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Review Article

Scales and Interventions for Resilience among Treatment-Seeking Patients with Depression: A Systematic Review

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Abstract
Introduction: Resilience is an ability of an individual to effectively adjust and thrive in adverse stressful conditions. Resilience has protective and compensatory effects against depression. Evaluating resilience clinically and modifying it among patients with depression hugely impacts their prognosis. We aimed to explore different clinical scales for measuring resilience as well as interventions used with an intent to improve resilience among patients with depression.
Methods: A systematic literature review was conducted by searching PubMed central, Biomed central, and google scholar, using relevant MeSH keywords. The population of interest were the patients who were clinically diagnosed with Bipolar or Unipolar Depression and the population were not restricted to any country. Clinical scales for evaluation and interventions for resilience among patients with depression were set as an outcome of the study. Randomized controlled trials (RCTs), Quasi-experimental studies, observational studies, and narrative reviews were considered relevant research designs for extraction.
Results: A total of 8689 articles were identified and 13 articles were included in the final review, which yielded five scales that have been identified and have been used to evaluate resilience among the patients who are clinically diagnosed with depression and six different interventions for building resilience among patients with depression.
Conclusion: Resilience-building interventions will not only act as a preventive measure against depression but also help in promoting recovery and sustaining remission after a depressive episode. Clinical evaluation of resilience and management will significantly support boosting emotional experience.

Introduction

Sigmund Freud once explained the concept of vulnerability through a crystal principle, which takes the example of a crystal that shatters once it falls on the ground only through the weakest structural planes (intrinsic cleavages), even when that is invisible. Patients with mental illness are also hypothesized to have similar weak structures in their mind, for example, individuals with depression may have undergone multitude of adversities in their life, but the symptoms may arise with an insignificant cause or without any significant change.[1] So various mental illnesses are believed to arise from an individual's particular psychological weaknesses. While resilience is a concept understood to be psychologically adapting to stress and adversities to maintain emotional homeostasis.[2,3]

Resilience is a multidimensional construct; it cannot be understood linearly. For simplicity, it could be termed as a phenomenon that gives the ability an individual to psychologically bounce back from adversity. This particular ability seems to vary between patients, as seen through genetic studies,[4] Deoxyribonucleic acid (DNA) studies showing differences in stress responses being mediated through genetic factors in the reactivity from the sympathetic nervous system,[5] and the lowered reuptake of serotonin being mediated by a single base substitution in the long form of 5-HTTLPR gene promoting the risk of depression.[6] Psychological factors such as having loving caretakers, a positive worldview, positive emotional regulation, a better coping system, sound social support, seeing problems in a positive view, spiritual support, attention to physical health, and disciplined focus help to deal with adversities better than otherwise.[7]

A resilient individual will talk to health professionals regarding depressive symptoms and will seek help. Building resilience in depressive individuals will encourage them to talk about depressive symptoms with significant others.[8,9] In a cross-sectional study done on

100 depressive and recurrent depressive disorder patients from ten hospitals in Tokyo, took the subjects who were eligible if they were outpatients 18 years of age or older, who fulfilled the criteria for a depressive episode (F32) or recurrent depressive disorder (F33) and who were capable of providing informed consent. It was reported that lower levels of resilience showed higher depressive symptomatology. The study also found as the severity of depression increased, irrespective of assessing objectively or subjectively, both were negatively associated with resilience.[10]

More interventions concerning building resilience are necessary for depressive disorders and reduction of depressive symptomatology. In fact, in a pilot study that was done for the improvement of resilience levels and reduction of depressive symptoms in college students, during a stressful period, the intervention involved a month-long psychoeducational intervention of weekly two-hour sessions, along with a cognitive behavioral therapy component. The intervention on assessment at the end of the four-week intervention revealed that there is a significant improvement in resilience scores and a significant reduction in depressive symptomatology. The study indicates that non-pharmacological interventions could be promoted for improvement of resilience and in turn, reduction of symptoms.[11]

A systematic review would yield extensive literature search for screening out the specific group of scales and intervention under the preview of the study. Moreover, there are no systematic reviews which enlist the scales and interventions of resilience which has been administered specifically to treatment seeking depressive patients. By understanding this specific group of interventions for building resilience among clinically diagnosed depressive individuals, the nurses receive greater understanding for managing individuals with depression effectively.

It is understood that depression is a grave disorder, and the challenges that the health professional has to deal with could be resolved majorly by an improved resilience level. Resilience could be assessed easily and enhanced non-invasively. Moreover, the studies done for the assessment and development of resilience, especially with individuals who are clinically diagnosed with depressive disorders are limited. So, this review tries to explore systematically the clinical scales as well as interventions that have been used in studies for the assessment and development of resilience, specifically on patients who were clinically diagnosed with depression. This systematic review will include inclusive evidence about the clinical scales and interventions necessary for resilience in depression.

Materials and Methods

The systematic review has been conducted as per the criteria of Preferred Reporting Items of Systematic Review (PRISMA)[12] and was registered in the PROSPERO registry for systematic review (reg no. CRD42022308942).

Data Sources and Article Selection

The search strategy adopted for recognizing all the available and pertinent articles was done by utilizing three separate medical databases (PubMed, Google Scholar, and Science Direct) with the keywords (Resilience or Resiliencies or Resiliency or Resiliency traits or psychological resilience or psychological resiliencies or psychological resiliency) AND (depression or bipolar depression or unipolar depression or depressive disorder or primary depression or clinical depression) AND (interventions or interventional or methods or management). The literature search was limited to articles published from 1990 to date, only in English Language.

