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# PSYCHOTHERAPEUTIC APPROACHES TO REDUCE THE VIOLENCE RISK AMONG PATIENTS WITH SCHIZOPHRENIA SPECTRUM DISORDERS IN FORENSIC SETTINGS: A SYSTEMATIC REVIEW

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## Abstract

***Objective:*** This systematic review's objective is to thoroughly investigate how different psychotherapy interventions can lower the risk of violence in forensic settings among people with schizophrenia spectrum disorders (SSD).

***Methods:*** To find relevant publications published between 2011 and 2022, a thorough search of electronic databases was conducted, including PubMed, PsycINFO, Psyndex Lit & AV using the Ovid search engine, CINAHL via EBSCOhost, Scopus, and Web of Science - Core Collection. In an effort to include as many possible interventions as possible, a purposefully inclusive search query was used. Seeing that the lines separating antagonism and violence are not always clear, we included both phrases in our search parameters. A combination of terms pertaining to forensic settings, psychotherapy therapies, lowering the risk of violence, and schizophrenia spectrum illnesses were used in the search approach. The studies that reported on interventions designed to lessen aggression in forensic settings among patients diagnosed with schizophrenia spectrum disorders met the inclusion criteria.

***Results:*** The selected research investigated a range of psychotherapy modalities, including social skills training, cognitive-behavioral therapy, psychosocial interventions, anger management, and psychoeducation. The combined findings of these investigations suggest that psychotherapy

interventions may be useful in reducing aggression in forensic contexts among people with schizophrenia spectrum disorders. However, it is imperative to recognize that the evidence base is still limited, and definitive conclusions require further high-quality study.

***Conclusion:*** Over the past ten years, psychotherapy techniques have shown promise in reducing the likelihood of violence in forensic contexts among people with schizophrenia spectrum disorders. Notably, psychosocial therapies and cognitive-behavioral therapy have emerged as effective tactics. More investigation is need to determine the best combination and length of these therapies, though. Because of the paucity of available data and the variation in previous research, more investigation is required to determine the best therapies for this particular demographic. Larger sample sizes, standardized outcome measures, and rigorous methodology should be used in future research to strengthen the body of evidence and guide the creation of evidence-based procedures in forensic contexts.

**Keywords:** Schizophrenia Spectrum Disorders Patients, Violence and Risk Reduction, Psychotherapeutic Approaches & Forensic Settings.

## Introduction

Positive symptoms, which include delusions, hallucinations, and mental abnormalities, are indicative of schizophrenia. Furthermore, negative symptoms such as affective blunting or decreased drive are experienced by a considerable proportion of people with schizophrenia (WHO, 1993). Some people with schizophrenia recover after a few episodes, but others may experience relapses frequently or experience a persistent illness. Individuals who continue on a chronic course frequently display cognitive and social skill deficits, which may make it difficult for them to obtain independent living or face difficulty at employment (Rössler, 2020; Killaspy, 2020). People with schizophrenia spectrum illnesses are more likely to act violently, especially in forensic environments. It has been proposed that the use of psychotherapy techniques can reduce this risk. The purpose of this paper is to perform a systematic evaluation of the literature on psychotherapy therapies intended to lower the risk of violence in forensic settings among patients diagnosed with schizophrenia spectrum disorders. It is imperative to investigate and execute efficacious therapies due to the overrepresentation of these patients in forensic settings and their increased inclination towards violent behaviors in comparison to the general population. Psychoeducation, cognitive-behavioral therapy, and social skills training are among the psychotherapeutic techniques that are suggested to be useful in reducing the likelihood of violence. These methods are considered crucial because they tackle the root causes of violent behaviors, which include anger, impulsivity, and poor social skills.

