The Effect of Dialectical Behavior Therapy - Based Intervention on the Psychological Impacts of Covid-19 among Internship Nursing Students

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Abstract

Background: Internship nursing student's mental health was typically poor during the epidemic, particularly anxiety, depression, and post-traumatic stress disorders which should be handled with assistance and intervention. **This study was aimed** to evaluate the effect of Dialectical behavior therapy - based intervention on the psychological impacts of Covid-19 among internship nursing students. **Method:** A total of 260 Internship Nursing Students (Study group) were received a dialectical behavior therapy intervention session for four weeks. This group was compared with 260 Internship Nursing Students (Control group) without (DBT) intervention sessions. Tool one A structured Interviewing Questionnaire, Tool two: Zung Self-Rating Anxiety Scale, Tool three: Zung Self-Rating Depression Scale, and Tool four: The Impact of Event Scale (IES) were used in this study. This study was carried out at the Faculty of Nursing, Menoufia University. A quasi - experimental research design two groups (Study and control group) was utilized. **Results:** There were no significant differences in total score of anxiety, depression, and post-traumatic stress subscales between the study and control group before the (DBT) intervention sessions while after the (DBT) intervention sessions the study group's anxiety, depression, and post-traumatic stress total scores were significantly lower than the control group. **Conclusion:** During the epidemic prevention and control, dialectical behavior therapy can successfully decrease the anxiety, depression, and post-traumatic stress of the Internship Nursing students. **Recommendations**: DBT therapy may be implemented in the future in school psychological counselling to help college students cope with unpleasant emotions. Furthermore, it can aid in the regulation of emotions and better satisfy the psychological demands of medical and nursing students as well as college psychological counselling development needs.

Keywords: Dialectical behavior therapy, Psychological Impacts, Covid-19& **Internship Nursing Students**

Introduction

At the end of 2019, a new form of pneumonia disease known as the corona virus disease 2019 (COVID-19) rapidly spread throughout most provinces of China, and the total global number of COVID-19 cases has surpassed 500 000 by Mar. 27, 2020. On Jan. 30, 2020, the World Health Organization (WHO) declared COVID-19 a global health emergency (WHO, 2020). COVID-19 causes most damage to the respiratory system, leading to pneumonia or breathing difficulties. The confirmed case fatality risk was estimated to be 5% to 8% (Jung et al., 2020). Besides physical pain, COVID-19 also induces psychological distress, with depression, anxiety, and stress affecting the general population, quarantined population, medical staff, and patients at different levels [3] (Xiang et al., 2020). Previous research on patients in isolation wards highlighted the risk of depressed mood, fear, loneliness, frustration, excessive worries, and insomnia (Kang et al., 2020).

COVID-19 and other infectious disease outbreaks, as well as other public health disasters, can cause mental discomfort and worry. Even persons who are not at a high risk of becoming ill can experience distress and anxiety (Montemurro, 2020; Rajkumar, 2020; Royal College of Psychiatrists, 2020; WHO, 2020a). Although the implications of poor mental health in a disease outbreak are costly, it is rarely reported during pandemic crisis management (Chan, et al., 2019). Early research suggests that health care providers who are actively involved in the diagnosis, treatment, and care of COVID-19 patients are at risk for mental health symptoms [10] (Special Expert Group for Control of the Epidemic of Novel Coronavirus Pneumonia of the Chinese Preventive Medicine Association, 2020). COVID-19 was declared a pandemic by the WHO after sustained local transmission around

the globe (European Centre for Disease Prevention and Control, 2020). COVID-19 has an Incubation Period (IP) of roughly 1–14 days (Chinese Center for Disease Control and Prevention Epidemic,2020), and the time from commencement of symptoms to death has been estimated to be between 6 and 41 days (Wang, Tang and Wei, 2020).

The World Health Organization held an emergency meeting on January, 2020and declared the global COVID-19 pandemic. Pointing to over 110 countries and territories around the world where coronavirus disease was present. Egypt reported 23,000 confirmed cases and 900 deaths have been reported in Egypt on 30th of May 2020. Hence, facing the critical situation of this growing pandemic, healthcare internship period nurses considered on the frontline who are directly involved in the diagnosis, treatment, and care of patients with COVID-19 are at risk of developing psychological distress and other mental health symptoms as, anxiety, fear, depression, insomnia, increased use of alcohol or food to comfort them, loss of interest in old hobbies, irritability with their children and an overwhelming sense of exhaustion took over our waking and sleeping hours (WHO, 2020b).

The ever-increasing number of confirmed and suspected cases, the overwhelming workload, the depletion of personal protective equipment, widespread media coverage, the lack of specific drugs or proper treatment, and feelings of being under-supported may all contribute to these healthcare workers' mental burden (Lai et al., 2020). Nurses working in quarantine units, emergency rooms, and outpatient clinics, on the other hand, rarely receive mental health training during their internship. Internship period nurses require a support system to maintain their mental health, and their activity must be checked on a regular basis (Mohindra, Ravaki, and Suri, 2020).

Previous research has found that internship nursing students who work closely with patients with emerging infectious diseases like Covid-19, experience high levels of stress, loneliness, anxiety, dread, exhaustion, sleep disturbances, and depression symptoms, which could have long-term psychological implications. And other mental and physical health issues (Cai, et al., 2020 and Kim, 2019). A review study showed that demographic variables including gender, occupation, age, workplace, and department as well as psychological variables such as self-efficacy and poor social support were accompanied by increase in stress, anxiety, depression symptoms and insomnia in healthcare workers. Studies showed that those health care workers feared contagion and infection of their family, friends, and colleagues, felt uncertainty and stigmatization (Ran, et al., 2020).

With the increase in cases of corona, some hospitals have been allocated to these patients only, and with the small number of medical staff from doctors and nurses, the Internship nursing and medical students have been resorted to and distributed to those hospitals and due to their lack of experience in this field and limited capabilities, many of them suffered from some psychological problems as a result of dealing with these Therefore, the researchers sought to apply a method of psychological treatment to help them balance and deal with these psychological problems and overcome them, which type of therapy is called a dialectical behavioral therapy. Mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness are four DBT modules (Eisner et al., 2017).

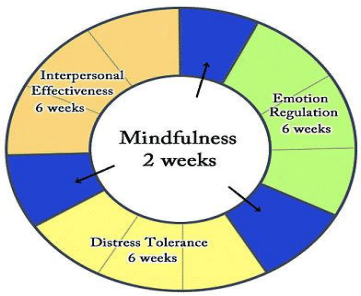
Dialectical behavioral therapy (DBT) is an innovative, principle-based, complete treatment that combines dialectic concepts and mindfulness practices. It is derived from cognitive behavioral therapy, and is based on the principle of dialectics, in which the dialectical relationship between normal and abnormal psychology and behavior, as well as the dialectical balance of acceptance and changes, is emphasized. DBT was initially used in the treatment of suicide and borderline personality disorder (Huang, et al., 2020). DBT also has a good therapeutic effect on disorders such as substance abuse and eating disorders. It was later discovered to be effective for depression, anxiety, and posttraumatic stress disorder (Salamin, et al., 2021).

