



## Efficacy of Cognitive Behavioral Therapy (CBT) on Emotional Resilience: A Randomized Control Trial

<sup>1</sup>Dr.BabaVajrala,<sup>2</sup>Dr.Priya.R,<sup>3</sup>Kanika,<sup>4</sup>Dr.Prathima.P,<sup>5</sup>Reena,<sup>6</sup>Dr.Kirubakaran,<sup>7</sup>Dr.Sreeraja kumar.R

<sup>1</sup>Principal, Birender Singh College of Nursing, Dept.of. Mental Health Nursing, Haryana.

<sup>2</sup>Principal, Savitri Jindal Institute of Nursing, Dept.of .Obstetrical & Gynaecological Nursing, Haryana.

<sup>3</sup>.Asst.Professor, Birender Singh College of Nursing, Dept. Of. Community Health Nursing, Haryana.

<sup>4</sup>. Principal,Sree Vidyanikethan College of Nursing,Tirupathi,Andhrapradesh

<sup>4</sup>.Nursing Tutor,Government College of Nursing,Safidon,Haryana.

<sup>5</sup>.Principal,PSV College of Nursing,Krishnagiri,Tamilnadu.

<sup>6</sup>.Dean,Sharda School of Nursing Sciences& Research,Uttar pradesh.

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### Abstract

**Background:** Resilience is a positive concept that allows nurses to overcome stressful situations and to adapt positively, resulting in the maintenance of their psychological wellbeing and mental health. *Aim:* The study examined the efficacy of cognitive behavioral therapy (CBT) on emotional resilience among nursing students. *Design:* Experimental pretest-posttest designs were used in the study. *Methods:* The simple random sampling technique was adopted to select 20 nursing students at the Savitri Jindal Institute of Nursing, Haryana, India. The data was collected by Brief Resilience Scale (BRS) self-structured questionnaire on the emotional resilience. The cognitive behavioral therapy (CBT) was performed among nursing students in the experimental group for 60 minutes weekly once for three months as 11 session. *Results:* The obtained unpaired "t" value computed between the experimental and control group (8.83) were significant changes in emotional resilience in the experimental group, and there was no association between demographic variables like age, birth order, religion, residence, occupation of parents, family income, type of family at ( $p < 0.05$ ). *Conclusion:* The results showed that cognitive behavioral therapy (CBT) improved the emotional resilience in the experimental group, which will help the nursing students to reduce the stress and improve the academic achievements.

**Keywords:** Behaviour, Cognitive, Emotional, Efficacy, Nursing, Resilience, Students, Therapy.

## Introduction

Nursing is becoming ever more demanding, and is regarded as a stressful occupation because of manpower shortages and various other challenges associated with nursing practice. While studying nursing at university, students experience higher levels of academic stress than those of other disciplines as they have to adapt to various clinical settings for practice.<sup>1</sup> According to research, the highest rate of probation, dropout, psychological, and social problems occur in students in the early years of courses.<sup>2</sup>

Xiao Xiao Mei., et al (2022) revealed the academic degree and psychological resilience were significant indicators of mental health profiles.<sup>3</sup> Samari AA and Tahmasbi F (2007) found the correlation between emotional intelligence and academic achievement among 112 clinical psychology students in University of Kashmar.<sup>4</sup> Southwick SM., et al (2014) recommended to develop varied intervention programs that enhance nurses' inner strength in order to improve the quality of nursing care.<sup>5</sup>

According to Arunmozhi M (2022), emotional intelligence (EI) scores of 40 or above emphasize seeming self-sufficiency and the sub-element of strength, authority, while less forcefully anticipating anxiety, discouragement, and one additional sub-component of flexibility, passionate responsiveness. In relation to the association between EI and resilience, the vast majority of research in the area shows that people with better EI have better resiliency.<sup>6</sup> Armstrong et al. (2011) revealed that EI was related to psychological resilience. It is essential to design socio-emotional intervention programs whose goal is to enhance these psychological variables (EI and resilience).<sup>7</sup>

