

A study on the relationship between sexual morality education and mental health level of Chinese female college students

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Abstract

The aim of this study was to explore the relationship between different models of sexual morality education and the mental health level of female college students, to provide a scientific basis for college conduct an effective sexual morality education program that can improve the psychological health level of female college students.

The experimental and control groups were comprised of female college students who received different models of sexual morality education. Total and factor scores derived from the Symptom Checklist 90 (SCL90) were compared between these groups.

The total mental health SCL90 score for female college students in the control group was 1.48 ± 0.39 , and the scores of 3 factors including SCL90-3 (interpersonal sensitivity, $P < .01$), SCL90-4 (depression, $P < .05$), and SCL90-5 (anxiety, $P < .05$) were all significantly higher than the national norm. The total mental health scores for female students in the purely theoretical experimental group and the integrated practical training experimental group were 1.40 ± 0.42 and 1.33 ± 0.39 , respectively, both of which were significantly different from the control group ($P < .05$), while the difference between the 2 groups was near the threshold of significance ($P = .052$). There were significant differences between the integrated practical training experimental group and the control group for scores of 5 factors including SCL90-2 (obsessive-compulsive symptoms), SCL90-3 (interpersonal sensitivity), SCL90-4 (depression), SCL90-5 (anxiety), and SCL90-6 (hostility) ($P_s < .01$). There were also significant differences between the purely theoretical experimental group and the control group for scores of 3 factors including SCL90-2 (obsessive-compulsive symptoms), SCL90-3 (interpersonal sensitivity), and SCL90-6 (hostility) ($P_s < .05$). And, there were also significant differences between the 2 experimental groups for scores for 3 factors including SCL90-3 (interpersonal sensitivity), SCL90-4 (depression), and SCL90-5 (anxiety) ($P_s < .05$).

Different models of sexual morality education have significantly different impacts on the mental health level of female college students. The integrated practical education model can significantly and effectively improve the mental health of female college students, and as such colleges and universities should adopt this integrated model to better improve these students' mental health.

Abbreviations: ANOVA = analysis of variance, SCL90 = Symptom Checklist 90, SME model = sexual morality education.

Keywords: China, college students, female, mental health level, sexual morality education

1. Introduction

The advent of the information age has promoted the development of a more social economy and has accelerated the individual's exposure to new social concepts, leading to constantly evolving views and value orientations with regard to sexuality. Among

receptive teenagers, there has been a sexual moral crisis since the beginning of the 21st century.^[1] Despite the increasing prominence of sexuality, China has not paid enough attention to the issue of sex education in universities, particularly with respect to sexual morality education, and there are problems in current curriculums, and with teachers and extant research.^[2-4] In China, young college students in high culture areas, and particularly female students, are more open with regard to their sexual attitudes, leading to a shift in their perceptions of sexual morality. There are increasing instances of premarital cohabitation, booty call, abortion, venereal disease, entering into relationships for financial gain, and sexual crime owing to this shift in sexual morality, and this can seriously affect the physical and mental health of students. Compared with male college students, female college students are more likely to suffer from anxiety, depression, sensitivity, self-harm, and suicide after stressful sexual events, adversely affecting social harmony and stability. It is therefore very important to provide students, and particularly female students, with sexual morality education. Hence, the aim of this study was to identify what mode of sexual morality education was most effective at improving the mental health of female college students, with the goal of providing a scientific and practical basis for future efforts to implement such training and improve the psychological health of female college students.

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2. Materials and methods

This research program was approved by the Ethics Committee of the Institute of Moral Education, Zhejiang University of Finance and Economics. Specific research methods are detailed in the following sections.

2.1. Subjects

Using a stratified random sampling method, 480 female college students from 6 universities in Hangzhou were selected as study subjects. There were 120 freshmen, 120 sophomores, 120 juniors, and 120 seniors among study participants, who were also balanced with regard to their disciplines, homelands, relationship status, and family backgrounds.