The current review had identified 8689 articles from different databases, out of which, 4111 articles were retrieved for screening, which found that only 86 articles were qualifying the eligibility criteria. 19 articles were excluded as their full texts could not be retrieved. Further screening showed that only 13 studies were eligible for inclusion to the review (Figure 1).

Inclusion and Exclusion Criteria

Inclusion criteria for the articles are:

Population: Patients who are clinically diagnosed with Bipolar and Unipolar Depression. The population is not restricted to any country.

Outcome: Clinical scales for evaluation, and interventions for enhancing resilience among patients with depression.

Setting: Hospital admissions, clinical setting, primary health care.

Study designs: Randomized controlled trials (RCTs), Quasi-experimental, observational studies, narrative reviews

Exclusion criteria for the articles are:

- Studies that show the presence of depression or anxiety as a co-morbidity to other medical illnesses.
- Studies published in any language other than English
- Studies that were done on paediatric patients

The stages of article selection were:

Stage 1: Identification: All the articles that were retrievable from the selected databases were exported to Mendeley Reference Software. The articles which were found to be duplicates were removed initially through the software.

Stage 2: Screening: Two independent reviewers screened the title and abstracts of the retrieved articles and excluded the studies which were not conducted on individuals who are clinically diagnosed with depressive disorder or on measures of resilience. Any disputes by the two reviewers were sorted by the third reviewer.

Stage 3: Eligibility: The remaining articles whose full texts could not be retrieved were also excluded. The full text of the articles for the rest was read by the reviewers and checked for its eligibility criteria. The articles found to be ineligible were excluded.

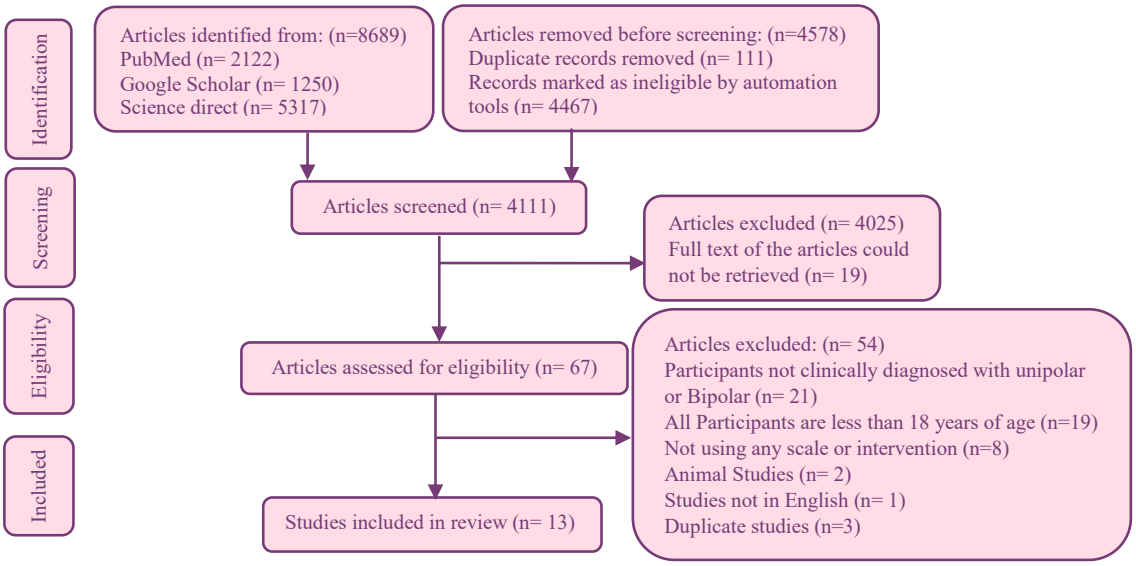

Figure 1. Prisma flowchart of literature search showing identification, screening and final inclusion of articles

Stage 4: Quality Assessment: The quality of the selected articles was assessed with Joanna Briggs Institute Critical appraisal tools. Three RCTs were assessed with the Joanna Briggs Institute (JBI) Checklist of Randomised Control Trials which had 13 items assessing the randomization, blinding, allocation, similarity in outcome assessment between groups, use of proper statistical analyses, etc. Three Quasi-Experimental studies were assessed with the JBI Checklist of Quasi-Experimental designs which had 9 items assessing the clarity of cause and effect, homogeneity of participants, presence of control, usage of proper statistical analyses, etc. The rest of the eight observational studies were assessed with the JBI Checklist for Analytical Cross-Sectional Studies which had 8 items assessing the clarity of sample description, setting, objectivity in measuring outcomes, identification of confounding variables, checking validity, and reliability of measurement tools and usage of proper statistical analyses, etc. Responses like 'Yes', 'No', 'Unclear', or 'Not Applicable' was provided for the rating of each item of the quality appraisal tools.

Results

The different stages of the retrieval, checking eligibility, and selection of articles have been depicted in a PRISMA flowchart (Figure 1). A total number of 8689 articles were identified from three different databases, i.e., PubMed (2122), Google Scholar (1250), and Science Direct (5317). Of the identified articles 4578 articles were excluded before the screening, the majority of the articles (4467) could not be retrieved from the database itself and 111 articles were found to be duplicate articles, giving 4111 articles for screening.

