Effects of Positive Psychotherapy on Depression and Self-efficacy in Undergraduate Nursing Students

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ABSTRACT

This study aimed to examine the effects of 8-Week Group Positive Psychotherapy (PPT) on depression and self-efficacy in undergraduate nursing students. A randomized, single-blind, controlled experimental design was conducted in 76 nursing students (34 in experimental group, 42 in control group). Data were collected via the Beck Depression Inventory-Ⅱ (BDI-Ⅱ) and the General Self-efficacy Scale at prior to (T1) and immediately after PPT (T2), and three months (T3), six months (T4) post PPT. Findings suggest that PPT does contribute to a significant decrease in the depressive symptoms and a significant increase in the self-efficacy. It is recommended that PPT is effective in alleviating depression and improving self-efficacy in undergraduate nursing students.

INTRODUCTION

Depression, as a feeling of being “down in the dumps” or “blue”, is a major negative emotion of today’s nursing students [1]. Studies showed that approximately 30% of nursing students globally had experienced depression nowadays [2-4]. In China, the prevalence of depression is also high among nursing students. Hsiao et al. interviewed 1276 Chinese nursing students and found the rate of depression was 30.1% [5]. Jiang and Zhao also reported that 38.04% of Chinese nursing students had depressive symptoms [6]. As a severe mood disturbance, depression negatively impacts the mental and physical health of nursing students. It could affect students’ mood, behavior, thought and perception pattern, which involves decreased studies’ productivity, vegetative and psychomotor alteration, apathy, loss of initiative and sleep disorder [7,8]. Thus, to keep their physical-mental health, be well prepared to cope with their future work stress, decrease professional burnout and improve care for their future patients, nursing students should learn how to manage negative psychological status, such as depression, in the early stage of higher education. It is urgent to develop a depression management program to help nursing students effectively manage and deal with their depression.

In the past few years, depression among nursing students has been widely documented by researchers and educators [3,9]. A number of interventions were used to relieve students’ depressive symptoms, including cognitive-behavioral therapy (CBT), Self-help mindfulness-based cognitive therapy (MBCT-SH), directing students’ to do some exercises and electro-acupuncture [10-16]. However, most of these interventions focused on the depressive symptoms rather than students’ personal strengths and advantages, and had a high requirement for the participants, therapists and place. Few interventions targeted for enhancing students’ positive attitudes and conditions [17].

Positive psychotherapy (PPT) was developed by Seligman, Rashid, & Parks, based on the theory of positive psychology.
Seligman described that the ultimate goal of positive psychology is “happiness” and it incorporated three significantly manageable components: positive emotions (the pleasant life), engagement (the engaged life) and meaning (the meaningful life). Positive emotions include pride, satisfaction, trust, confidence, hope, optimism and so on, which counteract negative emotions and its detrimental effects on physiology. Engagement is considered as the best psychological state that accompanies highly engaging activities. Enhancing engagement could help people use their talents and strengths to live a “happy” life. Meaning indicates the pursuit of a meaningful life, which encourages people to serve (politics, family, or community) by exercising their strengths. Building a meaningful life could enhance people’s satisfaction and well-being. As depressed people often present a lack of positive emotion, engagement and meaning, PPT is originally developed for intervening depressive symptoms by enriching people’s positive emotion, engagement and meaning rather than directly targeting depression.

Over the last decade, PPT has been proven to be an effective way of improving people’s psychological health. Seligman, et al. Delivered PPT to students who had mild to moderate depressive symptoms, and found that it could relieve depression and strengthen well-being for at least 6 months. A randomized controlled trial conducted by Brownell, et al. Showed that PPT could help service users develop strengths, gratitude and forgiveness. Schrank, et al. used PPT in people with psychosis, and found that it not only improved specific aspects of mental health, but also reduced depressive symptoms. Studies also showed that compared to the standard therapeutic methods and antidepressants, PPT had a better long-term effect on alleviating depression and increasing happiness. However, few studies to date have examined the effectiveness of PPT among nursing students group.

**PURPOSE**

This study aimed to assess the effect of positive psychological intervention on Chinese nursing students by implementing PPT. We hypothesized that PPT would significantly alleviate nursing students’ depression and improve their self-efficacy.

**MATERIAL and METHODS**

**Design**

We used randomized, single-blind, controlled experimental design to assess the effectiveness of PPT program from March to December 2013. Measures were administered before (T1), immediately after PPT (T2), and three months (T3), six months (T4) post-intervention.

