -6.045 to -1.744).

Subgroup comparisons were made to test the homogeneous of the effect of the

Table 1. Characteristics of participants and scores of the SSMI instrument among female and male students at the baseline (N = 57).

Items	Total	Female	Male	t	p-value
Proportion (%)	57 (100%)	45 (78.9%)	12 (21.1%)		
Age (years) mean \pm SD	20.263 \pm 0.720	20.289 \pm 0.727	20.167 \pm 0.718	0.519	0.606
Dimension		mean \pm SD	mean \pm SD	t	p-value
Overall		54.000 \pm 15.583	60.917 \pm 12.041	-1.425	0.160
Social distance		28.356 \pm 8.494	32.000 \pm 7.722	-1.344	0.184
Danger		17.822 \pm 5.738	19.750 \pm 5.833	-1.031	0.307
Competence		7.822 \pm 2.782	9.167 \pm 2.623	-1.504	0.138

[†]SD, Standard deviation.

Table 2. Comparison for scores of the SSMI instrument before and after the course (N = 57).

Dimension	Before the course mean \pm SD	After the course mean \pm SD	Mean difference	95% CI	t	p-value
Overall	55.456 \pm 15.078	54.316 \pm 15.749	1.140	-4.582, 6.862	0.395	0.694
Social distance	29.123 \pm 8.405	23.877 \pm 9.318	5.246	1.952, 8.539	3.156	0.002
Danger	18.228 \pm 5.760	22.123 \pm 5.828	-3.895	-6.045, -1.744	-3.588	0.000
Competence	8.105 \pm 2.782	8.316 \pm 2.606	-0.211	-1.211, 0.790	-0.417	0.677

[†]SD, Standard deviation; CI, Confidence interval.

intervention. The subgroup analyses were carried out according to the students' gender (**Table 3**). The only significant difference among male students was the mean score for the social distance dimension before and after the course ($t = 2.580$, $p = 0.026$). In addition, the mean scores for both social distance and danger dimension among female students were statistically different before and after the course ($p = 0.012$, $p = 0.001$, respectively). As shown in **Table 4**, the values of mean differences of scores for the danger dimension before and after the intervention were found significant different between the female and male students ($t = 2.268$, $p = 0.027$).

4. Discussion

This study aimed to determine the effectiveness of the mental health nursing course on reducing the discrimination towards people with mental illness among nursing students. Our findings indicated that the overall discrimination was not

Table 3. Subgroup analyses for scores of the SSMI instrument before and after the course in different gender.

Dimension	Female (n = 45)			Male (n = 12)		
	Mean difference	t	p-value	Mean difference	t	p-value
Overall	0.356	0.108	0.914	4.083	0.679	0.504
Social distance	4.778	2.560	0.012	7.200	2.580	0.026
Danger	-4.067	-3.311	0.001	-2.250	-1.386	0.180
Competence	-0.356	-0.634	0.528	1.333	0.294	0.771

Table 4. Comparison for the values of mean differences of scores before and after the intervention (female students versus male students).

Dimension	t	p-value
Overall	-0.620	0.538
Social distance	-0.467	0.643
Danger	2.268	0.027
Competence	-0.771	0.444

significantly decreased after the course.

A study conducted among nursing students in China obtained the contrast result [22], with a positive change in the overall discrimination attitude after the mental health/psychiatric nursing course, which was supported by another program [23]. A potential explanation of this difference was the various structures of the course. Both previous studies included the clinical clerkship as a section of the course, however, the present study did not take it into account. The robust effect of clerkship on students' stigma of mental illness was reported by a systematic review [24]. A Chinese study also suggested the clerkship to be an effective approach among medical students to eliminating stigma and discrimination towards people with mental illness [25]. Moreover, the theoretical training combined with the clinical clerkship changed the attitudes among health care students, varying significantly from the studies including only the clerkship without the theoretical education [24]. This finding indicated the importance of the theoretical education in the mental health nursing course. At present, few studies explored the difference of effectiveness between the clinical clerkship and the theoretical lessons in improving the discrimination attitude among medical students. We could not determine the reason of the inconsistent results between this study and other 2 previous studies in China was the absent component of the clinical clerkship in the course. Therefore, a well-designed study focusing on the combined intervention (clerkship and theoretical education), with two control groups (only theoretical education, and only clerkship), should be implemented in the future.