Subsequently, 4025 articles were excluded from the study either due to the absence of any resilience measures or conducted in individuals who had not been clinically diagnosed with depression, or both. Out of the remaining 86 articles that were screened, 19 articles were further excluded as the full text of the articles could not be retrieved. Then, the 67 articles were reviewed thoroughly for assessing their eligibility by the reviewers. Further, on assessment it was noticed that 21 other studies were also not done on individuals who are clinically diagnosed with depression, 19 studies were done on individuals who were all below the age of 18 years, and eight studies were narrative reviews that did not mention any clinical scale or intervention, 2 studies were done on animals, 1 study was in Spanish and 3 other articles were found to be duplicates.[13]

The final 13 studies that were included for analysis were done in 8 different countries like the USA (three),[11,14,15] Italy (three)[16–18] India (two),[19,20] Australia (one),[21] Sweden (one),[22] Egypt (one),[23] Netherland (one)[24] and Thailand (one).[25]

The data synthesis is done by following the extracted studies for review and put under the headings:

- Details of publication (Author and year of publication)
- Type of study (design)
- Mode of Completion (Self-report or interview schedule)
- Subject Characteristics (type of participants)
- Name of the clinical scale used (measuring scale)

The data that has been extracted after the review of the included articles regarding the clinical scales and interventions for resilience among patients with depression, has been presented in a form of narrative synthesis (Table 1).

Clinical Scales for Measuring Resilience Among Individuals with Depression

This search yielded six different resilience scales that have been utilized for the assessment of individuals with clinical depression. The research articles comprised two Randomised control studies, three quasi-experimental

Table 1. Characteristics of articles that yielded the clinical scales for resilience among patients with depression

Author & Year	Type of study	Mode of completion	Subject characteristics	Scales identified
McCann et al[25] (2017)	RCT	Self-reporting	Participants who are diagnosed with moderate depression who are currently hospitalised within the age group of 18-60years	The Resilience Scale (G. M. Wagnild & Young, 1993)
Vlasova et al[14] (2018)	Observational study	Self-reporting	Clinical diagnosed individuals with major depressive disorder who are aged 60years and above	CD-RISC 25
Wu et al[15] (2019)	Observational study	Self-reporting	Participants who are adults ≥ 60 years with major depressive disorder	CD-RISC 25
Siddarth et al[11] (2019)	Observational study	Self-reporting	Participants who are adults ≥ 60 years with major depressive disorder	CD-RISC 25
Priyadarsini and Rohini[19] (2017)	Pre-test, post-test and follow-up without control group design	Self-reporting	Participants were adults who were clinically diagnosed with Unipolar depression between 18-45 years of age	BURS
Sawle et al[21] (2015)	Observational study	Self-reporting	First group are young patients (17-25 years) who are diagnosed with psychosis and their current principal familial caregiver (23-57 years) Second group are young patients (15-25 years) who are diagnosed with depressive disorder and their current principal familial caregiver (23-54 years)	ER89
Favale et al (2020)[16]	Observational study	Self-reporting	Participants with the clinical diagnosis of unipolar depressive disorder, bipolar disorder and schizoaffective disorder reporting major current depressive episode ages between 18-75 years	CD-RISC 10
Priyadarsini and Rohini[20] (2015)	Two group quasi-experimental study	Self-reporting	Participants were with mild level of depression in the age range of 20-45 years	BURS
Ferrari et al (2016)[24]	Two-arm, double-blinded RCT	Self-reporting	Participants who were between the age of 18 to 65 years and had been diagnosed with first time or recurrent major depressive disorder	The Resilience Scale (G. M. Wagnild & Young, 1993)
Collazzoni et al[17] (2020)	Observational Study	Self-reporting	Patients with the primary diagnosis of major depressive disorder within the age range from 19 to 64 years	RSA
Hassnin Eita and Mohamed Aboshereda[23] (2021)	Quasi-experimental design two groups study	Self-reporting	Participants are medically diagnosed with depression in the age range 18 to 65 years	CD-RISC 25
Rossetti et al[18] (2017)	Observational Study	Self-reporting	Participants were clinically diagnosed depression with the mean age of 42.14	RSA

Abbreviations: RCT, randomized controlled trial; RSA, Resilience Scale for Adult; CD-RISC, Connor-Davidson Resilience Scale; BURS, Bharathiar University Resilience Scale; ER89, Ego-Resiliency Scale.

studies, and eight observational studies that yielded the six resilience scales.

The Resilience Scale by G.M. Wagnild and Young

This scale measures components of resilience in different domains of young patients' lives, ranging from planning and thinking ahead to the level of independence. The scale is a 25-item Likert scale, with each item rated with a seven-point rating, from 1 (disagree) to 7 (agree). The scores range from 25 to 175, suggesting higher scores with higher resilience. The scale also consists of three sub-components, i.e., Personal Competence, Health and wellness, and Acceptance of self and life.[24,25]

Connor Davidson Resilience Scale (CD-RISC)

CD-RISC is a self-reporting 25-item rating scale, developed by Kathryn M. Conner and Jonathan R.T. Davidson, for testing resilience in all age groups. It is a five-point scale ranging from not at all true (0) to true nearly all the time (4). The scores range from 0 to 100, indicating higher resilience for higher scores. CD-RISC is officially authorized with three versions of the same, such as CD-RISC-25, CD-RISC-10, and CD-RISC-2. The CD-RISC-25 reflects on five factors such as high standards, tenacity, and competence (8 items), handling negative emotions, trusting one's instincts, and perceived benefits of stress (7 items), positive attitude to change, and secure relationships (5 items), perceived control (3 items) and finally spirituality (2 items).[14-16,23,26,27]

Bharathiar University Resilience Scale (BURS)

BURS is a 30-item self-reporting Likert scale with 5-point response options, ranging from "not at all appropriate" (1) to "most appropriate" (5). The 30 items are set as personal statements which the participants are expected to mark as the most appropriate response in their regard. BURS is considered to measure seven domains of resilience, such, (i) duration of getting back to normalcy, (ii) perception of the effect of past negative events, (iii) response to risk factors, (iv) response to negative events, (v) openness to experience, (vi) flexibility and (vii) confidence in coping with future. The total scores of all the items are summed up to establish the level of psychological resilience of the respondent, with the scores ranging from 30 to 150.[19,20]

