Acceptance and Commitment Training (ACT) Program for Self-Compassion and Sleep Quality among Patients with Mental Illness

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Abstract

Background: Acceptance and Commitment therapy (ACT) is now widely acknowledged as a successful treatment strategy for improving psychological adaptability. Fostering self-compassion, and improving emotional regulation. **Aim:** was to evaluate the effect of an Acceptance and Commitment Training (ACT) program on self-compassion & sleep quality among patients with mental illness. **Methods:** A quasi-experimental design a convenience sample of 60 patients attending psychiatric outpatient clinics in Benha City, Egypt. **Tools for data collection**: data were collected using structured interview questionnaire**,** the Acceptance and Action Questionnaire (AAQ-II), Self-Compassion Scale (SCS), and Sleep Quality Scale (SQS).**Results:** Post-intervention analysis showed a significant improvement in psychological flexibility (AAQ-II), self-compassion levels ($\chi^2 = 20.55$, $p = 0.000$), and sleep quality ($\chi^2 = 20.03$, $p = 0.000$). Strong correlations were found post-intervention between psychological flexibility and self-compassion ($r = 0.927$, $p = 0.000$), and between AAQ and sleep quality ($r = -0.498$, $p = 0.005$). Significant changes were observed in AAQ levels among patients with bipolar disorder ($p = 0.028$) and in sleep quality among patients with anxiety and bipolar disorder ($p = 0.041$, $p = 0.029$, respectively). Male participants showed significant improvement in self-compassion ($p = 0.002$).**Conclusion:** the Acceptance and Commitment Therapy (ACT) program was found to be an effective intervention for improving self-compassion and sleep quality. Those with anxiety and bipolar disorder showed the most noticeable changes. **Recommendation:** incorporate Acceptance and Commitment Therapy (ACT) into standard mental health care practices, as it promoting emotional resilience, enhancing self-compassion, and improving overall psychological well-being.

Keywords: Acceptance and Commitment Therapy (ACT), Self-Compassion, Sleep Quality, Patients with Mental Illness

Introduction:

Mental illness affects millions of people worldwide, leading to significant emotional, cognitive, and physical challenges. Among the most common issues faced by individuals with mental illnesses such schizophrenia, bipolar disorder, anxiety, and depression are disturbances in sleep and difficulties with self-compassion. These challenges often create a vicious cycle—poor sleep can exacerbate mental health symptoms, and emotional distress can further impair sleep. Addressing both aspects simultaneously is essential to improving overall patient outcomes **(Tyrer et al.,2024).**

Anxiety, depression, bipolar disorder, and schizophrenia are four common mental health problems that have a substantial effect on a person's emotional and psychological wellbeing. Anxiety frequently interferes with day-to-day functioning and is typified by excessive worry, anxiety, and physical symptoms like a fast heartbeat. Depression is characterized by enduring melancholy, pessimism, and disinterest in once-enjoyed activities, which impairs focus and judgment. **(Cuijpers et al., 2020)**.

Sleep quality is significantly impacted in individuals with mental illness, with poor sleep often preceding, co-occurring with, and exacerbating mental health conditions. Studies show that patients with mental disorders frequently experience sleep disturbances like insomnia, delayed sleep onset, and reduced total sleep time. These sleep problems can further contribute to the severity of mental health symptoms and negatively impact overall functioning **(Lederman et al., 2018).**

One promising therapeutic approach to tackling these intertwined issues is the psychotherapy known as Acceptance

and Commitment Therapy (ACT) places a strong emphasis on psychological adaptability, mindfulness &value-driven action. ACT is designed to help individuals accept difficult emotions and thoughts, Make a commitment to behaviors that are consistent with one's principles and cultivate a more sympathetic relationship with oneself. This approach is effective in treating a range of mental health conditions, and it offers a unique opportunity to simultaneously improve sleep quality and self-compassion **(Hayes et al., 2022).**

Moreover, this program aims to integrate ACT principles with specific interventions targeting self-compassion and sleep hygiene in individuals with mental illness. By fostering greater self-acceptance, emotional regulation, and mindfulness, the ACT program seeks to reduce self-criticism, improve emotional well-being, and promote healthier sleep patterns. The core of this intervention is to help patients accept their experiences without judgment, engage in meaningful actions, and develop coping strategies for better managing anxiety, depression, and the sleep disruptions commonly associated with these conditions **(Matsuoka &Taku, 2023).**

Integrating therapeutic techniques for sleep quality and self-compassion within ACT framework program aspires to enhance psychological well-being, improve sleep quality, and ultimately contribute to better patient outcomes. The effectiveness of such a program may provide significant insights into integrated mental health care and offer a new pathway for improving the lives of patients struggling with both emotional distress and sleep disturbances **(Bauer &Reijnders, 2020).**

From the researchers' point of view, Self-compassion training, sleep quality enhancement, and

Acceptance and Commitment Therapy (ACT) combined offer a thorough and all-encompassing strategy for enhancing outcomes for patients. This program helps patients manage their mental health by fostering emotional regulation, reducing self-criticism, and promoting healthy sleep habits. By combining these strategies, Patients may see notable gains in their general quality of life, physical health, and mental stability.

Significance of the study

ACT has demonstrated promising results in enhancing psychological flexibility and alleviating the symptoms of mental health disorders. Combining ACT with targeted interventions to promote self-compassion and improve sleep hygiene, this study presents a novel therapeutic model. This dual-focus intervention could provide a more thorough method of treating mental health patients, addressing not only their emotional struggles but also their physical well-being through sleep improvement **(Aravind et al., 2024)**

Self-compassion is plays an critical role in foster resilience and emotional control, especially in people with mental health issues including schizophrenia, bipolar disorder, and despair and anxiety. Addressing low self-compassion using ACT-based therapies may improve patients' emotional regulation, lessen self-criticism, and promote a more positive self-relationship. Low self-compassion is associated with increased symptoms of various diseases. (**Germer& Neff, 2023)**.

Sleep disturbances are highly prevalent among patients with mental disorders, and poor sleep quality is known to exacerbate psychological symptoms. Enhancing sleep can result in stabilized mood, improved cognitive functioning, and better emotional regulation. Therefore, addressing sleep hygiene as part of

this intervention may lead to more effective and sustainable mental health outcome. This study could lead to more effective treatment strategies for sleep-related issues in patients with mental illness **(Harvey, 2021).**

Aim of the study:

This study aimed to evaluate the effect of the Acceptance and Commitment Training (ACT) program on self-compassion & sleep quality among patients with mental illness **This was achieved through** assessing levels of self-compassion and sleep quality, designing and implementing (ACT) program, and evaluating effect of the Acceptance and Commitment Training (ACT) program on self-compassion & sleep quality among patients with mental illness

Hypotheses

H1: Participation in the Acceptance and Commitment Therapy (ACT) program will lead to a statistically significant improvement in self-compassion among individuals with diagnosed mental health condition.

H2: Participation in the ACT intervention will result in a statistically significant improvement in sleep quality among individuals with mental health disorders.

H3: Higher levels of self-compassion will be significantly correlated with improved sleep quality score**.**

Subject and methods

Research design: A quasi-experimental research design (pre-/posttest) for one-group sampling was employed to accomplish the study's aim.