Pidgeon, A.M., et al (2014) reported the low levels of resilience significantly related to lower levels of perceived social support, campus connectedness, and higher levels of psychological distress and suggested to development of resilience-based interventions among university students.<sup>8</sup> Rios, M. I (2012) emphasized that students who showed a higher level of resilience experienced less emotional exhaustion and greater personal accomplishment. Similarly, the quality of relationship with teachers was associated with a higher presence of burnout syndrome.<sup>9</sup>

Vella SL & Pai NB (2019) the term resilience derives from the Latin verb *resilire* which means to rebound or "leap back."<sup>10</sup> Hill et al (2018) defined the resilience as "the dynamic process by which a biopsychosocial system returns to a previous level of functioning, following a perturbation caused by a stressor".<sup>11</sup>

There are also different types of resilience, each of which can influence a person's ability to cope with various forms of stress. Physical resilience refers to how the body deals with change and recovers from physical demands, illnesses, and injuries. Mental resilience refers to a person's ability to adapt to change and uncertainty. Emotional resilience involves being able to regulate emotions during times of stress. Social resilience, which may also be called community resilience, involves the ability of groups to recover from difficult situations.<sup>12</sup>

The resilience scales below are all useful tools in providing a measure of resilience, depending on the context in which it will be applied, one resilience scale may be more appropriate than others. The Connor-Davidson Resilience Scale (CD-RISC) originally developed by Connor-Davidson (2003) as a self-report measure of resilience, Resilience Scale for Adults (RSA) invented by Friberg et al (2003), Brief Resilience Scale (BRS) by Smith et al. (2008), Scale of Protective Factors (SPF) was developed by Ponce-Garcia, Madwell, and Kennison (2015), Predictive 6-Factor Resilience Scale invented by Roussouw & Roussouw (2016), The Ego Resilience Scale was developed by Block and Kremen (1996), The Resilience Scale (RS-14)

developed by Wagnild (2009), The Academic Resilience Scale (ARS-30) was developed by Cassidy (2016).<sup>13</sup>

The following models are useful to building the resilience. The ABCDE model (Adversity, Beliefs, Consequences, Disputation, and Energization) is a simple mnemonic developed by Albert Ellis (1991) in the field of rational-emotive behaviour therapy that helps people mentally work through a reflection process to consider if they want or need to change their thinking.<sup>14</sup> The SMART (Stress Management and Resiliency Training) developed by Dr. Amit Sood designed (2014) to help participants regain control and build resilience through a variety of mind body principles and self-care interventions, leading to reduced medical symptoms and enhanced quality of life.<sup>15</sup> The 7C model (Control, Competence, Coping, Confidence, Connection, Character, and Contribution) of resilience designed by Kenneth Ginsburg (2013) that gives an approach to prepare for life.<sup>16</sup>

Smith GD, Yang F (2017) identified the nursing students in their final year reported the highest mean General Health Questionnaire 12 (GHQ-12) scores (Mean 4.50 SD 2.89) and Stress in Nursing Student (SINS CN) scores (Mean 105.11 SD 25.37), Moderate levels of resilience were noted across all four years of nursing training programmes. Globally, more attention could be given to the potential role of resilience training and other forms effective coping strategies to deal with the inevitable sources of stress in student nurse training.<sup>17</sup>

Jihye Yu and Sujin Chae (2020) were suggested that education and counseling support are needed to increase medical students' resilience in order to increase their psychological well-being.<sup>18</sup> Fatimah Azzahra (2018) recommended that the higher the resilience, the lower the psychological distress, and the lower the resilience, the higher the psychological distress of female medical students. Vidal-Meliá L et al (2022) found mindfulness is positively related to resilience, which leads to better academic performance and represents a first step for designing additional interventions on this line.<sup>19</sup>

Joyce S, Shand F, Tighe J (2018) recommended the resilience interventions based on a combination of cognitive behavior therapy (CBT) and mindfulness techniques appears to have a positive impact on individual resilience.<sup>21</sup> Naeem F, Irfan M, Javed A (2020) stated that there is an urgent need to develop and test cognitive behavior therapy (CBT) based programs that focus on building resilience that can be used on a public health level to help persons facing challenges at national or global levels.<sup>22</sup>