Ego-resiliency Scale (ER89)

This scale has been created by Block and Kremen in 1989, to measure psychological resilience. Psychological resilience is the adaptability of the mind to bounce back from any negative emotional experience and be able to function in flexibility under stressful environmental states. ER89 is a 14-item Likert scale with four-point response options, such as, does not apply at all (1) to applies very strongly (4). The range of scores goes from 14-56, with higher scores indicating higher psychological resilience.[21]

Resilience Scale for Adults (RSA)

RSA is one of the resilience scales which approaches the measurement of resilience directly. This scale constitutes six factors for the measurement of resilience, with four factors for personal characteristics, that is, perception of self, planned future, social competence, and structured style; one factor for family characteristics, i.e., family cohesion and one factor for social characteristics, i.e., social resources. The scale is a 33-item scale with a seven-point semantic differential rating scale, with two polar opposite attributes at both ends of the scale for each item. For example, appreciating my qualities and despising my qualities would be the two ends of the response option and varies with each item. The range of scores is from 33 to 231, with higher resilience indicated by a higher score.[17,28,29]

There are many more scales which has been used to assess resilience,[30] but in the review, these were the only scales that have been mentioned to be used on adults who are clinically diagnosed depressive patients (Table 2).

Interventions for Improving Resilience Among Patients with Depression

In the case of interventions, the review identified six different interventions from three randomized control trials and three Quasi-experimental studies. These interventions have proven to be effective in raising resilience among patients with clinically diagnosed depression. (Table 3)

CBT-Based Guided Self Help Bibliotherapy

Guided self-help would provide a modest level of support by a coach or a clinician in completing a therapy. For instance, Bibliotherapy is a creative method to inculcate reading specific texts to treat. Cognitive behavioural therapy (CBT) has been a proven effective therapy in the conventional treatment regimen for reducing depressive symptoms. So, CBT-based Bibliotherapy which utilizes a guided self-help mode seems to be effective in enhancing resilience among patients with depression. It contains eight modules, with reading, writing, and activities to be completed in one week, for eight weeks. The completion of the assignments would require participants to challenge negative thoughts and behaviors to improve their resilience.[25]

Training for Awareness, Resilience and Action (TARA)

TARA is a neuropsychiatric intervention based upon the mindfulness approach, yet primarily focusing on emotional self-regulation than acceptance of emotional experience. The intervention consists of 12 sessions, that is completely online delivered, and has been divided into four modules, such as, (i) calming down and creating a sense of safety (1^{st}-3^{rd} session)- yoga-based movement and breathing exercise are trained primarily to reduce amygdala hyperactivity, (ii) Attending to and caring about our inner experience (4^{th}-6^{th} session)- emotional labeling and interoceptive attention is trained for shifting attention from negative self-referencing to present moment sensory awareness, (iii) recognizing, regulating and communicating emotions (7^{th} to 9^{th} session)-practicing of empathetic listening, effective communication and compassionate responses to reduce interpersonal stress and regulation of emotions and (iv)

Table 2. Clinical scales for resilience for patients with depression

Scales	Population	No. of items	No. of dimensions	Dimensions
The Resilience Scale (G. M. Wagnild & Young, 1993)	Moderate and recurrent major depressive disorders	25	3	i) Personal Competence, ii) Health and wellness and iii) Acceptance of self and life
CD-RISC 25	Major depressive disorders	25	5	i) High standards, tenacity and competence, ii) handling negative emotions, trusting one's instincts, and perceived benefits of stress iii) positive attitude to change and secure relationships, iv) perceived control and v) spirituality
BURS	Unipolar depression and mild level of depression	30	7	i) Duration of getting back to normalcy, ii) perception of effect of past negative events, iii) response to risk factors, iv) response to negative events, v) openness to experience, vi) flexibility and vii) confidence in coping with future.
ER89	All levels of depression	14	1	-
CD-RISC 10	Unipolar, bipolar and schizoaffective disorders	10	1	-
RSA	Major depressive disorder	33	6	i) Personal characteristics ((a) perception of self, (b) planned future, (c) social competence and (d) structured style), ii) Family characteristics (family cohesion) and iii) social characteristics (social resources.)

Abbreviations: RSA, Resilience Scale for Adult; CD-RISC, Connor-Davidson Resilience Scale; BURS, Bharathiar University Resilience Scale; ER89, Ego-Resiliency Scale.

Table 3. Characteristics of articles that has identified the interventions for improving resilience among depressive patients

Author & Year	Type of study	Subject characteristics	Interventions	Main findings of the study
McCann et al[25] (2017)	RCT	Participants who are diagnosed with moderate depression who are currently hospitalised within the age group of 18-60 years	CBT based guided self help bibliotherapy	Reading, writing and activities based to challenge negative thoughts and behaviours to enhance resilience
Ekbäck et al[22] (2021)	Multi-Center RCT	Adolescents and young adults between age of 15 to 22 years, who have attended clinic for the diagnosis of major depressive disorder or persistent depressive disorder.	TARA	Mindfulness based interventions focusing on emotional self-regulation than acceptance of emotional experience
Priyadarsini and Rohini[19] (2017)	Pre-test, post-test and follow-up without control group design	Participants were adults who were clinically diagnosed with unipolar depression between 18-45 years of age	Pranayama	Anuloma Viloma is a breathing practice believed to restore autonomic nervous system imbalances, balance of pineal gland and activate the frontal lobe to provide tranquillity, clarity and concentration
Priyadarsini and Rohini[20] (2015)	Two group quasi-experimental study	Patients with mild depression aged between 20-45 years	Carnatic music and pranayama	Atana, Mohanam and Neelambari were 3 ragas included as Carnatic music for intervention along with pranayama
Ferrari et al[24] (2016)	Two-arm, double-blinded RCT	Participants who were between the age of 18 to 65 years and had been diagnosed with first time or recurrent major depressive disorder	Attentional bias modification	Image based modification of negative attention towards positive or neutral attention for improving resilience
Hassnin Eita and Mohamed Aboshereda[23] (2021)	Quasi-experimental design two groups study	Participants are medically diagnosed with depression in the age range 18 to 65 years	Resilience Training based Nursing Intervention	Pre-written manual involving psychoeducation and group discussion on relevant areas for improving emotion regulation and resilience.