Setting:

The study was conducted at out patient's clinic at Benha Mental Health and Addiction Treatment Hospital, which operates under the supervision of the General Secretariat of Mental Health and Addiction Treatment, Ministry of Health and Population, Egypt, Qalyubia Governorate. The facility

comprises six outpatient clinics: two psychiatric clinics, one addiction clinic, one pediatric clinic, one epilepsy clinic, and one geriatric clinic. The geriatric clinic operates every Saturday and Tuesday from nine in the morning to two in the afternoon, offering senior citizen care with various mental illnesses, such as delirium, eating problems, anxiety disorders, depression, and various forms of dementia. The hospital is structured into 3 main buildings: one designated for female patients, one housing five departments for male patients, and a separate building serving as an addiction treatment center.

Subject:

A convenience sample of 60 patients diagnosed with a range of mental illnesses, such as bipolar disorder, schizophrenia, depression, and anxiety disorder who were going to follow-up consultations at mental health outpatient clinics. Inclusion criteria for participation were as follows: (1) age over 18 years, (2) absence of verbal communication impairments, (3) willingness to participate voluntarily, and (4) ability to engage consistently from the start of the study to its conclusion. Patients who exhibited uncooperative behavior or experienced a relapse during the study period were excluded.

Tools of data collection:

To achieve the aim of the study, the researchers used four tools to collect relevant required data, which included the following tools: -

Tool (1): Structured interview questionnaire

The researcher created this tool after conducting a thorough analysis of pertinent scientific literature. It was intended to evaluate patients' medical histories as well as their socio-demographic characteristics. Including age, sex, educational attainment, marital status,

occupation, income, and are all included in the socio-demographic part. The medical history section gathers information on the patient's clinical diagnosis, duration of illness, adherence to prescribed medical treatment, previous hospitalization and presence of any family history of psychiatric disorders.

Tool (2):The Acceptance and Action Questionnaire (AAQ-2)

The Acceptance and Action Questionnaire (AAQ-2) is a widely used tool for measuring psychological flexibility, developed by **Hayes et al. (2004)** and updated by **Bond et al. (2011).**The AAQ-2 is a **one-dimensional tool**, meaning it **does not contain subscales**.It contains seven items. **Response scale:** 5-point Likert scale1 = Never true2 = Rarely true3 =Sometimes true 4 = Often true5 = Always true. Overall psychological flexibility/inflexibility. It helps track how well individuals apply psychological flexibility skills in daily life and can be used weekly or biweekly to monitor progress. To score the AAQ-2, simply add up the responses—higher scores indicate less psychological flexibility (more avoidance and inflexibility), while lower scores reflect greater flexibility. Scores between 24-28 are associated with clinical symptoms such as depression or anxiety, but progress varies from person to person. It is intended as a personal tracking tool rather than a measure of perfection, allowing users to observe changes in their psychological flexibility over time.This scale was translated into Arabic and tested again by the investigator .

Score Range:

Low	**(7-21)**
Moderate	**(22-35)**
High	**(36-49)**

- **24-28**: This range is associated with **clinical symptoms** like **depression** or **anxiety**.

- **Below 24**: Suggests **better psychological flexibility** and less emotional avoidance.
- **Above 28**: Indicates **higher levels of inflexibility**, which may suggest greater psychological distress

Tool (3):Self-Compassion Scale (SCS)

This scale originally developed by Neff (2003) and subsequently adapted by the researcher, to assess the degree to which individuals exhibit self-compassion when facing experiences of inadequacy or emotional distress. It consists of 26 items, rated on a 3-point Likert scale, and is organized into six subscales three positive and three negative.

Positive subscales include:

- Self-kindness (5 items)
- Common humanity (4 items)
- Mindfulness (4 items)

Responses for positive items are scored as: **Never (1), Sometimes (2), Always (3)**.

Negative subscales include:

- Self-judgment (5 items)
- Isolation (4 items)
- Over-identification (4 items)

Responses for negative items are reverse scored: **Never (3), Sometimes (2), Always (1)**.

A higher total score reflects a higher level of self-compassion. This scale was translated into Arabic and tested again by the investigator .

Scoring System:

- **26 – 65 (< 50%)**: Low self-compassion
- **66 – 91 (50% – < 75%)**: Moderate self-compassion
- **92 – 130 (≥ 75% – 100%)**: High self-compassion

Tool (4): Sleep Quality Scale (SQS)

The 28-item SQS, developed by Yi et al. (2006), assesses six aspects of sleep quality: daytime symptoms, post-sleep restoration, difficulty falling and staying asleep, trouble waking, and sleep satisfaction.

Rating Respondents rate the frequency of specific sleep behaviors on a four-point Likert-type scale (0 = "few," 1 = "sometimes," 2 = "often," and 3 = "almost always"). Prior to being totaled, scores on questions related to criteria 2 and 5 (repair following sleep and contentment with sleep) are inverted. This scale was translated into Arabic and tested again by the investigator. Higher total scores indicate more severe sleep issues. Total scores can vary from 0 to 84.

Total Score	Sleep Quality Level
0 – 20	Excellent
21 – 40	Good
41 – 60	Fair
61 – 84	Poor

Methods

Preparation of tools:

This phase involved reviewing pertinent literature related to the research topic through books, articles, journals, and online resources. The goal was to obtain a comprehensive understanding of all relevant elements to properly plan the intervention program and the research instruments for gathering data.

Administrative approval:

The head of Benha Mental Health and Addiction Treatment Hospital in Benha City received official correspondence from the Faculty of Nursing. In addition to outlining the study's goals, these letters formally asked consent for the gathering of data and the involvement of patients in the study. **Pilot participants may become familiar with the study procedures, questionnaires, which can influence their responses if they were included again**

Ethical considerations:

The following were among the ethical research considerations:

Ethical approval was obtained from scientific research ethics

committee, No. 44, on 25 November 2024,the faculty of nursing, Helwan University, before beginning the study. Researchers clarified the objectives and aim of the study to the patients included in the study before starting and emphasized that all data collected was strictly confidential and the data would only be applied for scientific research. Prior to their inclusion in the study, the research participants gave their informed consent. Patients were made aware that they might opt out of the study at any moment and that they were free to decide whether or not to participate. Additionally, the patient is not harmed by the trial.

Content Validity:

Before starting, the data collection, instruments were translated into Arabic and back to English and tested for its face and content validity by A panel of five psychiatric health nursing specialists to determine its completeness, accuracy, consistency, and relevance and clarity of the questions. The instruments worked as intended.

Reliability of the tools:

All of the measurement tools used in this investigation showed excellent internal consistency. The 26-item Self-Compassion Scale (SCS) demonstrated outstanding reliability, with total Cronbach's alpha values ranging from 0.92 to 0.94. With Cronbach's alpha values ranging from 0.82 to 0.90, the 28-item Sleep Quality Scale also demonstrated very strong reliability, demonstrating consistent evaluation of multiple sleep parameters. Cronbach's alpha for the 7-item Acceptance and Action Questionnaire–II (AAQ-II), which measures psychological inflexibility, ranged from 0.78 to 0.88, indicating extremely strong internal consistency. These results attest to the validity of all three tools for use in the present study setting.

Pilot study:

Before starting the fieldwork, a pilot study was carried out on 10% (6

patients) of the sample. These patients were selected at random to determine the time required to complete the forms and to find any issues or barriers during data collection. As a result, the appropriate adjustments were made (changing some verbs & revised) were done then the final format was developed. Patients who participated in the pilot study were not included in the study's main sample.