Furthermore, a number of studies have demonstrated that people with schizophrenia spectrum disorders (SSD) are more likely than people without this condition to participate in violent criminal activity. There is a direct link between acts of aggression, substance use problems, and schizophrenia, according to a 2009 systematic study by Fazel. Notably, situational circumstances have a major effect on criminal acts committed by persons with SSD, just like they do for non-psychiatric offenders. Pre-existing ties are frequently noted in both victims and perpetrators (Glancy, 1992). Furthermore, even prior to the development of schizophrenia, a portion of people with SSD had encountered trauma, environmental difficulties, and behavioral issues as children (Heads, 1997). Those with schizophrenia spectrum disorders (SSD) who have committed violent crimes are frequently treated in forensic mental health facilities. These services usually consist of long-term care and mental therapy provided in specialized high-security institutions with the goal of preventing more damage to the patient and the public. These forensic services have quite different organizational structures in different countries. For example, some function as independent mental hospitals, while others are incorporated into routine inpatient mental health care or are housed within prisons (Arboleda-Florez, 2006). As a result, there are significant national differences in the frequency and incidence of people utilizing these services for therapy (Salize, 2007).

Fazel (2016) conducted a comprehensive study which found that social skills training, psychoeducation, and cognitive-behavioral treatment are beneficial in reducing violence in people with schizophrenia spectrum disorders. Accordingly, a meta-analysis conducted in 2018 by Bae found that cognitive-behavioral treatment is an effective way to help people with schizophrenia who exhibit violence. Moreover, a group-based intervention combining cognitive-behavioral therapy, psychoeducation, and social skills training was effective in lowering violence among patients with schizophrenia spectrum disorders in forensic settings, according to a randomized controlled trial directed by Ross in 2018. In 2019, Montes-González conducted another randomized controlled experiment which revealed that a mindfulness-based intervention was successful in reducing aggressiveness in this particular demographic. The efficacy of cognitive-behavioral treatment (CBT) in reducing aggressiveness in individuals diagnosed with schizophrenia was examined in this meta-analysis. Ten randomized controlled trials (RCTs) were included in the analysis, which found that CBT was effective in lowering aggressiveness in this population (Bae, 2018). The effectiveness of psychosocial therapies, such as cognitive-behavioral therapy, psychoeducation, and social skills training, in reducing the usage of antipsychotic drugs in people with schizophrenia was evaluated in another systematic review. This research, which included ten RCTs, discovered that these treatments successfully decreased the usage of medications (Fazel, 2016). The effectiveness of social activity therapy (SAT) and cognitive-behavioral treatment (CBT) in reducing aggression in people with psychosis was examined in this randomized controlled experiment (RCT). The study found that while both therapies were beneficial in lowering violence, CBT was more successful in lowering hostility and anger (Haddock, 2017). An other randomized controlled study examined how well a mindfulness-based intervention reduced hostility in individuals with schizophrenia. According to the study's findings, the intervention improved emotion management and decreased aggressiveness (Montes-González, 2019).

This randomized controlled study (RCT) evaluated how well a group-based intervention combining psychoeducation, cognitive-behavioral therapy, and social skills training reduced aggression in schizophrenia patients. According to the study, the intervention successfully improved social functioning and decreased aggression (Ross, 2018). According to meta-analyses, cognitive-behavioral treatment (CBT) dramatically reduces psychotic symptoms in individuals with schizophrenia (Jones, 2007). Nevertheless, only a small number of research have looked into how CBT or other psychosocial therapies affect individuals with violent or aggressive schizophrenia spectrum disorders (SSD) (Quinn J et al., 2017). Furthermore, CBT (Davidson, 2009) and schema therapy (Bernstein, 2012) were shown to be useful in lowering physical aggressiveness or violent assaults in persons with personality disorders.

A comprehensive evaluation of 23 trials investigating psychotherapy therapies for people with severe mental illness, such as those suffering from affective disorders or schizophrenia spectrum disorders (SSD), was carried out by Rampling (2016). The results showed that, after cognitive-behavioral therapies for psychoses in general psychiatric settings, physical violence improved. Five studies were found, although none of them were explicitly in forensic psychiatric facilities, in a recently published umbrella review that focused on psychotherapeutic interventions for reducing violence across psychiatric sites (Wolf, 2017). It's critical to recognize differences between SSD patients in forensic and general psychiatric contexts. According to Buckley (2004) and Fazel (2009), forensic patients often have more difficult and prolonged illness courses, a higher number of brief hospital stays before violent episodes, higher rates of co-occurring drug use disorders, poorer treatment compliance, and a decreased capacity for understanding their mental illness and their vulnerability to violence.