Abbreviations: RCT, randomized controlled trial; RSA, Resilience Scale for Adult; CD-RISC, Connor-Davidson Resilience Scale; BURS, Bharathiar University Resilience Scale; ER89, Ego-Resiliency Scale; CBT, cognitive behavioural therapy; TARA, Training for Awareness, Resilience and Action.

core values, goal setting and committed action (10th to 12th session) – training to identify and recognize the experiential avoidance to identify the core values and be guided in participant's actions in their lives. Overall, this intervention aims to provide an ability for patients with depression, to have cognitive control over emotional experiences, in dealing with day-to-day life activities.[22,31]

Pranayama

Pranayama is considered to be a basic component of Hatha Yoga, which primarily consists of control of Prana (vital energy needed for the survival of our physical self), by breathing techniques. Anuloma Viloma is a type of pranayama, which is believed to restore autonomic nervous system imbalances, maintain the balance of the pineal gland and even activate the frontal lobe of the brain to provide tranquillity, clarity, and concentration. So, Anuloma Viloma provides calmness and better awareness without any side effects. The practice is provided for 30 minutes, followed by 15 minutes of discussion with the participants. Long-term practice of pranayama would initiate a process known as telencephalisation, which is shifting towards conscious breathing from regular unconscious breathing leading to the involvement of the cerebral cortex and surrounding areas of the brain, even concerned with emotions.[19]

Carnatic Music and Pranayama

In this intervention, both Carnatic music and Pranayama was utilized together. For Carnatic music, three ragas were chosen, namely, Atana, Mohanam, and Neelambari. Each raga was played to the participants for 10 minutes each and was combined with 15 minutes of Pranayama after. The Intervention was given for 12 sessions, with two sessions per week for 6 weeks. Each session was of 45 minutes duration overall. The ragas were played through recorded flute music and Pranayama was similar to the previous intervention mentioned. The study has assumed that the vibrations in the ragas were able to resonate with participants' moods and health. The concept of Raga Chikitsa that is, healing through the use of raga is believed to balance nature that is in imbalance and help in the healing process.[20]

Attentional Bias Modification

This intervention is based on the idea that patients with depression have a more attentional bias toward negative information and difficulty disengaging, as compared to positive or neutral information. The negative attentional bias has been linked with ineffective emotion regulation in states of stress and decreased resilience. So, through attentional bias modification, it is expected to alter the symptoms of depressive disorders. Participants will engage in eight training sessions for a period of two weeks, in which 50 pairs of pictures are created that have negative and positive images or scenes, equally. A white fixation arrow is introduced during the display of the contrasting images to the participants, and 90% of the time, the arrow is placed over the positive images, modifying the attention towards the same. Regular breaks and feedback are included for the sustenance of motivation in the participants.[24]

Resilience Training-Based Nursing Intervention

This intervention was of eight sessions with one session of one hour each per week for eight weeks. Each session would include a revision (10 minutes), practice of relaxation technique (10 minutes), structured presentation (15 minutes), group discussion (15 minutes) and finally ending with a summarisation and feedback by the participants (15 minutes). Each session involved different topics for presentation which was structured for uniformity and was consistent with a pre-written manual. The first session involved training on topics regarding different aspects of depression (causes, signs, symptoms, fears, and stigma), the second session was on resilience (factors, process, and relationship with depression), and the third and fourth sessions aimed to build resilience, whereas the fifth session focussed on building and utilizing healthy coping strategies, the sixth session dealt with increasing social support, whereas the seventh session aimed to enhance problem-solving techniques and flexibility and finally the eight sessions focussed on practicing stress management techniques, increasing positivity and dealing difficult emotions.[23]

Discussion

From our systematic review, we identified 13 articles that met our inclusion criteria for the review. In this, there were three RCTs, three quasi-experimental studies, and seven observational studies. From the identified articles, we have yielded five different clinical scales as well as six interventions that were especially utilized on patients who were clinically diagnosed with depressive disorders for resilience. The most extensively used scale seems to be CD-RISC 25, mostly because it has strong psychometric properties and its applicability in clinical settings. The CD-RISC 25 is sensitive to clinical interventions as it identifies resilient characteristics that are enhanced by an individual's adaptive pursuits.[32]Apart from the five scales that were identified, the Brief resilience scale was also accounted for by the reviewers, but its non-applicability in clinical scenarios led us to remove it from the analysis. Even then, Brief Resilience Scale was just a six-item rating scale where the participants are expected to respond to a five-point response option. The authors believed that six items are sufficient to assess resilience, as resilience could never be assessed directly. They have utilized coping styles, social relationships, and health-related outcomes as their factors to evaluate the level of resilience.[33,34]