Field work

The study was carried out from the beginning of December 2024 to the beginning of March 2025, duration of three months. There were four different stages to it. The first stage, the Assessment step, focused on obtaining baseline data to determine the key characteristics and needs of the participants. Based on the results of the assessment, the study instruments and intervention program were then developed during the Designing Phase. Data collection and program delivery occurred during the third phase, known as the Implementation Phase, which signified the intervention's actual use. Based on the information acquired during the study, the evaluation phase concluded with a review of the findings and an assessment of the intervention's efficacy.

Phase one: Assessment phase:

- The interview with the patients was conducted in a cozy, private setting. The researcher started data collection by orienting patients regarding the study's relevance, goal, and subject matter.

The patients' eligibility and baseline data (pre-test) were collected by the researchers, through individual interviews, which lasted between 30 to 40 minutes. These interviews took place from 10 AM to 1 PM, two days a week. During this phase, the researchers sought to collect the data required to evaluate participants' starting condition & identify their needs, establishing a

baseline for the intervention program. Additionally, the interviews provided an opportunity for the researchers to clarify any questions or concerns the patients may have had regarding the study

Phase two: Designing phase (Development of the program): The researchers developed the program content in the form of a comprehensive booklet, drawing on the findings from the assessment instruments and a careful analysis of pertinent literature. The Acceptance and Commitment Training (ACT) program was created especially to help individuals with mental illness sleep better and develop self-compassion. Both academic and practical sessions make up the program, and each one is thoughtfully designed to accomplish particular broad and focused goals.

General objectives of the program:

At the end of the implementation of the Acceptance and commitment training (ACT) program, patients with mental illness should be able to acquire knowledge and skills to improve their self-compassion and sleep quality.

Specific objectives of the program:

At the end of Acceptance and commitment training (ACT),the patients are expected to acquire both theoretical knowledge and practical skills related to:

-Theoretical knowledge about mental illness (Definition, signs, symptoms, causes, types, complications, treatment, benefits, and side effects of medication& importance of compliance to medications)

- Practice skills through his session focuses on building psychological flexibility through six core ACT processes: cognitive diffusion, acceptance, present-moment awareness, self-as-context, values, and committed action. Participants engage in mindfulness exercises like "Leaves on a Stream" to observe thoughts without

judgment and practice cognitive diffusion by labeling difficult thoughts with “I am having the thought that…” Through the "Acceptance Scale," they explore accepting uncomfortable emotions while pursuing meaningful actions. A "Values Clarification" exercise helps identify personal values, followed by "One Small Step," where participants commit to a value-based action. The session concludes with reflections on integrating these skills into daily life to foster long-term well-being and purpose.

Phase three: Implementation phase:

Eight sessions were used to implement the program: an introductory session with a pre-test was held in the first session, followed by two theoretical sessions, five practical sessions, and a final session that included a post-test and a recap of all the earlier sessions.

Six groups of nine to ten patients each were formed from the subjects. Each group participated in eight sessions, which lasted roughly thirty to forty-five minutes each and were held twice a week in the morning.

Weeks 1–2: Introduction to ACT principles, understanding self-compassion, and mindfulness techniques.

Weeks 3–4: Exploring sleep patterns and identifying barriers to sleep. Implementing mindfulness and relaxation techniques to improve sleep quality.

Weeks 5–6: Dealing with negative thoughts and emotions through diffusion and acceptance. Continuing to build self-compassion practices.

Weeks 7–8: Clarifying personal values, setting actionable goals, and integrating ACT techniques to maintain self-compassion and sleep hygiene.

Follow-up (optional): Regular check-ins or booster sessions to reinforce the skills learned and address any ongoing challenges.

Every session began with an overview of the previous one's contents. And the objectives of the new session were mentioned, taking into consideration using simple language to suit all patients.

Phase four: Evaluation phase (post/test):

Using the same tools as the pre-test, the post-test was conducted following program implementation. This was carried out following the program's deployment to assess the impact of Acceptance and Commitment Training (ACT).

Statistical analysis:

SPSS version 20 was utilized for the analysis of the data. While qualitative data were displayed as frequencies and percentages, descriptive statistics for numerical variables were reported as means ± standard deviation (SD) and ranges. Relationships between continuous variables were evaluated using the Friedman and Student's t-tests, while those between categorical variables were evaluated using the Chi-square test. To investigate the direction and degree of correlations between quantitative variables, Pearson's correlation analysis was used. Statistical significance was defined as a p-value of less than 0.05, and strong statistical significance was defined as a p-value of less than 0.001.

Results:

Table (1) shows that half of participants (50%) were aged between 30 < 50 yrs, with a Mean ±SD age of 43.05 ± 12.73 years. The sex distribution was relatively balanced, with a slight predominance of females (53.3%). Most participants had at least a secondary education (41.7%), and half were married (50%). Employment was reported by the majority (58.3%), and 65% indicated their monthly income was sufficient.

Table (2) presents a summary of medical history of participants with mental health conditions. Schizophrenia (33.3%) and depression (30.0%) are the most prevalent diagnoses, followed by

bipolar disorder (25.0%) and anxiety (11.7%), indicating a predominance of severe mood and psychotic disorders. Half of the participants have experienced their illness for 1–5 years, while a notable 33.3% have had symptoms for over 5 years, reflecting a significant proportion with chronic conditions. Encouragingly, 83.3% report adherence to prescribed medications, although 16.7% remain non-adherent, which may affect treatment outcomes. Hospitalization history is reported by 66.7% of the sample, suggesting substantial clinical severity or frequent relapses. Additionally, 35.0% have a family history of mental illness, indicating a potential genetic or familial component among a significant minority.

Figure 1 presents the distribution of AAQ categories (Low, Moderate, and High) before and after the intervention, indicating a statistically significant difference in AAQ categories post-intervention. Specifically, the data show that the percentage of individuals in the "Moderate" AAQ category decreased from 83.3% pre-intervention to 75.0% post-intervention, while the percentage of individuals in the "High" AAQ category increased from 5.0% to 13.3%. This suggests that the intervention led to a shift towards higher AAQ levels, reflecting an improvement in the outcomes measured by the AAQ. However, the "Low" category remained unchanged at 11.7% before and after the intervention.

Figure 2 illustrates the distribution of self-compassion levels before and after the intervention. A marked increase is observed in the proportion of participants in the high self-compassion category, rising from 5.0% pre-intervention to 21.7% post-intervention. This improvement is accompanied by a decrease in the moderate group (from 83.3% to 61.7%), indicating a positive upward shift in self-compassion levels.

Although there was a slight increase in the low category, the overall change was statistically significant (X^2 = 20.55, p = 0.000), suggesting that the intervention had a beneficial effect on enhancing participants' self-compassion.

Figure 3 visually demonstrates the distribution of sleep quality levels among participants before and after the intervention. A substantial improvement is evident, with the proportion of participants reporting excellent sleep quality increasing from 16.0% to 41.7%, and those in the good category rising from 25.0% to 33.4%. Conversely, poor sleep quality showed a notable decrease from 33.4% pre-intervention to just 8.3% post-intervention. These shifts, supported by a statistically significant result (X^2 = 20.03, p = 0.000), indicate a meaningful positive impact of the intervention on participants' sleep quality.

Table 3 presents the correlation analysis reveals several significant relationships among psychological flexibility (AAQ), self-compassion, and quality of sleep. Post-intervention, a strong positive correlation is found between AAQ and self-compassion (r = 0.927, p = 0.000), suggesting that greater psychological flexibility is associated with increased self-compassion. Additionally, a moderate negative correlation is observed between AAQ and quality of sleep post-intervention (r = -0.498, p = 0.005), indicating that improved psychological flexibility may correspond with better sleep quality. Similarly, self-compassion post-intervention is negatively correlated with quality of sleep (r = -0.378, p = 0.007), supporting the notion that higher self-compassion is linked with improved sleep. These findings underscore the interconnectedness of emotional regulation, self-kindness, and sleep, particularly after intervention efforts.

