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The Effect of Health Educational Program on Depression, Anxiety and Stress among Female Nursing Students at Benha University

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Abstract: *Stress has been defined as a barrier to concentration, problem solving, decision making, and other necessary abilities for students' learning; it also has some symptoms and illnesses in the students such as depression and anxiety.* ***The aim*** *of the study was to evaluate the effect of health educationprogram on depression, anxiety and stress among female nursing students at Benha University.*

A study design:*Aquasi experimental design was utilized in this study.*

Sample:*A convenience random sample of 100 female studentsin the second and thirdyear faculty of nursing at Benha University were selected for the intervention and control groups.*

Setting*:The study was conducted at faculty of nursing Benha Universityfrom 2013 to 2014.*

Tools: *two tools were used for data collection****, First*** *an interview questionnaire to assess the socio-demography characteristics studied subjects****Second*** *:Depression, Anxiety and Stress Scale (DASS-42).*

The study results:*revealed that improvement in reducingmean scores of depression(7.1), anxiety (7.62) and stress (11.68) in the study group post immediate & three months after program.* ***The study concluded****that effect of health educational program among female nursing studentshad positive effect in reducing stress, anxiety and depression in the study group post immediate & three months after program.*

The study finding recommended*:holding stress management workshops to improve mental health of the Students.*

Keywords: *Health Educational Program, stress, depression, anxiety, nursing students*

I. Introduction

College is a time of great transition in a person's life. Periods of transition can be a cause of great stress. College attendance is one such period of transition in life that can potentially lead to problems with mental health[(1).] Stress is the subjective feeling produced by events that are uncontrollable or threatening [(2)]. It has been well documented that nursing students across the world experience stress and anxiety throughout their education and training [(3,4)]. Anxiety may be perceived, as an emotion characterized by tense and physically exhausting alert, focusing a sensation of imminent and inevitable danger [(5)].

Depression is a serious health issue and a considerable reason for restlessness among students. It affects their lives during the critical learning and social development process [(6)]. Students are considered as a vulnerable group for the development of depression and its symptoms [(7)]. Depression in the studentship period is closely related to their unstable communications, suicidal thoughts and attempts, and poor working performance [(8)]. These factors, in turn, generate stress and exacerbate depression in students [(9)]

Stress is an important psycho-social factor in the educational process that may influence academic performance and student well-being. Significantly profound stress is experienced by nursing students as they work with patients in the clinical setting. The most stressful aspect of student nurses' clinical practice was seeing the pain and suffering of the patients [(10)]. However, for nursing students, the level of academic stress was even higher than that of clinical stress [(11)].

Nursing students who graduate from nursing schools often take positions as nurses in stressful or anxiety-provoking roles in the provision of patient care; furthermore, their patients may be experiencing similar emotions. Thus, nursing students need to know how to manage their stress and emotions. Many forms of interventions have been suggested to help nursing students with their stress and anxiety such as removing the stressor through manipulating the environment, developing specific responses to help deal with the stressor or seeking diversion from the stressor [(12)]. Also, stress management practices include; progressive muscle relaxation, breathing exercises, meditation and mental imagery [(13)]. Considering appropriate and preventive approaches for stress, anxiety, and depression in nursing students seems to be necessary [(14)].

Community Health Nurses work with clients in the community and coordinate the range of services required by the clients in order to maximize the client's level of functioning and coordination of clinical and administration functions including assessment, counseling, planning, linkage, advocacy and monitoring. This

includes a recovery focus involving training in basic living skills and crisis intervention, and vigorous outreach in order to assist clients in achieving their potential for an increased level of functioning in the least restrictive manner.

Significance of the study

Anxiety and depression are often experienced simultaneously. Depression affects about 67% of students with anxiety, and anxiety was a major predictor of depression while 48.83% mild stress and11.62% moderate stress among nursing students. [15,16].

The study aim:

The aim of the study was to evaluate the effect of health education program on depression, anxiety and stressamong female nursing students at Benha University, Egypt. This aim was achieved through:

- Assess depression ,anxiety and stressamong female nursing students.
- Designing and implementing health education program for female nursing students onmanagement and prevent depression, anxiety and stress.
- Evaluating the effect of health education program on improving depression, anxiety and stress.