Different measures differ in the means of assessing resilience, as resilience by default is a complex construct to appraise. For example, as we consider that early childhood trauma and neglect being a central concept of maladaptation, and further poor resilience in individuals,[10] certain studies have shown that some neglected and abused children did show better resilience in different areas of functioning and positive adjustment towards particular developmental tasks.[35-38] So, the idea of measuring resilience on account of their protective factors and developmental tasks is questionable, as the evaluation of the resilience of individuals with similar adversities would show varied resilience levels.[39] On account of featuring prevalence of resilience among populations with common stressors could show diversity in values, i.e., different scales would infer the results differently.[40]

Whereas, in a network analysis, risk and protective factors for the remitted depressive patients were explored, such as residual symptomatology, emotional regulation, cognitive control, and resilience. This previous study showed that resilience was taking a central role in connecting all the factors and proving to be a key factor in connecting all the other risk and protective factors. Resilience stands out to be a successful coping factor when it comes to the stress from remission of depression.[41] Therefore, the health team members must be vigilant to assess the patients with depression regarding the levels of resilience and its impact on symptomatology. By focussing on resilience, the patient would also participate in the treatment process actively and generate a sense of insight to his advantage.[42]

In the case of interventions, six different interventions were identified after a comprehensive search from three RCTs and quasi-experimental studies each. The review did not show any pharmacological agents as interventions to improve resilience, even though there are pharmacological enhancements of neurochemical systems for resilience also being reviewed. The effect of pharmacology on depressive patients is yet to be proven.[43] The non-pharmacological interventions that have been identified in the review, are also not measured for their level of effectiveness in our review, even though individual studies have shown their effect on significantly improving resilience in depressive individuals. The Pranayama and Carnatic music are the interventions that would require prior training and certification, or expert assistance to conduct in its apposite manner. The rest of the interventions include self-help assignments for reading, writing, and comprehension, otherwise, previously structured manuals are being followed, which are easier to replicate by any member of the health team.

TARA program also includes yogic practices and breathing techniques, regardless, the authors have not mentioned any prior requirement of specific training for the same. Nonetheless, the authors have mentioned that the whole program of TARA needs to replicate with TARA-trained facilitators.[22] Attention bias modification treatment (ABMT) seems to be a promising intervention concerning depressive symptomatology. As ABMT seems to be a more focused and limited sort of intervention, the extraneous factors affecting the outcome also seem to be less, as compared to a CBT or Pharmacological intervention. Moreover, the control group of ABMT is also very tight, as they are also subjected to similar

cues, number of sessions, or effects which might show a lesser group effect size of ABMT, as compared to its counterparts.[44]

The effect of resilience is also evident in the quality of life among the depressive population.[45-48] So deliberate assessment of resilience, as a part of the treatment protocol, needs to be mandated, along with the inclusion of non-pharmacological interventions, led by nursing personnel in a psychiatric setting for patients with depression, shall act as an effective change in depressive symptomatology, and more importantly the quality of life. Health team personnel must also take up research projects involving interventions for resilience or systematic reviews involving meta-analyses of the same to add to our evidence base for the enhancement of resilience in a clinically depressed population. Limitations of the study were that only three databases were considered and google scholar is more of a search engine than a database, which narrowed the scope of review, lack of access to some full texts that could have been relevant, and not involving grey literature in the review.

Conclusion

The systematic review was able to synthesize clinical scales and interventions that have been used to improve resilience among patients with clinical depression, in the last two decades. Five clinical scales and six non-pharmacological interventions were identified through the review. Among patients, enhancing resilience could improve their prognosis and boost their quality of life. Considering the 13 articles that were included in the review, we can conclude that the latest interventions for resilience have the potential to bring well-being to the soaring population of depressive disorders.

Research Highlights

What is the current knowledge?

- Resilience is found to be lowering, with increasing depressive severity
- Resilient individual has more probability to seek treatment than otherwise
- Building resilience could improve the prognosis of depression as well as their quality of life.
- There are no systematic reviews that has enlisted the scales and interventions of resilience, specifically administered to treatment seeking depressive patients.

What is new here?

- Five different scales which has been administered on treatment seeking depressive patients in hospital settings has been identified.
- Six separate non-pharmacological interventions for building resilience on clinically diagnosed depressive individuals were highlighted.

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Authors' Contribution

Conceptualization: K Jayakrishnan, Athar Javeth.
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Competing Interests

All the authors declare no conflicts of interest with research or writing of the paper.

Data Availability

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Ethical Approval

We did not require ethical approval as neither data has been collected nor any intervention has been conducted on humans/animals.

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References

1. Freud S, Strachey J, Gay P. New Introductory Lectures on Psycho-Analysis. WW Norton & Company; 1989. p. 253.
2. Palmiter D, Alvord M, Dorlen R, Comas-Diaz L, Luther SS, Maddi SS, et al. Building Your Resilience. American Psychological Association; 2012. Available from: https://www.apa.org/topics/resilience/building-your-resilience. Accessed August 9, 2022.
3. Elisei S, Sciarma T, Verdolini N, Anastasi S. Resilience and depressive disorders. Psychiatr Danub. 2013; 25 Suppl 2: S263-7.
4. Feder A, Nestler EJ, Charney DS. Psychobiology and molecular genetics of resilience. Nat Rev Neurosci. 2009; 10(6): 446-57. doi: 10.1038/nrn2649
5. Southwick SM, Vythilingam M, Charney DS. The psychobiology of depression and resilience to stress: implications for prevention and treatment. Annu Rev Clin Psychol. 2005; 1: 255-91. doi: 10.1146/annurev.clinpsy.1.102803.143948
6. Caspi A, Hariri AR, Holmes A, Uher R, Moffitt TE. Genetic sensitivity to the environment: the case of the serotonin transporter gene and its implications for studying complex diseases and traits. Am J Psychiatry. 2010; 167(5): 509-27. doi: 10.1176/appi.ajp.2010.09101452
7. Southwick SM, Charney DS. The science of resilience: implications for the prevention and treatment of depression. Science. 2012; 338(6103): 79-82. doi: 10.1126/science.1222942
8. Aigner M, Förster-Streffleur S, Prause W, Freidl M, Weiss M, Bach M. What does the WHOQOL-Bref measure?