The term cognitive behavior therapy (CBT) can be seen as an umbrella term, generally used to refer a group of related therapies and first proposed by Beck in early 1960s. It is a common type of talk therapy (psychotherapy) in which patients works with a psychotherapist in a structured manner over a set number of sessions. Cognitive behavioral therapy (CBT) assists in becoming aware of incorrect or negative thinking so that one can view difficult situations more clearly and respond to them more effectively. The first meeting is to identify His or her approach, what type of therapy is appropriate, treatment goals, the length of each session (ranging from five to twenty) and how many therapy sessions may be required. A therapist can assist in gaining confidence and comfort. These are the steps that are usually included in Cognitive behavioral therapy (CBT). Recognize troubling situations or life conditions, Recognize the thoughts, emotions, and beliefs about these issues. Recognize negative or incorrect thinking. Reframe negative or incorrect thinking. Conversations with therapists are private, except in very specific circumstances. However, a therapist may breach confidentiality if there is an immediate threat to safety or if required to report concerns to authorities by state or federal law. Cognitive behavioural therapy may not be able to cure a condition or make an

unpleasant situation disappear. However, it can provide the ability to cope with situations in a healthy manner and to feel better about oneself and one's life.<sup>23</sup>

Cognitive behavior therapy combines intervention with behaviorism. A therapist aims to improve maladaptive behavior through changing dysfunctional thinking and beliefs, as well as providing clients with information processing skills training. Modification of patients' fundamental dysfunctional beliefs creates more permanent and faithful adjustments in behaviour for gradual improvement in their core ideas about themselves, their environment, and other people.<sup>24</sup>

Toosang MA (2021) revealed that the application of cognitive-behavioral intervention in student counseling and psychological counseling centers increases the rate of resilience and happiness of students and could be employed to improve mental health and academic status of students.<sup>25</sup> Yaser Boolaghi et al (2016) results showed that there was a significant difference between experimental and control groups in terms of psychological well-being and resilience ( $p < 0.001$ ) by cognitive-behavioral therapy.<sup>26</sup>

The importance of improving the emotional resilience of nursing students are effective in improving academic performance and contributing to the acceptance of social and individual responsibilities in nursing students. Considering this fact, in this study the researchers aimed to investigate the efficacy of cognitive behavioral therapy (CBT) on emotional resilience among nursing students.

### **Hypotheses**

H<sub>1</sub>: There is a significant difference in the level of emotional resilience among nursing students between the pre-test and post-test in the experimental and control group.

H<sub>2</sub>: There is a significant association between the pre-test level of emotional resilience and selected demographic variables of nursing students the experimental and control group.

### **Methodology**

The cognitive behavioral therapy (CBT) was the independent variable, while the level of emotional resilience was the dependent variables. The following are the instruments English language was used in this study. Section A: consist of demographic variables such as age, birth order, religion, residence, occupation of parents, family income, type of family, any previous exposure to cognitive behavioral therapy (CBT).

Section B: The Brief Resilience Scale (BRS) public domain was used in the study which consists of 6 items. The items 1, 3, and 5 are positively worded, and items 2, 4, and 6 are negatively worded. The BRS is scored by reverse coding items 2, 4, and 6 and finding the mean of the six items. Add the responses varying from 1-5 for all six items giving a range from 6-30. Divide the total sum by the total number of questions answered. The scale score was divided into the three categories of likely <50% (1.00-2.99) as Low resilience, 51%–75% (3.00-4.30) as normal resilience, and >75% (4.31-5.00) high resilience.

After permission from the director of Savitri Jindal Institute of Nursing, Haryana, India, the pilot study was carried out from 14/01/23 to 15/03/2023 to test the feasibility and reliability of tool among four nursing students. The reliability of the scale was analyzed by the Split-Half method, and showed excellent reliability ( $r = 0.95$ ).