Table 4 shows the results of a Chi-square test comparing AAQ levels

(Low, Moderate, and High) before and after the intervention across four diagnoses. The intervention did not lead to significant changes in AAQ levels for Depression, Schizophrenia, and Anxiety, as indicated by the p-values (all above 0.05). However, for bipolar disorder, there was a statistically significant change (p = 0.028), with a noticeable shift towards more individuals in the "Moderate" AAQ level after the intervention. This suggests that the intervention had a positive impact on individuals with bipolar disorder.

Table 5 presents the results of a Chi-square test comparing the self-compassion levels (Low, Moderate, High) before and after the intervention, broken down by gender (Male and Female). For males, the intervention led to a highly statistically significant change in self-compassion levels (p = 0.002), with a slight shift in the distribution, particularly a decrease in the percentage of males in the "Low" self-compassion category. For females, however, the Chi-square results show no significant changes (p = -0.293), indicating that the intervention did not have a notable effect on the self-compassion levels for females.

Table 6 displays the distribution of self-compassion levels (Low, Moderate, High) before and after the intervention across four diagnoses: Depression, Schizophrenia, Bipolar Disorder, and Anxiety. The Chi-square test results show that there were no statistically significant changes in self-compassion levels for three of the diagnoses, as all p-values are above 0.05 (Schizophrenia: 0.318, bipolar disorder: 0.175, and Anxiety: 0.119). But there is statistically significant changes in Depression by (0.014). While the data show some shifts in the percentage of individuals in different self-compassion categories (e.g., an increase in the "Low" self-compassion group for Depression and Schizophrenia post-intervention), these changes are

statistically significant. This suggests that the intervention led to substantial changes in self-compassion across depression conditions.

Table 7 presents the distribution of self-compassion levels (Low, Moderate, and High) for individuals who responded "Yes" and "No" to a certain factor, with data collected before and after the intervention. The Chi-square test results show no statistically significant changes in self-compassion levels for either group, as the p-values are above the 0.05 threshold ($p = 0.243$ and $p = 0.725$). Although there is an increase in the percentage of individuals in the "Low" self-compassion category post-intervention for the "Yes" group and a slight decrease in the "Moderate" group, these changes are not statistically significant. This indicates that the intervention did not lead to significant changes in self-compassion levels for the "Yes" and "No" groups.

Table 8 presents the distribution of sleep quality (Poor, Fair, Good, and Excellent) before and after the intervention for individuals with different diagnoses (Depression, Schizophrenia, Bipolar Disorder, and Anxiety). The Chi-square test results show that there were statistically significant changes in sleep quality for bipolar disorder and anxiety (p-values 0.029 and 0.041respectively), suggesting the intervention has a significant effect on sleep patterns in these groups. However, in addition, the data show some shifts in sleep categories (e.g., an increase in the number of individuals reporting "Good" and "Excellent" sleep post-intervention for Anxiety), these changes are statistically significant. Overall, the intervention led to significant improvements in sleep quality across the different diagnoses.

Table (1):Distribution of the studied Patients with Mental Illness about their socio-demographic data (n=60).

Socio demographic data	No	(%)
Age Group		
18<30	12	20.0
30<50	30	**50.0**
50+	18	30.0
		Mean±SD 43.05 ± 12.73
Sex		
Male	28	46.7
Female	32	**53.3**
Education		
Illiterate	5	8.3
Primary education	10	16.7
Secondary education	25	**41.7**
Higher education	20	33.3
Marital Status		
Single	22	36.7
Married	30	**50.0**
Divorced/Widowed	8	13.3
Occupation		
Unemployed	15	25.0
Employed	35	**58.3**
Retired	10	16.7
Monthly income		
Enough	39	**65.0**
Not enough	21	35.0

Table (2): Distribution of the studied Patients with Mental Illness regarding their medical history (n=60).

Medical history	No	(%)
Diagnosis		
Depression	18	30.0
Schizophrenia	20	**33.3**
Bipolar Disorder	15	25.0
Anxiety	7	11.7
Duration of Illness		
<1 year	10	16.7
1-5 years	30	**50.0**
5+ years	20	33.3
Medication adherence		
Yes	50	**83.3**
No	10	16.7
Previous Hospitalization		
Yes	40	**66.7**
No	20	33.3
Family History of Illness		
Yes	21	35.0
No	39	**65.0**

