



Intervention Study of Group Based Psychological Counseling Based on Horticulture on Interpersonal Relationship Disturbance of Vocational College Students

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DOI: 10.32629/jher.v3i2.756

Abstract: This study has made attempts to explore the intervention effect of psychological counseling techniques by horticulture on the interpersonal disturbance of vocational college students. Twenty vocational college students who scored more than 9 points in the Interpersonal Relationship Integrative Diagnostic Scale (IRIDS) were randomly divided into the intervention group (10 persons who received 5 periods of horticultural group based psychological counseling) and the control group (10 persons who were in the waiting group). After the intervention process, the Interpersonal Relationship Integrative Diagnostic Scale (IRIDS) was used for post-test. The results showed that interpersonal distress decreased significantly in the intervention group ($p < 0.01$), while there was no significant difference in the waiting group. It shows that the group psychological guidance by horticulture has a positive intervention effect on the students' interpersonal disturbance, which is conducive to alleviating the students' interpersonal disturbance.

Keywords: horticulture, group psychological counseling, vocational college students, interpersonal distress, intervention

1. Questions

In 2019, it was proposed in the "Two Sessions" that the number of vocational college students will be expanded by one million in higher vocational institutions, the number of higher vocational students will increase accordingly. Under the background of the diversification, the student source structure also ushered in an unprecedented new challenge for the mental health education in higher vocational colleges. To promote the high quality development of higher vocational education and cultivate high quality technical talents, students are required to be equipped with excellent skills, and strong psychological quality. Since 2020, the sudden outbreak of COVID-19 and the normalization of pandemic prevention and control have profoundly changed people's way of life. In the post-epidemic period when the epidemic prevention and control is normalized, a large amount of information about the epidemic at home and abroad, as well as changes in life brought by school epidemic prevention and closure, are prone to anxiety, depression and other emotions, which, to a certain extent, affect the physical and mental health of college students[1]. This situation also adds a second challenge to the psychological work of vocational colleges.

According to psychologist Erikson's Eight-stage Theory of Personality Development, it is an important life-development based task for college students in early adulthood to learn to establish good interpersonal relationship, healthy intimate relationship and solve the conflict between intimacy and loneliness[2]. However, even on the pre-pandemic period, interpersonal distress was also one of the most important factors that researchers reported affecting college students' mental health. Under the situation of the change in the source structure of higher vocational students and the normalization of pandemic prevention and control, the interpersonal communication of higher vocational students has also witnessed great changes compared with that before the pandemic. However, these changes are not conducive to the cultivation of good interpersonal relationships among college students, which, may, however, possibly be the factors that make college students to encounter more interpersonal troubles. In light of the channels for interpersonal relationship, the original colorful campus offline activities can promote college students' communication. In light of interpersonal interaction based space, closed management lead to the restricted space for activities in the school campus, even subject to small bedroom. In light of interpersonal communication means, students are more dependent on mobile networks and social media rather than face-to-face conversation and communication. Researchers have also pointed out that social media dependence often brings loneliness rather than close interpersonal connection [4].

College students in the pandemic era are confronted a special college life. The support of good relationships is an important factor in relieving stress and getting through special times. Therefore, this study will explore, create a supportive

social environment, increase the positive experience of human, relieve higher vocational college students' interpersonal problems and special period college students' psychological pressure and promote mental health.

The application of group based psychological guidance in mental health education has been widely demonstrated, and psychological guidance technology based on horticulture has also achieved good results in the application of life education for college students[5], anxiety relief for middle school students[6], psychological education for vocational counselors [7] and other studies. Therefore, this study is conducted with attempts to integrate horticultural psychological counseling technology with group psychological counseling, and horticultural group psychological intervention can be adopted to analyze the effect of intervention.

2. Research methods

2.1 Research objects

A vocational college in Chongqing is recruiting 20 students, including 10 boys and 10 girls. Inclusion criteria:

1. Voluntary participation;
2. Comply with activity requirements and be competent in activity intensity;
3. Without participation in other similar studies recently, and refuse to accept any other psychological counseling or intervention during the experiment period;
4. Major life events during treatment for non-mental and physical diseases or in the recent past;
5. No professional horticulture learning background;
6. No allergic history of plants, pollen or fertilizers;
7. Be committed to keeping confidential the privacy of others;
8. Enough time to finish 5 sessions of coaching;
9. Score more than 9 points in the Interpersonal Relationship Integrative Diagnostic Scale (IRIDS).