This study was an experimental design with pre-test/post-test scheme and three-month follow-up with experimental and control groups. The statistical population of the study was the nursing students of Savitri Jindal Institute of Nursing, Haryana, India in 2023. The nursing students ( $n=20$ ) were selected using a simple random sampling. Inclusion criteria were not receiving any other psychological intervention at the same time and not using psychotropic

drugs. Exclusion criteria were the absence of more than one session during the interventions and the unwillingness of participants to continue the research. After meeting the entry criteria, the students were randomly assigned to the experimental and control groups. The pre-test assessment was done by using demographic and Brief Resilience Scale (BRS) and categorized the students. The initial session the objectives, the rules of the study method were explained to the selected participants. Informed consent was obtained from all the participants. The interventions cognitive behavioral therapy (CBT) was performed through interview session. The experimental group was trained the eleven sessions of 60 minutes using cognitive behavioral therapy (CBT) intervention from 16/03/2023 to 29/05/2023. The outcomes of the study emotional resilience were assessed by Brief Resilience Scale (BRS) after 11 weeks. The study was limited to Diploma students at Savitri Jindal Institute of Nursing, Haryana, India in the first year of academic year 2022 to 2023. It was also limited to using scales and the cognitive behavioral therapy.

### Results

The data was computed using the International Business Machines (IBM) Statistical Package for the Social Sciences (SPSS) for Windows, Version 21. Frequency and percentage were used for demographic variables as well as paired and unpaired "t" tests were analyzed to find the efficacy of cognitive behavioral therapy (CBT) on emotional resilience. Chi-square analysis was performed to determine the association between emotional resilience with selected demographic variables the experimental and control groups.

<b>Total number of student diagnosed with poor emotional resilience=30</b>			
Met criteria-27			
Did not met criteria-03			
<ul style="list-style-type: none"> <li>• Had previous CBT &gt; 3 week =1</li> <li>• Unwillingness to participate=2</li> </ul>			
<b>Informed Consent</b>			
Accepted and gave the consent-22			
Not accepted to give a consent-05			
<b>Randomization</b>			
<b>Number of Weeks</b>	<b>Session activities</b>	<b>Experimental Group</b>	<b>Control Group</b>
1 <sup>st</sup> week	Orientation and introduced the students and explained the benefits of CBT for improving the Emotional Resilience.	11 students attended the session	11 students were observed and monitored the scale.
2 <sup>nd</sup> week	<ul style="list-style-type: none"> <li>• Discussed the normal and abnormal thoughts, feeling and behavior and its effects.</li> <li>• Assigned the student to list down the thoughts and feelings on worksheets for reconstruction of thoughts.</li> </ul>		
3 <sup>rd</sup> week	<ul style="list-style-type: none"> <li>• Introduces body signals and how body signals are linked to thoughts, feelings and behavior.</li> <li>• Described the steps for reconstructing thoughts.</li> </ul>		
4 <sup>th</sup> week	Introduces thoughts, ways of identifying thoughts and how thoughts influence feelings		

	and actions.		
5 <sup>th</sup> week	<ul style="list-style-type: none"> <li>• Practice being more assertive explain to how to be optimistic how to face the fears.</li> <li>• Practice spirituality.</li> <li>• Engage with social friends.</li> <li>• Maintain physical health.</li> <li>• Keep strong brain.</li> <li>• Cognitively flexible.</li> <li>• Imagine a situation where it is difficult to behave boldly.</li> <li>• Summarize the session.</li> </ul>		
6 <sup>th</sup> week	<ul style="list-style-type: none"> <li>• Advised the self-control strategies.</li> <li>• Identify the enjoyable activities.</li> </ul>	10 students attended the session	
7 <sup>th</sup> week	<ul style="list-style-type: none"> <li>• Discuss the importance of applying coping mechanism.</li> <li>• Explains how to implement life goals encourages help-seeking behaviour and helps participants to define and articulate their difficulties so their difficulties can be resolved.</li> <li>• Explain the relaxation techniques alternative ways of looking at difficulties.</li> </ul>		
8 <sup>th</sup> week	Discuss the Self-esteem and its importance.		
9 <sup>th</sup> week	Strategies to improve self-esteem.		
10 <sup>th</sup> week	Evaluate work progress and acquired skills.		
Drop outs students from CBT		01	00
CBT Completed		10	00

Regarding the results of the demographic variables, with regard to age, the majority of the nursing students, 6 (60%) in the experimental and 7 (70%) in the control group, belonged to the age group of <25 years. In terms of birth order the majority of the nursing students, 8 (80%) in the experimental and 9 (90%) in the control group, belonged to the >2. In terms of religion, the majority of the nursing students 10 (100%) in both the experimental and control groups were Hindu. Regarding residence, the majority of the nursing students 8 (80%) in the experimental group and rural areas 6 (60%) in the control group were from urban. Regarding occupation of parents, the majority of the nursing students, 09 (90%) in the experimental and 8 (80%) in the control group belong to formers. In terms of family income, the majority of nursing students 7 (70%) were Rs 15,001 - 20000 in the experimental group, and 8 (80%) of the were in > 20000 in the control group. Regarding the type of family, the majority of the nursing students, 10 (100%) in the experimental and 8 (80%) in the control group were joint families.

