

Effects of Assisted Outpatient Treatment and Health Care Service Use on Violent Behavior and Victimization: The Impact of Trauma

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Abstract

Background: The effects of assisted outpatient treatment (AOT) continue to be a controversial topic. The current study assessed violent behavior as a perpetrator and situations as a victim among patients with severe mental illness (SMI) receiving AOT compared to patients receiving non-compulsory treatment (NCT). Moreover, it assessed the effects of posttraumatic stress disorder symptoms and healthcare service use.

Methods: This study used a quasi-experimental design, and propensity score matching to control for group differences. Participants were recruited from seven psychiatric outpatient clinics in the Bronx and Queens, New York, between 2001 and 2007. The sample comprised 184 individuals aged 18-65 years, including 76 participants assigned to AOT and 108 participants receiving NCT. Assessments were conducted at baseline and at three-month intervals over a 12-month follow-up period. Multilevel modeling was used to analyze longitudinal data.

Results: AOT was associated with reduced incidents of violent behavior as a perpetrator. Posttraumatic stress disorder symptoms predicted an increase in violence as a perpetrator. When healthcare services, specifically psychologist or psychiatrist visits, were added to the model, the effect of AOT disappeared while the negative impact of complex posttraumatic stress disorder symptoms continued to be a factor. AOT did show significant positive effects on victimization experiences. The frequency of case manager visits positively influenced the violent experiences as a victim. However, complex posttraumatic stress disorder symptoms continued to be predictive of victimization experiences even if health services were included.

Conclusions: Results indicate that the positive effect of AOT on violent behavior may be related to the availability of mental healthcare service use. AOT in combination with an increased use of case managers might be able to help people avoid victimization experiences. However, complex trauma symptoms persistently predict negative outcomes of violent experiences as a perpetrator and a victim. Coercive outpatient treatment should not only include increased use of intensive services but also trauma specific treatments to be successful.

Background

Assisted outpatient treatment (AOT) and related forms of compulsory community treatment remain highly contested interventions in psychiatry. While their use is expanding across jurisdictions [1], consensus regarding their effectiveness has not been achieved [2-4]. AOT authorizes court-mandated, community-based treatment for individuals with severe mental illness (SMI), typically with the goal of improving clinical outcomes and reducing adverse events, including violence and victimization [5,6]. However, heterogeneity in legal frameworks, implementation, and target populations complicates interpretation of the evidence base and limits generalizability across settings.

A central but unresolved question concerns the mechanism through which AOT may exert beneficial effects. Observational studies report reductions in violent behavior, criminal justice involvement, and psychiatric rehospitalization among individuals receiving AOT [7-9]. Yet findings from controlled and randomized designs are more equivocal, often showing diminished or absent effects once treatment intensity is accounted for [3,10]. This pattern suggests that the apparent benefits of AOT may not derive from coercion per se, but from increased access to and engagement with mental health services.

Clarifying this mechanism is of substantial clinical and policy relevance. If AOT operates primarily by increasing treatment exposure, through more frequent contact with psychiatrists, psychologists, and case managers, then its effectiveness depends on the intensity and continuity of care rather than the legal mandate itself. This interpretation is consistent with evidence from intensive case management, which demonstrates that higher levels of service engagement are independently associated with improved outcomes and reduced violence risk in individuals with SMI [11,12]. Prior work has similarly suggested that reductions in symptom severity under AOT are better explained by service availability than by coercion alone [13], and that AOT is effective only when paired with enhanced service provision [14]. Despite this, few studies have formally examined whether service use mediates the relationship between AOT and outcomes such as violence and victimization. Addressing this question is essential for determining whether AOT represents a distinct therapeutic mechanism or primarily a delivery system for intensified care.

A second, largely underexamined issue concerns the role of trauma. Individuals with SMI exhibit high rates of trauma exposure and complex posttraumatic stress symptoms, which are robustly associated with both perpetration of violence and vulnerability to victimization [15,16]. Trauma and violence are dynamically linked: exposure to violence increases posttraumatic symptomatology, which in turn elevates the risk of subsequent violence and revictimization [17,18]. This bidirectional process is particularly pronounced in populations with complex trauma histories [19,20].

Critically, it remains unclear whether the potential benefits of AOT, whether direct or mediated through increased service engagement, extend to this trauma-related pathway. If complex posttraumatic stress symptoms continue to predict violent behavior and victimization independently of both AOT assignment and treatment exposure, this would indicate that current AOT models fail to address a key driver of adverse outcomes. Such a finding would have direct implications for service design, suggesting that trauma-focused interventions are not optional adjuncts but necessary components of effective care in this population. This question is particularly salient given evidence that elevated violence risk in SMI is more strongly associated with comorbid and contextual factors, including trauma exposure, than with core psychotic symptoms alone [21].

The present study addresses these two gaps using data from a quasi-experimental, propensity score-matched study of AOT in New York State. First, we examine whether the association between AOT and reduced violent behavior and victimization is mediated by mental health service use, specifically psychiatric/psychological contacts and case management. Second, we assess whether complex

posttraumatic stress symptoms independently predict these outcomes after accounting for both AOT assignment and service utilization. By jointly testing these pathways, the study aims to clarify whether AOT's effects are attributable to coercion or to treatment exposure, and to determine whether trauma represents an unaddressed mechanism limiting its effectiveness.

Methods

Study design

Originally commissioned by the New York State Office of Mental Health, this study evaluated the effects of Assisted Outpatient Treatment (AOT) in a naturalistic clinical setting [13,22,23]. Participants were recruited from seven psychiatric outpatient clinics in the Bronx and Queens, New York, between 2001 and 2007. Baseline assessments were conducted three months following discharge from psychiatric inpatient care.