2.2. Methods

2.2.1. Educational methods

2.2.1.1. Educational models. The subjects were divided into 2 experimental groups and a control group. The experimental groups were trained using 2 different models of sexual morality education: a purely theoretical model and a model of integrated practical training, while the control group did not receive sexual morality education. Students in the purely theoretical education group underwent comprehensive exposure to explanation of relevant theoretical knowledge, while the practical training group combined theoretical knowledge with practical training, conducting sexual morality education for students through case analyses, interactive scenarios, debate competitions, and other activities. Each study group had the same number of subjects, including 40 freshmen, 40 sophomores, 40 juniors, and 40 seniors.

2.2.1.2. Educational content. Phase I: All subjects were taught about sexual health knowledge, including the dangers of AIDS and preventions strategies, the status quo, and the harm of premarital sexual behavior.

Phase II: Subjects in the experimental groups were trained through the 2 different educational models. The primary education content was the same in both groups, with a focus on instilling an understanding of basic standards of sexual morality, the establishment of good sexual morality, the cultivation of healthy sexual moral psychology, and the avoidance of sexual morality anomie. In other words, this educational effort sought to guide students to see, treat, and deal with sexual behavior from a moral perspective.

2.2.2. Survey method. The SCL90 prepared by Derogatis in 1973^[5] was used to conduct a questionnaire survey of all study participants. The SCL90 is one of the most famous mental health test scales in the world. Since its introduction to China in the 1980s, it has been widely used for the measurement of group mental health, especially that of college students,^[6] with good reliability and validity. The SCL90 has 90 topics including 10 factors such as somatization (SCL90-1), obsessive-compulsive disorder (SCL90-2), interpersonal sensitivity (SCL90-3), depression (SCL90-4), anxiety (SCL90-5), hostility (SCL90-6), terror (SCL90-7), paranoia (SCL90-8), psychosis (SCL90-9), and other additional items (SCL90-10). It is mainly used to assess whether a person has which psychologic symptoms and the severity of the symptoms. Based on self-perceptions of one's mental status, subjects graded symptoms using a scale with scores corresponding to responses of "no," "very light," "medium," "heavy," and

"severe." Higher scores were indicative of poorer mental health in subjects. Besides, the questionnaire also included questions about necessary information regarding subjects, and the investigation was conducted anonymously. To ensure the homogeneity of the experimental groups and the control group before the implementation of sexual morality education, in addition to balancing each group, the control group was administered this questionnaire after the 1st stage of training, while the experimental groups received it after the 2nd stage of education. A total of 480 surveys were issued, and 444 valid questionnaires were recovered, with an adequate recovery rate of 92.50%.

2.2.3. Statistical analyses. The SPSS 18.0 was used for all data analysis. Frequencies and percentages were used to describe enumeration data. The measurement data were described using mean and standard deviation. Total mental health scores and factor scores of different groups were analyzed by *t* test or analysis of variance (ANOVA), and Student Newman Keuls (SNK) tests were used for pairwise comparisons.

3. Results

3.1. Analysis of overall mental health among study participants

The mental health of female college students who did not receive sexual morality education was investigated within the control group. The SCL90 uses a graded scale rating system, with symptoms ranging from "no" to "severe" corresponding to grades of 1 to 5. When a given factor score exceeds 2, it is indicative that an individual is likely to have mental health problems related to the aspect being assessed, and when the factor score exceeds 3, it indicates that the individual has moderate to severe problems with respect to this aspect. The average overall SCL90 score of female college students in the control group was 1.58 ± 0.37 , and the scores for the 10 factors were between 1.32 and 1.86. Using *t* tests, we found that the factor scores for SCL90-3 (interpersonal sensitivity), SCL90-4 (depression), and SCL90-5 (anxiety) were all significantly higher than the national norm (Table 1). These results overall indicated that the female college students participating in this study had generally good mental health, although they were affected by factors pertaining to interpersonal relationships, depression, and anxiety.