Regarding the level of emotional resilience, out of 10 nursing students in the experimental group, the majority of them 8 (80%) had low resilience and 2 (20%) had normal resilience in the pre-test, and in the post-test, 9 (90%) of them had high resilience and one (10%) had normal

resilience. Whereas out of 10 in the control group, 7 (70%) had low resilience and 3 (30%) had normal resilience in the pre-test, and no changes were found in the post-test.

The obtained paired "t" value computed between pretest and posttest regarding the emotional resilience (11.56) in the experimental group and (11.60) in the control group and unpaired "t" value computed between the experimental and control group (8.83) was significant at the  $p < 0.05$  level. Hence the alternative hypothesis  $H_1$  was accepted.

With regard to the association, there was no significant association between level of emotional resilience with age (1.01), religion (0.89), residence (0.96), occupation of parents (2.71), family income (1.82), type of family (1.69) at the  $p < 0.05$  among nursing students in the both experimental. Hence the alternative hypothesis  $H_2$  was rejected.

### **Discussion**

The main objective of this study was to examine the efficacy of cognitive behavioral therapy (CBT) on emotional resilience in the nursing students of Savitri Jindal Institute of Nursing, Haryana, India. One of the important findings showed that the cognitive behavioral therapy (CBT) in the post-test phase and the three-month follow-up on emotional resilience are effective.

The results of this study are in accordance with Cross (2015) which states that cognitive behavioral therapy (CBT) helps individuals recognize negative thought forms and replace them with more accurate and positive ones, so that individuals have increasing resilience. Cognitive behavioral therapy (CBT) is also believed to help individuals to improve their competence, positive mindset, solve problems. Neenan (2009) also found that cognitive behavioral therapy (CBT) not only helps individuals overcome the problems that they are facing, but also helps build new views about themselves, namely as individuals who are strong and able to overcome existing challenges, find happiness in life, and determine important goals that are will be achieved, individuals build resilience capabilities.<sup>27</sup>

Janzarik G et al (2022) tested the efficacy of resilience intervention for eight-week program to reduced mental burden in nurses positively affected.<sup>28</sup> Kadek Suranata (2017) concluded that the cognitive-behavioral counseling is more effective than the strengths-based counseling model.<sup>29</sup> Anjomshoaa H (2020) reported the training neurolinguistics programming (NLP) strategies and cognitive behavioral therapy had a significant effect on reducing anxiety, depression, and stress of the students.<sup>30</sup>

Saberi Fard F (2019) stated that regulation of emotions and resiliency are two important variables that are associated with the affective family climate in the students.<sup>31</sup> Yong Gao (2020) show that the psychological resilience of postgraduates after the course was significantly improved, and the differences in self-acceptance, emotional stability and problem solving before and after the course were statistically significant ( $P < 0.05$ ).<sup>32</sup>

### **Conclusion**

According to the findings, it can be concluded that cognitive behavioral therapy (CBT) is effective on the emotional resilience of nursing students and by emphasizing the strengths and capabilities of individuals. Therefore, it is suggested that educational institution use cognitive behavioral therapy to improve the emotional resilience, resulting in an increased level of mental health, quality of life, and improving the relevant components of the nursing students' educational process.

### **Ethical approval**

This research was approved by the Ethics Committee of Savitri Jindal Institute of Nursing, Haryana, India and <https://www.ctri.nic.in/> with the code of CTRI/2023/01/048974.

The participants voluntarily participated in the present study and written informed consent was obtained.

### Recommendations

- Conduct further studies on university students to identify the sources, factors affecting and coping strategies to improve the emotional resilience.
- Periodically conduct training courses to university students on cognitive behavior therapy.

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### Conflicts of interest

There are no conflicts of interest to disclose.

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