MHA MEDIHEALTH ACADEMY
Journal of Nursing Care Research
Review
doi: 10.51271/JNCR-0060

The salutogenic model in psychiatric disorders: a systematic review of applications and outcomes

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Cite this article as: Ayhan CH, Uçak R, & Gün Çalıskan Ç. (2026). The salutogenic model in psychiatric disorders: a systematic review of applications and outcomes. *J Nurs Care Res, 3*(4), 133-144. doi:10.51271/JNCR-0060

Received: 30.11.2025 ◆ **Accepted**: 14.06.2026 ◆ **Published**: 27.10.2026

ABSTRACT

This systematic review aimed to examine how the salutogenic model has been applied in psychiatric disorders and to synthesize evidence regarding its clinical relevance. A systematic search was conducted in Web of Science, Scopus, and PubMed, yielding 525 records. Following the removal of duplicates and screening according to predefined eligibility criteria, 31 studies were included in the final review. The studies encompassed a wide range of psychiatric populations, including individuals with schizophrenia, mood disorders, substance use disorders, and trauma-related conditions.

The findings demonstrated that the salutogenic model has been applied primarily as an explanatory framework for understanding mental health beyond symptom reduction, as a predictor of recovery-related outcomes, and as a foundation for intervention development. Across studies, higher levels of sense of coherence (SOC) and related psychosocial resources were consistently associated with lower symptom severity, better functioning, enhanced quality of life, and reduced engagement in risk behaviors. Longitudinal evidence suggested that salutogenic processes are dynamic and may strengthen over time, particularly during recovery. Intervention studies indicated that resource-oriented and salutogenic approaches can improve psychological resources, although their effects on SOC were not consistently significant. Social and contextual factors, particularly social support and stigma, also played an important role in shaping salutogenic processes and mental health outcomes. Overall, the evidence supports the clinical relevance of the salutogenic model in psychiatric settings and highlights the importance of incorporating resource-oriented and recovery-focused approaches into mental health care.

Keywords: Sense of coherence, mental disorders, mental health

INTRODUCTION

For decades, the dominant paradigm in health sciences has been the pathogenic model, which primarily focuses on identifying the causes of disease and pathological processes. Although this approach has significantly contributed to understanding the mechanisms underlying illness, it remains limited in explaining how individuals maintain health and well-being despite exposure to adversity and stressors. In response to this limitation, Aaron Antonovsky introduced the salutogenic model in the late 1970s, shifting the focus from disease to the origins of health and emphasizing the processes that support individuals in moving along the health–illness continuum (Antonovsky, 1987; Klepp et al., 2007). Within this framework, health is conceptualized not as a dichotomous state but as a dynamic continuum influenced by the individual's ability to utilize available resources to cope with life stressors.

At the core of the salutogenic model lies the concept of sense of coherence (SOC), defined as a global orientation reflecting the extent to which individuals perceive life as comprehensible, manageable, and meaningful (Antonovsky, 1987). These three interrelated components-comprehensibility, manageability, and meaningfulness-operate synergistically to facilitate adaptive coping and resilience in the face of stress (Klepp et al., 2007). SOC is not a specific coping strategy but rather a generalized capacity that enables individuals to mobilize internal and external resources effectively, thereby enhancing their ability to deal with both everyday challenges and major life adversities. Empirical evidence suggests that SOC reflects a broader adaptive capacity shaped by general resistance resources, including cognitive, emotional, social, and material factors (Griffiths et al., 2011).

A growing body of research has demonstrated the relevance of SOC in mental health contexts. Individuals with higher SOC tend to report lower levels of psychological distress, including depression, anxiety, and other psychiatric symptoms, and exhibit better overall psychological well-being (Klepp et al., 2007; Fiscone et al., 2024). Conversely, lower SOC has been associated with increased vulnerability to mental health problems and reduced coping capacity. In clinical populations, particularly among individuals with severe mental illnesses such as schizophrenia, higher SOC has been linked to lower symptom severity, improved

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recovery trajectories, and better quality of life (Witkowska-Łuć, 2018). These findings support the role of SOC as a protective and health-promoting factor within psychiatric populations.

Furthermore, psychosocial factors such as stigma, social rejection, and reduced empowerment have been shown to negatively influence SOC levels among individuals with mental illness. Experiences of stigma and discrimination are associated with lower SOC, self-esteem, and empowerment, indicating that social context plays a critical role in shaping individuals' coping resources and psychological resilience (Lundberg et al., 2009). At the same time, evidence from vulnerable populations, such as refugees and forcibly displaced individuals, highlights the importance of SOC and related constructs in mitigating the negative effects of trauma and chronic stress on mental health (Fiscone et al., 2024) .

In summary, the salutogenic model and its central construct, SOC, offer a comprehensive framework for understanding mental health beyond the traditional pathogenic perspective. By focusing on strengths, resources, and adaptive processes, the salutogenic approach provides valuable insights into how individuals maintain psychological well-being and recover from mental illness. Therefore, integrating the salutogenic model into psychiatric research and practice represents a promising direction for enhancing recovery-oriented and resource-based mental health care.

Despite the growing body of research on SOC and related psychosocial resources, the application of the salutogenic model in psychiatric populations has not yet been comprehensively synthesized. Existing studies are often fragmented across diagnostic groups, methodologies, and conceptual approaches, limiting a coherent understanding of how salutogenic principles contribute to mental health and recovery processes. Therefore, the aim of this systematic review is to examine how the salutogenic model has been utilized in the context of psychiatric disorders and to synthesize the available evidence regarding its explanatory, predictive, and intervention-based roles. Specifically, this review seeks to (i) explore the use of the salutogenic framework in understanding mental health beyond symptomatology, (ii) evaluate the role of SOC and related resources in predicting clinical and recovery outcomes, and (iii) assess the extent to which salutogenic principles have been integrated into intervention studies within psychiatric settings.

METHODS

Study Design

This study is a systematic review conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The primary aim was to comprehensively examine the literature on the application of the salutogenic model in mental health disorders.

CRITERIA FOR CONSIDERING STUDIES FOR THIS REVIEW

Types of Studies

This review included quantitative, qualitative, and mixed-methods studies that examined the application of the salutogenic model in psychiatric contexts. Given the exploratory nature of the review topic, a broad range of study designs-including cross-sectional, longitudinal, randomized controlled trials, quasi-experimental, and qualitative studies-were considered in order to capture the full scope of existing evidence.