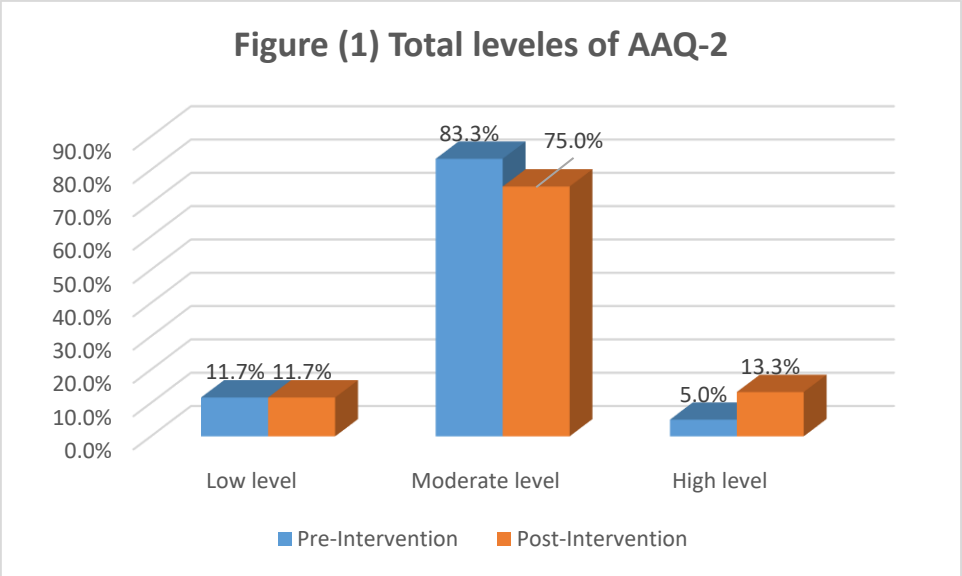
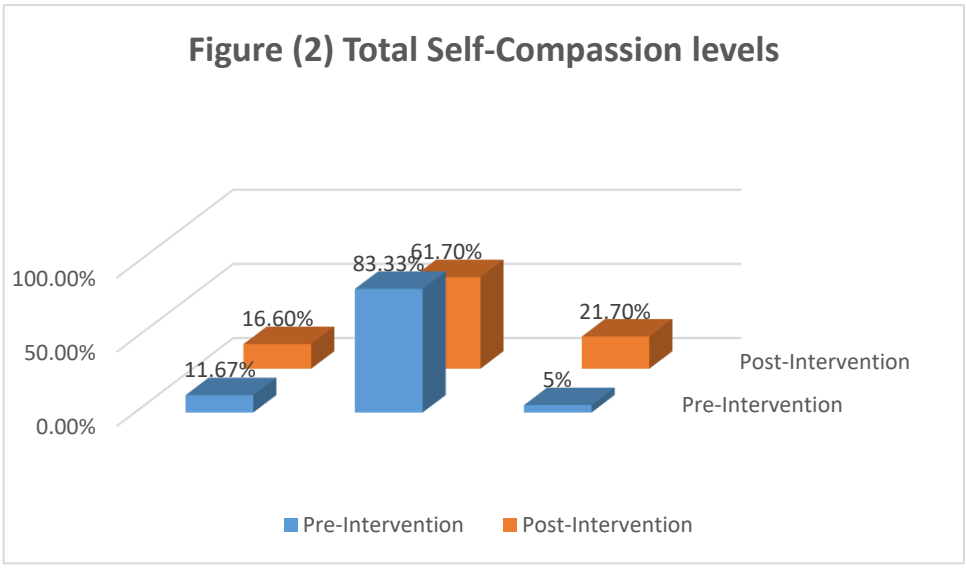
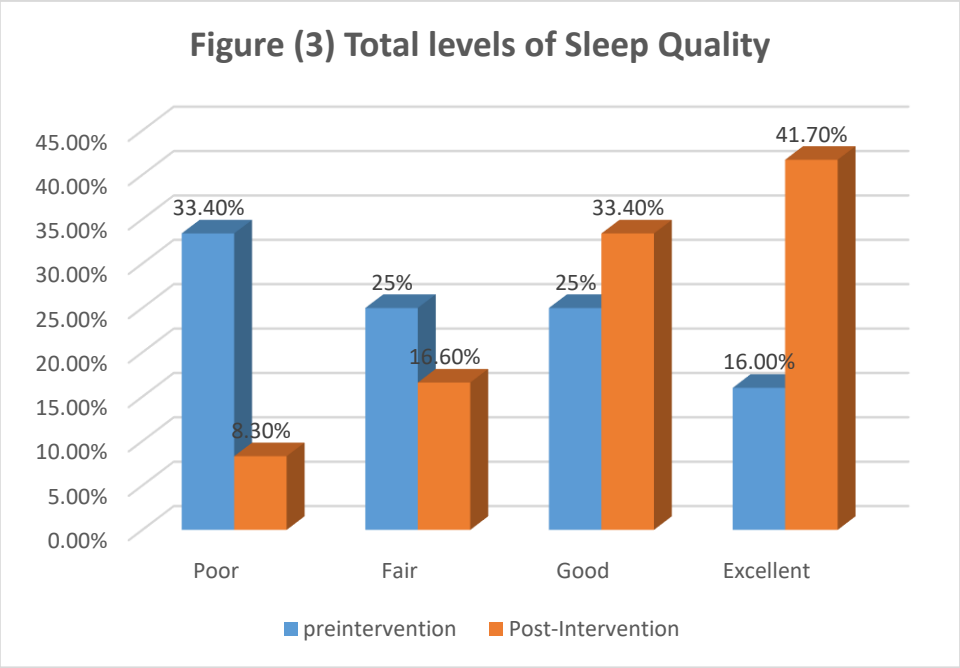


Figure (1):- Comparison between Total levels of the Acceptance and Action Questionnaire (AAQ-2) Scores among the patients studied (Pre & Post ACT program) (n=60).



Figure(2): Comparison between total Self-Compassion Scale (SQS) levels among the patients studied (Pre- & Post ACT Program) (n=60).



Figure(3): Comparison between Total levels of Sleep Quality Scale (SQS) among the patients studied (Pre & Post ACT program) (n=60).

Table (3): Correlation between total patients' AAQ, Self-Compassion, and Sleep Quality among Patients with Mental Illness (Pre &Post-ACT program) (n=60)

Variables		Total self-compassion		Total quality of sleep	
		Pre	Post	Pre	Post
Total AAQ	**r** **p**	2.06 0.725	0.927 0.000**	4.97 0.290	-0.498 0.005* *
Total quality of sleep	**r** **p**	1.94 0.747	-0.378 0.007*		
Total self-compassion	**r** **p**			1.94 0.747	-0.378 0.007* *

r= correlation coefficient test. P= p-value **highly significant at p ‹ 0.001.

Table (4): Relation between AAQ Level and Diagnosis in medical history among Patients with Mental Illness (Pre- & Post ACT Program) (n=60)

Diagnosis	AAQ Level	Pre-Intervention		Post-Intervention		Chi-square test	
		No	(%)	No	(%)	r^2	p-value
Depression	Low	3	37.5%	2	28.6%	8.811[a]	0.358
	Moderate	12	26.7%	15	30.0%		
	High	3	42.9%	1	33.3%		
Schizophrenia	Low	2	25.0%	2	28.6%	3.530[a]	0.171
	Moderate	15	33.3%	17	34.0%		
	High	3	42.9%	1	33.3%		
Bipolar Disorder	Low	1	12.5%	1	14.3%	10.859[a]	0.028*
	Moderate	12	26.7%	18	36.0%		
	High	2	28.6%	1	33.3%		
Anxiety	Low	2	25.0%	2	28.6%	3.787[a]	0.436
	Moderate	6	13.3%	0	0.0%		
	High	0	0.0%	0	0.0%		

*statistically significant at p<0.05.

Table (5): Relation between Self-Compassion Level and sex among Patients with Mental Illness (Pre- & Post ACT Program) (n=60)

Sex	Self-Compassion Level	Pre Intervention		Post-Intervention		Chi-square test	
		No	(%)	No	(%)	r 2	p-value
Male	Low (7-21)	3	37.5	2	28.6		
	Moderate (22-35)	20	44.4	22	44.0	**12.138[a]**	**0.002***
	High (36-49)	2	28.6	1	33.3		
Female	Low (7-21)	5	62.5	5	71.4		
	Moderate (22-35)	25	55.6	28	56.0	**-.293****	**0.293**
	High (36-49)	5	71.4	2	66.7		

(**) highly statistically significant at p<0.001.

Table (6): Relation between Self-Compassion Level and Diagnosis in medical history among Patients with Mental Illness (Pre- & Post ACT Program) (n=60)

Self-Compassion Level		Depression		Schizophrenia		Bipolar Disorder		Anxiety	
		No	%	No	%	No	%	No	%
Low (7-21)	pre	3	5	2	3.3	1	1.6	2	3.3
	post	7	11.6	11	18.3	6	10	4	6.6
Moderate (22-35)	pre	12	20	15	25	12	20	6	10
	post	10	16.6	9	15	8	13.3	4	6.6
High (36-49)	pre	3	5	3	5	2	3.3	0	0
	post	1	1.6	0	0	1	1.6	0	0
Chi-square	r 2	1.571[a]		2.291[a]		1.839[a]		2.426[a]	
	p-value	0.014*		0 .318		0.175		0.119	

*statistically significant at p<0.05.