Dialectical behavioral therapy based psychological intervention applied for the current case that included mindfulness training,

relaxation exercises for controlling negative emotions, distress tolerance skills, and interpersonal skills for sharing distress and gaining support. The efficacy of these DBT strategies was backed up by empirical evidence. Participants who practiced mindfulness, for example, reported considerably lower levels of despair, anxiety, and stress on surveys than those who did not [21] (Huang, et al.,2020). In a group of hospitalized patients, a similar DBT-based psychological therapy dramatically reduced feelings of hopelessness, depression, anxiety, and perceived levels of suffering [23] (Stone,2019)

Dialectical behavioral therapy modules have been shown to dramatically reduce negative feeling and discomfort caused by negative thoughts. DBT focuses on the here-and-now more than other psychiatric therapy, making it more effective for individuals experiencing acute negative moods and thoughts. Nursing Interns working in Quarantine Hospitals, A quick psychological intervention based on DBT is both possible and required [20] (Eisner et al., 2017).

Despite a significant body of data describing DBT's involvement in chronic mental disorders, its efficacy for crisis response has yet to be investigated. The present study described the use of DBT-based psychological intervention session for internship nursing students who working in Quarantine hospitals and examined its effectiveness in alleviating psychological impacts of Covid-19 as, depression, anxiety, and post-traumatic stress disorders.



Magnitude of the problem: -

The impact of COVID-19 on mental health is well documented in various countries among different populations including health professionals (Naser et al., 2020). However, evidence regarding the impact of the COVID-19 pandemic on internship period nurses is not adequate in Egypt. Last update in the world: WHO 28 February 2022, 05:00 pm. (434 154 739) Confirmed cases, (5 944 342) Confirmed deaths, Last updated: March 01, 2022, 06:40 GMT. Egypt. Coronavirus Cases: 483, 771, Deaths: 24,074 **(**WHO**,** 2022). A recent meta-analysis of 21 psychological research found that mental health issues including as dread, anxiety, and sadness are widespread among the medical isolation population, COVID-19 patients, and front-line medical professionals during this pandemic (Bareeqa, et al., 2020). However, there have been few studies on the psychological well-being of nursing students who have been placed in long-term home quarantine.

Internship nursing students play a crucial role in ensuring the medical industry's long-term viability. It is critical for them to have a healthy psychology to finish their education and be qualified for clinical employment. Individuals under quarantine may endure worry, perplexity, and stress symptoms because of their confinement (Labrague and Santos, 2020). Furthermore, numerous prior researches have shown that medical students' psychological difficulties might influence their career choices and even lead to suicide. (Abdulghani, et al., 2020)

There have been pertinent reviews of DBT's application in Egypt. However, there are few intervention studies, and the interventions are primarily focused on suicidal self-injury and eating disorders (Yang, et al. 2020, & Chen et al., 2021). There are limited studies on DBT's use in college psychological counselling (emotion control), and there are no localized DBT programs or empirical analyses in Egypt. DBT was used to treat anxiety, depression, and post-traumatic stress disorders in college students as part of epidemic prevention and control in this study. There is no such study in Egypt that we are aware of. So, this study is very important to apply.

Theoretical and operational definitions of psychological impacts of Covid-19:

Anxiety: Is theoretically defined anxiety as a state of distress induced by clinical

learning environment (Bahadır-Yılmaz, 2016). Anxiety in the present study is operationally defined as the internship student's anxiety score that was measured by Zung Self-Rating Anxiety Scale, was modified to be fit for the internship nursing students and used by the researchers.

Depression: Is theoretically refers to an experience where you feel down most of the time which is called "low mood" and you have also lost interest in things you usually enjoy [33] (American Psychiatric Association, 2013). Depression in the present study is operationally defined as the internship student's depression score that was measured by Zung Self-Rating Depression Scale.

Post-traumatic stress: Is theoretically defined as a fundamental human capacity to control one's thoughts, feelings, and behaviors by post decisional inhibition, which allows individuals to overcome momentary temptations in service of future-oriented goals (Yan, et al., 2021). Post-traumatic stress in the present study is operationally defined as the score of student's post-traumatic stress that was measured by The Impact of Event Scale.

Aim of the study:

The study aimed to evaluate the effect of dialectical behavior therapy- based intervention on the psychological impacts of Covid-19 among internship nursing students. Through:

1- Assess participants' level of anxiety pre/post interventions

2. Assess participants' level of depression pre/post interventions

3- Assess participants' post-traumatic stress pre/post interventions

Research hypothesis:

1- The Internship nursing students who receive the dialectical behavior therapy-based intervention (study group) will have lower scores of anxiety than students who don't receive the intervention (Control group)

2- The Internship nursing students who receive the dialectical behavior therapy-based intervention (study group) will have lower scores of depression, than students who don't receive the intervention (Control group)

3- The Internship nursing students who receive the dialectical behavior therapy-based intervention (study group) will have lower scores of post-traumatic stress than students who don't receive the intervention (Control group).

Method

Research design:

A quasi - experimental research design two groups (study and control group) was utilized to achieve the aim of the study in which the independent variable is manipulated, participants are not randomly assigned to conditions or orders of conditions and it used to evaluate the effectiveness of dialectical behavior therapy-based intervention.

Research setting:

This study was carried out at the Faculty of Nursing, Menoufia University, Egypt. The faculty of nursing composed of 4 academic years plus training year which the student enrolled in the hospital for training in all hospital areas to be qualified in all specialties. This study was applied on those students (internship nursing students) to achieve the aim of the study.

Sample size:

It was calculated at power 80%, confidence level 95%, and margin of error 5%, accordingly the calculated sample size was 520 students by using the following equation: n = [DEFF*Np (1-p)]/ [(d2/Z21-α/2*(N-1) +p*(1-p)]

Subjects

A purposive sample of 520 students was selected from the chosen setting who had the following inclusion and exclusion criteria. **Inclusion criteria which are** internship nursing students in faculty of nursing . **Exclusion criteria which are** any history of chronic physical illness and any history of psychiatric illness e.g. depression because these illnesses may lead to stress and will interfere with the results. The students were divided into two equal groups, 260 were study group who participate in the Dialectical behavioral therapy and other 260 control group does not participate in the Dialectical behavioral therapy.

Tools of data Collection:

The following tools were used to achieve the aim of the study: -

Tool one: A structured Interviewing Questionnaire: It was developed by the researchers based on pertinent literature to assess socio-demographic characteristics of the internship students as age, gender, residence, and parent's education.

Tool two: Zung Self-Rating Anxiety Scale. It was originally developed by [36] Zung (1971) to assess the level of anxiety, translated into Arabic by [37] (Zeinoun, Iliescu, & El Hakim, 2021). It consists of 20-items. There are converted items as, (5.9.13.17.19) Responses are rated on a 4-point Likert scale ranging from 1-4, "None or a little of the time, some of the time, Good part of the time, Most or all of the time" The scores range from 25-100, 25-44 Normal Range, 45-59 Mild to Moderate Anxiety Levels, 60-74 Marked to Severe Anxiety Levels, 75 and above Extreme Anxiety Levels.

Tool three: The Zung Self-Rating Depression Scale. It was designed by [38] Zung (1965) and translated into Arabic by [39] (Kirkby, Al Saif, & Mohamed, 2005) to assess the level of depression. It was consisted of 20 items on the scale that rate the four common characteristics of depression: the pervasive effect, the physiological equivalents, other disturbances, and psychomotor activities. There are ten positively worded and ten negatively worded questions. Each question is scored on a scale of 1-4 (a little of the time, some of the time, good part of the time, most of the time). The scores range from 25-100. • 25-49 Normal Range • 50-59 Mildly Depressed • 60-69 Moderately Depressed • 70 and above Severely Depressed.

