

A Study on the Correlation between Depression, Self-Efficacy and Hope of Nursing Vocational College Students under Public Emergencies

Lu Zhou^{1,2}, Qin Guan¹, Xiaoling Zhu^{3,*}

¹Faculty of Nursing, Dali University, Dali, Yunnan, China

²Department of Emergency Medicine, Affiliated Hospital of Southwest Medical University, Luzhou, Sichuan, China

³Nursing Department of the First Affiliated Hospital of Dali University, Dali, Yunnan, China

*Corresponding author: zhuzhuxiaoling@163.com

Received May 11, 2023; Revised July 01, 2023; Accepted July 11, 2023

Abstract Objective: To explore the current status of depression among nursing senior students under public health emergencies and to analyze its relationship with self-efficacy and hope. Methods: A cross-sectional study of 210 nursing vocational college students from a vocational college in Sichuan Province were selected by convenience sampling method in January 2023, and investigated with General demographic information, Self-rating depression scale, General self-efficacy scale, and hope scale. Results: The scores of depression, general self-efficacy and hope were (41.96 ± 10.05) , (23.84 ± 5.92) and (21.18 ± 4.46) , respectively; Correlation analysis showed that depression was negatively correlated with self-efficacy ($r=-0.617$, $P<0.01$), and depression was negatively correlated with hope ($r=-0.612$, $P<0.01$). The results of the multiple linear regression analysis showed that the three variables of self-efficacy, willingness motivation dimension, and path dimension entered the regression equation and together explained 43.70% of the total variance. Conclusion: Nursing vocational college students have mild depression under public emergencies, and their psychological problems should be paid attention to. Therefore, higher vocational colleges should take targeted measures to enhance their self-efficacy and hope, so as to reduce their depression.

Keywords: nursing vocational college students, depression, self efficacy, hope, relevance

Cite This Article: Lu Zhou, Qin Guan, and Xiaoling Zhu, "A Study on the Correlation between Depression, Self-Efficacy and Hope of Nursing Vocational College Students under Public Emergencies." *American Journal of Nursing Research*, vol. 11, no. 2 (2023): 93-97. doi: 10.12691/ajnr-11-2-4.

1. Introduction

The COVID-19 epidemic in 2020 has brought a huge impact on the physical and mental health of individuals as a public health emergency, and as a special group of college students, a very high proportion of higher education nursing girls, who are in their adolescent years and not yet mature in physical and mental development, are more vulnerable to shock and negative emotions under public emergencies [1]. And some studies have shown that negative emotions may cause expressive states or aggravate the level of depression in individuals [2]. Self-efficacy can play its role by influencing the cognitive, emotional, and choice processes of individuals, which determine the choice of behavior, the effort and persistence of that behavior, and the attitude to cope with difficulties [3]. And the sense of hope it is one of the four elements that constitute the positive psychological capital [4], from the emotional perspective, it is the one that allows the individual to maintain a good state and thus have the ability to mobilize psychological energy to overcome the negative emotions generated by the

organism [5]. Therefore, this study investigated the current state of depression among nursing senior students and explored the effects of self-efficacy and hope on depressive symptoms under an unexpected public health event in order to propose a new theoretical basis and a new perspective for psychological counseling of nursing senior students.

2. Methods

2.1. Study Design and Ethical Considerations

A cross-sectional survey was conducted in January 2023, and a convenience sampling method was used to select nursing higher vocational students from a higher vocational college in Sichuan Province as the research object. The study received ethical approval from the Ethics Committee of Dali University (NO.0163/2022), following the principle of voluntariness, the investigated subjects could withdraw or refuse this study at any time, and the investigators promised the investigated subjects that the information obtained would be kept strictly confidential for research use only.

2.2. Participants

A convenience sampling method was used to select nursing senior students from a higher education institution in Sichuan Province in January 2023 as the study population. Inclusion criteria: nursing students enrolled in school; informed consent and voluntary participation in this study. Exclusion criteria: not enrolled in school during the survey period, such as suspension or leave of absence. The sample was estimated based on 10-20 times the number of independent variables of the research instrument [6], and there were 11 independent variables in this study, and considering the possibility of 20% invalid questionnaires, about 132-264 were needed; 210 nursing students were actually included in this study.