Subjects And Methods

Research Hypothesis:

-The mean scores of Female studentsintervention group who were attainedin the health education program have less level ofdepression, anxiety and stressthan those not attained training program

Research design: Aquasi experimental design was utilized inthis study.

Setting: The study was conducted at faculty of nursing Benha University in QalyubiaGovernorate ,Egypt from 2013 to 2014 .

Sample:A convenience random sample of 100 female students faculty of nursing at BenhaUniversityand who fulfilled the inclusion criteria (students in the second and third year-age from 19 to 23 years)were included in the studied sample. The sample equallydivided into two groups (50 in the study group and 50in the control group) on a simple random basisaccording to their list number studying in 2013-2014.

Tools of Data collection:

Tow tools were used to collect data:

1- **An interviewing questionnaire** was developed by the researchers, which covered two parts. The firstpartwas concerned with collection data about studiedparticipants, characteristics (as age in year, academic year, marital status, residence, nature of home,number of siblings,rank among brothers,presence of mother, mother age in year**,**motherworker**,** mother educational level**,**presence of father**,**father age in year, father educational levelandFather occupation).

2- **An observational checklist throughdepression Anxiety Stress Scales (DASS)** : this tool was developed byLovibondandLovibond[10] . it was created to measure the three related negative emotional states of depression, anxiety and tension/stress. The tool contains 42-items (14 items for depression, 14 to tension/stress, and 14 to anxiety) in a 4 point-likert type scale ranged from 0 (didn't apply to me at all) to 3 (apply to me very much, or most of the time) with scores that can be normal (0-9 for depression, 0-7 for anxiety, 0-14 for stress), mild (10-13 for depression, 8-9 for anxiety, 15-18 for stress), moderate (14-20 for depression, 10-14 for anxiety, 19-25 for stress) , severe (21-27 for depression, 15-19 for anxiety, 26-33 for stress), and extremely severe (> 28 for depression, > 20 for anxiety, > 34 for stress).

Study procedure (education program):

Based on relevant literature, a health education program was developed. Sessions weregiven to the intervention group of female students in eight sessions of 2hours for each: First session, about introduction and providing information about the content of the program, time of sessions, and completing the questionnaire**,** second session about effect of stress definition, types, symptoms, causes, and management, third session,aboutFamiliarity with the consequences and physical symptoms of stress,fourth session, about familiarity with gradual muscle relaxation, deep breathing exercise and its implementation, fifth session, discussion about positive thinking, anger, and stress management, sixth session, about familiarity with replacement exercises and its implementation, seventh session, about familiarity with visualization and journaling and its implementation, eighth session, about end of health education program, completing the

questionnaire. Each educationsession was 2 hours one session per week and the implementation of Theeducation program was covered in two-month duration. After three months, the impact of the stress management program was evaluated through the pre-post-test of both groups (intervention &control groups). During program implementation, The researchers were complied with the distribution of the health education program booklets and hand-outs on the program sessions, The duration of study was three months, started from beginning of December 2013 to the end of February 201

Pilot study:A pilot study was carried out on 10% of students(ten students) recruited to test the tools content applicability, and clarity and to determine the needed time for filling in application to tools and education program. Necessary modifications have been considered. The content clarity and applicability test; It was revised by consultants in the Psychiatric Health Nursing and Community Health Nursing.

Ethical Consideration

Approval was obtained upon letters issued from the faculty of nursing to obtain permission for conduction of the study and an oral consent from student who agreed to participate in this study. Privacy and confidentiality were assured for each one and taken into consideration.

Statistical analysis

The collected data were tabulated and analyzedusing Statistical Package of Social Science (SPSS),version 16. A variety of statistical methods were usedto analyze the data in this study as percentage, paired t test utilized to compare mean within the same group and , independent t-test was used to compare maen score between two groups ,chi square, correlationcoefficient. Level of significance was considered atp value ≤ 0.05.

II. Result

Table (1) shows personal characteristics of the studied subjects, more than half of the intervention and control groups 64.0% & 60.0% were in age 19 years with a Mean ±SD 19.88±1.88 &20.10±1.374. As for marital status more than three quarters 86.0% & 82.0% were single. As regards residence slightly more than half 58.0% & 52.0% were from urban area and more than half 60.0% were live in separate home. As regards number of brothers slightly less than half 48.0% &44.0% were ≥2with Mean ±SD 2.740±0.89 & 2.85±0.997 and arrange among brothers 50.0% & 68.0% were ≥2with Mean ±SD2.44±0.9722 &2.200±0.857.