Types of Participants

The review focused on individuals diagnosed with psychiatric disorders, including but not limited to schizophrenia, bipolar disorder, major depressive disorder, substance use disorders, and trauma-related conditions. Studies conducted in both inpatient and outpatient psychiatric settings, as well as community-based samples with clinically relevant mental health conditions, were included.

Types of Interventions/Phenomena of Interest

This review examined studies that applied the salutogenic model either directly or indirectly. Direct applications included interventions explicitly based on salutogenic principles (e.g., salutogenic therapy, resource-oriented programs), while indirect applications included studies examining core components of the model, such as sense of coherence, generalized resistance resources, and related psychosocial constructs (e.g., social support, self-efficacy, resilience). Additionally, studies conducted in general population samples were considered eligible when they explicitly examined sense of coherence (SOC) as a central study variable or intervention outcome, providing relevant evidence on the application of salutogenic principles to mental health promotion and psychological well-being.

Types of Outcome Measures

The primary outcomes of interest included:

- Psychiatric symptom severity (e.g., depression, anxiety, psychosis)
- Quality of life and well-being
- Psychosocial functioning
- Recovery-related outcomes (e.g., remission, relapse, coping, resilience)
- Secondary outcomes included:
- Sense of coherence
- Social support and psychosocial resources
- Self-efficacy and adaptive coping mechanisms

Search Strategy

A systematic search was conducted using three major electronic databases: Web of Science, Scopus, and PubMed. The search strategy followed a staged approach, as recommended by JBI guidelines. In the initial stage, a limited search was conducted to identify relevant keywords and index terms related to the salutogenic model and psychiatric disorders. Based on this preliminary search, a comprehensive search strategy was developed using combinations of keywords such as "salutogenesis," "sense of coherence," "mental health," and "psychiatric disorders." The Boolean search strategy was as follows: ("salutogenesis" OR "salutogenic" OR "sense of coherence" OR "generalized resistance resources") AND ("mental health" OR "mental disorders" OR "psychiatric disorders" OR "schizophrenia" OR "bipolar disorder" OR

"depression" OR "substance use disorders" OR "trauma-related disorders" OR "psychological well-being"). The initial systematic literature search was conducted in March 2025. To ensure the inclusion of the most recent evidence, the database search was updated in May 2026 using the same search strategy and eligibility criteria. Following this initial search, additional databases were incorporated to enhance the comprehensiveness of the review, and the search was subsequently expanded. The full search was then performed across all selected databases without restricting study design. Reference lists of all included studies were manually screened to identify additional relevant publications. Only studies published in English were included. All studies identified through the search process were screened based on titles, abstracts, and keywords. Full texts of potentially relevant studies were retrieved and assessed against the inclusion criteria.

Assessment of Methodological Quality

The methodological quality of the included studies was assessed using standardized critical appraisal tools appropriate to each study design, in accordance with JBI recommendations. Each study was evaluated based on criteria such as study design, sampling methods, measurement validity, and risk of bias. The appraisal process was conducted independently by the review team, and discrepancies were resolved through discussion. Although variations in methodological quality were identified across studies, no studies were excluded based on quality assessment. Instead, all eligible studies were retained to provide a comprehensive overview of the application of the salutogenic model in psychiatric contexts, and methodological limitations were taken into account during the interpretation of findings.

Data Extraction

Data were extracted using a structured data extraction form developed by the researchers in line with JBI guidance.

Extracted data included:

- Author(s), year, and country
- Study design
- Sample characteristics
- Objectives
- Measurement tools
- Key findings related to the salutogenic model (Table).

The data extraction form was refined iteratively during the review process to ensure consistency and comprehensiveness.

Data Synthesis

Given the heterogeneity of study designs, populations, and outcome measures, a meta-analysis was not considered appropriate. Instead, a narrative synthesis approach was employed.

The findings were synthesized thematically based on the role of the salutogenic model in psychiatric contexts, including:

- Explanatory role of the model
- Predictive role in mental health outcomes
- Application in intervention studies

This approach enabled the integration of findings across diverse methodologies and provided a comprehensive understanding of how the salutogenic model has been utilized in psychiatric research and practice.

RESULTS

Study Characteristics

A total of 31 studies were included in this review (Figure), encompassing a wide range of study designs, psychiatric populations, and methodological approaches. The included studies demonstrated considerable heterogeneity, reflecting the broad application of the salutogenic model across mental health research.

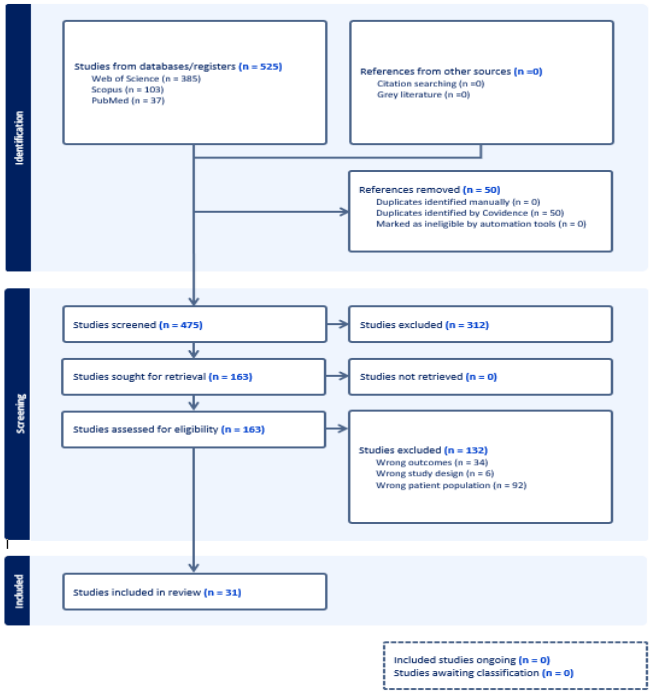


Figure 1. Flow diagram of the systematic review and article selection process according to PRISMA

PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses

In terms of study design, the majority of studies employed quantitative approaches, including cross-sectional designs (Tagay et al., 2005; Bergstein et al., 2008; Lundberg et al., 2009; Henje Blom et al., 2010; Glück et al., 2016; Witkowska-Łuć, 2018; Badura-Brzoza et al., 2019; Başkaya, 2026; Malinowska & Rodzeń, 2026), longitudinal or prospective studies (Hansson et al., 2004; Skärsäter et al., 2005; 2009; Langeland et al., 2007; Sjöström et al., 2012; Stein-Parbury et al., 2012; Schäfer et al., 2020; Vagedes et al., 2021; Pålsson & Landén, 2025), and randomized controlled trials (Forsberg et al., 2010; Schrank et al., 2016; Aci & Kutlu, 2022; Westerberg et al., 2023; Khedr et al., 2024; Nomura et al., 2026) or quasi-experimental interventions (Johansson et al., 2018; Komóczi & Kósa, 2025; Kuroda et al., 2026). In addition, one study focused on intervention development or implementation of salutogenic frameworks in clinical settings (Langeland et al., 2007). This diversity highlights that the salutogenic model has been explored both as an explanatory framework and as a basis for intervention design.