3. Measures

3.1. General Demographic Information

Designed by the researcher, the questionnaire contained seven items, including gender, grade, only child, family's area, class leader, divorced parents, and family status.

3.2. Self-Rating Depression Scale

The Chinese version of the Depression Self-Rating Inventory has 20 items [7]. The scale has 20 entries, 10 of which are scored positively and 10 of which are scored negatively. The scale was a Likert 4-point scale, with higher scores indicating a more severe depression index. The Cronbach's alpha coefficient for this study was 0.870.

3.3. General Self-Efficacy Scale

The Chinese version of the self-efficacy scale has 10 items [8]. The scale was a 4-point Likert scale. The higher the total score, the higher the self-efficacy. The Cronbach's alpha coefficient for this study was 0.903.

3.4. The Traits of Hope Scale

The Chinese version of hope Scale has 12-item scale, including 2 dimensions (willingness motivation, path) with 8 questions, and the remaining 4 questions are interfering items not counted in the total score [9]. The scale was a Likert 4-point scale, with higher scores indicating higher levels of hopefulness. The Cronbach's alpha coefficient for this study was 0.887.

3.5. Data collection

The online data was collected by two researchers. By contacting with higher vocational colleges and the head teachers of nursing major in this school, the purpose and significance of this study were informed and the two-dimensional code of electronic questionnaire was issued after consent was obtained. A total of 221 questionnaires were returned for this study, and after eliminating invalid questionnaires such as missing and consistent answers, 210 questionnaires were finally returned, with an effective rate of 95.0%.

3.6. Data Analysis

This study used SPSS 25.0 for statistical analysis of the data, in which the count data were described by n (%) and the normally distributed measures were expressed by Mean $\pm$ SD, using t-test, and ANOVA. Pearson correlation analysis was used to explore the relationship between depressive symptoms and feelings of self-efficacy and hope. Multiple linear regression was used to analyze the factors influencing depressive symptoms among nursing students. Statistical significance was found at $P < 0.05$.

4. Results

4.1. Scores of the Depression, Self-efficacy and Hope

All above 210 nursing seniors, 39 (18.57%) were male and 171 (81.43%) were female, with an age of (16.24 $\pm$ 0.82) years. Depression score was (41.96 $\pm$ 10.05) with a mean entry score of (2.58 $\pm$ 0.45), self-efficacy score was (23.83 $\pm$ 5.92) with a mean entry score of (2.38 $\pm$ 0.59), and hope score was (21.18 $\pm$ 4.46) with a mean entry score of (2.65 $\pm$ 0.56).

4.2. Depression Scores with Different Demographic Characteristics

There were no statistically significant differences in depression scores by gender, being an only child, family location, being a class officer, and family economic status ($P > 0.05$); there were statistically significant differences in depression scores by grade level and parental marital status ($P < 0.05$). As detailed in Table 1.

Table 1. Depression scores of nursing students with different demographic characteristics (N=210)

characteristics	Projects	n	depression	t	P
Gender	male	39	42.00 $\pm$ 8.97	0.305	0.760
	female	171	41.51 $\pm$ 9.09		
Grade	grade one	64	38.72 $\pm$ 8.83	2.946	0.034
	grade two	146	42.61 $\pm$ 9.00		
only child	no	201	41.72 $\pm$ 9.00	0.918	0.359
	yes	9	38.89 $\pm$ 10.20		
Family's area	rural	174	41.69 $\pm$ 8.77	0.315	0.753
	town	36	41.17 $\pm$ 10.40		
class leader	no	177	41.76 $\pm$ 8.70	0.582	0.561
	yes	33	40.76 $\pm$ 10.86		
divorced parents	no	176	41.37 $\pm$ 8.70	-1.84	0.040
	yes	34	42.79 $\pm$ 10.74		
family status	poverty	43	42.19 $\pm$ 8.77	0.475	0.635
	prosperity	167	41.45 $\pm$ 9.14		

4.3. Correlation Analysis of Depression, Self-Efficacy, and Hope

Pearson correlation analysis showed that depression scores were negatively correlated with self-efficacy and hope scores on all dimensions ($P < 0.01$). As detailed in Table 2.