Measurement overlap between quality of life and depressive symptomatology in chronic somatoform pain disorder. Soc Psychiatry Psychiatr Epidemiol. 2006; 41(1): 81-6. doi: 10.1007/s00127-005-0997-8
9. Shumye S, Belayneh Z, Mengistu N. Health related quality of life and its correlates among people with depression attending outpatient department in Ethiopia: a cross sectional study. Health Qual Life Outcomes. 2019; 17(1): 169. doi: 10.1186/s12955-019-1233-7
10. Seok JH, Lee KU, Kim W, Lee SH, Kang EH, Ham BJ, et al. Impact of early-life stress and resilience on patients with major depressive disorder. Yonsei Med J. 2012; 53(6): 1093-8. doi: 10.3349/ymj.2012.53.6.1093
11. Siddarth P, Laird K, Vlasova R, St Cyr N, Lavretsky H. Clinical correlates of resilience factors in geriatric depression. Am J Geriatr Psychiatry. 2018; 26(3): S139. doi: 10.1016/j.jagp.2018.01.169
12. Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. PLoS Med. 2009; 6(7): e1000097. doi: 10.1371/journal.pmed.1000097
13. JBI. Critical Appraisal Tools. South Australia. Available from: https://jbi.global/critical-appraisal-tools. Accessed August 19, 2022.
14. Vlasova RM, Siddarth P, Krause B, Leaver AM, Laird KT, St Cyr N, et al. Resilience and white matter integrity in geriatric depression. Am J Geriatr Psychiatry. 2018; 26(8): 874-83. doi: 10.1016/j.jagp.2018.04.004
15. Wu P, Lavretsky H, Siddarth P. Neurocognitive correlates of resilience in geriatric depression. Am J Geriatr Psychiatry. 2018; 26(3): S139-40. doi: 10.1016/j.jagp.2018.01.170
16. Favale D, Bellomo A, Lotti P, Bradascio C, Ventriglio A. Role of hope and resilience in the outcome of depression and related suicidality. Psychology. 2020; 11(3): 428-35. doi: 10.4236/psych.2020.113028
17. Collazzoni A, Stratta P, Pacitti F, Rossi A, Santarelli V, Bustini M, et al. Resilience as a mediator between interpersonal risk factors and hopelessness in depression. Front Psychiatry. 2020; 11: 10. doi: 10.3389/fpsyt.2020.00010
18. Rossetti AC, Papp M, Gruca P, Paladini MS, Racagni G, Riva MA, et al. Stress-induced anhedonia is associated with the activation of the inflammatory system in the rat brain: restorative effect of pharmacological intervention. Pharmacol Res. 2016; 103: 1-12. doi: 10.1016/j.phrs.2015.10.022
19. Priyadarsini AC, Rohini NS. Pranayama for the management of depression and enhancement of resilience. Indian J Posit Psychol. 2017; 8(3): 351-5.
20. Priyadarsini AC, Rohini NS. Effect of camatic music and pranayama on depression and resilience in mild depressives. Indian Journal of Health & Wellbeing. 2015; 6(9): 849-53.
21. Sawle G, Lennings C, Heard R. Carer attachment moderates resilience for young patients experiencing psychosis or depression. Universal Journal of Psychology 2015; 3(6): 176–84. doi: 10.13189/ujp.2015.030604
22. Ekbäck E, Granåsen G, Svärling R, Blomqvist I, Henje E. Clinical effectiveness of training for awareness resilience and action online compared to standard treatment for adolescents and young adults with depression: study protocol and analysis plan for a pragmatic, multi-center randomized controlled superiority trial. Front Psychiatry. 2021; 12: 674583. doi: 10.3389/fpsyt.2021.674583
23. Hassnin Eita L, Mohamed Aboshereda H. Resilience training based nursing intervention: its effect on depressive symptoms, coping styles and resilience among patients with depression. Egypt J Health Care. 2021; 12(2): 11-27.
24. Ferrari GR, Becker ES, Smit F, Rinck M, Spijker J. Investigating the (cost-) effectiveness of attention bias modification (ABM) for outpatients with major depressive disorder (MDD): a randomized controlled trial protocol. BMC Psychiatry. 2016; 16(1): 370. doi: 10.1186/s12888-016-1085-1
25. McCann TV, Songprakun W, Stephenson J. Effectiveness of a guided self-help manual in strengthening resilience in people diagnosed with moderate depression and their family caregivers in Thailand: a randomised controlled trial. Issues Ment Health Nurs. 2017; 38(8): 655-62. doi: 10.1080/01612840.2017.1313913
26. Velickovic K, Rahm Hallberg I, Axelsson U, Borrebaeck CAK, Rydén L, Johnsson P, et al. Psychometric properties of the Connor-Davidson Resilience Scale (CD-RISC) in a non-clinical population in Sweden. Health Qual Life Outcomes. 2020; 18(1): 132. doi: 10.1186/s12955-020-01383-3
27. Laird KT, Lavretsky H, Wu P, Krause B, Siddarth P. Neurocognitive correlates of resilience in late-life depression. Am J Geriatr Psychiatry. 2019; 27(1): 12-7. doi: 10.1016/j.jagp.2018.08.009
28. Stratta P. The Italian Validation Study of the Resilience Scale for Adults (RSA). Paolo Stratta - Academia. USA; [Internet]. Available from: https://www.academia.edu/18398592/The_Italian_validation_study_of_the_Resilience_Scale_for_Adults_RSA_. Accessed March 11, 2022.
29. Rossetti MC, Tosone A, Stratta P, Collazzoni A, Santarelli V, Guadagni E, et al. Different roles of resilience in depressive patients with history of suicide attempt and no history of suicide attempt. Braz J Psychiatry. 2017; 39(3): 216-9. doi: 10.1590/1516-4446-2016-2045
30. Windle G, Bennett KM, Noyes J. A methodological review of resilience measurement scales. Health Qual Life Outcomes. 2011; 9: 8. doi: 10.1186/1477-7525-9-8
31. Henje Blom E, Tymofiyeva O, Chesney MA, Ho TC, Moran P, Connolly CG, et al. Feasibility and preliminary efficacy of a novel RDoC-based treatment program for adolescent depression: "Training for Awareness Resilience and Action" (TARA)-a pilot study. Front Psychiatry. 2016; 7: 208. doi: 10.3389/fpsyt.2016.00208
32. Connor KM, Davidson JR. Development of a new resilience scale: the Connor-Davidson Resilience Scale (CD-RISC). Depress Anxiety. 2003; 18(2): 76-82. doi: 10.1002/da.10113
33. de Holanda Coelho GL, Hanel PH, Cavalcanti TM, Rezende AT, Gouveia VV. Brief Resilience Scale: testing its factorial structure and invariance in Brazil. Univ Psychol. 2016; 15(2): 397-408. doi: 10.11144/Javeriana.upsy15-2.brst
34. Liu N, Liu S, Yu N, Peng Y, Wen Y, Tang J, et al. Correlations among psychological resilience, self-efficacy, and negative emotion in acute myocardial infarction patients after percutaneous coronary intervention. Front Psychiatry. 2018; 9: 1. doi: 10.3389/fpsyt.2018.00001
35. Toth SL, Cicchetti D. A developmental psychopathology perspective on child maltreatment. Introduction. Child Maltreat. 2013; 18(3): 135-9. doi: 10.1177/1077559513500380
36. Flores E, Cicchetti D, Rogosch FA. Predictors of resilience in maltreated and nonmaltreated Latino children. Dev Psychol. 2005; 41(2): 338-51. doi: 10.1037/0012-1649.41.2.338
37. Cicchetti D, Rogosch FA, Lynch M, Holt KD. Resilience in maltreated children: processes leading to adaptive outcome. Dev Psychol. 1993; 5(4): 629-47. doi: 10.1017/s0954579400006209
38. Kaufman J, Cook A, Arny L, Jones B, Pittinsky T. Problems defining resiliency: illustrations from the study of maltreated children. Dev Psychol. 1994; 6(1): 215-29. doi: 10.1017/s0954579400005964
39. Haskett ME, Nears K, Ward CS, McPherson AV. Diversity in adjustment of maltreated children: factors associated with resilient functioning. Clin Psychol Rev. 2006; 26(6): 796-812. doi: 10.1016/j.cpr.2006.03.005