Presence of mother of the intervention and control groups were 88.0% & 92.0% respectively. As regard mother age 54.0% and 46.0% of the intervention respectively. and their mother age from< 45-55 year with Mean ±SD41.500±15.80 & 44.86±14.32 .Whilemore than half of mother occupation were 60.0% &64.0% respectively and 34.0% & 46.0% respectively. As regardofmother educational level were Secondary education. Presence of father of the intervention and control groups 80.0% &86.0% respectively. Also, father age of 38.0% of intervention group were from55 to less than 65 years old however in control group, more than one third of father age (34.0%) were from 45 to less than 55 years old with Mean ±SD 44.60±1.189 & 20.10±1.374. with Mean ±SD 44.60±1.189 & 20.10±1.374 and 32.0% of father educational level of the intervention group were Secondary education while 32.0% of the control groups had university education and 66.0% & 68.0% respectively of the intervention and control groups father working.

Table (2),clarified that there were highly statistically significant differences ($p<0.001$) between mean score of depression, anxiety and stresspre-program&Immediate post program in the intervention group more observed in the mean scores of stress level 29.50±.41Pre –program while 10.82±4.26Three months after program.Table (3) indicates that there is no significant differences in the mean scores of depression, anxiety and stress between the intervention and control groups at Pre –program,while Immediate post program and Three months after program there were improvement in the mean scores of depression, anxiety and stress between the intervention and control groups with highly statistically significant differences ($p<0.001$).

Figure (1): illustrates that pre –program phase 82% of thestudy group had mild depression, and slightly less than half of them 48% had mild anxiety and less than half 46% of them had severe stress while 70% of the control group had mild depression, and 32% of them had mild anxiety and more than half 52% of them had severe stress.Figure (2) illustrates thattheimmediately post program 90% of the intervention group had normal depression ,more than half of them 58 % had normal anxiety and 82% of them had normal stress while 82% of control group had mild depression ,42% of them had mild anxiety and more than half 58% of them had severe stress.Figure (3) shows thatthethree months after program phase 92% of thestudygrouphad normal depression , 84% of them had normal anxiety and more than three quarters 78% of them had normal stress while 70% of control group had mild depression ,less than half 44% of them had moderate anxiety and less than three quarters 72% of them had severe stress**.**

Table (1): percentage distribution of personnel characteristics of the studied subjects.

Personnel characteristics		Study group N=50		Control group N=50		X^2	p
		No	%	No	%		
Age in year	19-	32	64.0	30	60.0	**4.30**	**>0.05**
	21-	11	22.0	12	24.0		
	≥23	7	14.0	8	16.0		
	Mean ±SD	19.88±1.88		20.10±1.374			
Academic year	2nd	25	50.0	25	50.0	**2.66**	**>0.05**
	3rd	25	50.0	25	50.0		
Marital status	Single	43	86.0	41	82.0	**0.65**	**>0.05**
	Married	7	14.0	9	18.0		
Residence	Urban	29	58.0	26	52.0	**0.991**	**>0.05**
	Rural	21	42.0	24	48.0		
Nature of home	separate	30	60.0	30	60.0	**0.000**	**>0.05**
	Combined	20	40.0	20	40.0		
Number of sibling	≥2	24	48.0	22	44.0	**0.298**	**>0.05**
	3-	15	30.0	12	24.0		
	4-	11	22.0	16	32.0		
	Mean ±SD	2.740±0.89		2.85±0.997			
Rank among sibling	≥2	25	50.0	34	68.0	**0.364**	**>0.05**
	3-	18	36.0	12	24.0		
	4-	7	14.0	4	8.0		
	Mean ±SD	2.44±0.9722		2.200±0.857			

Table (1) cont. : percentage distribution of personnel characteristics of the studied subjects.