3.2. Comparison of mental health among female college students in different groups

The mental health level of female college students was compared between the experimental group and the control group (Table 2). The total SCL90 score of female students in the purely theoretical experimental group was 1.40 ± 0.42 , while the total SCL90 score in the integrated training experimental group was 1.33 ± 0.39 , both of which differed significantly from that of the control group ($F=3.956$, $P<.05$). Further assessment determined that the scores of both experimental groups were significantly lower than that of the control group, and that the difference between the integrated practical training experimental group and the control group was extremely significant ($P<.01$), while the difference between the training group and purely theoretical group approached the threshold of significance ($P=.051$). This indicates that sexual morality education and training can significantly improve the mental health of female college students,

Table 1
Comparison of the mental health scores of female college students in this study and national norms.

Factors	Items	National norms (n=3422)	Female college students (n=142)	t	P value
SCL90-1 (somatization)	12	1.37 ± 0.37	1.32 ± 0.35	1.28	>.05
SCL90-2 (obsessive-compulsive disorder)	10	1.62 ± 0.56	1.59 ± 0.55	1.43	>.05
SCL90-3 (interpersonal sensitivity)	9	1.65 ± 0.56	1.86 ± 0.51	-4.57*	<.01
SCL90-4 (depression)	13	1.50 ± 0.57	1.62 ± 0.49	-2.26†	<.05
SCL90-5 (anxiety)	10	1.39 ± 0.47	1.50 ± 0.48	-2.63†	<.05
SCL90-6 (hostility)	6	1.48 ± 0.57	1.39 ± 0.54	1.98	>.05
SCL90-7 (terror)	7	1.23 ± 0.41	1.30 ± 0.38	-1.33	>.05
SCL90-8 (paranoia)	6	1.43 ± 0.52	1.45 ± 0.48	-1.01	>.05
SCL90-9 (psychosis)	10	1.29 ± 0.45	1.31 ± 0.41	-0.98	>.05
SCL90-10 (other additional items)	7	1.39 ± 0.44	1.37 ± 0.42	0.89	>.05
total SCL90 score	90	1.44 ± 0.43	1.48 ± 0.39	1.27	>.05

* $P < .01$.

† $P < .05$.

SCL90 = Symptom Checklist 90.

and that the effect of integrated practical training was superior to that of purely theoretical training. The scores for the 10 individual SCL90 factors in the integrated practical training group ranged between 1.20 and 1.61, with each factor score being lower than that of the control group. SNK test results revealed that the scores for 5 factors: SCL90-2 (symptoms), SCL90-3 (interpersonal sensitivity), SCL90-4 (depression), SCL90-5 (anxiety), and SCL90-6 (hostility) in the integrated practical training experimental group were significantly lower than those of the control group ($P < .01$), while those for the remaining factors with the exception of SCL90-8 (paranoid) approached significance. With the exception of SCL90-8 (paranoia), the difference between the practical training experimental group and the control group for the remaining 4 factors was also marginally significant (Table 2). This sexual morality education and training proved to be particularly helpful for female college students dealing with issues including obsessive-compulsive symptoms, interpersonal relationships, anxiety and depression, hostility awareness, and behavior. The 10 SCL90 factor scores for female college students in the purely theoretical experimental group ranged from between 1.26 and 1.81. Except for SCL90-1 (somatization), SCL90-9 (psychosis), and SCL90-10 (additional items), all factor scores in the purely theoretical experimental group were significantly lower than

those of the control group, including SCL90-2 (obsessive-compulsive symptom), SCL90-3 (interpersonal sensitivity), and SCL90-6 (hostility), which reached significant level ($P < .05$). In addition, there were significant differences in the factor scores for SCL90-3, SCL90-4, and SCL90-5 between the purely theoretical experimental group and the integrated practical training experimental group ($P < .05$). This suggests that sexual moral education and training can improve the mental health of female college students, and the effect of an integrated practical training educational model is superior to that of a purely theoretical educational model, as reflected by the interpersonal and emotional attitudes of female college students.