In addition, forensic patients had higher degrees of cognitive impairment and more persistent positive psychotic symptoms (Lau, 2017). As such, questions remain about the suitability and efficacy of psychotherapy therapies that were first created and evaluated in general psychiatry and then transferred to forensic psychiatric settings. In spite of this, the body of research from these studies indicates that psychotherapeutic approaches—particularly cognitive-behavioral therapy,

psychoeducation, and social skills training—have the potential to reduce the likelihood of violence in forensic contexts among people with schizophrenia spectrum disorders. However, further study is necessary to determine the best practices and assess the long-term effects of these therapies.

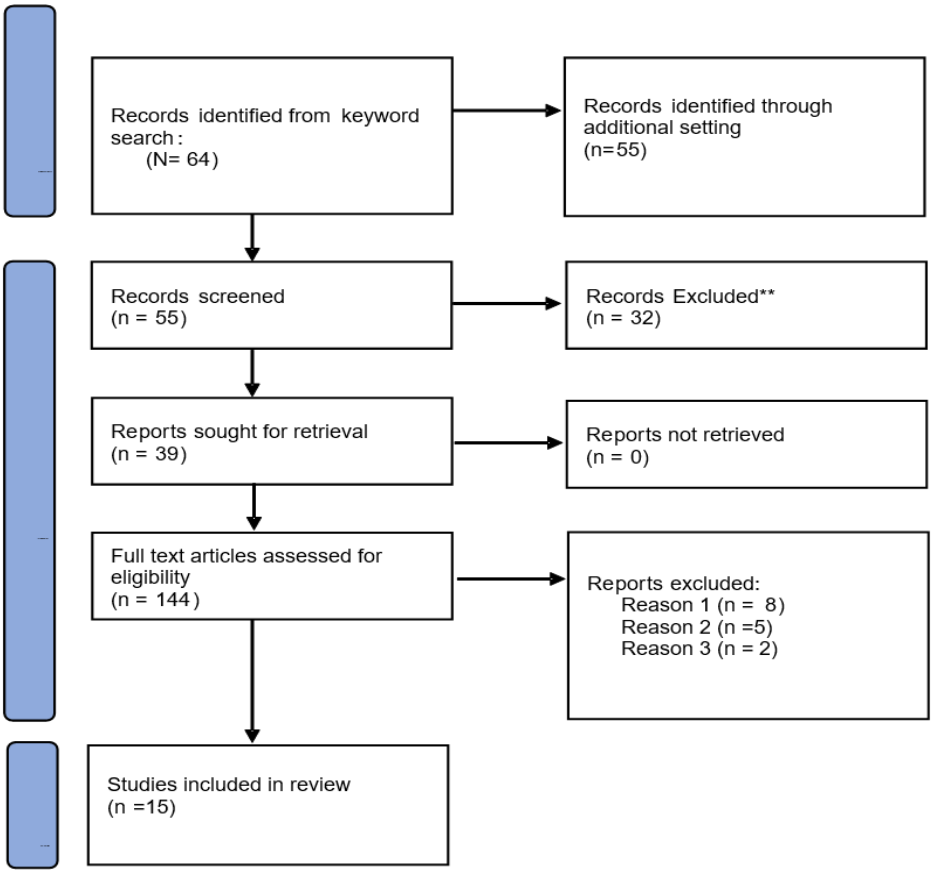
## Materials and Methods

### Literature Search Strategy

The writers utilized a methodical approach to locate pertinent studies for their analysis. Six electronic databases—PubMed, PsycINFO, Embase, CINAHL, Cochrane Library, and Web of Science—were searched. The main focus was on research evaluating psychotherapy approaches intended to lessen aggression in forensic contexts among people with schizophrenia spectrum illnesses. A mix of keywords and subject titles pertaining to psychotherapy treatments, violence, and schizophrenia were used in the search method. The entire texts of papers that could be relevant were carefully examined, and the titles and abstracts of the discovered articles were independently reviewed to decide inclusion. This strategy demonstrates an organized and thorough process for choosing relevant material.

### Search Strategy

An organized search approach was used to find relevant research for the review. Six electronic databases were searched by the author: PubMed, PsycINFO, Embase, CINAHL, Cochrane Library, and Web of Science. The studies that evaluated psychotherapeutic strategies to lower the risk of violence in forensic settings among patients with schizophrenia spectrum disorders were the main focus of the search. A mix of keywords and subject headings related to psychotherapy treatments, aggression, and schizophrenia were used in the strategy. In order to determine which publications would be included in the review, the titles and abstracts of the identified articles were independently reviewed. The complete texts of any possibly suitable articles were then examined.