The sample sizes varied considerably, ranging from small pilot samples (e.g., n=20) (Kuroda et al., 2026) to large clinical

Table. Characteristics of the included studies

Author/year and country	Research type	Sample size	Objective	Measurement tools	Findings
Bergstein et al. 2008 Israel	Cross-sectional	The study included 48 patients diagnosed with delusional disorder.	This study aimed to examine the role of sense of coherence (SOC) in predicting remission and risk of relapse among patients with delusional disorder.	Sense of Coherence (SOC) Scale Positive and Negative Syndrome Scale (PANSS)	Patients with higher SOC scores demonstrated faster remission and a lower risk of relapse compared to those with lower SOC scores. A negative correlation was found between SOC scores and PANSS scores; that is, a stronger sense of coherence was associated with less severe symptoms.
Bengtsson-Tops & Hansson 2001 Sweden	Longitudinal study (18-month follow-up)	120 patients with schizophrenia or schizoaffective disorder	To examine the construct and predictive validity of sense of coherence in individuals with schizophrenia and its relationship with psychological, social, and health-related outcomes	Sense of Coherence (SOC) Scale Pearlin's Mastery Scale Rosenberg Self-Esteem ScaleInterview Schedule for Social Interactions (ISSI) Brief Psychiatric Rating Scale (BPRS) Lancashire Quality of Life Profile (LQOLP) Global Assessment of Functioning (GAF)	Sense of coherence was positively associated with mastery, self-esteem, social support, quality of life, well-being, and psychosocial functioning, and negatively associated with psychiatric symptoms. Changes in SOC over time were significantly correlated with improvements in quality of life, general health, and overall well-being, supporting both the construct and predictive validity of SOC in individuals with schizophrenia
Henje Blom et al. 2010 Sweden	Cross-sectional comparative study	139 adolescent females (73 clinical, 66 non-clinical)	To examine whether sense of coherence represents a distinct salutogenic construct or reflects symptoms of anxiety and depression	Sense of Coherence (SOC) Scale Beck Depression Inventory (BDI) Beck Anxiety Inventory (BAI) Strengths and Difficulties Questionnaire – Emotional Symptoms Subscale (SDQ-em)	Sense of coherence showed strong inverse correlations with depression and anxiety measures, and these variables explained a large proportion of SOC variance. Multivariate analyses failed to support SOC as a distinct construct, suggesting that SOC may function as an inverse indicator of persistent depressive and anxiety symptoms rather than a separate salutogenic factor.
Grevenstein et al. 2016 Germany	Prospective and longitudinal	A total of 318 adolescents, aged 14–15 years at baseline, participated in the study.	To examine the incremental validity of sense of coherence compared to neuroticism, extraversion, and self-efficacy in predicting substance use and mental health	SOC-13 Neuroticism & Extraversion (FPI-R) General Self-Efficacy Scale SCL-90-R (mental health) Substance use frequency measure	Sense of coherence demonstrated significant long-term predictive power for both substance use and mental health outcomes. It showed incremental validity beyond neuroticism, extraversion, and self-efficacy, and was the only variable predicting long-term mental health, supporting its role as a distinct and robust salutogenic construct.
Witkowska-Łuć (2018), Poland	Cross-sectional (with pre–post clinical assessment during hospitalization)	n=134 patients with schizophrenia or schizoaffective disorder	To examine the relationship between sense of coherence and symptomatic improvement during hospitalization in patients with schizophrenia spectrum disorders	Sense of Coherence Scale (SOC-29) Positive and Negative Syndrome Scale (PANSS)	Higher sense of coherence was associated with lower severity of negative and general psychopathological symptoms at admission Sense of comprehensibility showed the strongest associations with symptom severity Higher SOC was linked to less symptom escalation during hospitalization However, greater symptom improvement (reduction) was paradoxically associated with lower SOC levels, possibly reflecting increased illness insight during recovery
Lundberg et al., 2009, Sweden	Quantitative (cross-sectional study)	200 individuals with current or previous contact with mental health services	To examine the relationship between stigma-related rejection experiences and self-related variables, including sense of coherence, self-esteem, and empowerment among individuals with mental illness	Sense of Coherence Scale (SOC-13) Rejection Experience Scale Rosenberg Self-Esteem Scale Empowerment Scale	Higher levels of rejection experiences were significantly associated with lower sense of coherence, lower self-esteem, and lower empowerment. A moderate negative correlation was found between stigma experiences and SOC, suggesting that SOC may play a role in how individuals with mental illness cope with stigma.
Schäfer et al., 2020, Germany	Quantitative (longitudinal, two-wave study)	294 patients receiving inpatient psychosomatic rehabilitation	To investigate whether pre-treatment sense of coherence predicts changes in psychopathological symptoms following rehabilitation	Sense of Coherence Scale (SOC-13) Health-49 (general mental health problems) Beck Depression Inventory-II (BDI-II) Beck Anxiety Inventory (BAI)	Sense of coherence significantly increased following treatment, while depression, anxiety, and general mental health problems significantly decreased. Pre-treatment SOC was a significant negative predictor of post-treatment symptom severity across all outcomes, even after controlling for baseline symptoms. Higher SOC levels were associated with greater symptom improvement, indicating that SOC plays a predictive role in mental health recovery.