Table 2. The correlation of variables in the study (N=210)

Projects	Mean±SD	depression	
		r	P
Self-efficacy	23.84±5.92	-0.617	<0.01
Hope	21.18±4.46	-0.612	<0.01
willingness motivation	2.53±0.61	-0.596	<0.01
path dimension	2.78±0.58	-0.549	<0.01

4.4. Multiple Linear Regression Analysis of Depression in Nursing Seniors

Multiple linear regression was conducted with depression as the dependent variable and the 2 dimensions of general demographic data of depression with statistically significant items, self-efficacy and hope as independent variables, and the specific assignments are shown in Table 3. multiple linear regression analysis showed that the variables grade and whether the parents were divorced were not statistically significant and were excluded from the equation. The variables statistically significant self-efficacy, willingness motivation, and path were included in the regression equation, explaining 43.7% of the total variance. The regression equation: $Y=3.375-0.278 \times X_1-0.210 \times X_2-0.064 \times X_3$, see Table 4.

Table 3. Independent variable valuation

Independent variable	assignment criteria
Grade	grade one=1; grade two=2
divorced parents	no=0; yes=1
Self-efficacy	actual values
willingness motivation	actual values
path dimension	actual values

Table 4. Multiple linear regression analysis of influencing factors of depression

Variables	Beta	SE	standardized Beta	t	P
constant term	3.375	0.142		23.838	0.000
X_1 Self-efficacy	-0.278	0.057	-0.364	-4.909	0.000
X_2 willingness motivation	-0.210	0.062	-0.283	-3.372	0.001
X_3 path dimension	-0.064	0.066	-0.182	-1.975	0.038

Note: $R^2=0.448$, adjusted $R^2=0.437$, $F=41.614$, $P<0.001$.

5. Discussion

In this study, the depression symptom score of nursing students was (41.96 ± 10.05) points, and the depression severity index (total score / 80) showed a mild depression state, which was higher than the norm in China (41.88 ± 10.57) points. The reasons may be as follows. First, from the perspective of psychological stress-response, the rare long-term COVID-19 epidemic can be regarded as a huge source of stress. Due to its high transmission and serious consequences in many aspects, nursing students have a higher degree of risk perception [10]. High-risk perception often causes individual cognitive and emotional problems, induces non-adaptive behavior, produces uncertainty about their selected profession, academic burnout, and depression [11]. Second, during the possible investigation period, due to the implementation of the new policy of epidemic prevention and control in China, public hospitals have

ushered in a surge in the number of patients, and the medical system is under tremendous pressure. In the face of this situation, nursing students who are about to become medical workers often have negative emotions such as anxiety and depression. In this study, there was a statistically significant difference in depressive symptoms between the two demographic variables of grade and whether the parents were divorced ($P < 0.05$). The reasons may be: (1) The higher the grade, the higher the depression, which is consistent with the results of a Chinese study [12]. Grade 1 students just entered the campus, but also not familiar with the nursing profession, just a hot blood, and with the expansion of colleges and universities, nursing higher vocational students are slightly weaker than the students entering the undergraduate stage of learning. The autonomous ability may still be in a state of pleasure and playfulness, while grade 2 students may have a deeper understanding of the nursing profession through theoretical learning. Coupled with the unknown anxiety of clinical practice, it is more likely to produce negative emotions, depression and so on. (2) Nursing students with divorced parents are more prone to depression, which may be due to the misfortune of parents' marriage in the family, leaving them in an atmosphere of long-term parent-child relationship disharmony.