personnel characteristics		Study group N=80		Control group N=80		X^2	p
		No	%	No	%		
Presence of mother	Yes	44	88.0	46	92.0	**0.102**	**>0.05**
	No	6	12.0	4	8.0		
Mother age in year	Dead	6	12.0	4	8.0	**9.54**	**>0.05**
	<45	16	32.0	14	28.0		
	55-	27	54.0	23	46.0		
	≥65	1	2.0	9	18.0		
		41.500±15.80		44.86±14.32			
Mother worker	Dead	6	12.0	4	8.0	**0.465**	**>0.05**
	Yes	30	60.0	32	64.0		
	No	14	28.0	14	28.0		
Mother educational level	Dead	6	12.0	4	8.0	**7.00**	**>0.05**
	Illiterate	10	20.0	7	14.0		
	Primary education	7	14.0	7	14.0		
	Secondary education	17	34.0	23	46.0		
	Universal education	10	20.0	9	18.0		
Presence of father	Yes	40	80.0	43	86.0	**17.108**	**<0.001****
	No	10	20.0	7	14.0		
Father age in year	Dead	10	20.0	7	14.0	**8.971**	**>0.05**
	45-	15	30.0	17	34.0		
	55-	19	38.0	14	28.0		
	≥65	6	12.0				
		44.60±1.189		20.10±1.374			
Father educational level	Dead	10	20.0	7	14.0	**2.26**	**>0.05**
	Illiterate	5	10.0	3	6.0		
	Primary education	7	14.0	10	20.0		
	Secondary education	16	32.0	14	28.0		
	Universal education	12	24.0	16	32.0		
Father occupation	Dead	10	20.0	7	14.0	**0.974**	**>0.05**
	Yes	7	14.0	9	18.0		
	No	33	66.0	34	68.0		

**Highly statistically significant difference ($P \leq 0.001$)

No statistical significance relation among study and control group in age, academic year, marital status, residence, nature of home, number of brothers and arrange among brothers.

Table (2): Comparing the mean scores of depression, anxiety and stress in the study and control groups at different phases of the program.

Group	Variable	Pre -program	Immediate post program	Three months after program	Paired t test (1)	P value	Paired t test (2)	P value
		Mean ±SD	Mean ±SD	Mean ±SD				
Study group	Depression	12.38±3.48	7.10±2.08	7.32±2.02	20.60	<0.001**	22.21	<0.001**
	Anxiety	12.70±4.57	7.62±2.25	6.92±2.08	8.925	<0.001**	9.512	<0.001**
	Stress	29.50±.41	11.68±4.56	10.82±4.26	11.373	<0.001**	10.850	<0.001**
Control group	Depression	11.76±3.74	12.34±3.53	13.82±4.36	-0.522	>0.05	-2.35	<0.05*
	Anxiety	12.32± 3.52	13.62±4.21	14.34± 4.27	-2.94	<0.05*	-4.588	<0.05*
	Stress	28.36±5.01	28.48±4.75	29.32±4.47	-1.94	>0.05	-5.35	<0.001**

Paired t test (1):compare mean score pre-program and immediate post .
Paired t test (2):compare mean score pre-program and three months after program.

**Highly statistically significant difference ($P \leq 0.001$)
*Statistically significant difference ($p \leq 0.05$)

Table (3): Comparing the mean scores of depression, anxiety and stress between the study and control groups at different phases of the program.

Variable	Phases of assessment	Study group	Control group	Independent t test	P value
		Mean ±SD	Mean ±SD		
Depression	Pre -program	12.38 ±3.48	11.76 ±3.74	.858	>0.05
	Immediate post program	7.10 ± 2.08	12.34 ±3.53	-9.037	<0.001**
	Three months after program	7.32 ±2.02	13.82 ±4.36	-9.570	<0.001**
Anxiety	Pre -program	12.70 ±4.57	12.32 ± 3.52	.466	>0.05
	Immediate post program	7.62 ±2.25	13.62 ±4.21	-8.884	<0.001**
	Three months after program	6.92 ±2.08	14.34 ±4.27	-11.039	<0.001**
Stress	Pre -program	29.50 ± 5.41	28.36 ±5.01	1.094	>0.05
	Immediate post program	11.68 ±4.56	28.48 ±4.75	-18.037	<0.001**
	Three months after program	10.82 ±4.26	29.32 ±4.47	-21.174	<0.001**