Semi-structured interviews were conducted with the selected candidates to further ensure the homogeneity of the group, and supplementary plans for the horticulture group were designed according to the practical problems and needs of students. The selected 20 people signed a written informed consent. 5 males and 5 females in the intervention group were matched to the experimental group and received gardening counseling intervention. The waiting group consisted of 5 men and 5 women. The waiting group was also the control group of the study.

The limit comparison of the gender, grade, registered permanent residence, whether the only child in the family and whether the students cadre of the two groups of higher vocational students was carried out, and the differences were not statistically significant. The total number of samples included in the analysis was 20: 10 in the experimental group and 10 in the waiting group, with an average age of 21.

2.2 Research Tools

In this study, the Interpersonal Relationship Integrative Diagnostic Scale (IRIDS) was selected by Zheng Richang as the pre-test and post-test intervention scale. The scale includes four dimensions of communication disturbance, conversation disturbance, interpersonal disturbance, and heterosexual disturbance. The scale is widely used and has good reliability and validity.

3. Intervention

3.1 Design the program of "Understanding Life through Plants" — interpersonal relationship enhancement by group psychological counseling program based on horticulture

20 vocational college students were interviewed and asked to describe their current interpersonal troubles and make subjective reports: "I possibly developed light social anxiety disorder," "Frightened to talk to male/female" "how to make true friends," "It is difficult to trust others," "Group assignment always becomes a homework by myself," "I dare not speak in public," "I feel lonely at school," "I am afraid of being disliked by people," and so on. These problems are basically consistent with the problems in the four dimensions of the Interpersonal Relationship Integrative Diagnostic Scale (IRIDS). There are the types of distress presented based on the pre-test results of questionnaire and interview results. In this study, the five themes of the supplementary program are designed as acquaintance, cooperation, trust, expression and praise.

3.2 Implementation of the program

The intervention group received 5 psychological counselings once a week for 2 hours each time, while the waiting group did not receive any intervention after filling in the feedback form of group counseling for horticulture units after each session.

Table 1. Program of "Understanding Life through Plants" — interpersonal relationship enhancement by group psychological counseling program based on horticulture

| Activity theme | Activity theme | Activity contents |
|--|--|---|
| First group counselling: Acquaintance | Indoor: My tree of life, our small forest, creation materials with floral leaves | <ol style="list-style-type: none"> 1. Sign the contract of the group counseling and explain the activity rules and safety precautions. 2. Group members choose their favorite materials on floral leaves and pigments to make "my tree of life", then explain and show it. 3. Members put together "my tree of life" works to create a small forest. 4. Members share their feelings under the guidance of the group counseling teachers. 5. Members fill in the Feedback Form for Group Counseling Unites Based on Horticulture. |
| Second group counselling: Trust | Indoor: Trust; Box construction for fleshy vegetation | <ol style="list-style-type: none"> 1. Group members choose their favorite fleshy vegetation after discussion, and plant them in turn, and collaborate to create works on box for fleshy vegetation expressing the theme of "trust". 2. After discussion, members will name the work, share the creation ideas and feelings of the work. 3. Members share their feelings under the guidance of the auxiliary teachers. 4. Members fill in the Feedback Form for Group Counseling Unites Based on Horticulture. |
| Third group counselling: Cooperation | Outdoor: Open up a spiritual garden; Vegetable cultivation | <ol style="list-style-type: none"> 1. After discussion, group members choose their favorite vegetable seeds or roots and cooperate to loosen soil, fertilize, water, sow and transplanting. 2. Members discuss and groups agree on later maintenance plan. 3. Under the guidance of the auxiliary teachers, group members share the warm feelings they have experienced in the cooperation. 4. Members fill in the Feedback Form for Group Counseling Unites Based on Horticulture. |
| The fourth group counselling: Expression | Outdoor: Communication is not so difficult; A trip to flower market | <ol style="list-style-type: none"> 1. Each group will receive the same amount of money. The group counseling teacher will lead the group members to choose their favorite plants in the flower and wood market. 2. Members of the two groups share the successful or unsuccessful negotiation process and experience of the group. 3. Assign tasks, pair up freely, give a name to their plants, take turns to take care of the plants purchased in the gardening relaxation room within a week, and record the growth and changes of the plants. 4. Members fill in the Feedback Form for Group Counseling Unites Based on Horticulture. |
| The fifth group counselling: Praise | Indoor: Gratitude for our encounter; Plant adoption | <ol style="list-style-type: none"> 1. Group members take turns to introduce their favorite plants to everyone, as well as the process, experience and perception of plant conservation in a week and the next maintenance plan. 2. Members take turns to say something good about each member that they observed during the tour. "In your own way, and with the other person's permission, thank the person who helped you." 3. Hold a plant claim ceremony. Members speak from the heart to their adopted plants. 4. Ending of this activity. Members fill in the Feedback Form for Group Counseling Unites Based on Horticulture. |