40. Luthar SS, Sexton CC. Maternal drug abuse versus maternal depression: vulnerability and resilience among school-age and adolescent offspring. Dev Psychol. 2007; 19(1): 205-25. doi: 10.1017/s0954579407070113
41. Hoorelbeke K, Marchetti I, De Schryver M, Koster EH. The interplay between cognitive risk and resilience factors in remitted depression: a network analysis. J Affect Disord. 2016; 195: 96-104. doi: 10.1016/j.jad.2016.02.001
42. Ozawa C, Suzuki T, Mizuno Y, Tarumi R, Yoshida K, Fujii K, et al. Resilience and spirituality in patients with depression and their family members: a cross-sectional study. Compr Psychiatry. 2017; 77: 53-9. doi: 10.1016/j.comppsych.2017.06.002
43. Wu G, Feder A, Cohen H, Kim JJ, Calderon S, Charney DS, et al. Understanding resilience. Front Behav Neurosci. 2013; 7: 10. doi: 10.3389/fnbeh.2013.00010
44. Hakamata Y, Lissek S, Bar-Haim Y, Britton JC, Fox NA, Leibenluft E, et al. Attention bias modification treatment: a meta-analysis toward the establishment of novel treatment for anxiety. Biol Psychiatry. 2010; 68(11): 982-90. doi: 10.1016/j.biopsych.2010.07.021
45. Laird KT, Krause B, Funes C, Lavretsky H. Psychobiological factors of resilience and depression in late life. Transl Psychiatry. 2019; 9(1): 88. doi: 10.1038/s41398-019-0424-7
46. Pardeller S, Kemmler G, Hoertnagl CM, Hofer A. Associations between resilience and quality of life in patients experiencing a depressive episode. Psychiatry Res. 2020; 292: 113353. doi: 10.1016/j.psychres.2020.113353
47. Post F, Pardeller S, Frajo-Apor B, Kemmler G, Sondermann C, Hausmann A, et al. Quality of life in stabilized outpatients with bipolar I disorder: associations with resilience, internalized stigma, and residual symptoms. J Affect Disord. 2018; 238: 399-404. doi: 10.1016/j.jad.2018.05.055
48. Lee D, Cha B, Park CS, Kim BJ, Lee CS, Lee SJ, et al. Effects of resilience on quality of life in patients with bipolar disorder. J Affect Disord. 2017; 207: 434-41. doi: 10.1016/j.jad.2016.08.075