Tool four: The Impact of Event Scale (IES). It was developed by [40] Weiss & Marmar, (1997) and translated into Arabic by [41] (Alharbi, ALHarthi, & Alzahrani, 2020) to assess psychological trauma post-traumatic stress. It consisted of 22-items. Responses are rated on a 5-point Likert scale ranging from 0-4, "Not at all, little bit, Moderately, quite a bit, extremely". It is containing three subscales:

Avoidance Subscale = Mean of items 5, 7, 8, 11, 12, 13, 17, 22

Intrusion Subscale = Mean of items 1, 2, 3, 6, 9, 14, 16, 20

Hyper arousal Subscale = Mean of items 4, 10, 15, 18, 19, 21.

Scoring system:

Avoidance: from 0 to 19 mild avoidance, from 20 to 24 moderate avoidance, from 25 to 32 refers to severe avoidance. **Intrusion:** from 0 to 19 mild intrusions, from 20 to 24 moderate intrusions, from 25 to 32 severe intrusions. **Hyper arousal:** from 0 to 14 mild hyper arousal, from 15 to18 moderate hyper arousal, from 19 to 24 severe hyper arousal. **Total post-traumatic stress score:** from 0 to 52 mild post-traumatic stress, from 53to 66 moderate post-traumatic stress, from 67 to 88 severe post-traumatic stress.

Validity of the tools: The validity of the study tools was ascertained by a jury of five professor's experts in the field of psychiatric nursing and psychiatric medicine to test their content validity and to examine the face validity in terms of whether that reflected the concepts intended to measure and to determine its clarity to reach consensus on the best form to be implemented. Following the judgment of the experts, some items were modified to fit the internship nursing students.

Reliability of the tools: The internal consistency of the questionnaires was calculated using Cronbach's alpha coefficients. The reliability of the tools was done using test - retest reliability and proved to be strongly reliable at 0.86 for tool two, at 0.90 for tool three, and 0.88 for tool four.

Procedure:

Administrative approval: Before starting the study, an administrative approval was obtained from the Deans of the Faculty of Nursing of Menoufia University and the director of the nursing administration

department after explanation of the purpose of the study.

Ethical consideration: An informed consent was obtained from every participant who accepts to participate in the study after complete description of the aim, nature, and confidentiality of the study.

A pilot study: It was conducted to 10% of the total sample to test the clarity and applicability of the tools and the feasibility of the research process. All subjects included in the pilot study met the inclusion criteria. The pilot study revealed minimal modifications in the questionnaires. Subjects in the pilot study were excluded from the main study sample.

Data collection: Collection of the data and application of the program began from January to June 2021. The data in the current study was collected through three phases: assessment phase, implementation phase and evaluation phase.

1. Assessment phase:

An extensive literature related to the study was done, including electronic dissertations, available books, articles, doctoral dissertation, research and peer interaction, and idea from external sources and periodicals. A review of literature to formulate a knowledge base relevant to the study was also done.

Permission was obtained from Faculty of nursing then from the students. The researchers met the students within one day in a lecture hall. Through interview technique the students were asked individually to fill the three used questionnaires for data collection, the researchers contacted with them for clarification of scale and for explanation of the aim of the study. After pretest, the researchers divided the students into two equal groups (study and control group)

2. Implementation phase:

The researchers applied the implementation phase on study group according to the following steps:

The first step: After reviewing related literature the researchers developed the Dialectical behavioral therapy intervention in Arabic language in the form of a booklet. The intervention reviewed by experts in the field of psychiatric nursing and psychiatric medicine. This intervention had a set of specific objectives for each session.

Orientation was done about researchers' name, purpose, and content of the study. All students who were met the inclusion criteria were included in the study; the researchers introduced themselves to them, provides verbal explanation of the study and answered all related question.

The second step: the researchers divided the participants of study group into six equal sub-groups. Every sub-group was 34-44 students, every group attended eight dialectical behavioral therapy intervention sessions every session took near about one hour within two days/ week – 3group /day from 11 AM to 2 PM. The sessions designed to meet specific objectives, including techniques and content. At the beginning of session, the researchers explain the rules and regulation of the sessions and keep reinforcing the students followed the rules and finish the task completely.

Before the beginning of each session, the researchers asked about homework and application and how they used the content

Description of the Dialectical behavioral therapy intervention sessions:

The intervention in this study is focused on dialectical behavior therapy which defined as a flexible psychotherapy that comprises elements of behavior therapy, cognitive behavior therapy, and mindfulness. The term "dialectical" refers to the combination of two opposing ideas. The first of these ideas is the acceptance of the reality of a person's life and behaviors. The second opposing idea is the change of situations and dysfunctional behaviors [35] Liang et al., (2021).

DBT is a stage-based therapy, meaning it involves specific stages (Huang, et al., 2020). These stages are as follows:

Stage 1: This stage involves stabilizing internship nursing students and helping them gain control of their behaviors. Therapy in stage 1 involves crisis

intervention and keeping internship nursing students safe from suicide, self-harm, or addiction issues.

Stage 2: During this stage, individuals will work on their emotional pain and traumatic experiences. Therapists help internship nursing students to identify unhelpful thoughts, behaviors, and beliefs.

Stage 3: involves solving issues the internship nursing students associates with their everyday life. Therapy focuses on maintaining progress and setting achievable goals. The aim is to help internship nursing students take responsibility for their actions and find joy in life.

In the final stage, individuals work toward advancing their lives and achieving spiritual fulfillment.

General objective of the intervention:

The intervention aimed at reducing the psychological impacts of Covid-19 among Internship Nursing Students (anxiety, depression, and post-traumatic stress disorder). This intervention has a set of specific objectives for each of the session.

Specific objectives:

1. Gaining behavioral control
2. Reduce symptoms of traumatic stress (anxiety and depression)
3. Teach the students four different types of skills:
   a) Mindfulness meditation skills
   b) Interpersonal effectiveness skills
   c) Distress tolerance skills
   d) Emotion regulation skills

This specific objective was achieved through several teaching method such as lectures, group discussion, brainstorming and examples from real-life situations and experiences, modeling, role-playing, getting participants' feedback, providing corrective feedback, and assigning homework. Variable teaching method also was used to facilitate the implementation of the program such as, Data show, videos, pictures, and evidence-based booklets.

The content of Dialectical behavior therapy (DBT) intervention sessions according to [35] Liang et al., (2021) **was:**

Session one: This session aimed to encouraging students to actively participate in Dialectical behavior therapy (DBT) sessions. The researchers talk about the DBT sessions, explained the nature and purpose of the study and the possibility to convince the students about the importance of the DBT sessions. Written consent was taken from the students that they agreed to participate in the DBT sessions and agreement done on the number of sessions (8 sessions, one session every week, for 45-60 minute), time and duration of every session, then specifying the subject of the next session and setting an agreement on the rules of the sessions that must be followed by the students**.**

Session two: aimed to identifying the concept of anxiety, depression, and post-traumatic stress disorder, their causes, and symptoms**,** the researchers present models of students' stories with psychological problem and the complication that arise from the psychological disorder related to Covid19. The researchers presented a video showing the symptoms of psychological disorder. Also, this session included information about the intervention (DBT), clarify the relationship between covid-19 and the psychological distress, identify the meaning of psychological distress, the importance and the factors affecting psychological distress, and clarify the features of the students with no psychological distress.