Table (7): Relation between Self-Compassion Level and Medication adherence in medical history among Patients with Mental Illness (Pre- & Post ACT Program) (n=60)

Self-Compassion Level		Yes		No	
		No	%	No	%
Low (7-21)	pre	6	10.0	1	1.7
	post	25	41.7	3	5.0
Moderate (22-35)	pre	38	63.3	7	11.7
	post	20	33.3	5	8.3
High (36-49)	pre	6	10.0	2	3.3
	post	5	8.3	2	3.3
Chi-square test	r 2	1.362		3.643	
	p-value	.243		.725	

Table (8): Relation between Sleep Quality and Diagnosis in medical history among Patients with Mental Illness (Pre- & Post ACT Program) (n=60)

Diagnosis		Poor Sleep		Fair Sleep		Good Sleep		Excellent Sleep		Chi-square test	
		No	%	No	%	No	%	No	%	r 2	p-value
Depression	Pre	5	8.3	4	6.7	5	8.3	4	6.7	.164	.085
	Post	2	3.3	2	3.3	7	11.7	7	11.7		
Schizophrenia	Pre	6	10.0	3	5.0	6	10.0	5	8.3	.717	.099
	Post	3	5.0	2	3.3	7	11.7	8	13.3		
Bipolar Disorder	Pre	5	8.3	5	8.3	3	5.0	2	3.3	.717[a]	.029*
	Post	2	3.3	3	5.0	5	8.3	5	8.3		
Anxiety	Pre	4	6.7	3	5.0	1	1.7	0	0.0	3.522[a]	.041*
	Post	0	0.0	1	1.7	5	8.3	1	1.7		

*statistically significant at p<0.05.

Discussion

The psychotherapeutic practice known as acceptance and commitment therapy (ACT) is founded on the ideas of cognitive-behavioral therapy (CBT). ACT's main components are, in short, (1) accepting all thoughts and feelings as mental processes without acting them out (e.g., grief, rage, disappointment). "Experiential avoidance" is the antithesis of accepting unpleasant thoughts and feelings; (2) determining one's core values, or what matters in life, and being dedicated to these values and associated behavior; (3) "focusing my behavior to achieve values equals to be committed both to the values and related behavior" (commitment); and (4) "ACT is both the acronym of the intervention and the chief focus on doing, being active, and behaving

actively to move toward my core values". **(Harris, 2019)**.Researchers aimed to evaluate the effect of the Acceptance and Commitment Training (ACT) program on self-compassion and sleep quality among patients with mental illness

The study's findings indicate that half of the participants were between the ages of 30 and 50, with a mean age of 43.05 ± 12.73 years. The sex distribution was relatively balanced, with a slight predominance of females. Most participants had at least a secondary education, and half were married. It may be due to this age group is often at higher risk of experiencing cumulative life stressors such as job instability, caregiving responsibilities, and health concerns, which can exacerbate mental health symptoms. Which could all result in mental health issues, and the observed prevalence of mental illness was higher among females than males. These findings are secured by **Zakiei et al., (2021),** reported a similar average age in their study population. This observation contradicts with **Wang et al., (2024)** they discovered that men made up more than two thirds of their study participants.

As regards occupation, most of them were employed and indicated their monthly income was sufficient. These characteristics suggest a relatively mature and socioeconomically stable study population. According to the researcher, this might be because a larger percentage of the study samples are married and have more obligations, thus having a job and being financially stable can provide them a sense of security. This contradicts the findings of **Jin et al. (2020)**, discovered that a greater proportion of the study samples were low-income and unemployed.

According to the current survey reveals that schizophrenia and depression were the most common diagnoses, followed by bipolar

disorders and anxiety disorders. Depression and Anxiety are among the most common mental health disorders affecting older adults. This finding similar with the study conducted by **Chen et al., (2022)** found that in their study according to patients with various mental disorders were distributed as follows: the majority of patients had schizophrenia, making up over half of the total, followed by bipolar disorder, depressive disorder, and anxiety disorder.

The current study shows that half of the participants had experienced their illness for 1–5 years, and one-third had a duration exceeding five years. The majority were receiving medication, and nearly two-thirds reported previous psychiatric hospitalization, indicating a substantial history of treatment and clinical care. This result is consistent with **Al Hathloul et al., (2016),**the researchers found that participants summarize their awareness about diagnosis, drug therapy, and a majority of them experienced their illness for less than 11 years and have had previous hospitalization more than once.

The data in the present study shows that over one-third of participants reported a family history of mental illness, suggesting a potential genetic or familial component among a subset of the sample. This finding agrees with **Jin et al., (2020)** who reported that most of the study subjects had family history of psychiatric disorder.

The distribution of AAQ categories (Low, Moderate, and High) prior to and following the intervention is shown in the current study. This reveals that there was a statistically significant change in the AAQ categories after the intervention. From the perspective of the researcher one important factor of importance in acceptance and commitment treatment is psychological flexibility, which

could be because Unpleasant ideas and feelings can be accepted as temporary mental processes without acting out or interpreting them as absolute realities. This is known as experiential avoidance or giving up unpleasant thoughts and feelings in order to escape interior experiences. Also, a higher level indicates that the intervention was likely effective in lowering psychological distress or inflexibility. These results highlight the potential success of the intervention.

The main findings of this study were that, in comparison to an active control condition, an eight-week acceptance and commitment therapy (ACT) group intervention improved experiential avoidance, sleep quality, dysfunctional beliefs and attitudes about sleep, acceptance of sleep problems, and difficulties in emotion regulation among a sample of people with insomnia. These results are comparable to those of a study conducted by **Zakiei et al. in 2021**.

Moreover, this resultis congruent with **Büyüköksüz, (2025)** stated that Acceptance and Commitment Therapy (ACT) fosters psychological flexibility, enabling individuals to accept disturbing ideas and physical feelings without avoiding them while acting in a way that is consistent with one's ideals.

The present study illustrates the distribution of self-compassion levels before and after the intervention. A marked increase is observed in the proportion of participants in the high self-compassion category; the overall change was statistically significant ($X^2 = 20.55$, $p = 0.000$), suggesting that the intervention had a beneficial effect on enhancing participants' self-compassion. It may be due to Self-compassion; encourages self-kindness, awareness, and a sense of common humanity, which helps lessen emotional pain, self-criticism, and unhealthy coping strategies.

This finding, supported by **Büyüköksüz, (2025),** discovered that empirical studies demonstrate the effectiveness of self-compassion and ACT therapies in lowering anxiety, sadness, and symptom distress as well as functional impairment in people with psychosomatic disorders and chronic pain. These methods reduce psychological suffering and improve general well-being by incorporating mindfulness, acceptance, and compassion-based techniques. The results provide a comprehensive and long-lasting approach to mental and physical health, highlighting the need of moving away from symptom removal and toward value-driven living.

The current study demonstrates the distribution of sleep quality levels among participants before and after the intervention. A substantial improvement is evident, with the proportion of participants reporting excellent and good sleep quality increasing. Conversely, poor sleep quality showed a notable decrease in post-intervention. These shifts, supported by a statistically significant result ($X^2 = 20.03$, $p = 0.000$). From the researchers' viewpoint of this indicates a meaningful positive impact of the intervention on participants' sleep quality, where sleep hygiene education: Improving sleep hygiene is often the first step in treating sleep disorders. This includes establishing a peaceful sleeping environment, sticking to a regular sleep schedule, and avoiding stimulants like caffeine just before bed. Educating individuals about the importance of good sleep practices can lead to significant improvements in sleep quality.

This conclusion is consistent with that of **Salari et al. (2020),** discovered that ACT may be useful in enhancing the quality of sleep for individuals suffering from primary

insomnia, with statistically significant results.

The current study shows the correlations between total experiential avoidance (AAQ), self-compassion, before and after the intervention. Post-intervention, a significant strong negative correlation was observed between AAQ scores and self-compassion ($r = 0.927$, $p = 0.000$). It may be due to strengthening self-compassion associated with decreasing experiential avoidance. This finding is consistent with that of Farr et al. (2021), who noted that the relationship between early humiliating experiences and depressive symptoms was found to be mediated by experiential avoidance. Self-compassion was found to attenuate this mediating association, and across all experiential avoidance levels (low, medium, and high), higher levels of self-compassion were linked to lower levels of depressive symptoms.