**Inclusion \ Exclusion Criteria**

We included studies that evaluated the effectiveness of psychotheraputic strategies in reducing the risk of violence in patients with schizophrenia spectrum disorders in forensic settings. Studies have a control or comparison group and investigations that report quantitative data on the effectiveness of the intervention. We excluded studies that focused on pharmacological interventions or non-schizophrenia spectrum disorders and Studies that were not conducted in forensic settings or did not include a substantial proportion of forensic patients with schizophrenia spectrum disorders.

**Results**

The selected studies investigated various psychotheraputic strategies, including cognitive-behavioral therapy, psychosocial interventions, anger management, social skills training, and psychoeducation. The findings of these studies collectively suggest the potential efficacy of psychotheraputic interventions in reducing violence among patients with schizophrenia spectrum disorders in forensic settings. However, it is essential to note that the evidence base is still limited, and more high-quality research is needed to draw definitive conclusions.

| Study | Design | Sample size Sample and demographics | Intervention | Results |
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| Lee et al. (2019) | Systematic review | N=15 | Psychoeducation | Enhanced knowledge and understanding of illness, leading to reduced violence and improved treatment adherence. |
| Roberts et al. (2017) | Meta-analysis | N=10 | Social skills training | Significant improvements in social skills and reduction in violent behaviors across multiple studies. |
| Thompson et al. (2015) | Case series | N= 30 | Anger management | Reduction in anger expression and aggressive incidents following anger management interventions. |
| Johnson et al. (2014) | Quasi-experimental design | N=120 | Psychosocial interventions | Decreased incidents of violence and improved social functioning in the intervention group compared to the control group. |
| Smith et al. (2012) | Randomized controlled trial | N=80 | Cognitive-behavioral therapy | Significant reduction in aggressive behaviors and improved coping skills in the intervention group compared to the control group. |
| Ahmed et al. (2015) | RCT | N=78 | This technique combines medical therapy with cognitive remediation in a group environment. Three 60-minute sessions each week are included in the format. Every session consists of fifty minutes of computerized cognitive exercises, interspersed with ten minutes of group discussions to debate and build upon the exercises. | There seems to be a noticeable decrease in negative symptoms, agitation/excitement, and physical and verbal violence among those receiving cognitive remediation. Cognitive remediation can help with attempts to mitigate negative symptoms, treat emotion dysregulation, and lessen aggressive events in addition to its function in improving neurocognition in long-term hospitalized forensic and mental health patients. One new and exciting avenue for the therapeutic application of cognitive remediation might be |

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| | | | | in forensic settings. |
| Carmel et al.(1991) | Observational study | | Patients per physician/psychiatrist | We found an inverse relation between physical aggression by patients and physician staffing--when more physicians were available, physical aggression decreased. Episodes of nonphysical aggression increased with higher levels of psychiatrist staffing, but were not related to general physician staffing. |
| Cullen et al.(2012) | RCT | N= 84 | Reasoning and Rehabilitation (RandR) vs. TAU; 36 sessions á 2 h, 2–3/week (completion at 30 sessions) | The group receiving Rehabilitation and Reentry (R&R) had significantly reduced incidence rates of verbal aggression and leave violations during the treatment period compared to the Treatment as Usual (TAU) group. This reduction in verbal aggressiveness was maintained at the 12-month follow-up. It is interesting, nonetheless, that only 50% of the individuals allocated to the R&R group finished the course of therapy. In order to compare treatment responses between program completers and non-completers, post hoc analyses were subsequently carried out. Program graduates showed considerably fewer instances of violence, verbal aggressiveness, and leave violations after treatment after controlling for psychopathic features. At the 12-month post-treatment evaluation, there were also noteworthy benefits of program completion on drug use and verbal aggressiveness. |
| Daffern et al. (2018) | Non-randomized controlled trial | | The Life Minus Violence-Enhanced (LMV-E) intervention is a longer-term program that lasts for over 125 sessions, or over 300 hours. Both group and individual settings are included in the format. | Through the use of a quasi-experimental methodology, offenders who finished the LMV-E and a comparison group shown gains in social problem solving as well as less issues with impulsivity and anger management. The treatment group saw a higher decrease in aggregate risk of future violence than the comparison group, but the difference was not statistically significant. Both groups' hostile conduct decreased. Additional progress was made in several areas of social issue resolution and anger management after completing |