Session three: The researchers urged the students to talk about anything that was bothering them and release intense emotion at the start of the session. Nonjudgmental listening and empathy skills were two of the most important tactics used. Some of the student's unreasonable or unreal thoughts were soothed using psychoeducation and COVID-19-related knowledge. The basic DBT principle of "change what can be changed and accept what can be accepted" was introduced after the students had stabilized.

Session four (Mindfulness meditation skills): aimed to teach the students Mindfulness skills. In this session, intervention worked through empathy and good therapeutic relationship. In which the emotion leads an individual to practice being present and fully aware within the moment, feel life for what it is and not live years in the future. It relies heavily on the principle of acceptance. Students will learn to accept all situations, no matter how intense or overwhelming their feelings may become. With time, the students will learn how to master the techniques taught in their skill groups. This technique allowed them to mentally slowdown in life and focused on the positives around them, no matter how stressful and negative a situation could become.

Also, the researchers taught the students how to think dialectically by listing both the negative and good parts of the current circumstance; therefore, the students became aware of and enlightened by the concept that even the worst event has a bright side. The students were able to experience their circumstances with less psychological discomfort after employing these two strategies. After the exercise, the students were able to accept their mood and thoughts as they are and reported feeling less distress. The researchers taught the students emotion management skills by leading them through a breathing and relaxation exercise at the end of the session and reminded them to practice relaxation exercise and mindfulness regularly to gain control of emotion in daily life and in any stressful situation.

Session five (Interpersonal effectiveness skills). It aimed to teach the students an interpersonal effectiveness skill. The session began with a brief mindfulness breathing and relaxation. The students expressed high approval of mindfulness skill, saying that it was effective in controlling anxious feelings. In this session the researchers teach the students how to interact with the people around them, personal relationships and the challenges that can create a stressful environment. When learning interpersonal effectiveness skills, they will understand how to communicate clearly and without animosity when they disagree or say no to a situation or request. Also, the students were encouraged to express their feelings and psychological needs. It also explored the effectiveness of a brief intervention on helping the students cope with here-and-now psychological problems and identified several DBT techniques that benefited the students. Students also learned how to ask for what they want whilst maintaining self-respect and a functional relationship with others.

Session six (Distress tolerance) within the session of distress tolerance, the students learned the art of acceptance and change. They will discover four primary techniques within this class that will help them handle any crisis; this included: self-soothing, improving the stressful situation, thinking of the pros and cons of the situation, distracting yourself. This session also included learn them face both negative and positive situations within their life and how to view these situations without being judgmental— learning how to accept the outcome no matter the problem. This skillset heavily incorporates the first skill mentioned, which was mindfulness.

Session seven (Emotion regulation session): This session was essential to master, learning to recognize, accept and control their emotions without judgment when they are an intense person can be a struggle, but with the right help, you can achieve anything. Students who regularly goes through intense negative emotions will benefit from learning how to regulate and control their emotions. Once students have learnt how to manage their feelings, they decrease their vulnerability to any form of painful emotions caused by situations that are entirely out of their control and learn them to stop letting negative emotions take over.

Session eight: aimed to provide a summary of the previous skills, understand the students' experience and feedback about

the (DBT) sessions, evaluate the effectiveness of Dialectical behavior therapy on psychological impact of covid-19. At the end of the session, the researchers thanked the students who participated in the intervention sessions for their attention and the effort they exerted in the implementation of the homework and emphasizes to generalize what they learned in different situations in their daily lives and future and urges them to apply what they learned in the extension sessions to reflect on the improve their psychological status.

3. Evaluation phase:

The last phase in which the researchers assess the achievement of the aim of the study through reintroducing the research tools Zung Self-Rating Anxiety Scale, Zung Self-Rating Depression Scale, and The Impact of Event Scale (IES) (post-test) for both study and control groups to evaluate the effectiveness of dialectical behavior therapy intervention sessions among the study group.

After obtaining the results for an ethical purpose the Dialectical behavior therapy session were given to the control group.

Statistical analysis

Data were collected, tabulated, statistically analyzed using an IBM personal computer with Statistical Package of Social Science (SPSS) version 19 (SPSS, Inc, Chicago, Illinois, USA). Where the following statistics were applied:

Descriptive statistics: in which quantitative data were presented in the form of mean, standard deviation (SD), range, and qualitative data were presented in the form numbers and percentages.

Analytical statistics: used to find out the possible association between studied factors and the targeted disease. The used tests of significance included:

Shapiro Wilk test of normality was used to determine if the data normally distributed or not**. Mann-Whitney test (nonparametric test):** is a test of significance used for comparison between two groups not normally distributed having quantitative variables. **Kruskal-Wallis test (nonparametric test):** is a test of significance used for comparison between three or more groups not normally distributed having quantitative variables. **Spearmans correlation:** Used for correlation of two quantitative variables not normally distributed. **Wilcoxon signed rank test (nonparametric test): i**s a test of significance used for comparison between two related groups not normally distributed having quantitative variables. **Marginal homogeneity test**: assess the significance of the difference between three correlated proportions.

P value of >0.05 was considered statistically non-significant.

P value of <0.05 was considered statistically significant.

P value of <0.001 was considered statistically highly significant.

Results:

Table (1): Characteristics of the studied students. This table showed that the mean age of the studied group is 21.4±0.58, more than half of them (70%) are females, more than two thirds of them (67.3%) are from rural residence, near to half of them (48.1%) had enough daily expense, almost all of them (95%) are living with both parents. The mean age of their fathers is 53.2±5.77, more than one third (35.8%) their father's education is university or higher, more than half of them (54.2%) have governmental work, their mean mother age is 46.9±4.70, more than one third of them (35.4%) their level of education is university or higher, more than two thirds (69.2%) of their mothers are housewives. Regarding areas of training, the result of the present study demonstrated that about 17.75%-15.8 % (study and control respectively) worked in emergency unit, nearly to half (48.1%) and (40.4%) of case and control worked in intensive care unit, while 20.4% of case and 20.0% from control group worked in hemodialysis unit, a few of them (4.2% from cases and 12.7% from control) worked in maternity unit, and about (9.6% and 11.2%) for study and control group respectively worked in neonatal intensive care unit.

Table (2): Comparison between study group and control group regarding mean score of the psychological impacts of covid-19 (anxiety, depression, and post-traumatic stress)

pre and post (DBT) intervention. The table revealed that there is no statistically significant difference between the study group and the control group regarding to the mean of their all the **psychological** impact of covid-19 (anxiety, depression, and post-traumatic stress) pre (DBT) intervention. But there is a highly statistically significant difference in the study group post (DBT) intervention at p-value (0.001). As the mean of the anxiety is reduced from 36.6±9.51 to 23.9±6.61, the mean of depression is decreased from 23.9±8.51 to 17.8±5.25, and the mean of total post-traumatic stress is decreased from 60.7±5.76 to 43.8±5.42. Also, each of the subscales of post-traumatic stress is also decreased as well.

Figure (1): The figure displayed that there is no statistically significant difference between the study group and the control group regarding to their percentage of anxiety pre and post (DBT) intervention. But there is a highly statistically significant difference in the study group regarding to their percentage of anxiety post (DBT) intervention.