****Highly statistically significant difference ($P \leq 0.001$)**

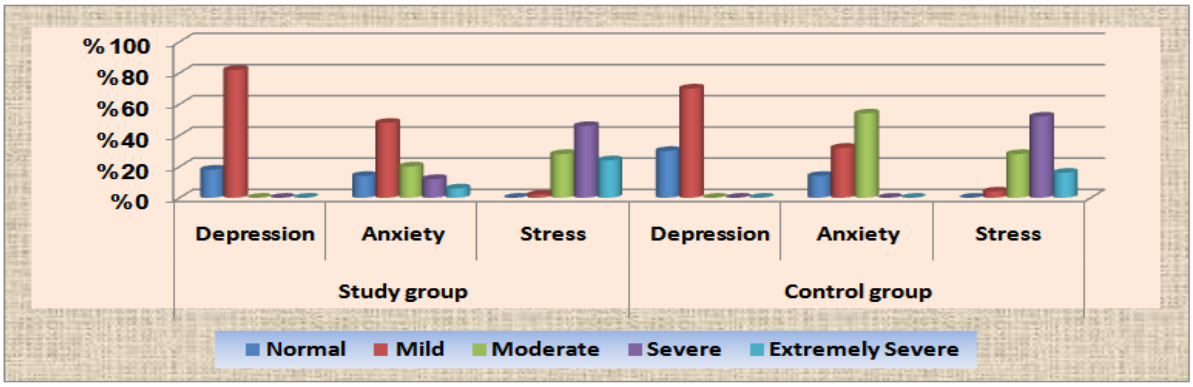

Figure (1):percentage distribution of depression, anxiety and stress total score among both study and control group at the pre –program phase.

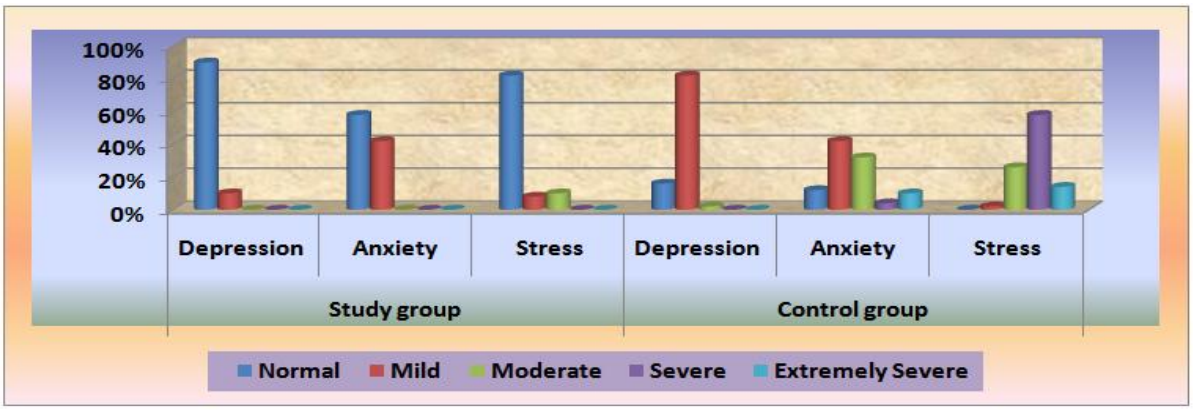

Figure (2):percentage distribution of depression, anxiety and stress total score among both study and control group at the immediately post program phase.

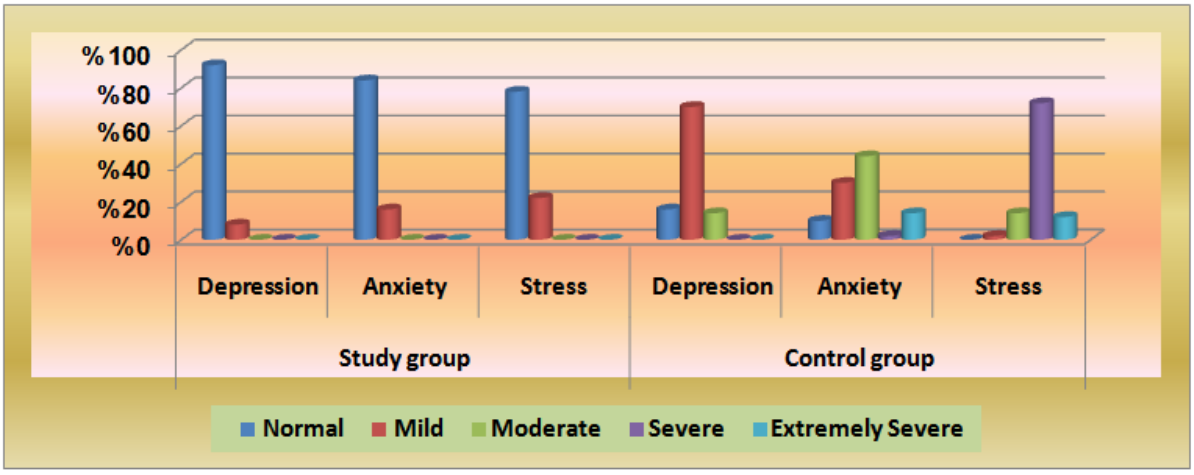

Figure (3):percentage distribution of depression, anxiety and stress total score among both study and control group at the three months after program phase.