4. Discussion

4.1. Female college students have good overall mental health but suffer from problems pertaining to interpersonal relationships, depression, and paranoia

In this survey, the mental health level of female college students who had not received sexual morality education was assessed through the control group. As shown in Table 1, scores for the 10 SCL90 factors in this group were between 1.32 and 1.86. Based on the scoring standards of SCL-90, the overall psychologic

Table 2
Comparison of mental health scores between the experimental groups and the control group of female college students.

Factors	Items	Control group (n=142)	Purely theoretical experimental group (n=150)	Integrated training experimental group (n=152)	F	P
SCL90-1 (somatization)	12	1.32 ± 0.35	1.33 ± 0.38	1.23 ± 0.31	2.672	.051
SCL90-2 (obsessive-compulsive disorder)	10	1.59 ± 0.55	1.44 ± 0.45	1.41 ± 0.42	3.185*	<.05
SCL90-3 (interpersonal sensitivity)	9	1.86 ± 0.51	1.72 ± 0.42	1.61 ± 0.39	4.861†	<.01
SCL90-4 (depression)	13	1.62 ± 0.49	1.50 ± 0.41	1.39 ± 0.37	4.504†	<.01
SCL90-5 (anxiety)	10	1.50 ± 0.48	1.29 ± 0.45	1.20 ± 0.40	4.967†	<.01
SCL90-6 (hostility)	6	1.39 ± 0.54	1.28 ± 0.52	1.25 ± 0.53	2.867*	<.05
SCL90-7 (terror)	7	1.30 ± 0.38	1.24 ± 0.37	1.21 ± 0.39	2.584	.054
SCL90-8 (paranoia)	6	1.45 ± 0.48	1.44 ± 0.43	1.42 ± 0.44	1.018	>.05
SCL90-9 (psychosis)	10	1.31 ± 0.41	1.31 ± 0.45	1.27 ± 0.33	2.156	.056
SCL90-10 (other additional items)	7	1.37 ± 0.42	1.38 ± 0.38	1.32 ± 0.38	2.113	.053
total SCL90 score	90	1.48 ± 0.39	1.40 ± 0.42	1.33 ± 0.39	3.956*	<.05

* $P < .05$.

† $P < .01$.

SCL90 = Symptom Checklist 90.

health of female college students is thus good, which is consistent with the research results of Guo Zhifeng^[6] and Zhu Hong et al.^[7] The overall good psychologic health of female college students is inseparable from the current attention and input on college student mental health education from top to bottom. However, compared with the national norm, female college students in the control group had significantly higher scores relating to SCL90-3 (interpersonal sensitivity), SCL90-4 (depression), and SCL90-5 (anxiety). This indicates that interpersonal and emotional psychologic problems affecting female college students are relatively prominent. There are several possible explanations for this phenomenon. For one, regarding interpersonal issues, female college students are more likely to be timid and sentimental and are more likely to be sensitive regarding interpersonal communication, potentially leading to problems.^[8] Girls are also more likely to have romantic setbacks than boys, leading to distrust between individuals that can generalize to other contexts. About emotional problems, these same traits mentioned above are more likely to make female students experience anxiety and depression in challenging situations, such as those pertaining to love or sex, and the current job market and traditional social pressures can put girls under additional pressure,^[9] further increasing the risk of anxiety or depression. Therefore, while the overall mental health level of female college students remains largely good, colleges, and universities should not ignore the prominent issues which do still affect their students. About using education as a means of addressing psychologic health, it is important to understand the causes and etiology of these psychologic problems, and to use a combination of collective education and individual guidance to guide and help students overcome these challenges. Strategies that may be useful in this regard include strengthening marriage and sex education, career education, and similar efforts aimed at improving their psychologic health level in a comprehensive manner. Screening for the affective temperament profile and for hopelessness has importance for designing the treatment and rehabilitation plans of affective disorder patients, as these variables are involved in the course and outcome of affective disorder patients and influence their health and social functioning.^[10]