**Sample**

The study sample was undergraduate nursing students recruited from three universities in Changsha. The inclusion criteria were:

1. Full-time undergraduate nursing students.
2. The score of Beck Depression Inventory-II (BDI-II) ranges 14~28.
3. Chinese speaker.
4. Mentally competent to answer questions.

The sample was calculated via PASS statistical software. The effect size was 0.68, power was 0.80 and margin of error type I was taken as 0.05, consequently, the sample size was found to be 32. Stochastic table’s law was used for group division. Totally 85 nursing students were eligible for the study, with 42 in the experimental group and 43 in the control group.

**Ethical considerations**

This study was approved by the Institutional Review Boards (IRB) of Xiangya Nursing School, Central South University. Written informed consent was obtained from the eligible participants. Participation was voluntary and anonymous. All participants were assured confidentiality and informed about the right to withdraw at any time. All the personal information was locked in a file and could only be accessed by the research team. The participants’ contact information was destroyed after the study.

**Measurements**

**Socio-demographic characteristics survey questionnaire**

The socio-demographic characteristics include age, gender, educational level, religion, home location, only child or not, student cadre or not, academic record, involvement in sports, the number of friends, monthly family per capita income, the intimacy with teachers and classmates, the intensity of stress on study and finding jobs after graduation.

**The beck depression inventory (BDI-II)**

Beck Depression Inventory-II (BDI-II) was used to measure the level of depression. The Chinese version of BDI-II is a valid and reliable (Cronbach’s α is 0.94), 21-item self-rating scale to assess the intensity of depressive symptoms over the past two weeks. The total score of BDI-II ranges from 0 to 63. Higher scores represent more severe depression symptoms. The defined four groups included:
(1) Level 1 or normal (BDI-II score ≤ 13).
(2) Level 2 or mild (14-19).
(3) Level 3 or moderate depression (20-28).
(4) Level 4 or severe depression (29-63).

The general self-efficacy scale

Self-efficacy was evaluated by the general self-efficacy scale which was originally devised by German psychologist Schwarzer and colleagues in 1981; it has been shown to give a good representation of self-efficacy in a variety of settings [29,30]. The scale is a single-dimension scale with 10 questions. Each question is assigned points from 1 to 4, and the final score is the average score of the 10 questions. The Chinese version also has a good validity and reliability; the Cronbach’s α is 0.87 [31,32].

Intervention

Translation and development of the positive psychotherapy (PPT)

After permitted by Prof. Seligman, a four-phase process was implemented to translate and develop the PPT. First, two professional bilingual translators independently translated the PPT from English to Chinese. Second, the translation committee (two bilingual translators, two Chinese researchers and one psychiatry expert) checked and agreed on a Chinese version of the PPT that accurately captured the linguistic and conceptual points of the original English version; they also gave their opinions on the cultural equivalency of the PPT. There was no indication that the intervention needed to be replaced or eliminated. Third, two native English-speaking translators who had experience in psychological research but unaware of the original English PPT performed a back translation. Fourth, another translation committee (two native English-speaking researchers and a bilingual Chinese researcher) compared the translated Chinese version with the original one to identify any linguistic inaccuracies. Any noticeable differences between the two versions were discussed and modifications of the Chinese version were made if necessary. Once a modification was made, it was then back translated again by the same translators and the process was repeated until there were no further discrepancies. Finally, the translated Chinese version was confirmed. PPT includes eight sessions and the intervention of each session lasts only one week. The overview of the English version of PPT was provided in Table 1.

Table 1. The content of positive psychotherapy.