4. Results and analysis

4.1 Descriptive statistical analysis of the intervention group and waiting group

After the group counseling based on horticulture, statistical software SPSS26.0 was used to make statistics on the interpersonal relationship comprehensive diagnostic scale measurement results of the intervention group and the waiting group, and the data were compared.

Table 2. Descriptive statistical analysis of the intervention/waiting group (N=10)

| Scale score | Minimal value | Maximum value | Median | M±SD |
|--------------------------------|---------------|---------------|--------|------------|
| (Intervention group) Pre-test | 9.00 | 16.00 | 12.50 | 12.70±2.00 |
| (Intervention group) Post-test | 3.00 | 10.00 | 4.00 | 4.80±2.20 |
| (Waiting group) Pre-test | 9.00 | 15.00 | 10.00 | 11.50±2.01 |
| (Waiting group) Post-test | 9.00 | 14.00 | 10.00 | 10.00±1.89 |

As can be seen from Table 2, the post-test results of the intervention group and the waiting group showed a decrease in interpersonal distress scores compared with the pre-test results. The decrease was significant in the intervention group while there's a slight decrease in the waiting group.

4.2 Homogeneity test between the intervention group and the waiting group

Table 3. Homogeneity test of pre-/post- test scores between the intervention group and the waiting group (N=10)

| Pre-/post- test | Intervention group (M±SD) | Waiting Group (M±SD) | t | p |
|-----------------|---------------------------|----------------------|-----------|-------|
| Pre-test score | 12.70±2.003 | 11.500±2.014 | 1.336 | 0.198 |
| Post-test score | 4.80±2.201 | 10.70±1.889 | -6.433*** | 0.000 |

As shown in Table 3, independent sample T test was performed on the pretest scores of the intervention group and the waiting group, indicating that there was no significant difference between the two groups ($P > 0.05$), and the pretest data of the two groups were homogeneous. Independent sample T-test was conducted on the post-test scores of the intervention group and the waiting group, and the post-test scores of the intervention group and the waiting group were significantly different ($P < 0.05$), and the post-test data of the two groups were of different quality. The pretest data were identical, but the post-test data were significantly different, indicating that horticultural psychological counseling could effectively reduce the interpersonal distress of vocational college students.

4.3 Examination on the score differences between the intervention group and the waiting group

Table 4. Comparison of pre- and post- test pairs in the intervention group/waiting group (N=10)

| Scale | Pre-test (M±SD) | Post-test (M±SD) | t | p |
|--------------------|-----------------|------------------|-----------|-------|
| Intervention group | 12.70±2.003 | 4.80±2.201 | 12.338*** | 0.000 |
| Waiting group | 11.50±2.014 | 10.70±1.889 | 1.078 | 0.309 |

Note: * represents P value less than 0.05, ** represents P value less than 0.01, *** represents P value less than 0.001.

It can be seen from Table 4 that the paired sample T test was performed on the pre -and post test results of the intervention group and the waiting group, and there was significant difference in the pre- and post test results of the comprehensive diagnostic scale of interpersonal relationship in the intervention group ($P < 0.001$), indicating that the horticultural group psychological counseling significantly reduced interpersonal relationship distress. There was no significant difference in the scores of the waiting group interpersonal relationship comprehensive diagnostic scale before and after ($P > 0.05$), indicating that the waiting group did not participate in the group counseling based on horticulture and interpersonal distress was not significantly reduced.