(table continues)

Table. Characteristics of the included studies (table continues)

Vagedes et al., 2021, Germany	Quantitative (long-term follow-up, correlational study)	68 former patients with anorexia nervosa (initial N=149)	To examine the relationship between sense of coherence and long-term eating disorder symptoms in individuals previously hospitalized for anorexia nervosa	Sense of Coherence Scale (SOC-13) Eating Disorder Inventory (EDI-2)	Sense of coherence was significantly lower than normative values among individuals with a history of anorexia nervosa. SOC scores were negatively correlated with all eating disorder symptom subscales, indicating that lower SOC was associated with more severe ongoing symptoms. Individuals with lower SOC demonstrated significantly higher levels of eating disorder pathology at long-term follow-up.
Başkaya, 2026, Turkiye	Quantitative (cross-sectional, correlational study)	104 patients diagnosed with schizophrenia	To examine the relationship between sense of coherence, cognitive flexibility, and well-being in individuals with schizophrenia	Sense of Coherence Scale (SOC) Cognitive Flexibility Inventory (CFI) Flourishing Scale (FS)	Sense of coherence was positively and significantly associated with both cognitive flexibility and well-being. Higher levels of cognitive flexibility and well-being were linked to higher SOC scores. Additionally, cognitive flexibility and well-being together explained a substantial proportion of variance in SOC, indicating that these factors are important correlates of SOC in individuals with schizophrenia.
Skärsäter et al., 2005, Sweden	Quantitative (prospective longitudinal study)	24 patients with first-episode major depression	To explore the relationship between sense of coherence, social support, and recovery in patients treated for a first episode of major depression over a one-year follow-up period	Sense of Coherence Scale (SOC-29) Montgomery Åsberg Depression Rating Scale (MADRS) Support-Q (social support and social network)	Patients exhibited low sense of coherence at baseline, which significantly increased among those who recovered at the one-year follow-up. Approximately 71% of patients achieved recovery, and this group demonstrated significant improvements in both SOC and perceived social support. Changes in SOC were significantly associated with changes in depressive symptoms, indicating that SOC is dynamically related to recovery processes in major depression.
Sjöström et al., 2012, Sweden	Quantitative (prospective clinical study)	155 patients admitted after a suicide attempt	To examine whether low sense of coherence predicts suicidality and repeat suicide attempts in individuals hospitalized after a suicide attempt	Sense of Coherence Scale (SOC-29) Structured Clinical Interview for DSM-IV (SCID) Suicide Assessment Scale (SUAS) Comprehensive Psychopathological Rating Scale (CPRS-S-A)	Low sense of coherence was significantly associated with higher suicidality both at baseline and at 2-month follow-up. Low SOC predicted increased risk of suicidality independently of major depression and symptom severity. Although low SOC was associated with repeat suicide attempts over a 3-year period in univariate analysis, this association did not remain significant after controlling for depression and symptom burden. Overall, SOC was identified as an important marker of suicide risk in clinical populations.
Skärsäter et al. (2009), Sweden	Longitudinal study (4-year follow-up)	n=33 (baseline), n=22 (completed follow-up)	To examine changes in sense of coherence over time and its relationship with depressive symptoms, aggression, and functional status in individuals with first-episode major depression	Sense of Coherence Scale (SOC-29) Montgomery–Åsberg Depression Rating Scale (MADRS) Aggression Questionnaire (AQ) Global Assessment of Functioning (GAF) SF-36 (Quality of Life)	Sense of coherence significantly increased over time ($p<.0001$) SOC was not related to depression at baseline but became significantly associated at 4-year follow-up ($r=-.60$) Higher SOC was associated with: better functioning (GAF) ($r=.64$) better quality of life (SF-36) ($r=.72–.74$) lower aggression and hostility Results suggest that SOC improves alongside recovery and may be strengthened through treatment
Hansson et al., 2004, Sweden	Quantitative (long-term follow-up study)	186 adolescents diagnosed with conduct disorder	To investigate long-term outcomes and the role of sense of coherence and other psychosocial factors in adolescents diagnosed with conduct disorder who received inpatient psychiatric treatment	Sense of Coherence Scale (SOC) Self-reported psychiatric symptom measures Family climate assessment Interview-based health ratings	A substantial proportion of participants demonstrated improvement in life functioning over time, including domains such as relationships, work, and overall life adjustment. Sense of coherence was included as a key psychosocial resource associated with better long-term outcomes, suggesting that higher SOC may contribute to more adaptive life trajectories in individuals with conduct disorder.
Tagay et al., 2005, Germany	Quantitative (cross-sectional clinical study)	583 psychiatric outpatients	To examine the prevalence of PTSD and compare psychopathology, sense of coherence, and service utilization between patients with and without PTSD	Sense of Coherence Scale (SOC) Trauma-specific questionnaires DSM-IV/ICD-10 diagnostic criteria Measures of depression and anxiety	Patients with PTSD exhibited significantly lower levels of sense of coherence compared to those without PTSD. PTSD was also associated with higher levels of depression and anxiety, as well as increased use of mental health services, including psychotherapy and medication. These findings suggest that lower SOC is linked to greater psychological distress and clinical burden in PTSD.

(table continues)

Table. Characteristics of the included studies (table continues)