Figure (2): The figure displayed that there is no statistically significant difference between the study group and the control group regarding to their percentage of depression pre and post (DBT) intervention. But there is a highly statistically significant difference in the study group regarding to their percentage of depression post (DBT) intervention.

Figure (3): The figure displayed that there is no statistically significant difference between the study group and the control group regarding to their percentage of post-traumatic stress pre (DBT) intervention. But there is a highly statistically significant difference in the study group regarding to their percentage of post-traumatic stress post (DBT) intervention

Table (3) Comparison between study group and control group regarding distribution of the Impact event subscale (post - traumatic stress) pre and post Dialectical behavioral therapy intervention

The table discovered that, each subscale of **Impact of Event (Post-traumatic stress)** percentage levels is decreased as well. Moderate avoidance percentage levels are decreased from 56.2% to 16.2%, moderate intrusion thoughts percentage is decreased from 59.6% to 7.7%, and high hyper arousal states percentage levels is decreased from 43.5% to 3.8%.

Table (4): Correlation between the psychological impacts of covid-19 anxiety, depression, and total post-traumatic stress among the study group. The table showed there is a highly statistically significant positive correlation between anxiety and post-traumatic stress and there is a highly statistically significant positive correlation between depression and post-traumatic stress at p-value <0.001.

Table (5): Relation between socio demographic characteristics and the psychological impacts of covid-19 (anxiety, depression, and post-traumatic stress) of the study group. The table revealed that there is a statistically significant relation between not enough daily expense and anxiety at p-value 0.014. Also, there is a highly statistically significant relation between students live with friends and depression at p-value 0.001, and there is a statistically significant relation between fathers does not have work (without job) and depression at p-value 0.011. There is a statistically significant relation between urban residence and post-traumatic stress at p-value 0.048, and there is a statistically significant relation between father preparatory education post-traumatic stresses at p-value 0.035. There is a statistically significant relation between Intensive care Unit training and anxiety at p value 0.017 and there is a statistically significant relation between maternity unit training and depression at p value 0.024.

Table (1): Socio-demographic characteristics of the studied students (N=520):

Socio-demographic characteristics	Study group (N= 260)		Control group (N=260)		Test of significance	P-value
	No.	%	No.	%		
Age / years					t-test	
Mean ±SD	21.4±0.58		21.3±0.63		1.88	0.060
Sex					X2	
Male	78	30.0	70	26.9	0.60	0.436
Female	182	70.0	190	73.1		
Residence					X2	
Urban	85	32.7	78	30.0	0.44	0.508
Rural	175	67.3	182	70.0		
Daily expense						
Enough	125	48.1	108	42.5	X2	
Enough and save	105	40.4	117	45.0	2.27	0.321
Not enough	30	11.5	35	13.5		
With whom do you live						
Both parents	247	95.0	235	90.3	X2	
Relatives	3	1.20	7	2.70	4.18	0.123
Friends	10	3.80	18	7.00		
Father age					t-test	
Mean ±SD	53.2±5.77		53.6±6.30		0.75	0.450
Father education						
Illiterate	47	18.1	46	17.7		
Primary	64	24.6	55	21.2	X2	
Preparatory	22	8.50	21	8.10	1.19	0.880
Secondary	34	13.1	38	14.6		
University or higher	93	35.8	100	38.5		
Father job						
Governmental employee	141	54.2	138	53.0	X2	
Nongovernmental	76	29.2	87	33.5	1.59	0.450
Don't have work	43	16.5	35	13.5		
Mother age					t-test	
Mean ±SD	46.9±4.70		47.2±4.85		0.72	0.474
Mother education						
Illiterate	66	25.4	65	25.0		
Primary	55	21.2	53	20.4	X2	
Preparatory	24	9.20	21	8.10	5.53	0.236
Secondary	23	8.80	40	15.4		
University or higher	92	35.4	81	31.2		
Mother job						
Governmental employee	73	28.1	78	30.0	X2	
Nongovernmental	7	2.70	9	3.50	0.55	0.757
Housewife	180	69.2	173	55.5		
Parent's relationship						
Understanding and respect	243	93.5	238	91.5	X2	
Non-understanding and non-respect	17	6.50	22	8.50	0.69	0.405
Areas of Training:						
Emergency Unit	46	17.7	41	15.8		
Intensive care Unit	125	48.1	105	40.4	X2	
Hemodialysis Unit	53	20.4	52	20.0	2.98	0.301
Maternity Unit	11	4.2	33	12.7		
Neonatal intensive care Unit	25	9.6	29	11.2		

Table (2): Comparison between study group and control group regarding mean score of the psychological impacts of covid-19 (anxiety, depression, and post-traumatic stress) pre and post (DBT) intervention (N= 520):

Studied variables	Pre (DBT) Intervention		Mann Whitney test P value	Post (DBT) Intervention		Mann Whitney test P value
	Study group	Control group		Study group	Control group	
	Mean ±SD	Mean ±SD		Mean ±SD	Mean ±SD	
Anxiety	36.6±9.51	37.9±10.2	1.37 0.168	23.9±6.61	37.3±11.8	**13.5** **0.001****
Depression	23.9±8.51	22.8±7.98	1.72 0.085	17.8±5.25	22.5±7.95	7.07 **0.001****
Impact of Event subscales (post-traumatic stress subscales)						
Avoidance	21.4±3.33	21.8±3.77	1.33 0.183	16.1±3.22	21.5±3.99	14.1 **0.001****
Intrusion	21.6±3.47	21.7±3.56	0.316 0.752	15.0±3.07	21.3±3.66	16.2 **0.001****
Hyper arousal	17.5±3.18	17.3±3.33	0.616 0.538	12.7±3.03	17.1±3.70	12.2 **0.001****
Total Impact of Event	60.7±5.76	60.9±6.00	t-test 0.373 0.710	43.8±5.42	60.4±6.33	t-test 32.1 **0.001****

**High significant

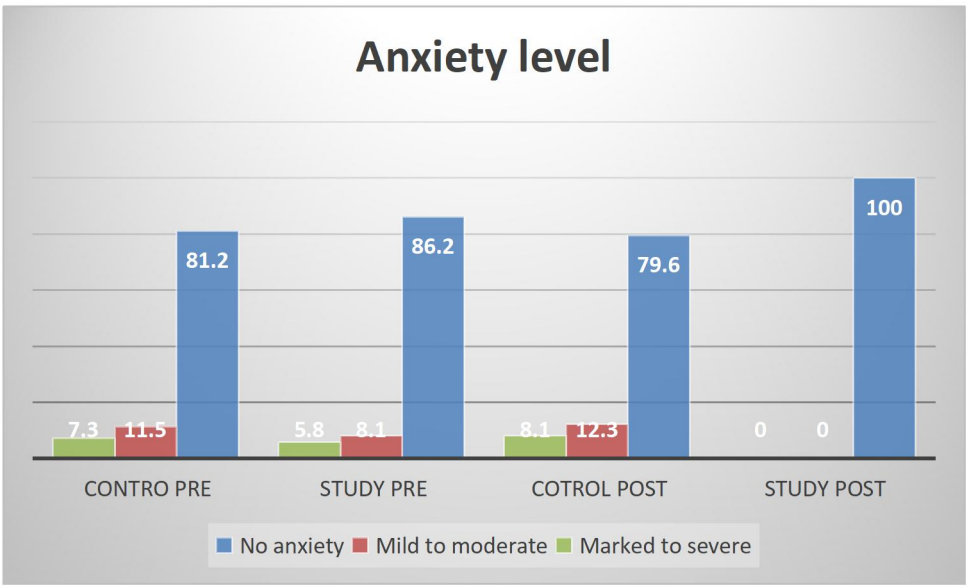


Figure (1) Comparison between study group and control group regarding distribution of the anxiety levels pre and post Dialectical behavioral therapy intervention