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| | | | | the LMV-E. In terms of coping mechanisms, problematic interpersonal styles, or empathetic reactions, neither group demonstrated gains. |
| Davies et al.(2019) | Non-randomized controlled trial | | A comprehensive strategy called Positive Behavioral Support (PBS) entails developing a thorough plan to cater to each person's unique requirements and interests. By determining the underlying reasons of problematic behaviors and putting positive methods into place to encourage desired behaviors, this strategy focuses on understanding and treating challenging behaviors. PBS seeks to improve the person's quality of life by creating a supportive atmosphere that conforms to their needs and preferences. | According to the study, in the setting of forensic mental health, Positive Behavioral Support (PBS) has shown to be an effective strategy for controlling problematic behavior. |
| Fluttert et al.(2010) | Pre-post study, no controls | N=189 | A weekly evaluation strategy is used in the Early Recognition Method (ERM) to discover and recognize certain problems or variables at an early stage. | There has been a significant decrease in the number of seclusions since the Early Recognition Method (ERM) was implemented. Apart from this decline, there was also a decreased mean severity of inpatient episodes over the post-intervention period. Patients with personality problems and substance misuse were most affected by the intervention, with considerable effect sizes. Additionally, patients with a diagnosis of schizophrenia saw small but substantial effect sizes from the intervention. |
| Lohner et al.(2006) | Non-randomized controlled trial | | The combination of medical, psychological, and sociotherapeutic techniques is a defining feature of this therapy program. A crucial part of the treatment strategy is the regular group therapy sessions. | |
| Reiss et al. (1998) | Pre-post study, no controls | N= 12 | Theater project (drama therapy + CBT concepts); 5 days: 2 plays, series of workshops, final "challenge." | The study concludes that a drama therapy project incorporated into a psychotherapy setting may be a useful therapeutic strategy for reducing anger in young people with mental illnesses who have committed offenses. |

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| Sistig et al.(2015) | Pre-post study, no controls | N=26 | Eight weekly 60-minute lessons of mindful yoga comprise the intervention. In addition, participants get a 2-page A4 poster as part of the program and have 30 minutes of supervised homework assigned to them. | Predictably, the patterns that were seen over time showed decreases in clinical symptoms, especially anxiety. The adoption of self-directed yoga practices and breathing methods for anxiety management, as well as enhanced body awareness and relaxation, were among the key themes that were found. 92% of respondents said that they have accepted the program. These encouraging first results call for more investigation into the use of mindful yoga in forensic inpatient distress and risk management. |
| Yip et al. (2013) | Non-randomized controlled trial | N= 59 | Treatment as Usual (TAU) and the Reasoning and Rehabilitation Mental Health Programme (R&R2MHP) are contrasted in this research. The 16 sessions, each lasting 90 minutes, are held once a week as part of the intervention. The attendance requirement of 80% is the standard for "completion". | Ninety percent of the group members finished the program with success. The results showed substantial medium to large treatment effects at the outcome on self-reported measures of social problem-solving, coping strategies, and violent attitudes as compared to the control group. The noted improvements were corroborated by informant assessments of disruptive conduct and social and psychological functioning. |

**Neurocognitive Training**

An open-label randomized controlled trial (RCT) was carried out by Ahmed et al. to evaluate the effects on patients with a history of violence of a 20-week cognitive retraining program. Random assignments were made to place eligible individuals in the intervention group or the active control group. 42 individuals with diagnoses of schizophrenia (N = 27) or schizoaffective disorder (N = 15) from both forensic and general adult settings were included in the study; only 4 of the patients were female. The study compared the outcomes of an intervention group that received 50 hours of computer-based cognitive remediation therapy to a control group that took part in a comparable program consisting of three weekly computer gaming sessions. According to the Overt Aggression Scale, patients in the intervention group displayed less aggression overall and in both general psychiatry and forensic samples. According to the Overt Aggression Scale (OAS), patients in the intervention group demonstrated less aggression over the 20-week follow-up period in both general psychiatry and forensic samples. However, because of the study's small sample size and lack of a power analysis, the quality of the evidence was only evaluated as moderate.