Glück et al., 2016, Austria	Cross-sectional (mediation/path analysis study)	N=97	To examine the influence of sense of coherence and mindfulness on PTSD symptoms and posttraumatic cognitions in elderly individuals with a history of trauma.	Sense of Coherence Scale (SOC-13) Essen Trauma Inventory (ETI) Posttraumatic Cognitions Inventory (PTCI) Five Facet Mindfulness Questionnaire (FFMQ) Brief Symptom Inventory (BSI-18)	Sense of coherence was a strong predictor of lower PTSD symptoms and posttraumatic cognitions. Mindfulness partially mediated the relationship between SOC and posttraumatic cognitions, and indirectly influenced PTSD symptoms through posttraumatic cognitions. SOC and mindfulness together explained a substantial proportion of variance in PTSD symptoms.
Badura-Brzoza et al., 2019, Poland	Quantitative (cross-sectional study)	147 patients with various psychiatric disorders	To evaluate sense of coherence in different psychiatric disorders and examine its relationship with depression, anxiety, and quality of life	Sense of Coherence Scale (SOC-29) Beck Depression Inventory (BDI) State-Trait Anxiety Inventory (STAI) SF-36 Quality of Life Scale	Sense of coherence was significantly lower in patients with major depression and eating disorders compared to other diagnostic groups. SOC showed a significant negative correlation with depression and anxiety symptoms across all patients, and a positive correlation with quality of life. These findings indicate that higher SOC is associated with better psychological well-being and functioning in psychiatric populations.
Stein-Parbury et al., 2012, Australia	Quantitative (prospective descriptive study/secondary analysis)	84 older adults with schizophrenia	To identify factors associated with illness self-management in older adults with schizophrenia and examine the role of sense of coherence	Sense of Coherence Scale (SOC-29) Partners in Health Scale (self-management) Self-rated health scale	A higher sense of coherence was significantly associated with better illness self-management, particularly in understanding symptoms and responding appropriately to health-related changes. SOC emerged as an important predictor of self-management abilities in individuals with schizophrenia, highlighting its role in functional adaptation and illness management.
Pajewska et al., 2025, Poland	Quantitative (cross-sectional with regression and mediation analysis)	100 patients with alcohol use disorder	To examine the role of sense of coherence in predicting perceived stress, health behaviors, acceptance of illness, and life satisfaction among individuals with alcohol use disorder, and to test potential mediation effects	Sense of Coherence Scale (SOC-29) Perceived Stress Scale (PSS-10) Satisfaction with Life Scale (SWLS) Acceptance of Illness Scale (AIS) Health Behavior Inventory (HBI)	Sense of coherence was a significant predictor of lower perceived stress and higher life satisfaction among individuals with alcohol use disorder. Mediation analysis showed that perceived stress partially mediated the relationship between SOC and life satisfaction, indicating that higher SOC reduces stress, which in turn enhances well-being. SOC was also positively associated with health behaviors and acceptance of illness.
Pålsson & Landén, 2025, Sweden	Quantitative (longitudinal cohort study with case–control comparison)	248 patients with bipolar disorder and 113 healthy controls	To examine sense of coherence in individuals with bipolar disorder, its association with clinical characteristics, and its predictive value for psychiatric outcomes over time	Sense of Coherence Scale (SOC-29) Montgomery–Åsberg Depression Rating Scale (MADRS) Sheehan Disability Scale Global Assessment of Functioning (GAF)	Individuals with bipolar disorder had significantly lower SOC compared to healthy controls. Lower SOC was associated with greater depressive symptoms, functional impairment, and comorbid anxiety disorders. Longitudinal analyses showed that SOC remained relatively stable over a 14-year period. Importantly, lower baseline SOC predicted self-harm during follow-up, although it was not associated with relapse or suicide attempts.
Malinowska & Rodzeń, 2026, Poland	Quantitative (cross-sectional with mediation analysis)	180 adults with ADHD	To examine the relationships between procrastination, self-efficacy, and sense of coherence, and to test the mediating role of self-efficacy in adults with ADHD	Sense of Coherence Scale General Self-Efficacy Scale Procrastination Scale	Sense of coherence was negatively associated with procrastination and positively associated with self-efficacy. Mediation analysis indicated that self-efficacy partially mediated the relationship between procrastination and SOC, suggesting that higher self-efficacy may buffer the negative impact of procrastination on psychological coherence and functioning.
Langeland & Wahl (2009), Norway	Prospective longitudinal panel study	n=107 (baseline), n=92 (1-year follow-up)	To examine whether social support predicts changes in sense of coherence (SOC) over one year among individuals with mental health problems	Sense of Coherence Scale (SOC-29) Social Provision Scale (SPS) Symptom Checklist-90-R (SCL-90-R)	Social support significantly predicted positive changes in SOC (β=0.32, p=.016) Mental symptom severity did not predict SOC change (p=.621) The most important predictor was opportunity for nurturance (β=0.24) Social integration showed a weaker and non-significant effect after adjustment Results indicate that social relational factors, rather than symptom severity, drive SOC development

(table continues)

Table. Characteristics of the included studies (table continues)

Kuroda et al., 2026, Japan	Quantitative (non-randomized pre–post pilot intervention study)	20 individuals with schizophrenia	To examine the effects of the Japanese version of metacognitive training (MCT-J) on self-efficacy, sense of coherence, and cognitive functioning in community-dwelling individuals with schizophrenia	A 10-session group-based metacognitive training program delivered weekly, targeting cognitive biases (e.g., jumping to conclusions, attributional style, and self-reflection) through structured exercises, psychoeducation, and group discussions. Sense of Coherence Scale (SOC-13) Self-Efficacy for Community Life Scale (SECL) Beck Cognitive Insight Scale (BCIS) Trail Making Test (TMT-J) PANSS (symptoms)	The intervention led to improvements in self-efficacy and attentional performance; however, changes in sense of coherence were limited and not consistently significant across analyses. Exploratory findings suggested minor improvements in the comprehensibility subdimension, but overall SOC remained relatively stable.
Johansson et al. 2018 Sweden	Implementation study (quasi-experimental, pre-post +comparative)	Evaluation: n=41 Comparative: n=829	To develop, implement, and evaluate a salutogenic treatment model based on generalized resistance resources in a child and adolescent psychiatric emergency setting	A salutogenic treatment model based on eight generalized resistance resources (GRRs), including clear communication, patient involvement in decision-making, continuous staff availability, daily information, maintenance of social connections, self-help guidance, and improvement of the care environment, implemented in a child and adolescent psychiatric emergency setting. Generalized Resistance Resources (GRR) were identified and applied within the unit. Patient and parent satisfaction questionnaires. Mental health assessments conducted at admission and discharge. Data on length of treatment and rates of readmission.	Implementation of a salutogenic treatment model based on eight generalized resistance resources was associated with improved mental health outcomes, increased patient and parent satisfaction, reduced treatment duration, and lower readmission rates, suggesting the model as a promising approach in psychiatric emergency care.
Nomura et al., 2026, Japan	Randomized Controlled Trial (RCT)	175 postpartum women	To evaluate the effectiveness of a remote group-based physical activity intervention on physical activity and psychosocial outcomes, including sense of coherence	Sense of Coherence Scale (SOC-13) SF-12 (QoL) Accelerometer (MVPA) Exercise self-efficacy scale	The intervention significantly increased sense of coherence compared to the control group. Improvements in SOC were accompanied by increased physical activity and self-efficacy. The findings suggest that structured, group-based physical activity interventions can strengthen psychological resources such as SOC by enhancing social support, perceived competence, and coping capacity.
Forsberg et al., 2010, Sweden	Quantitative (cluster randomized controlled trial)	41 individuals with psychiatric disabilities (DSM-IV diagnoses)	To investigate the effects of a 12-month lifestyle intervention on psychiatric symptoms, quality of life, functioning, and sense of coherence among individuals with psychiatric disabilities	A 12-month group-based lifestyle intervention including dietary education, physical activity, and psychoeducation on health, stress, and motivation. Sessions were held twice weekly (one educational and one physical activity session), each lasting approximately two hours, and were delivered in a socially interactive group setting. Sense of Coherence Scale (SOC-13) Symptom Checklist-90-R (SCL-90-R) Global Assessment of Functioning (GAF) SF-36 (quality of life) MANSA (quality of life)	The intervention resulted in a significant increase in sense of coherence compared to the control group. Improvements in psychosocial functioning were observed, while no significant changes were found in psychiatric symptoms or quality of life. Higher attendance was associated with greater improvements in SOC, suggesting that structured, socially engaging lifestyle interventions can enhance SOC in individuals with psychiatric disabilities.