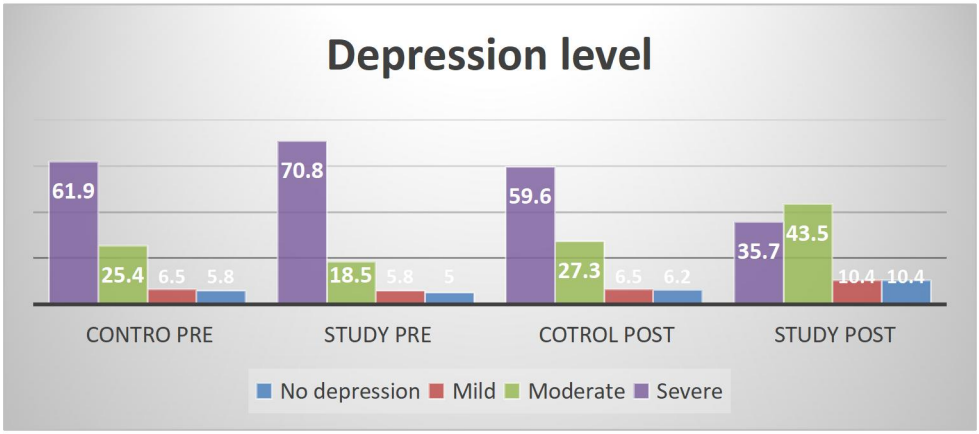


Figure (2): Comparison between study group and control group regarding distribution of depression level pre and post Dialectical behavioral therapy intervention

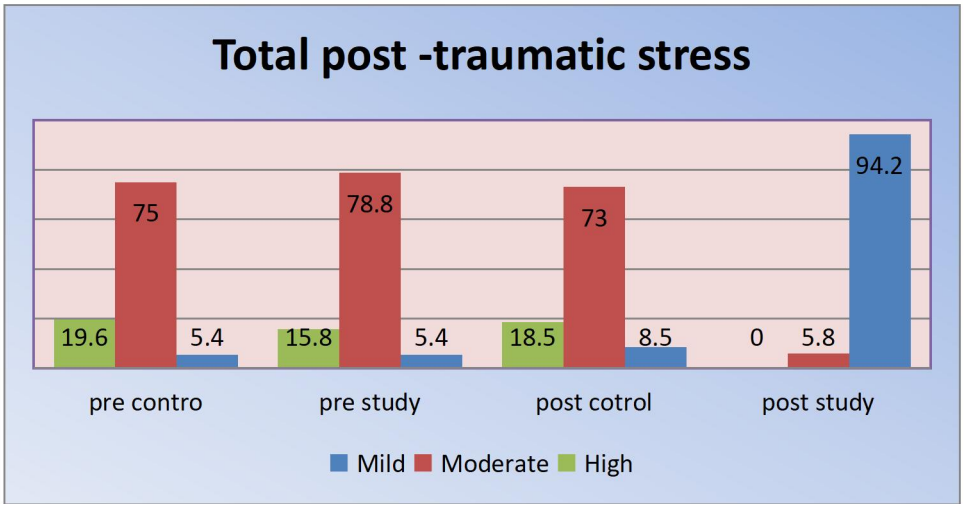


Figure (3): Comparison between study group and control group regarding distribution of post-traumatic stress level pre and post Dialectical behavioral therapy intervention

Table (3): Comparison between study group and control group regarding distribution of the Impact of event (post- traumatic stress) pre and post Dialectical behavioral therapy intervention

Studied variables Impact event subscale (post-traumatic stress)	Pre (DBT) Intervention				X2 P-value	Post (DBT) Intervention				X2 P-value
	Study Group		Control group			Study Group		Control group		
	No.	%	No.	%		No.	%	No.	%	
Avoidance										
Mild	73	28.1	68	26.2	3.22	218	83.8	71	27.3	177.6
Moderate	146	56.2	135	51.9	0.199	42	16.2	135	51.9	**<0.001****
High	41	15.8	57	21.9		0	0.00	54	20..8	
Intrusion										
Mild	62	23.9	66	25.4	0.67	240	92.3	71	27.3	230.4
Moderate	155	59.6	146	56.2	0.715	20	7.70	147	56.5	**0.002****
High	43	16.5	48	18.5		0	0.00	42	16.2	
Hyper arousal										
Mild	57	21.9	70	27.0	1.82	193	74.2	65	25.0	152.3
Moderate	90	34.6	82	31.5	0.403	57	21.9	85	32.7	**<0.001****
High	113	43.5	108	41.5		10	3.80	110	42.3	

Table (4): Correlation between the psychological impacts of covid-19 among the study group (N= 260):

Studied variables	Total post-traumatic stress	
	R	P value
Anxiety	0.507	**<0.001****
Depression	0.238	**<0.001****

Table (5): Relation between socio demographic characteristics and the psychological impacts of covid-19 of the study group (N=260):

Socio demographic characteristics	Anxiety Mean ±SD	Test of sig P-value	Depression Mean ±SD	Test of sig P-value	Post-traumatic stress Mean ±SD	Test of sig P-value
Sex		U=		U=		U=
Male	24.2±6.26	0.946	17.9±4.51	0..771	44.3±5.59	0.586
Female	23.8±6.77	0.344	17.6±5.54	0.441	43.7±5.35	0.558
Residence		U=		U=		U=
Urban	22.3±4.82	1.55	18.7±4.47	1.05	44.9±5.75	**1.98**
Rural	24.7±7.22	0.120	17.3±5.53	0.292	43.3±5.19	**0.048***
Daily expense		F=		K=		K=
Enough	24.5±7.07	**4.32**	17.6±5.39	2.04	44.2±5.80	4.56
Enough and save	22.6±5.26	**0.014***	18.2±5.18	0.359	43.1±4.96	0.102
Not enough	26.1±8.01		16.7±4.78		45.2±5.05	
With whom do you live		K=		K=		K
	23.8±6.59	3.47	11.3±5.77	**13.6**	43.9±5.41	5.52
Both parents	31.3±8.08	0.176	13.0±4.08	**0.001****	36.3±4.04	0.063
Relatives	24.4±6.13		18.0±5.16		45.0±4.47	
Friends						
Father education		K=		K=		K=
Illiterate	25.8±8.36	2.82	17.0±5.81	1.42	44.7±5.30	**10.3**
Primary	23.2±5.87	0.588	17.8±5.70	0.840	44.8±5.34	**0.035***
Preparatory	22.6±5.91		18.3±3.55		45.4±4.06	
Secondary	23.2±6.24		18.6±4.22		43.8±5.80	
University or higher	23.9±6.31		17.6±5.33		42.4±5.43	
Father job		K=		K=		K=
Governmental	24.2±6.88	0.181	17.4±5.37	**9.08**	43.4±5.69	2.09
Nongovernmental	23.4±6.14	0.914	15.7±5.20	**0.011***	44.7±5.15	0.350
Don't work	23.9±6.62		18.5±5.04		43.5±4.91	
Mother education		K=		K=		K=
Illiterate	23.5±6.55	6.94	17.6±5.12	5.56	45.1±4.90	8.53
Primary	23.6±6.68	0.139	18.8±5.45	0.234	44.1±5.29	0.074
Preparatory	21.4±3.37		16.3±5.17		43.3±5.88	
Secondary	27.0±7.30		16.1±5.78		41.6±5.39	
University or higher	24.2±6.87		18.0±5.03		43.5±5.60	
Mother job		K=		K=		K=
Governmental	23.4±6.82	2.80	18.2±4.89	0.860	44.9±5.65	2.94
Nongovernmental	22.2±3.90	0.246	16.8±5.20	0.650	44.2±3.90	0.229
Housewife	24.2±6.61		17.6±5.40		43.4±5.34	
Parent's relationship		U=		U=		U=
Understanding and respect	23.8±6.63	0.715	17.7±5.15	0.122	43.9±5.41	0.575
Non-understanding and non-respect	24.4±6.14	0.475	18.0±6.68	0.903	42.9±5.62	0.565
Areas of Training:						
Emergency Unit	23.52±6.19	F=	17.34±5.086	F=	42.47±6.006	F=
Intensive care Unit	25.07±7.18	3.089	16.92±5.137	2.863	44.21±5.651	2.07
Hemodialysis Unit	23.69±6.23	**0.017***	18.77±6.411	**0.024***	43.73±4.451	0.084
Maternity Unit	20.27±3.34		20.18±2.182		42.00±4.753	
Neonatal intensive care Unit	21.08±4.74		19.68±2.996		45.84±4.722	