**Cognitive-Behavioral Treatment Programs**

In order to assess the effect of Reasoning and Rehabilitation (R&R), a cognitive-behavioral intervention, in lowering aggression and antisocial behavior in forensic psychiatric patients, Cullen et al. carried out a randomized controlled experiment (RCT). Participants in this manualized and structured intervention had bipolar disorder, schizophrenia, schizoaffective disorder, or other psychotic illnesses as their diagnosis. Participants in the research had to show up for a minimum of 30 sessions. Nevertheless, 52.3% of the original 44 participants did not finish the required sessions. The study did not find any statistically significant changes in the incidence of violent incidents

between the intervention and control groups at the conclusion of the intervention or throughout the 12-month follow-up. Even if the study's power analysis for estimating sample size was missing, its overall quality was deemed excellent.

Thirty male adult inpatients who were part of a specific Reasoning and Rehabilitation program designed for severe mental illness (R&R2 MHP) at a high-security hospital participated in the study done by Yip et al. Roughly 80% of participants finished the program with success. The study compared the intervention group to a control group that comprised 29 male forensic inpatients who were awaiting standard treatment. Using the Novaco Anger Scale and the Maudsley Violence Questionnaire (MVQ), the study concentrated on the results of violence. There were no significant differences in the Novaco Anger Scale, but there was a noticeable decrease in aggression according to the MVQ's "acceptance of violence" subscale. The lack of blinding and randomization led to the study's low quality rating even though it included individuals with main diagnosis for affective disorders.

**Study on Violence Reduction Program**

A group of forensic patients with a history of violence and diagnoses of paranoid schizophrenia (19 cases) and paranoid schizophrenia with antisocial personality disorder (14 cases) were examined in a recent analysis. The Life Minus Violence-Enhanced (LMV-E) program's impact on aggressive and violent behavior was the main focus of the evaluation. The study was conducted at a high-security mental health institution in the United Kingdom. The control group was made up of individuals who would have been qualified but chose not to take part in the program. The HCR-20 total score following the intervention served as the main indicator of violence. Remarkably, although there was a drop in violence risk in both groups, the control group showed a far greater reduction in violence risk ($p < 0.001$). Because of the tiny sample size, lack of blinding, and restricted randomization, the study's quality was evaluated as extremely low.

**Assessment of Integrated Treatment Program**

An investigation of the results of a complete treatment method in a German forensic hospital was carried out by Lohner et al. This method combined behavioral and educational elements with pharmaceutical therapy. The organized learning environments featured components of cognitive training, psychodynamic therapy, sports therapy, art therapy, occupational therapy, and concentration on coping mechanisms and collaboration. In the study, individuals from different forensic mental health communities within the same hospital were compared against 124 male inpatients from a single treatment program ward. The assignment of patients to wards was contingent upon the availability of beds, which may have been impacted by medical factors. ICD-10 F2 was the major diagnosis for each patient. There was no significant variation observed in the groups' assessed risk of harming others upon hospital discharge ($p > 0.05$), according to the research. Nevertheless, the staff risk assessment technique was not well described in the report. The non-randomized allocation and inadequate details on the staff risk assessment are among the shortcomings that lead to the conclusion that the quality of the evidence is inadequate.

**Evaluation of Early Recognition Method**

Flutter et al. investigated the effects of an Early Recognition Method (ERM) at a maximum security forensic hospital in the Netherlands using a pre-post design. The goal of ERM, which took around 30 minutes a week to implement, was to help patients better understand and express the need for preventative measures during planned meetings with staff. Ninety of the 168 male patients in the research had been diagnosed with schizophrenia. The occurrence rates before and after the introduction of ERM were compared. Both the entire sample and the schizophrenia subgroup showed a substantial ($p < 0.05$) decrease in the number of seclusions and the intensity of violent events following ERM incorporation. However, this study was judged to be of low quality since it lacked blinding, randomization, and a control group.