(table continues)

Table. Characteristics of the included studies (table continues)

Aci & Kutlu 2022 Turkiye	Randomized Controlled Experimental Study	Initial sample: 60 participants (30 experimental, 30 control) Completed: 49 participants (22 experimental, 27 control)	To determine the effects of salutogenesis-based interventions on sense of coherence (SOC) and psychological resilience in individuals diagnosed with schizophrenia.	Intervention/Measurement Tools Group counseling sessions based on the salutogenic approach Conducted over 8 weeks, twice a week, for a total of 16 sessions Each session lasted 45–90 minutes Sessions were facilitated by a trained nurse Measurement Tools Sense of Coherence Scale-13 (SOC-13) Brief Resilience Scale (BRS)	In the experimental group, significant increases were observed in SOC and BRS scores at post-test and 1-month follow-up ($p < 0.001$). SOC sub-dimensions (meaningfulness, manageability, comprehensibility) also showed significant improvements. No significant changes were found in the control group. These findings indicate that the intervention program enhanced both sense of coherence and psychological resilience.
Khedr et al., 2024, (Egypt)	Quantitative (randomized controlled trial; pre–post design with follow-up)	50 patients with bipolar disorder (25 intervention, 25 control)	To examine the effect of a physical exercise program on sense of coherence, social functioning, and alexithymia among patients with bipolar disorder	A structured physical exercise program delivered to patients with bipolar disorder, including regular supervised exercise sessions over a defined intervention period, compared with a waiting-list control group. Sense of Coherence Scale Social Functioning Scale Toronto Alexithymia Scale	The intervention group showed a significant increase in sense of coherence and social functioning scores, along with a significant decrease in alexithymia levels compared to the control group. These improvements were maintained at the three-month follow-up, indicating the sustained benefits of physical exercise as an adjunctive treatment in bipolar disorder.
Schrank et al., 2016, UK	Randomized Controlled Trial (pilot RCT)	94 individuals with psychosis	To evaluate the feasibility and effectiveness of a positive psychotherapy group intervention (WELLFOCUS PPT) on well-being and psychological outcomes in people with psychosis	Measurement Tools: Sense of Coherence Scale Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) Brief Psychiatric Rating Scale (BPRS) Depression scale Quality of Life measures	The intervention group showed improvements in several psychological outcomes, including symptoms, depression, hope, and self-esteem. Sense of coherence also increased in the intervention group at a descriptive level. However, SOC was not a primary outcome, and overall effects on well-being were mixed depending on the measurement approach.
Westerberg et al., 2023, Sweden	Randomized Controlled Trial	84 adults with Autism Spectrum Disorder	To evaluate the feasibility and effectiveness of an internet-based intervention on quality of life, sense of coherence, and psychiatric symptoms	A therapist-guided, internet-based group intervention designed for adults with autism spectrum disorder, combining structured online modules and regular group sessions. The program focused on enhancing coping skills, daily functioning, and quality of life through psychoeducation, cognitive-behavioral strategies, and peer interaction. Sense of Coherence Scale (SOC-13) General Self-Efficacy Scale (GSE-10) General Health Questionnaire (GHQ-12) Life Satisfaction (single-item scale)	No significant differences were found between intervention and control groups for sense of coherence, quality of life, or psychiatric symptoms. Although the intervention was feasible and well accepted, it did not produce significant improvements in SOC or mental health outcomes.
Komóczi & Kósa, 2025, Hungary	Quasi-experimental study (pretest–posttest design)	27 participants (matched pre–post analysis: n=11) with mental disorders in a community-based psychiatric rehabilitation setting	To evaluate the feasibility and effects of a storytelling-based intervention on sense of coherence, self-efficacy, psychological distress, and life satisfaction among individuals with mental disorders in community psychiatric rehabilitation	A community-based storytelling intervention consisting of eight group sessions over four months, in which participants listened to and discussed narratives depicting challenging life situations, followed by open reflection and meaning-making processes.	The storytelling intervention significantly improved life satisfaction. Although sense of coherence, self-efficacy, and psychological distress showed a tendency toward improvement, these changes were not statistically significant. Additionally, sense of coherence was positively correlated with self-efficacy and negatively associated with psychological distress.
Langeland et al., 2007, Norway	Intervention framework/ program development study (theory-based)	Not applicable (program description for individuals with mental health problems)	To operationalize the salutogenic model into therapy principles and develop a structured group-based intervention aimed at enhancing sense of coherence, coping, and mental health among individuals with mental health problems	Not directly applied in this paper (the program is based on the Sense of Coherence framework and has been evaluated in a separate randomized controlled trial study)	The study presents a structured salutogenic intervention consisting of 16 group sessions based on five core therapy principles (health continuum, personal narrative, health-promoting factors, tension as a resource, and active adaptation). The program aims to enhance sense of coherence and coping by increasing awareness of personal and environmental resources. The authors suggest that such interventions can support mental health promotion and recovery-oriented care.