U: Mann Whitney test K: kruskal Wallis test **High significant *significant

Discussion

Following the outbreak of the COVID-19 epidemic, many medical students' psychological and behavioral status shifted, resulting in a slew of emotional issues. Many medical students are unable to cope with negative feelings. As a result, this research is critical in emphasizing the importance of DPT in helping people manage their emotions. So, this study is very important to stress on the impact of DPT in managing their emotions.

The result of the present study reveals that there was no statistically significant difference between study and control group regarding their sociodemographic characteristics (table 1). This might be due to the study and control group had the same inclusion criteria. This study was consistent with (Abdulghani, et al., 2020 & Kumar, et al., 2019). Who found that there were no significant differences between the two groups ($p > .05$) regarding demographic characteristics.

As regarding to the mean age of the study group was 21.4±0.58, and more than half of them (70%) were females. This might be due to that the study was carried out among students of internship nursing students and this was appropriate age for them, and the number of female students was higher than male students as females like more to work as a nurse not like male. The result of the current study was in the same line with Albaqawi, Alquwez and Cruz et al. (2020) who found that the mean age of the study group was (21.62), and more than half of them (71,6%) were females.

Concerning residence, the result of the current study revealed that nearly two thirds of the study group was from rural residence (table 1). This might be due to the location of the faculty of nursing, nature of the governorate which is filled up with rural areas and the high expense to live in urban area. This study was matched with Alasmee & Hasan (2021) who found that almost two thirds of study participants were from rural areas.

Regarding with whom the students live almost all the study group were living with both parents. This might be due to nature of the culture in the governorate to be lived with both parents and the need of the presence of parents beside students help them to express their feeling and give them the power to face any danger without any fears. This result was consistent with Sundarasen, Chinna and Kamaludin et al. (2020) who found that (87,3%) of the study group were living with their family.

As regarding to father education and job, the result of the present study revealed that more than one third of the study group their father education was university or higher, and more than half of them have governmental work. This could be due to feeling safe with high education and getting governmental job. This result was contradicted with Tiwari, Imam and Nagar et al. (2021) who found that (86,8%) of the study subject their father education was illiterate and (15,8%) had governmental job. This result was also contradicted with Ramadan and Ahmed (2015) who found that more than half of the participants 60.0% father and mother educational level of the intervention group was secondary education.

Regarding areas of training, the result of the present study demonstrated that about 17.75%-15.8 % (study and control respectively) worked in emergency unit, nearly to half (48.1%) and (40.4%) of case and control worked in intensive care unit, while 20.4% of case and 20.0% from control group worked in hemodialysis unit, a few of them (4.2% from cases and 12.7% from control) worked in maternity unit, and about 9.6% and 11.2% for study and control group respectively worked in neonatal intensive care unit (table 1). This might be due to that the internship students should have experience all over the hospital words and units. We also found that staff working within ICUs or sub-intensive COVID-19 units had a significantly increased risk of developing adverse psychological outcomes (more specifically, post-traumatic distress symptoms and depression), independent of any other factor and that nurses had a considerably greater risk of adverse psychological outcomes (more specifically, post-traumatic distress symptoms and anxiety) than physicians.

The result of the present study was in the same line with Lasalvia et al. (2021). They revealed that, the percentages of place of

training the internship nursing students as the following (ICUs 89%; sub-intensive COVID units 90%; other frontline services 77%; no COVID wards 59%; laboratory services 49%; administration 45%; $p < 0{\cdot}001$), with nurses and healthcare staff working in both ICUs and sub intensive COVID units reporting more traumatic events.

The results of the current study showed that (8.10% and 11.5%) of the study and control group have mild to moderate anxiety, and (5.80% and 7.30%) respectively have severe anxiety, 18.5 % and 25.4 % of the study and control group respectively have moderate depression, and 48.5% from study group and 38.8% for control group have extremely severe depression, before (DBT) intervention (figure 1, 2 and 3). Regarding to the result of posttraumatic stress the finding of the present study showed that 78.8% for study and 75.0% of control have moderate post-traumatic stress, while 15.8% of study group and 19.6% for control group have high level of post-traumatic stress. This might be due to the psychological effect of epidemic on internship students and having responsibility with little experience and fear from infection of corona virus. This result was consistent with the study conducted by Yadav, et al., (2021). They showed that 52.8%, 31.5%, 10.3%, and 5.4% percent of points were scored in minimal, mild, moderate, and severe anxiety, respectively and about 57.9% minimal depression, 31.3% mild depression, 8.1% moderate, 2.4% moderately severe, and 0.2% severe depression. The result of the present study was inconsistent with the study findings by Islam et.al, 2020. They showed that student nurses show 9.5% minimal depression, 11% mild depression, 50.2% moderate, 15.3% moderately severe, and 4% severe depression. The previous study also showed 18, 21, 47.3, and 13.8 percent of points for minimal, mild, moderate, and severe anxieties, respectively (Islam, et al., 2020).

On the other hand the other study conducted by Kalkan, et al. (2021) It was found that 143 (34.8%) of the nursing students had moderate to severe depression, 97 (23.9%) had moderate to severe anxiety and 132 (32.1%) had moderate to severe stress symptoms. In addition, Johnson, et al., (2020) reveled that A total of 28.9% of the sample had clinical or subclinical symptoms of PTSD, and 21.2% and 20.5% were above the established cut-offs for anxiety and depression.