The correlation analysis of this study showed that depressive symptoms were negatively correlated with self-efficacy, hope and its dimensions. This is similar to the results of a study in China [13], indicating that the higher the depression, the lower the self-efficacy. Self-efficacy refers to the individual's judgment on whether he can succeed in something, which can affect the individual's emotional thinking [14]. The nursing growth period is in a negative depression, which will reduce self-efficacy in the long run. When facing difficulties, it will produce timid withdrawal behavior. Therefore, educators should correctly guide students to have a good state of mind and emotions, especially in the period of public health emergencies, to cultivate students to form a good sense of self-efficacy, in the future when encountering career risks and difficulties, can face these challenges and pressures with a positive state of mind and emotions. In this study, the stronger the sense of hope, the lower the depression, which is consistent with the results of a Chinese study [15]. The sense of hope is an emotional experience that allows people to maintain a good state, a sense of happiness and meaning in life, and the ability to mobilize psychological energy to overcome difficulties and avoid falling into despair due to excessive mental fatigue [16]. This shows that nursing students with a stronger sense of hope have higher confidence to cope with difficulties and maintain an optimistic and positive attitude to achieve their goals. Therefore, in the face of the long-term public health event of the COVID-19 epidemic, educators should strengthen the spiritual energy of nursing students, enhance their confidence, increase their sense of hope, and help them establish a sense of overcoming difficulties and obstacles. At the same time, strengthen the positive emotions of self-affirmation, and then gradually eliminate the negative emotions such as depression of nursing students.

According to multiple linear regression analysis, the ‘willingness motivation’ dimension of self-efficacy and hope has a large weight in the whole equation, and both are the reducing factors in the equation. The reasons may be as follows: First of all, self-efficacy, as a concept in positive psychology, plays an important role in the self-regulation system and can affect individual thinking, choice and motivation [17]. Nursing students with high self-efficacy will process emotional cognition in time when they encounter negative things or worrying problems, so as to buffer negative emotions, produce positive experiences and adjust their depressed mood, thus reducing the level of depression. Secondly, the “will power” of the sense of hope is the individual’s ability to initiate, act, adhere to and strive to achieve valuable goals, that is, the motivation to pursue goals and achieve goals [18,19]. It is based on a positive motivational state generated by their sense of internal ability. In the process of achieving the goal, it will prompt the individual to continuously evaluate their internal ability. In the process of evaluation, a positive emotion will be generated to help the individual actively find a path to achieve the goal and mobilize the spiritual energy to maintain the path until the ultimate goal is achieved [20]. Hope is the strongest force in the face of the future, and it is the motivation component in the cognitive process. Nursing vocational college students are in adolescence. When they are full of hope for the future, they can better face the future when pursuing their studies and careers, and then continuously enhance their self-happiness. Therefore, it is suggested that educators should consider the two important variables of self-efficacy and hope in positive emotions according to the results of multiple linear regression analysis and the weight of influencing factors. In the period of public health emergencies, we should understand more about the practical problems encountered by nursing students in their study and life and pay attention to their psychological feelings in time. As an important environment for the growth of nursing students, higher vocational colleges should adopt various ways to improve their self-efficacy and hope, so as to formulate achievable goals for students and encourage nursing students to overcome them.

6. Limitations

Due to the limitations of the sample size of this study, a large sample survey can be conducted in the future, and qualitative research methods can be added to enrich this study in order to obtain more perfect conclusions.

7. Conclusion

In summary, under the public health emergencies, the depression of nursing vocational students is relatively high, so it is particularly important to maintain the mental health status of nursing students. It is suggested that educators can reduce the negative emotional level of nursing students by creating a harmonious learning atmosphere, enhancing their confidence, enhancing their self-efficacy and enhancing their sense of hope.

Acknowledgements

The author would like to thank all the teachers in higher education institutions for their assistance. Also, we would like to thank all the students who participated in this study.

Funding

This study is supported by the Doctoral Research Start-up Fund of Dali University (No. : DFY20220302).