FPI-R: Freiburg Personality Inventory-Revised; SCL-90-R: Symptom Checklist-90-Revised; CPRS-S-A: Comprehensive Psychopathological Rating Scale-Self-rating Scale for Affective Syndromes; SF-36: 36-Item Short Form Health Survey; PTSD: Post-Traumatic Stress Disorder; DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition; ICD-10: International Classification of Diseases, 10th Revision; ADHD: Attention-Deficit/Hyperactivity Disorder; SF-12: 12-Item Short Form Health Survey; QoL: Quality of Life; MVPA: Moderate-to-Vigorous Physical Activity; MANSA: Manchester Short Assessment of Quality of Life; WELLFOCUS PPT: WELLFOCUS Positive Psychotherapy

cohorts exceeding 583 participants (Tagay et al., 2005). The populations included individuals with a wide spectrum of psychiatric conditions, most commonly schizophrenia and related psychotic disorders, followed by mood disorders such as major depression and bipolar disorder. Other populations included individuals with substance use disorders, post-traumatic stress disorder, autism spectrum disorder, eating disorders, and those with a history of suicide attempts.

Geographically, the studies were conducted across multiple regions, with a strong concentration in European countries, particularly Sweden (Bengtsson-Tops & Hansson, 2001; Hansson et al., 2004; Skärsäter et al., 2005; 2009; Tagay et al., 2005; Drageset et al., 2009; Langeland et al., 2007; Lundberg et al., 2009; Forsberg et al., 2010; Henje Blom et al., 2010; Sjöström et al., 2012; Grevenstein et al., 2016; Johansson et al., 2018; Witkowska-Łuć, 2018; Badura-Brzoza et al., 2019; Schäfer et al., 2020; Vagedes et al., 2021; Westerberg et al., 2023; Pajewska et al., 2025; Pålsson & Landén, 2025; Malinowska & Rodzeń, 2026). Notably, Scandinavian countries contributed a substantial proportion of the longitudinal and intervention-based studies, highlighting their leading role in salutogenesis research.

Across all studies, the Sense of Coherence (SOC) Scale was the most frequently used instrument, applied in both its 13-item (SOC-13) and 29-item (SOC-29) versions. In addition to SOC, a wide range of validated measurement tools were used to assess psychiatric symptoms, functioning, and well-being. These included instruments such as the Positive and Negative Syndrome Scale (PANSS), Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI), Global Assessment of Functioning (GAF), and quality of life measures such as SF-36. Several studies also incorporated measures of psychosocial resources, including self-efficacy, social support, empowerment, and cognitive flexibility, reflecting the multidimensional nature of the salutogenic model.

A subset of the included studies applied the salutogenic model within intervention contexts (Langeland et al., 2007; Forsberg et al., 2010; Schrank et al., 2016; Johansson et al., 2018; Aci & Kutlu, 2022; Westerberg et al., 2023; Khedr et al., 2024; Komóczi & Kósa, 2025; Kuroda et al., 2026; Nomura et al., 2026). These interventions varied in structure, duration, and theoretical emphasis but generally aimed to enhance psychosocial resources and coping capacities. Intervention types included group-based salutogenic counseling programs, lifestyle and physical activity interventions, metacognitive training, positive psychotherapy, storytelling-based interventions, and internet-based programs. While some interventions were explicitly grounded in salutogenic theory, others indirectly targeted core salutogenic components such as social support, coping, and self-efficacy. Intervention durations ranged from short-term programs (e.g., 8 weeks) Aci & Kutlu (2022) to long-term interventions (e.g., 12 months) Forsberg et al. (2010), with varying levels of effectiveness in improving SOC and related outcomes

Study Findings

This review synthesized 31 studies examining the use of the salutogenic model in psychiatric populations. Across the included studies, the salutogenic model was operationalized primarily through the concept of SOC and related psychosocial resources, and was applied in three main ways: (1) as an explanatory framework for mental health and illness, (2) as a predictor of clinical and recovery-related outcomes, and (3) as a basis for intervention development and implementation.

Salutogenic model as an explanatory framework: A substantial proportion of studies used the salutogenic model to explain variations in psychiatric symptoms, functioning, and well-being. Within this framework, SOC functioned as a central construct reflecting individuals' capacity to perceive life as comprehensible, manageable, and meaningful. Across diagnostic groups-including schizophrenia, depression, bipolar disorder, PTSD, and eating disorders-higher SOC was consistently associated with lower symptom severity and better psychosocial outcomes (Bengtsson-Tops & Hansson, 2001; Tagay et al., 2006; Bergstein et al., 2008; Badura-Brzoza et al., 2019; Vagedes et al., 2021).

These findings suggest that the salutogenic model provides a useful lens for understanding not only the presence of psychopathology but also the distribution of psychological resources that contribute to mental health. In this context, SOC appears to capture an individual's overall orientation toward coping with stressors, rather than representing a disorder-specific factor.

Salutogenic model as a predictor of clinical and recovery outcomes: Several longitudinal and prospective studies demonstrated that the salutogenic model, operationalized through SOC, has predictive value for psychiatric outcomes. Higher SOC was associated with faster remission and lower relapse risk in psychotic disorders (Bergstein et al., 2008) as well as improved quality of life, functioning, and well-being over time (Bengtsson-Tops & Hansson, 2001).

In mood disorders, SOC increased during recovery and became more strongly associated with depressive symptoms and functioning over time, suggesting that salutogenic processes may evolve throughout the course of illness (Skärsäter et al., 2005; 2009). Similarly, low SOC predicted higher suicidality and psychological distress in clinical populations (Sjöström et al., 2012).

Importantly, longitudinal evidence indicated that salutogenic resources may operate independently of symptom severity. For example, social support predicted changes in SOC, whereas baseline symptom levels did not (Langeland et al., 2007) . This finding highlights a core assumption of the salutogenic model: that health is not merely the absence of illness but is shaped by access to and utilization of generalized resistance resources.

Role of social and psychological resources in the salutogenic model: Across studies, the salutogenic model emphasized the importance of psychosocial resources such as social support, self-efficacy, cognitive flexibility, and empowerment. These resources were consistently associated with higher SOC and better mental health outcomes (Lundberg et al., 2009; Pajewska et al., 2025; Başkaya, 2026; Malinowska & Rodzeń, 2026).

In particular, relational factors played a critical role. Social support-especially opportunities for meaningful interpersonal engagement-was a key predictor of SOC development (Langeland et al., 2007). Conversely, negative social experiences such as stigma and rejection were

associated with lower SOC, suggesting that social context is central to the functioning of the salutogenic model (Lundberg et al., 2009).

These findings reinforce the view that salutogenesis is inherently relational and contextual, extending beyond individual coping to include social and environmental determinants of mental health.