III. Discussion

There were many studies that evaluated the role and importance of the cognitive and behavioral techniques in reducing the stress, anxiety and depression and other mental stress. The aim of present study was to determine the effectiveness of the effect of health education program on depression, anxiety and stress among female nursing students at Benha, Egypt. The results of this study indicated that, there were not any significant differences in the personal characteristics among intervention and control group which denotes homogeneity of both groups. However there was highly statistically significantly difference among intervention and control group related to presence of father.

The results of this study found that stress, depression and anxiety level of the nursing students reduced through implementing education program and three months after program compared to before the program. This results indicated the efficacy of this program in reducing stress, anxiety and depression. This result was in accordance with the result of [18,19,20,21, and 22]. studies that all of them have approved the efficacy of cognitive and behavioral stress management on reducing the depression.

Also the previous studies found that progressive muscle relaxation reduced anxiety, and increased ability to learn. What's more, relaxation is used as a means of reducing anxiety and tension; and controls blood pressure while reducing muscle cramps. Also, stress management training based on the meditation could significantly reduce the anxiety level of the nursing students in the intervention group compared to before the intervention [(23,24)].

Any change in the individual's life requires new adjustment with the condition. Furthermore, according to the cognitive-behavioral theory, coping strategies have important role in stress reduction and consequently mental health. Besides, stress alone has a limited value in explanation and predication of individuals' situation, and do not considering as their coping skills. On the other hand, when someone has better sources for coping, the likelihood of catch at vulnerable situations are more [(24).]

In consistent with the result of **Yazdani et al** The result of current study indicated that there is no significant differences in the mean scores of depression, anxiety and stress between the intervention and control groups at preprogram while immediate post, and three months after program there were improvement in the mean scores of depression, anxiety and stress in the intervention group compared with control group within highly statistically significant [(21)]. This result interpreted as the efficacy of health education program among nursing students.

It is very important for nurse educator to help nursing students manage their stress and anxiety in order to prevent additional problems. The result of current study indicated that stress, anxiety, and depression increased in control group immediately and three months after program compared to before the program. This may result from extreme demands, time pressure, reduced motivation and poor coping among nursing students. The workload of the students increases with the study year. High stress level in the year 2 and 3 may be related with the introduction of clinical practice, feeling of personal inadequacy and fear of making mistakes. Also depressive symptoms may be more common as a result of students worries about their future as they are approaching graduation.

This result go on line with the result of **Ross etal** who found that nursing students who experience high stress tend to be depressed [(25).] Other studies, which have examined distress and adjustment among nursing students have also found that a proportion of students find the course stressful. Different themes that contributed to stress and burnout among nursing students are identified. Extreme demands, time pressure,

reduced motivation and poor coping were some of the causes of stress. Psychological distress, poor adjustment and coping can result in poor academic performance among students by impeding memory, concentration, and problem solving skills. In a minority of students this can result in significant psychiatric morbidity and even withdrawal from the course [26, 27, and 28].

Depression in nursing students often affects their ability to perform their clinical duties, their relationship with patients, and their attitude toward the nursing profession. Likewise, if nursing students experience problem with concentration and problem solving, not only will they have a hard time getting through school, but also will they not be performing their nursing duties at optimum levels, which will affect the quality of patient care [29].

Limitation: This study was conducted only at one nursing college in one country. Future studies should consider replicating the study at multiple nursing college and multiple countries

IV. Conclusion

The study concluded that depression, anxietyand stress level was high among nursingstudents.and the health educational program was succeed tohelp nursing students manage and reduce their depression, anxiety and stressafter implementation the program.

V. Recommendation

holding stress management workshops to improve mental health of the students prior to entering the clinical environment, and starting the internship.

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