The results of the present study showed that before the DBT intervention, there were no significant differences in total score of anxiety, depression, and post-traumatic stress scales between the study and control groups. The study group's anxiety and depression scores were significantly lower than the control group's after the (DBT) intervention therapy session, and the total scores of the post-traumatic stress subscale were also significantly lower (table 2& figure 1,2 and 3) indicating that DBT can help with negative emotions like anxiety, depression, and post-traumatic stress. This might be due to DBT has a solid theoretical foundation and a therapeutic framework to back it up, and the framework was used to create appropriate programmed design and intervention goals. The study's intervention approach was directed at nursing students' anxiety and depression. Meanwhile, considering the high academic pressure and stress that internship nursing students face, the intervention strategies was created using a systematic, comprehensive, and relevant approach that included adjustments and modifications to meet current actual needs with reference to domestic and international intervention strategies (Neacsiu et al., 2014)

These results were consistent with the results of Luo, Zhong & Chiu (2021) who revealed that, during the normalization of epidemic prevention and control, dialectical behavior therapy can successfully decrease the depression and anxiety of medical students and there were no statistically significant differences between the study group and the control group in the total scores and dimensions of each scales (PHQ-9, GAD-7, SSS, and PSS) Before the intervention of DBT group counseling while after intervention, the scores of these scales in the study group were significantly reduced than those of the control group. These findings also were in the same line with Saito, Tebbett-Mock, & McGee, (2020) who found that DBT treatment has been found to effectively reduce anxiety and depression in participants.

Regarding anxiety and depression, the result of the present study showed that there was a highly statistically significant difference in the study group post DBT therapy at p-value (<0.001). This result was consistent with Ding, He, and Lu, et al., (2021) who found that non-drug interventions can reduce anxiety and depression scores. In addition, Cho, et al. (2021) observed that the experimental group, which participated in a logo-autobiography (LAC) intervention, exhibited less stress and depression than the control group.

The result of the present study showed that there was a highly statistically significant positive correlation between anxiety and post-traumatic stress and there was a highly statistically significant positive correlation between depression and post-traumatic stress (table 4). This might be due to increase in life stressors lead to increase in depression symptoms that increase level of anxiety and post-traumatic stress as well. This study result was consistent with [58] Johnson, Ebrahimi, and Hoffart, (2020) who found that having a higher level of anxiety, and depression symptoms were associated with more PTSD symptoms.

Regarding to relationship between daily expense and anxiety. The result of the current study revealed that there was a statistically significant relation between not enough daily expense anxiety at p- value 0.014 (table 5). This could be due lower economic status and higher living expenses needed may be directly associated with anxiety. This study result was consistent with Basheti, Mhaidat and Mhaidat (2021) who reported that low income levels were found to associate with high increase of anxiety score.

Regarding to relationship between students living with whom and depression. The result of the current study revealed that there was a highly statistically significant relation between with friends the students' lives and depression at p-value 0.001(table 5). This could be due to living with the family can protect the student from the negative psychological effects of covid-19, even the students are scared to transfer the infection to their family and relative but still they will be in need for their support and warmth. This study result was in the same line with Ugurlu, Degirmenci, Durgun and Ugur (2020) who found that the depression scores of the participants who were away from their families were significantly higher than the other participants.

Regarding to relationship between student's father job and depression. The result of the current study revealed that there was a statistically significant relation between students' father not working and depression at p-value 0.011 (table 5). This could be due to living with the family have instant work at least will give some type of support children may get depressed if they cannot live smoothly with father, he doesn't have fixed job. This result was in the same line with Yadav, et al. (2021) who reported that there was a statistically significant relation between students' father without work rather than worked and depression symptoms while there was no statistically significant association was found between any of the socio-demographic variables, including sex, religion, ethnicity, place of residence, staying partner, living arrangement. A previous study of Bangladeshi medical students also reported no significant relationship between socio-demographic variables and depression or anxiety.

Regarding to relationship between student's residence and post-traumatic stress. The result of the current study revealed that there was a statistically significant relation between students' living in urban residence and post-traumatic stress at p-value 0.048 (table 5). This could be due to living in urban areas expose the students to face so many stressors and different type of trauma and accidents may be daily which can affect their tolerance and response to stressors. This result was in the same line with Johnson et al., (2020) who reported that there was a statistically significant relation between health care workers' living in urban residence and post-traumatic stress at p-value 0.001 while contradicted with Yadav, et al., (2021) there was no statistically significant association was found between any of the socio-demographic variables, including sex, religion, ethnicity, place of residence and post-traumatic stress.

Regarding to relationship between student's father education and post-traumatic stress. The result of the current study revealed

that there was a statistically significant relation between students' father preparatory education and post-traumatic stress at p-value 0.035 (table 5). This could be due to the importance of the family to be educated as drive their children to the correct way and teach them how to deal and interact correctly with different daily and living stressors. The result of the present study was in the same line with the study conducted by Tiwari et al., 2021 who revealed that there was a statistically significant relation between students' father preparatory and secondary education and post-traumatic stress at p-value 0.001.

Regarding to relationship between areas of students training and anxiety. The result of the current study revealed that there was a statistically significant relation between intensive care unit training and anxiety at p value 0.017. This might be due to the complex nature of working in critical care, nurses in the ICU encounter more ethical dilemmas than general ward nurses. Nurses form bonds with patients and family members and develop a sense of being responsible for patients' outcomes. This result was consistent with Emami, et al., 2021 who found that nurses working in ICU undergo more anxiety compared to the nurses in other words, as they have various and numerous roles. They have the highest workload and are more involved in interventions and care, have more working hours by the patients' bed, and are in increased contact with the patients, compared to other health team members. Therefore, the effect of work- related stress on them is so high.

Regarding to relationship between areas of students training and depression. The result of the current study revealed that there was a statistically significant relation between maternity unit training and depression at p value 0.024. This might be due to Nurses working in units of maternity and newborn care could feel more stressful and depressed since they care for both mothers and their babies. Pregnant women are vulnerable to viral respiratory infections and at increased risk for adverse pregnancy outcomes, including preterm births, low birthweight and neonatal intensive care unit (NICU) admission due to these infectious diseases. Pregnancy and childbirth are significant life events. Before the pandemic, family-centered care for childbirth was emphasized. The result of the current study was in the same line with Kang, et al., 2021. They found that Participants nurses said that big changes had occurred in their lives, such as "stopping meetings with family or friends," "attending a church virtually" and "being very careful in all aspects of daily life." Participants' nurses expressed that they were gradually becoming depressed and very sensitive emotionally, and having a difficult time mentally, but there was no time to refresh them.

Anxiety, depression, and stress were linked to the students' age, level of COVID-19 awareness, and changes in future health behaviors. Mindfulness and cognitive changes were emphasized to regulate emotions by observing, describing, and participating without judgement, changing participants' cognitive styles, developing listening, expression, consultation, negotiation, and other communication skills, learning to control impulsive behavior and accept difficult life events during stress, reducing emotional vulnerability, and improving their negative emotional state. DBT group skills training include mindfulness skills, emotion regulation skills, distress tolerance skills, and interpersonal effectiveness skills. It emphasizes the application of cognitive changes and numerous behavioral therapy techniques combined with mindfulness skills to help students learn to maintain a balance between acceptance and change. So, this study is very important to apply.

Conclusion:

Dialectical behavior therapy - based intervention can effectively alleviate the anxiety, depression, and stress of the internship nursing students during epidemic prevention and control.

Recommendation:

DBT group therapy may be implemented in the future in school psychological counselling to help college students cope with unpleasant emotions. Furthermore, it can aid in the regulation of emotions and better satisfy the psychological demands of medical and nursing students as

well as college psychological counselling development needs.

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