Salutogenic model in intervention studies: A growing number of studies applied the salutogenic model in intervention design, although findings were mixed. Interventions explicitly based on salutogenic principles-such as group counseling programs, lifestyle interventions, and structured psychosocial programs-generally demonstrated improvements in SOC and related outcomes (Forsberg et al., 2010; Johansson et al., 2018; Aci & Kutlu, 2022).

Additionally, interventions not explicitly labeled as "salutogenic" but targeting core salutogenic mechanisms-such as physical activity, self-efficacy, and social engagement-also resulted in significant increases in SOC (Khedr et al., 2024; Nomura et al., 2026). These findings suggest that the salutogenic model can be applied both directly and indirectly in clinical practice.

However, not all interventions led to significant changes in SOC. Internet-based interventions and narrative-based rehabilitation programs showed limited or non-significant effects on SOC, despite improvements in other outcomes (Westerberg et al., 2023; Komóczi & Kósa, 2025). This variability indicates that SOC may be more responsive to interventions that include sustained engagement, social interaction, and active participation.

Conceptual considerations in the application of the salutogenic model: Some studies raised important conceptual questions regarding the distinctiveness of SOC within the salutogenic model. While several findings supported SOC as an independent and predictive construct (Grevenstein et al., 2016), others suggested that SOC may overlap substantially with depression and anxiety, functioning partly as an inverse indicator of psychopathology (Henje Blom et al., 2010).

These contrasting findings highlight an ongoing debate in the literature and suggest that the application of the salutogenic model in psychiatric contexts requires careful conceptual consideration. Nevertheless, even in studies where SOC overlapped with symptom measures, it remained strongly associated with clinically relevant outcomes, supporting its practical relevance.

DISCUSSION

The findings of this systematic review demonstrate that the salutogenic model and its central construct, SOC, function both as protective and predictive factors in the field of mental health. Overall, the studies indicated that higher SOC levels help individuals buffer against the negative effects of depression, anxiety, psychotic disorders, and traumatic life events, whereas lower SOC levels were closely associated with adverse mental health outcomes. Furthermore, general resistance resources (GRRs)-such as social support, self-efficacy, self-esteem, and mindfulness-were found to exert strong protective effects on mental health when combined with high SOC.

These results are consistent with Antonovsky's (1996) conceptualization of the salutogenic model. Antonovsky emphasized that SOC reflects individuals' capacity to perceive life stressors as comprehensible, manageable, and meaningful, thereby serving as a fundamental resource that shifts individuals toward the healthier end of the health–disease continuum. Eriksson and Lindström's (2006) comprehensive review also highlighted SOC as one of the strongest predictors of both physical and mental health outcomes. The present review supports these perspectives and underscores the importance of considering SOC as a central variable, particularly in the context of mental disorders.

Studies conducted with clinical populations clearly demonstrate the role of SOC in treatment processes. For instance, higher SOC levels were associated with faster remission and lower relapse risk among individuals with delusional disorder (Bergstein et al., 2008), suggesting that SOC is a critical prognostic indicator. Similarly, among patients with schizophrenia and schizoaffective disorder, SOC was strongly associated with social support and self-esteem (Bengtsson-Tops & Hansson, 2001), indicating that targeting SOC in rehabilitation and psychosocial interventions may enhance treatment outcomes. Evidence from non-clinical populations further supports these findings. For example, low SOC among adolescent girls was strongly linked with depressive and anxiety symptoms (Henje Blom et al., 2010), highlighting the importance of strengthening SOC within preventive mental health programs for youth.

Research focusing on trauma and special conditions further illustrates SOC's role in coping with adversity. A qualitative study of war-affected adolescents revealed that high SOC was related to more effective coping strategies, whereas low SOC was associated with difficulties in adjustment (Ebina & Yamazaki, 2008). Likewise, siblings of children with autism spectrum disorder who demonstrated higher SOC reported greater social support, better adjustment, and stronger coping skills (Smith et al., 2015), indicating that SOC is an important resource not only at the individual level but also within family mental health.

Community-based studies provided additional support for SOC's protective role in larger samples. Among university students, self-efficacy, mindfulness, and social support were positively associated with SOC, collectively enhancing mental health outcomes (Guzman Villegas-Frei et al., 2024). In a longitudinal study with adolescents, SOC was identified as the strongest predictor of long-term mental health and a protective factor against substance use (Grevenstein et al., 2016). In older adults, lower SOC was significantly linked with alcohol problems (Midanik et al., 1992), while a longitudinal study in Sweden demonstrated that childhood self-esteem and secure parental relationships predicted higher SOC and positive mental health in adulthood (Cederblad et al., 1994).

The findings of this review contribute to the literature in three significant ways. First, SOC was shown to strengthen mental health not only at the individual level but also at the family and community levels. Second, SOC was found to be associated not only with current mental health symptoms but also with long-term prognosis, underscoring its predictive value. Third, the integration of SOC with psychosocial factors such as social support, self-efficacy, and mindfulness

offers new perspectives for preventive and health-promoting interventions.

CONCLUSION

Nevertheless, some limitations must be acknowledged. The majority of included studies were cross-sectional, which limits the ability to establish causal relationships. In addition, the relatively small number of intervention studies restricts conclusions about the effectiveness of programs that directly target SOC. From a cultural perspective, most studies were conducted in Europe and North America, with limited representation from low- and middle-income countries.

Future research should focus on developing and evaluating psychoeducational and psychosocial interventions designed to strengthen SOC, particularly through experimental designs. Moreover, longitudinal studies are needed to further examine the long-term effects of SOC on mental health, thereby providing a stronger foundation for the application of the salutogenic model in both clinical and community-based contexts.

ETHICAL DECLARATIONS

Peer Review Process

This review was externally peer-reviewed.

Conflict of Interest

The authors declare no conflicts of interest.

Financial Disclosure

No financial support was received for the preparation or publication of this article.

Author Contributions

Concept: CHA, RU; Design: CHA, RU; Control: CHA, RU, ÇGÇ; Data Collection and/or Processing: CHA, RU, ÇGÇ; Analysis and/or Interpretation: CHA, RU, ÇGÇ; Literature Review: CHA, RU, ÇGÇ; Article Writing: CHA, RU, ÇGÇ; Critical Review: CHA, RU, ÇGÇ.

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