Educational intervention was found effective in decreasing the stigma or discriminatory attitude towards mental disorders in other countries. A study among students from a liberal arts university in the USA found that the educational intervention with humanizing approach, watching the documentary of people with mental disorders in the class, improved the attitudes towards individuals with bipolar disorder and schizophrenia [26]. Another study in England reported that medical students had significantly greater improvement in mental health-related attitudes after the education program including testimonies sharing about contact experiences with psychiatric patients and role-play activities in the class [27]. Absence of the person-centered methods in educational intervention could be another reason for the insignificant change of the discrimination attitudes among nursing students, considering that only a traditional approach (lectures without sufficient interaction and experience from students) was used in this study.

Although there was no significant improvement of the overall discrimination attitudes, this study found some robust changes in 2 dimensions: the social distance and the danger. Nurse students' discrimination attitude in the social distance dimension decreased after the course. The result was consistent with another study among medical students in Japan [17], in which students presented more positive attitudes in social contact aspect and higher acceptance of relatively close social distance after one-hour educational program. Increased knowledge about mental illness could promote the realize to people with mental illness, which was helpful to generate more empathy in students. Empathy was found a significant predictor of the stigma attitudes, especially the social distance perspective [28], which was supported by another study [29]. An anti-stigma educational training was found to bring positive changes in students' stigma attitudes, and the increased empathy partly mediated the association between the increased knowledge and the decreased stigma attitudes [30].

According to the subgroup analyses in this study, the educational course had the same effectiveness in improving the discrimination attitudes in the social distance regard among female and male students. Nevertheless, there was a significant difference of the effectiveness in the dimension of danger among various gender. The course, astonishingly, aggravated the discrimination attitudes in danger dimension among female, whereas did not make changes among male students. In contrast, the mental health semester course was found effective in improving the perceived danger attitude among nursing students in Israel [31]. This inconsistent result could be explained by differences in the contents of educational interventions. Violence behavior related to patients with mental illness was highlighted in this study in order to enhance the attention on safety in psychiatric ward among students. This emphasis might result in an inaccurate view among students that all individuals with mental illness were unpredictable and dangerous. Female students in a vulnerable position generated more fear facing the sources of danger (the patients), which led to a more sensitive attitude

towards people with mental illness than male students. The contents of the course should be optimized to avoid the impression of fear towards people with mental illness among students, especially female students, caused by excessive publicity of violent incidents. The media-based or web-based educational approach could be taken into consideration in the course, since anti-stigma film and presentations with voice-over were found effective in reducing perceived dangerousness [32] [33].

This study has several limitations. First of all, potential bias may exist due to the before-after design without a separate control group and the absence of randomization in this study. Secondly, despite the number of subjects in this study met the pre-calculated minimum sample size, a relatively small sample size compared to other relevant studies may reduce the generalizability of the results. Besides, the significant difference between female and male students may be overestimated because of the large female-male ratio (nearly 4 to 1). Finally, Only one instrument (SSMI) was used in this study, which might not capture all aspects of discrimination accurately. Diversifying measurement tools should be used to provide a more comprehensive assessment in the future.

5. Conclusion

The mental health nursing course did not reduce the overall discrimination attitude toward people with mental disorders among nursing students. However, this convenient and cost-less intervention showed effectiveness in decreasing the discriminatory attitude in social distance. Moreover, this study highlighted the importance of reducing fear among female students. More effective interventions are needed in further studies, using person-centered methods and media-based teaching materials.

Funding

This study was supported by an educational research program of Yangtze University (JY2023062). The authors report no conflicts of interest.

Acknowledgements

We are grateful to all students participated in this study, and all authors for their contribution. It is very appreciate to Wei Liu for checking the statistics.

Conflicts of Interest

The authors declare no conflicts of interest.

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