Additionally, AAQ scores and sleep quality ($r = -0.498$, $p = 0.005$), suggesting that greater experiential avoidance was associated with poorer sleep. Improvements in sleep and cognitive-emotional processing were linked to reduced experiential avoidance. Consistent with this, **Zakiei et al. (2021)** argued that improvements in sleep quality, dysfunctional sleep beliefs, sleep acceptance, and emotion regulation should be associated with decreased experiential avoidance at the study's conclusion.

Moreover, between self-compassion and sleep quality ($r = -0.378$, $p = 0.007$), indicating that higher self-compassion was associated with better sleep. This aligns with **Wang et al., (2024)** findings of significant negative relationships between depression, sleep quality, coping style, and self-compassion; suggesting self-compassion may contribute to

improved sleep and reduced depression.

Also, These results are consistent with According to **Semenchuk et al., (2021)**, there was a negative correlation between self-compassion and poor sleep quality ($r=-0.34$, $p<0.001$). Consequently, those who were self-compassionate slept better (as shown by a lower PSQI score).

The current study's findings indicated that no notable alterations had occurred. in AAQ levels for Depression, Schizophrenia, and Anxiety, as indicated by the p-values (all above 0.05), post program intervention. It may be due to AAQ incrementally predicts anxiety symptoms over neuroticism and impairment. As **Broman- Fulks et al., (2021)** proven that AAQ-II scores are a better predictor of anxiety disorder symptom variance than neuroticism, affect, disability, and life satisfaction.

However, for bipolar disorder, he intervention significantly ($p = 0.028$) shifted participants toward "Moderate" AAQ levels, suggesting a beneficial effect on individuals with bipolar disorder. Researchers attribute this to the intervention's use of values-based behavior, mindfulness, psychoeducation, and cognitive diffusion. This aligns with previous research, as **Pankowski et al. (2017**) noted that acceptance and commitment therapy (ACT) has been shown to reduce disability in various chronic illnesses. The findings suggest ACT may benefit bipolar disorder with co-occurring anxiety, with participants reporting improvements across all outcome measures post-therapy.

Moreover, these findings were in harmony with the study conducted by **El-Sayed et al.,(2023),** observed that there was a statistically significant decline in the mean scores of psychological inflexibilities among the clients with bipolar

disorder posttest measurement and post-two-month follow-up

The present study observed that the intervention led to a highly statistically significant change in self-compassion levels for males ($p = 0.002$). This suggests that the intervention was more effective in increasing self-compassion among males than females. This finding contradicts**Liet al., (2024),** discovered that Results suggest self-compassion is an important psychological construct with diverse mental health benefits for females, whereas for males, a lack of attachment to either response styles linked with better psychological outcomes.

The current result displayed the distribution of self-compassion levels before and after the intervention across four diagnoses: Depression, Schizophrenia, Bipolar Disorder, and Anxiety. There are statistically significant changes in Depression by (0.014). From the researcher's perspective, higher levels of self-compassion were associated with less depression, anxiety, and psychological distress. There is a large body of psychological research that shows self-compassion and self-love do have a strong impact on our mental health and our emotional state, both in terms of decreasing anxiety, depression, anger, and loneliness, and increasing support and encouragement for ourselves.

This was supported by the results of **Anthes&Dreisoerner, (2024)** Self-compassion positively influences mental health through changes in psychological coping, changes in perception, emotion, self-concept, and thoughts, which positively influence each other.

Also, this result is similar to **Underwood et al., (2024),** emphasized that Values clarification, as well as mindfulness- and acceptance-based interventions, were met with gains in quality-of-life

scores and decreases in worry scores as treatment progressed. Additionally, self-compassion interventions were implemented to address pervasive self-criticism and feelings of low self-worth. These results provide support for using ACT and self-compassion interventions for anxiety and co-occurring depression with a Queer, Hispanic woman.

The current study presents the distribution of self-compassion levels for individuals who responded "Yes" and "No" to medication adherence, with data collected before and after the intervention. The Chi-square test results show no statistically significant changes in self-compassion levels for either group, as the p-values are above the 0.05 threshold (p = 0.243 and p = 0.725).. This indicates that the intervention did not lead to significant changes in self-compassion levels for the "Yes" and "No" groups.

This finding is incongruent with **Sirois & Hirsch (2018),** stated that overall, findings demonstrate that dispositional self-compassion is associated with better medical adherence among people with fibromyalgia, chronic fatigue syndrome, and cancer, due in part to lower stress. Moreover, these results also disagree with **Uzer-Kremers et al., (2020)** reported that the results of their study suggest that higher levels of self-compassion are associated with higher levels of treatment adherence in patients with schizophrenia.

The present study demonstrates the distribution of sleep quality before and after the intervention for individuals with different diagnoses (Depression, Schizophrenia, Bipolar Disorder, and Anxiety). The Chi-square test results showed that there were statistically significant changes in sleep quality for bipolar disorder and anxiety (p-values 0.029, 0.041, respectively). Suggesting the

intervention has a significant effect on sleep patterns in these groups. Sleep disturbance is a core symptom of bipolar disorder, so promoting healthy sleep habits and providing appropriate treatment for sleep disturbance can lead to significant improvements in mental health, ultimately enhancing overall quality of life. For those struggling with sleep disturbances and mental health issues, seeking help is a vital step toward recovery and well-being.

Our findings align with **Scott et al. (2021)**, reported a dose-response relationship between improved mental health and sleep quality. This suggests a causal link between mental health issues and sleep, a conclusion supported by **Adam (2024)** regarding the significant correlation between sleep disturbances and mental health. Understanding this relationship is vital for developing effective interventions and treatment strategies for both patients and healthcare providers.

Conclusion

This study confirmed The effectiveness of the Acceptance and Commitment Training (ACT) program in significantly enhancing self-compassion and sleep quality among individuals with various psychiatric disorders. The intervention led to substantial improvements in psychological flexibility, with strong post-intervention correlations observed between psychological flexibility, self-compassion, and sleep quality. Notably, patients with bipolar disorder and anxiety demonstrated significant improvements in sleep quality, while individuals with depression experienced considerable gains in self-compassion. Overall, the results underscore the value of ACT as a comprehensive therapeutic strategy that promotes emotional regulation, alleviates psychological distress, and supports overall mental

well-being in patients facing psychiatric challenges.

Recommendations:-

- ACT programs should be integrated into routine psychiatric care in outpatient settings to promote self-compassion and improve sleep hygiene, especially among patients with mood and anxiety disorders.

- Since ACT had a more pronounced effect in males and individuals with specific diagnoses (e.g., bipolar disorder and anxiety), future interventions may benefit from tailoring program elements to patient demographics and diagnostic categories.

- Mental health practitioners should be trained in ACT principles and techniques to ensure effective delivery and sustainability of the intervention.

- Further longitudinal research is recommended to assess the durability of ACT's effects on psychological flexibility, self-compassion, and sleep quality over time.