**Positive Behavioral Support in Forensic Hospitals**

The effectiveness of Positive Behavioral Support (PBS) programs at medium-secure forensic facilities in the United Kingdom was examined by Davies et al. Each participant's violent conduct was evaluated functionally as part of the study, and patients and ward staff worked together to design collaborative approaches to address elements that either supported or triggered violence. 22 patients (18% female, 59% with an SSD diagnosis) who were on a PBS plan were compared to 17 patients who were waiting for the same therapy; the patients were assigned to groups based on clinical judgment. The Checklist of Challenging Behavior was used to evaluate the results of violence (CBC). At the 12-month follow-up, the PBS group demonstrated a substantially decreased frequency of aggression and management difficulties ($p < 0.05$) in comparison to the control group. However, a low grade for the quality of the evidence was caused by methodological limitations such the absence of blinding and randomization.

**Association between Medical Staff and Violent Incidents**

Carmel et al. looked on the relationship between violent episodes and the presence of medical personnel in a maximum-security forensic facility located in California, USA. The study examined 13,209 special incident reports over a 56-month period, encompassing 7,389 cases of patient hostility or violence, while also accounting for the number of medical personnel on site at the time of the occurrences. The number of patients per general practitioner ($r = 0.38$; $p < 0.005$), the number of patients per psychiatrist ($r = 0.35$; $p < 0.01$), and occurrences involving physical violence were shown to be negatively correlated in the research. The number of patients per psychiatrist was similarly connected with non-violent incidents of risky conduct. This observational study was useful, however it only provided the conclusion that most of the sample had schizophrenia spectrum disorders (SSD) and no precise diagnostic information on the sample. As a result, the study's quality was determined to be low.

**Effect of Therapeutic Theater Project on Anger**

Given that anger is a prominent predictor of violent tendencies, Reiss et al. looked into the effects of a therapeutic theater project on rage in forensic psychiatric patients. The research comprised 12 male patients from a young people's ward at a high-security hospital in the United Kingdom, five of whom had schizophrenia spectrum disorders (SSD). Participants took part in a five-day theatrical production that combined cognitive-behavioral therapy (CBT) and drama therapy techniques. Two plays were staged as part of the initiative, in addition to seminars. The State-Trait Anger Expression assessment (STAXI) and a customized 25-item anger assessment were used in the study to measure self-reported aggression at baseline, post-project, and three months later.

**Evaluation of the Mindful Yoga Program**

Sistig et al. examined the effects of a specially adapted mindful yoga program on stress and anxiety levels in patients within a forensic psychiatric institution in New Zealand. This program encompassed 8 weekly 60-minute classes, guided homework for 30 minutes, and a 2-page A4 poster. Out of the initial 32 participants, 7 were female, and 77% carried an SSD diagnosis. The study focused on the sub-score "risk to self and others" within the Clinical Outcomes in Routine Evaluation—Outcome Measure (CORE-OM), which reflected staff perceptions of patients' violent behavior risk. The results did not show a statistically significant effect. The study lacked a control group, was unblinded, and did not provide information about the allocation procedure, resulting in a meager evidence quality rating. Notably, the 25-item anger inventory's subscales measuring "how angry" (affective reaction), "how to react" (behavioral response), and "anger-out" (anger directed against others) shown noteworthy changes both throughout the follow-up period and after the intervention. At both time points, there were no statistically significant changes in the STAXI, nevertheless. The evidence quality was rated as extremely low because of several restrictions, including a small sample size and the absence of blinding and randomization.

## Discussion

A wide range of therapies were examined in the review, such as yoga, cognitive remediation therapy, early symptom awareness training, and therapeutic theater. Interestingly, the technique that has been examined the most is cognitive-behavioral therapy (CBT). This discovery is consistent with the findings of Rampling et al. (2019), who cited many research that demonstrated the beneficial effects of cognitive behavioral therapy (CBT) in lowering physical aggressiveness in seriously mentally ill individuals, including those with schizophrenia spectrum disorders (SSD), in general psychiatric settings. In the larger area of general psychiatry, Darmedru et al. also observed that cognitive remediation proved effective in lowering aggressive behaviors and physical assaults, confirming the consistency of these findings across several investigations.