<table>
<thead>
<tr>
<th>Session 1</th>
<th>Using Your Strengths</th>
<th>Take the Values in Action (VIA) Strengths Survey and write down your five highest strengths. Every day for the next week, use one of the strengths in a way that you don’t do before. Each night, record how you used your strength and how you felt before, during and after the activity, and whether you plan to use it in the future.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 2</td>
<td>Three Good Things</td>
<td>Each evening before bed, you need to write down three things that went well that day. These things can be ordinary and important. Next to each positive thing, you should answer the question “why did this good thing happen?”</td>
</tr>
<tr>
<td>Session 3</td>
<td>Gratitude Visit</td>
<td>Think of the people who have been especially kind to you but you haven’t properly thanked. Choose someone and arrange a face to face meeting next week. Your task is to write a gratitude letter and deliver it in person by reading it aloud. The letter must cover the specific about what he did for you and how it affected your life. After the visit, take some time to reflect on the experience.</td>
</tr>
<tr>
<td>Session 4</td>
<td>Savoring</td>
<td>Every day for the next week, be sure to savor at least two experiences (e.g. your breakfast, the sunshine). Spend at least 2-3 minutes savouring each experience.</td>
</tr>
<tr>
<td>Session 5</td>
<td>Active/ Constructive Responding</td>
<td>Next week, listen carefully when people you care about report good events to you. Go out of your way to respond actively and constructively. Each night, write down the opportunities you had to respond to good news from someone.</td>
</tr>
<tr>
<td>Session 6</td>
<td>Life Summary</td>
<td>Imagine that one day, someone writes a book about your fruitful and satisfying life. What would you want the book to say about you? Write a 1-2 page essay summarizing what you would like to be remembered for the most.</td>
</tr>
<tr>
<td>Session 7</td>
<td>Positive Service</td>
<td>Select two domains that you would like to serve (e.g. politics, community) by exercising your strengths. Write down your ideas for service and select one of your ideas and put it into action this week.</td>
</tr>
<tr>
<td>Session 8</td>
<td>Maintenance</td>
<td>Participants provide feedback on the pro’ and con’s of each exercise with the goal of generating ways to modify the exercise to fit their lives.</td>
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</table>

Implementation of PPT

Students in the experimental group were provided with PPT program, while the control group only received school routine help, such as once every semester of psychological counseling. The PPT program included eight 1.5-hour seminars lasted for eight weeks to nursing students. Each seminar group consisted of approximately 10-12 students and one seminar facilitator. The intervention was mainly discussion-based and the facilitator’s primary responsibility was to organize structured discussions. In the first session, the facilitator introduced himself and demonstrated an overview of the PPT program. Participants then introduced themselves in a positive way and received the first homework assignment. Sessions 2-7 followed a consistent structure. First the facilitator led a discussion of the homework assignment that participants completed in the last week. Each participant had an opportunity to share their experience with the exercise, and the facilitator helped the group analyze exercise’s strengths and
weakness. Second, the facilitator introduced the next homework assignment. In the last session, the facilitator started a discussion on the week’s assignment as usual, and then focused the discussion on the idea of maintenance. Participants identified the most useful and useless part of the exercises, and generated ideas about how the exercises can be integrated into their everyday lives.

DATA ANALYSIS

SPSS17.0 (SPSS Inc., Chicago, IL, USA) was used for data analysis. Mean, standard deviation and percentage were used to describe data. Generalized Linear Model Repeated Measure 2×4 Analysis of Variance was applied for comparing observations across the four contact periods to demonstrate an intervention × time interaction.

RESULTS

Sample characteristics

Totally, 78 undergraduate nursing students from three universities in Changsha agreed to participate in the study (6 refusals in experiment group, 1 refusal in control group). During the intervention period, 2 participants from experimental group dropped out. Finally, 76 participants completed the study. The flow charts of recruitment were demonstrated in Figure 1.

![Figure 1](Image)

The majority of participants were female 94.9% (74/76). The average age of the participants was 20.39 ± 1.20 years. Twenty-two participants were freshmen, twenty-seven participants were sophomore students, twenty participants were junior students and seven were senior students. Almost two-thirds (52/76) came from countryside. Only 18.4% were only child. The level of family monthly income per capita in this sample was relatively low. Only 11.8% (9/76) earned more than 3000 yuan ($450), 38.2% (29/76) between 2000 yuan ($300) and 3000 yuan ($450), and half of subjects less than 1000 yuan ($150). The majority of subjects had no religion (63/76), and only 17.1% of them had religion.

Participants in both groups were comparable in socio-demographic characteristics (P>0.05). Similarly, there was no significant difference in baseline scores of depression and self-efficacy between the two groups (P>0.05).

Effects of intervention on depression and self-efficacy

Mean and standard deviation were calculated to determine the scores of depression and self-efficacy (Table 2). Comparing T1 data with T2, T3, T4 data, participants in the experimental group demonstrated a more obvious decrease in the mean scores of depression, while participants in the control group only showed a slight decrease in depression; participants in the experimental group showed an increase trend in the mean scores of self-efficacy, while participants in the control group indicated a slight up and down trend in self-efficacy.