4.2. Sexual morality education can improve the mental health of female college students, with model-dependent effects

In this survey, the 2 experimental groups received 2 formats of sexual morality education: a purely theoretical model and a practical training model. As shown in Table 2, the total scores and factor scores from the SCL90 for female college students who received integrated practical sexual morality education or purely theoretical sexual morality education were generally lower than those of female college students in the control group who did not receive sexual morality education. This demonstrates that sexual morality education is an effective means of improving the mental health of female college students, particularly with respect to interpersonal, emotional, compulsive, and hostile behaviors. This is different from the research results of Dai Ling et al.,^[11] who found that sexual morality education can significantly improve the mental health of male college students, but has no significant effect on female college students, which may be related to the different subjects and education models adopted between these 2 studies. In their study, female subjects were freshmen attending medical colleges, while in our study female students ranged from

freshman to senior grade levels. The students in our study may have thus been more representative. In addition, female college students majoring in medicine are more objective and scientific in their attitudes and cognition of sex and have a deeper understanding of sexual morality.^[12] Therefore, the effects of sexual morality education on this group may not be as obvious. The education model adopted in this previous study was also based around peer education by senior students; however, traditional Chinese culture often leads girls to be shyer with regard to sex, such that they avoid discussing it even with members of the same sex. Our practical sexual morality education strategy combined theoretical and practical training activities such as case analyses, interactive scenarios, and debate competitions that increased the sense of situational substitution and reduced the psychologic burden imposed on female college students by sex. In this way, we were thus able to effectively communicate and discuss sexual problems from a 3rd-party perspective or using hypothetical situations, thus strengthening the sexual morality of the students.

In addition, as shown in Table 2, after back testing, we found that our integrated practical sexual morality education SME model was more effective than was our purely theoretical sexual morality education for improving the mental health of female college students, especially with respect to interpersonal and emotional issues. There may be 2 main reasons for this finding. For 1, compared with the practical training model, the purely theoretical model was primarily based upon the reasoning and facts provided by teachers. The lack of interaction and experience in such a setting can lead to a lack of students identifying with the concepts being discussed, leading them to more quickly forget the concepts after the end of the class. In contrast, the integrated practical training model combined theory with practice, thus overcoming the above deficiencies by enabling students to communicate and discuss in context, resulting in deeper experience and understanding in students, thus achieving superior educational outcomes. Secondly, the difference between the 2 kinds of education models was mainly linked to interpersonal and emotional problems. As these 2 problems are easily influenced by the outside world, unlike the personality components such as paranoia, differences in education models were more likely to affect these problems. Effective education can overcome the incorrect understandings and ideas underlying interpersonal and emotional problems, allow students to establish correct sexual values, so that they can learn to correctly respond to sexual issues, and to not be influenced by negative external ideas. Students can also be trained to use appropriate methods and approaches to transfer, relieve, or sublimate their sexual impulses, thus avoiding the psychologic contradictions that may arise when contending with sexual issues, and thereby reducing the adverse psychologic manifestations such as anxiety, depression, and hostility in interpersonal sensitivity and communication that may arise consequently.

In summary, negative love or sexual experiences are a significant factor influencing the psychologic health of female college students. Sexual morality education can improve the mental health of female college students, and the effect of integrated practical sexual morality education is stronger than is that of purely theoretical sexual morality education. As a result of career and social pressures, the age at which female college students marry has become increasingly delayed, extending the period during which students wait for sex. Student values have not remained stable during this period, with students being

exposed to external western concepts such as sexual freedom and sexual liberation, which are at odds with traditional Chinese female sexual concepts. This conflict can lead to psychologic contradictions and various negative emotions, making students more prone to sexual morality biased behaviors, affecting their mental health and growth. Therefore, we suggest that colleges and universities pay more attention to the sexual morality education of female college students, strengthening their sexual morality education efforts with the goal of improving the mental health of female college students.

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