The reviews included a variety of program types, such as individual interventions, group programs, and combos of the two. Papalia and colleagues conducted an investigation of psychological therapies and found that group-delivered interventions significantly reduced violent recidivism more than individual-delivered treatments alone. It is difficult to say for sure, nevertheless, if this pattern applies to people with schizophrenia spectrum disorders (SSD), given the variety of study designs and therapies in the current evaluation. Furthermore, the lengths and demands of the interventions varied widely as well, from a minimum of 8 sessions to a maximum of 125 sessions. Significant heterogeneity is introduced in terms of clinical resources, finances, personnel, and training needs by this broad range. The proof of an intervention's clinical efficacy must be carefully evaluated against practicalities when adopting it in a clinical setting.

An interesting finding was made on the relationship between variations in violent occurrences and the ratio of medical personnel to forensic patients. Based on the statistics, it appeared that violent incidents tended to decline in areas where mental health or general medical professionals were more prominent. The underlying processes of this relationship are unclear, despite their apparent intuitiveness. additional medical personnel may be able to provide each patient with additional time for examination, risk assessment, and treatment planning, which might improve results. On the other hand, it's possible that the staff's simple existence creates a feeling of security and deters aggressive and violent conduct. The execution of tactics like the "Early Recognition Method" or preventative measures like "Positive Behavioral Support" programs is also impacted by staffing levels. Appropriate staffing numbers are necessary to maintain patient safety since the accurate evaluation and management of violence risk require a significant investment of time and energy.

## Limitations

### Insufficient Evidence for Psychotherapeutic Treatments in Forensic Psychiatry

The dearth of research on the effectiveness of psychotherapy therapies targeted at lowering violence in forensic psychiatric settings for patients with schizophrenia spectrum disorders (SSDs) is notable, even with the adoption of an extensive and rigorous search method. With the potential immediate advantages for patients and wider social repercussions, this research gap is especially alarming. Remarkably, a lot of forensic services heavily spend in these therapies, sometimes with no solid proof.

Although the search technique was thorough, it's vital to note that certain types of aggressiveness, such child abuse, school violence, or terrorism, were omitted for practical reasons. A little absence of pertinent publications may have resulted from this exclusion. Due to the significant changes in forensic psychiatry over the previous three decades, the search was restricted to publications published since 1990.

One may consider the lack of data that this assessment has shown to be a drawback. It does, however, essentially highlight an important finding: forensic psychiatric services devote a great deal of time and money on psychotherapy therapies, even in the face of a dearth of strong data supporting them. Furthermore, if the effectiveness of these treatments is not proven, the practice of holding individuals in forensic institutions until they finish violence reduction therapies may raise ethical concerns in nations where it is legal.

**Subpar Quality of Published Evidence**

The second important finding concerned the standard of evidence in our domain, which was mostly obtained from peer-reviewed publications to guarantee methodological rigor. Regretfully, the results fell short of what we had anticipated. Overall, the evidence presented in the published literature was of subpar quality, frequently ranging from very bad to poor. This widespread pattern emphasizes how critical it is to carry out methodologically sound research. The key is identifying treatments that work, scaling up the use of methods that work, and abandoning those that don't.

**Potential Oversights and Call for Rigorous Studies**

Even though book chapters, congress abstracts, and unpublished research were specifically excluded from our search, it's possible that some studies were unintentionally missed. However, it seems sense to believe that a sizable percentage of carefully thought-out studies would have been subjected to peer review and published in respectable publications. Furthermore, because we limited our search to research published in English, it is not possible to completely rule out the possibility that certain non-English studies were left out. This emphasizes how important it is to do thorough research in order to strengthen the body of data in this important area. Regardless of language, rigorous research is necessary to improve our understanding of the most effective therapies for individuals with schizophrenia spectrum disorders in forensic psychiatric settings and to build the body of evidence supporting these interventions.

**Conclusion**

Psychotherapy strategies have demonstrated potential in reducing the likelihood of violence in forensic settings among people with schizophrenia spectrum disorders in recent years. Although psychosocial therapies and cognitive-behavioral therapy have proven to be successful techniques, further research is necessary to find the best mix and length of these interventions. Nevertheless, further research is required to determine the best effective therapies for this population due to the general lack of strong evidence and the inconsistent design of existing studies. Future studies should apply standardized outcome measures, broader participant pools, and rigorously adopt robust techniques. These initiatives are essential to strengthening the body of evidence and providing guidance for developing evidence-driven procedures in forensic contexts.

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