![Table 2](Image)

Repeated measures analysis was carried out for evaluating changes in depression and self-efficacy using 2×4 ANOVA with intervention as the between-the-subjects factor and time as the within-subject factor (Table 3). As the sphericity assumption was not met, corrections with Greenhouse-Geisser were applied for calculating the change in depression score. The intervention significantly alleviated depression (F=287.06, P=0.0001) and improved self-efficacy (F=8.98, P=0.004), as participants in the experimental group had significantly lower score in depression, whereas higher score in self-efficacy than those in the control group.

The effect of time on depression (F=94.75, P=0.0001) and self-efficacy (F=9.072, P=0.0001) was also significant, which
meant that the scores at T2, T3, T4 were significantly lower in depression compared with T1 score and significantly higher in self-efficacy compared with T1 score.

Table 3. Repeated measures analysis on the intervention effects on depression and self-efficacy.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Intervention effects</th>
<th>Time effects</th>
<th>Interaction effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>P</td>
<td>F</td>
</tr>
<tr>
<td>Depression</td>
<td>287.1</td>
<td>1E-04</td>
<td>94.75</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>8.981</td>
<td>0.004</td>
<td>9.072</td>
</tr>
</tbody>
</table>

There were significant interactions between the intervention and time effects from T1 to T4 for depression (F=44.89, P=0.0001) and self-efficacy (F=2.861, P=0.046). The interaction showed a difference in effect over time, because of the more pronounced and significant effect in the experimental group than that in the control group.

**DISCUSSION**

This study evaluated the effect of PPT on depression and self-efficacy of nursing students. Our data showed that the eight-week positive psychotherapy significantly alleviated depression, which were consistent with other studies, suggesting that the PPT program is effective in depression management on nursing students [18,25]. Additionally, our study also supported the effectiveness of PPT on the improvement of self-efficacy among nursing students.

Because of burdensome courses and clinical practice, many nursing students experience more anxiety, depression and stress during their college life than other university students, which would severely affect their personal health and professional development [33]. The underlying mechanism of PPT on depression and self-efficacy might be as follows, first, through session 1, it helped the nursing students clearly realize that their outstanding strengths and introduce them to use their strengths in new different ways. For example, it helped students get a successful feeling, which could reduce their depressive symptoms and enhance their self-efficacy through practice. Second, by applying session 2 to 4, PPT could teach students how to find and maintain happiness in their daily life, which not only alleviated students' negative emotions, but also helped them keep beliefs in their ability to live a pleasant and healthy life. Dockray and Steptoe found that positive emotion was stably associated with better mental-physical health outcomes [34]. Increasing positive emotions tends to be effective for depression and self-abasement [35,36]. Third, through session 5 to 7, nursing students could realize the importance of interpersonal relationships, which taught them to help others get the senses of satisfaction, self-esteem and confidence. This also contributes to reducing negative depressive symptoms and improving self-efficacy. Lyubomirsky et al. reported that holding a good relationship and self-summary could arouse a subjective feeling of meaning and are significantly correlated with well-being [37]. Finally, based on session 8, nursing students choose one or two interventions to practice regularly for the next several months as a way of maintaining their gains. This is a useful way to guarantee a long-term effect, thereby assuring students to have healthy psychological and physical states.

Our results showed that PPT could cultivate students’ positive thoughts and behavior, which was associated with less depressive symptoms and better self-efficacy. Wood and Joseph, suggested that lacking of well-being and positive emotions would increase the possibility of depression and physical disorders, whereas those who had positive emotions and behaviors were more likely to have a healthy life with more rewarding interpersonal relations and more easily achieve their goals in life [38]. To conclude, nursing educators and psychiatric nurses can integrate PPT program into their regular teaching and treatment schedule.

**Limitations**

The study only incorporates undergraduate nursing students who have mild to moderate depressive symptoms, and who were mainly recruited from three university of Changsha city. Thus, the finding cannot be generalized to other populations. Additionally, physiological and biochemical indexes weren’t used to demonstrate the effect of positive psychotherapy. It is recommended that further studies on PPT should be carried out with diverse samples (e.g., graduate nursing students, PhD nursing students or other medical students) in different areas and brought some physiological and biochemical indexes (e.g., weight, body mass index, cortisol) into the measurements.

**CONCLUSIONS**

Our results suggested that PPT was effective in alleviating depression and improving self-efficacy among nursing students. Given the increasing problems on nursing students’ mental and physical health, PPT program can be implemented to reduce their negative emotions and enhance their happiness and interests in normal school life. Furthermore, nursing educators and psychiatric nurses may realize the value of PPT and carefully apply it to help students improve their mental-physical health.

**ACKNOWLEDGEMENTS**

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