References

- [1] Yuan Jingle. A study on the relationship between self-efficacy, mental toughness and social adjustment ability of senior nursing students[D]. Shenzhen University, 2019.
- [2] Sun Jianlei. Adolescent psychological abuse and neglect and depression: the multiple mediating roles of ruminative thinking and negative emotional information attention bias[D]. Sichuan Normal University, 2022.
- [3] Yan Lifang, Jin Hongmei, Zhu Chunyan, Tong Xiaozhen, Zhong Jiancheng, Tan Huantao. Analysis of the current situation and influencing factors of self-efficacy of 1131 senior nursing students in northern Guangdong[J]. Journal of Nursing, 2022,29(18):59-62.
- [4] Zhang Jing. A study on the relationship between negative stressful events, ruminative thinking and sense of hope among high school students: the moderating role of gender [D]. Harbin Normal University, 2022.
- [5] LUTHANS F, YOUSSEF C M. Human, social and now positive psychological capital management: investing in people for competitive advantage [J].Organizational Dynamics, 2004, 33(2): 143-160.
- [6] Chen F. Multivariate statistical methods for medical applications [M]. Beijing:China Statistics Press, 2000:81-82.
- [7] Wang CHF, Cai ZEH, Xu CQ. Analysis of the Self-Rating Scale of Depression-SDS in 1,340 normal subjects. Chinese Journal of Neuropsychiatric Disorders, 1986, 12(5): 267-268.
- [8] Wang Cai-Kang, Hu C-F, Liu Y. A study of the reliability and validity of the General Self-Efficacy Scale [J]. Applied Psychology, 2001(01):37-40.
- [9] Shi Guoxing, Tian Lijuan. Reliability and validity tests of the Hope Trait Scale in a group of middle school students[J]. Psychological and Behavioral Research, 2009,7(03):203-206.
- [10] PFEFFERBAUM B, NORTH CS. Mental health and the Covid-19 pandemic[J]. New England Journal of Medicine, 2020, 383(6):510-512.
- [11] MURAT M, KOSE S, SAVAER S. Determination of stress, depression and burnout levels of front-line nurses during the COVID-19 pandemic[J].International journal of mental health nursing, 2021,30(2):533-543.
- [12] Song XY, Wu SH, Qu W, et al. Analysis of the current situation and influencing factors of depression and anxiety among nursing students in a higher vocational institution[J]. Chinese Journal of Disease Control, 2014,18(06):533-536.
- [13] Wu F, Shen Wechen, Qu Jing, et al. The relationship between emotion regulation self-efficacy and anxiety, depression, and sleep quality among medical students[J]. Electronic Journal of Modern Medicine and Health Research, 2018,2(13):128-129.
- [14] Huang Ying. A study on the correlation between high school students' self-efficacy, learning strategies and English performance[D]. Minnan Normal University, 2019.
- [15] Ouyang Xiaoyu, Hu Yiqiu. The effect of positive psychological qualities on depression of college students in vocational colleges left behind experience[J]. Journal of Hunan Industrial Vocational Technology College, 2020,20(04):14-18.
- [16] Zhang Jing. A study on the relationship between negative stressful events, ruminative thinking and sense of hope among high school students: the moderating role of gender[D]. Harbin Normal University, 2022.

- [17] Li Y. Responsibility and mental health of college students: the moderating role of self-efficacy[D]. East China Normal University, 2022.
- [18] Han X, Wang L, Kong M. The mechanism of social support on college students' subjective well-being: the mediating role of self-efficacy[J]. *Psychological Monthly*, 2022,17(14):55-58.
- [19] Ruan S. L., Ant Chun, Xie Q., et al. Analysis of the association between clinical empathy and psychological resilience and self-efficacy among school nursing students[J]. *China Medical Herald*, 2022,19(24):61-64+85.
- [20] SNYDER C R. Reality negotiation: from excuses to hope and beyond[J]. *Journal of Social and Clinical Psychology*, 1989, 8(2): 130-157.



© The Author(s) 2023. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).