4.4 The difference test of all dimensions before and after the intervention group

Table 5. Pre- and post-test difference test of Interpersonal Relationship Integrative Diagnostic Scale (IRIDS) intervention group (N=10)

| Dimension | Pre-test (M±SD) | Post-test (M±SD) | t | p |
|---------------------------------|-----------------|------------------|------|-------|
| Conversation | 3.40±1.075 | 1.00±1.56 | 5.62 | 0.000 |
| Communication | 4.80±0.789 | 2.40±0.174 | 7.86 | 0.000 |
| Interpersonal | 1.30±1.06 | 0.10±0.316 | 3.34 | 0.001 |
| Communication with opposite-sex | 3.20±0.79 | 1.30±1.16 | 5.46 | 0.000 |

Table 5 shows that the paired sample T-test was performed on the results of each dimension before and after the intervention group. ($P < 0.001$), and in light of the interpersonal dimension ($P < 0.005$), there were significant differences in the scores before and after the intervention, indicating that group counseling in horticulture group was effective in the above four aspects of intervention.

5. Discussion

5.1 Analysis of the reasons why psychological counseling based on horticulture can reduce the interpersonal troubles of college students in a short time

In this study, the reasons why group counseling based on horticulture can significantly reduce the interpersonal relationship troubles of participating group members in a short period of time are as follows.

First of all, this study conducted in-depth interviews with the guidance before designing the program, so as to understand the interpersonal distress types of vocational college students and design the intervention program with an exact target, which is an important prerequisite for the effectiveness of the intervention.

Secondly, the group psychological counseling based on horticulture is endowed with the following unique advantages: On the one hand, the flowers, green leaves, soil, fragrance and a sense of touch have the effect of relieving emotional pressure, and the venues for group counseling based on horticulture can also be expanded from indoor to more relaxing nature environment. In a calm and relaxed state, people are more likely to open up their mind with more positive self-experience and interpersonal experience. On the other hand, observation of the growth and change of plants planted by oneself brings participants a sense of achievement and value, which can increase their confidence and empathy. Such positive experience can make participants more confident and dare to share in interpersonal communication, and reduce the trouble of not daring to communicate and communicate. A student who was nervous at the beginning of self-introduction became confident, fluent and enthusiastic when she introduced the plants she had carefully chosen to cultivate in the last stage.

Next, psychological counseling based on horticulture is a kind of expressive counseling techniques[8]. In the process of creation of horticulture by participants, plants serve as the media and the trauma and emotional stress were released in interpersonal setbacks and failure through non-verbal communication skills, which was conducive to the re-building of previous experience and feelings.

Last, group psychological counseling based on horticulture involves a lot of group cooperation projects that cover physical labor and fine labor. During the experiment, the researchers observed that students who felt shy to talk to members took the initiative to have a talk with the opposite sex in order to complete the planting task, which naturally broke the phenomenon of “boys cooperated with boys and girls with girls”. The activity feedback form indicated that both male and female students said that: “I did not expect to actively communicate and cooperate with the opposite sex, however, actually there is nothing to be nervous about.” In the process of cooperation and mutual assistance, on the one hand, the helpers can be guided to understand that their behavior can help others, as result, a sense of happiness will emerge. On the other hand, they also feel the enthusiastic acceptance and support of the group.

In conclusion, this study held that group psychological counseling based on horticulture will have good intervention effect on relieving interpersonal communication among vocational students, which can help students cultivate gratitude, love and optimism and sense of cooperation in the group counseling. As a result, a sense of loneliness can be drifted away to increase students confidence, communication skills and positive experience.

5.2 Deficiencies in research and prospects

This study is an attempt to introduce non-traditional psychological method based on green vegetation and horticulture and technology into students' psychological counseling. There are some inspirations on how to deal with the common interpersonal troubles of college students, but there are also some space to be improved. First of all, the number of participants in this study is covered with small size, so more research samples should be involved in future studies. Secondly, questionnaires were adopted in this paper to conduct pre- and post- tests combined with interviews, which is subjective to a certain extent. More objective indicators will be considered in the follow-up study. Third, whether the effects brought by horticulture groups can be maintained stably needs further follow-up research.

In practical operation, it was also found in the research that the guidance materials based on horticulture and related technologies are easier to obtain than other professional psychological work tools or guidance methods, and it is easier to reduce the psychological defense of the objects to be guided. In addition to the realization of psychological education, the functions in aesthetic education and labor education should be endowed simultaneously. In the further study, it is considered to be adopted as an efficient and convenient means for psychological counseling that can be universally used in practical education for mental health of students rather than confined in psychological counseling or counseling.

Acknowledgments

This paper was supported by General Project of Chongqing College of Finance and Economics: Exploration on new ways of psychological education under the background of higher vocational enrollment expansion — Application of horticultural therapy in mental health based education (Project No. 2021KYY007).

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