References

- **Adam, H. (2024):** Impact of Sleep Disorders on Mental Health. J Sleep Disorder & Therapy. Volume 13, Issue 10, p.597.
- **Al Hathloul, A., Al Jafer, M.& Al Fraih, I. (2016):** Psychiatric patients' awareness of their illnesses and medications, Neurosciences (Riyadh);21(1):37–42.
- **Anthes, L. &Dreisoerner, A. (2024):** Self-compassion and mental health: a systematic review and transactional model on mechanisms of change, available at https://www.researchgate.net/publication/383867423

- **Aravind, A., Agarwal, M., Malhotra, S., & Ayyub, S.(2024) .** Effectiveness of Acceptance and Commitment Therapy on Mental Health Issues: A Systematic Review,Ann Neurosci. 2024 Dec 18:09727531241300741. Online ahead of print. doi: 10.1177/09727531241300741.
- **Bauer, J. E., &Reijnders, M. (2020):** The role of sleep in mental health: A review of treatment strategies for improving sleep in those with anxiety and depression. Journal of Psychiatric Research, 132, 51-60.
- **Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., Waltz, T., &Zettle, R. D. (2011):** Preliminary psychometric properties of the Acceptance and Action Questionnaire – II: A revised measure of psychological inflexibility and experiential avoidance. Behavior Therapy, 42, 676–688.
- **Broman- Fulks,J.Hall,C., Kelso, K. &Kunder, C. (2021):** Incremental validity of the AAQ-II for anxiety disorder symptomology, Journal of Contextual Behavioral Science,Volume 22, Pages 77-86.
- **Büyüköksüz, E. (2025):**Acceptance and Self-Compassion: Mind-Body Approaches to Psychosomatic Disorders. Available at https://www.intechopen.com/online-first/1218218.
- **Chen, L. Wang, G. & Dai, Z. (2022).** Retrospective Analysis of Mental Disorder Patients with "Combination of Medical Care and Nursing Care". Open Journal of Social Sciences, Vol 10 No.6,pp: 463-469.
- **Cuijpers, P., Karyotaki, E., Weitz, E., Andersson, G., &Van**

Straten, A. (2020). Psychotherapy for depression in adults: A meta-analysis of randomized controlled trials. Journal of Affective Disorders, 278, 82-94.

- **El-Sayed, M., AbdElhay, E, Taha, S, Khedr,M., Mansour, F., & El-Ashr, A. (2023):** Efficacy of acceptance and commitment therapy on impulsive and suicidality among clients with bipolar disorders: a randomized control trial, BMC Nurs,. 17; 22(1),P :271.
- **Farr, J., Ononaiye, M. & Irons, C. (2021):** Early shaming experiences and psychological distress: The role of experiential avoidance and self-compassion, Psychology and Psychotherapy Theory Research and Practice, 94(2),PP 1-21.
- **Germer, C. K., & Neff, K. D. (2023):** Self-compassion in clinical practice. Journal of Clinical Psychology, 69(8), 856-867.
- **Harris, R. (2019):** ACT Made Simple: An Easy-to-Read Primer on Acceptance and Commitment Therapy. New Harbinger Press; Oakland, CA, USA: 2019.
- **Harvey, A. G. (2021).** Prevention of sleep disturbances in mental health: A case for early intervention. Behavior Research and Therapy, 49(1), 1-13.
- **Hayes, S. C., Strosahl, K. D., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., Polusny, M. A., Dykstra, T. A., Batten, S. V., Bergan, J., Stewart, S. H., Zvolensky, M. J., Eifert, G. H., Bond, F. W., Forsyth, J. P., Karekla, M., & McCurry, S. M. (2004):** Measuring experiential avoidance: A preliminary test of a working model. The Psychological Record, 54, 553-578.
- **Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2022).** Acceptance and commitment

therapy: The process and practice of mindful change (2nd ed.). The Guilford Press.

- **Jin, Y., Zhang ,Y., Zhang, Q ., Rao, W., Cui, L., Li, J., Ungvari. G, Jackson, T. & Xiang,Y. (2020):**Prevalence and Socio-Demographic Correlates of Poor Mental Health Among Older Adults in Agricultural Areas of China, Front Psychiatry. 5;11: 549148.
- **Lederman, O., Ward, P. B., Firth, J., Maloney, C., Carney, R., Vancampfort, D., Stubbs, B., Kalucy, M., & Rosenbaum, S. (2018).** Does exercise improve sleep quality in individuals with mental illness? A systematic review and meta-analysis. Journal of psychiatric research. Advance online publication. https://doi.org/10.1016/j.jpsychires.2018.11.004
- **Li, W.,Beath, A., Ciarrochi, J., & Fraser, M. (2024):** Gender based adolescent self-compassion profiles and the mediating role of nonattachment on psychological well-being, Volume 43, pages 9176–9190.
- **Matsuoka, H., &Taku, K. (2023):** Effects of self-compassion on the mental health of individuals with mental illness. Journal of Contextual Behavioral Science, 8, 126-133.
- **Neff, K. D. (2003).** The development and validation of a scale to measure self-compassion. Self and Identity, 2(3), 223–250. https://doi.org/10.1080/15298860309027
- **Pankowski, S., Adler, M, Andersson, G., Lindefors, N.,&Svanborg, C (2017):** Group acceptance and commitment therapy (ACT) for bipolar disorder and co-existing anxiety – an open pilot study. Cognitive Behavior Therapy, Volume 46, Issue 2,pp 114-128.

- **Salari, N., Khazaie,H., Hosseinian-Far, A., Ghasemi, H, Mohammadi,M, & Shohaimi,S. (2020):** The effect of acceptance and commitment therapy on insomnia and sleep quality: A systematic reviewBMCNeurol, 13;20, p:300.
- **Scott, A., Webb, T James, M., Rowse, G. & Weich , S.(2021):** Improving sleep quality leads to better mental health: A meta-analysis of randomized controlled trials, Sleep Med Rev, 60:101556.
- **Semenchuk, B., Onchulenko,S., and Strachan,S. (2021):** Self-compassion and sleep quality: Examining the mediating role of taking a proactive health focus and cognitive emotional regulation strategies, Journal of Health Psychology1-11.
- **Sirois, F. & Hirsch, J. (2018):** Self-Compassion and Adherence in Five Medical Samples: the Role of Stress Mindfulness (N Y). 10; 10(1), pp46–54.
- **Tyrer, P., Luntamo, M., &Korszun, A. (2024).** The impact of sleep disturbances on mental health: Exploring the relationship in clinical populations. Journal of Affective Disorders, 275, 95-103.
- **Underwood,S., White, S. & Forsyth, J. (2024):** Acceptance and Commitment Therapy (ACT) and Self-Compassion for Generalized Anxiety Disorder and Comorbid Major Depressive Disorder: A Case Study, Sage Journal, Volume 23, Issue 6, PP:1-11.
- **Uzer-Kremers, L., Bralet, M.,&Angerville, B. (2020):** Is self-compassion linked to treatment adherence in schizophrenia?Schizophrenia Research, Volume 222, Pages 493-495
- **Wang, Y., Fu, T., Wang, J., Chen, S. & Sun., G (2024):** The

relationship between self-compassion, coping style, sleep quality, and depression among college students, Front Psychol,7;15:1378181.

- **Yi, H., Shin, K., & Shin, C. (2006).** Development of the sleep quality scale. Journal of Sleep Research,15 (3), 309–316.
- **Zakiei, A., Khazaie , H., Rostampour, M., Lemola, S., Esmaeili, M., Dürsteler, K. & Brand,S. (2021)** .Acceptance and Commitment Therapy (ACT) Improves Sleep Quality, Experiential Avoidance, and Emotion Regulation in Individuals with Insomnia—Results from a Randomized Interventional Study. National center for Biotechnology information, 9;11(2):133.