The sample comprised 184 individuals aged 18-65 years, including 76 participants assigned to AOT and 108 participants receiving non-compulsory treatment (NCT). Individuals in the AOT group had been under a court mandate for at least one month prior to study enrollment. The NCT group was recruited from the same outpatient clinics to enhance comparability. Participants who declined participation did not differ systematically from those enrolled on key characteristics.

Exclusion criteria included inability to complete interviews in English or Spanish, residence outside the Bronx or Queens, and lack of capacity to provide informed consent. Capacity was assessed by an independent psychiatrist or doctoral-level psychologist. All participants provided informed consent and received financial compensation. Interviews were conducted by trained Master's-level psychologists or social workers with experience in SMI populations, with ongoing monitoring to ensure protocol adherence. Diagnostic information was obtained via chart review at baseline.

Assessments were conducted at baseline and at three-month intervals over a 12-month follow-up period. This longitudinal, repeated-measures design provides multiple observations per participant, enhancing statistical power and enabling the modeling of within-person change over time. It further reduces reliance on retrospective recall, particularly for episodic outcomes such as violent behavior and victimization. While randomization was not feasible due to ethical and legal constraints [7], the design allows for the examination of temporal associations and potential mechanisms in a real-world population, including individuals with elevated risk profiles who are typically excluded from randomized trials [5].

The study protocol was approved by the institutional review boards of all participating sites, the New York State Office of Mental Health, and the New York State Psychiatric Institute, and was conducted in accordance with the Declaration of Helsinki [24].

A total of 184 participants (111 men and 73 women) between the ages of 18 and 65 were included in the study. The sociodemographic data is summarized in Table 1. 76 (41.3%) persons were mandated to AOT, and 108 (58.7%) participants received NCT (comparison group). The sample had an average age of 37 years and the majority were males, with no significant differences between the two groups. The racial/ethnic distribution was mostly African American followed by Hispanic. Most respondents had accomplished high school and over two thirds of them had never been married. The sample mirrors the patient population found in psychiatric outpatient clinics in the boroughs Queens and the Bronx, New York [7,22,25]. The lost to follow-up rates were 15.8% (N=29) for 3 months, 34.2% (N=63) for 6 months, 38.0% (N=70) for 9 months, and 27.7% (N=51) for the 12-month interview. At all interview points, people lost to follow-up were more likely to be not married than those who had completed the study. Participants at 3-month follow-up were younger and at 12-month follow-up were older than contributors lost to follow-up at that same time point. Males were more likely than females to be lost to follow-up at 9 and at 12 months. For a more detailed description of the lost to follow-up rates, please refer to Schneeberger, Huber, Lang, et al. [13].

Measures

Violent behavior and victimization. Violent behavior as a perpetrator and victimization experiences were assessed using multi-item self-report measures comprising 9 items (perpetration) and 8 items (victimization), respectively. Items captured a range of specific behaviors, including throwing objects, pushing or shoving, slapping, kicking, biting, choking, and hitting or beating another person. More severe acts included forced sexual activity, threatening with a weapon, and use of a firearm or knife. Victimization items paralleled perpetration items, with the exception of "being hurt very badly." These items are consistent with established behavioral approaches to measuring violence using specific acts rather than global judgments. Self-report measures employing behaviorally specific items have demonstrated acceptable reliability and validity in populations with severe mental illness (SMI) (e.g., Mueser et al., 2001; Singer & Flannery, 2000), and are widely used in studies of community violence and victimization.

Posttraumatic stress symptoms. Posttraumatic stress symptoms were assessed using the Posttraumatic Stress Disorder Checklist (PCL) and the Symptoms of Trauma Scale (SOTS). The PCL is a 17-item self-report instrument assessing DSM-IV PTSD symptom clusters (re-experiencing, avoidance, hyperarousal) [26]. It has been extensively applied in SMI populations and demonstrates good internal consistency and convergent validity [27,28]. The SOTS assesses both core PTSD and complex trauma-related symptoms, including affect dysregulation, dissociation, altered self-perception, interpersonal difficulties, and somatic dysregulation, and has demonstrated acceptable internal consistency and construct validity in adults with SMI [19,29]. Baseline assessments were used in the present analyses.

Mental health service utilization. Service utilization was assessed via self-report for the preceding three months, including (a) any contact with a case manager, psychiatrist, or psychologist, and (b) frequency of such contacts. Participants were also asked about outpatient clinic visits and their frequency over the

same period. Self-reported measures of mental health service use are widely employed in psychiatric research and show acceptable levels of agreement with administrative data in individuals with SMI (e.g., Cuffel et al., 2002).

Analytic Approach

As it was not possible to randomize participants to the intervention group and the control group, we studied two groups: one mandated to AOT and a comparison group assigned to NCT [7]. Using propensity scores, we reweighted the control group so that, with respect to the potentially confounding covariates, it mirrors the intervention group [30]. Each participant's score is the propensity that he or she was assigned to AOT, depending on selected covariates measured before group assignment. We chose the probable confounders based on previous research and clinical experience [31]. The potentially interacting variables gender, age, race, marital status, criminal record, and education were based on prior studies on AOT [7,13,32]. Sexual orientation was included to consider a possible minority stress effect on victimization [20,33]. We also added injectable medication as a possible confounder because the treatment with depot medication might have a significant impact on violent behavior [34]. Assuming that the model is correct, properly adjusting for the propensity score is appropriate to adjust for all the covariates used to create it [35]. Consequently, the propensity score method we used sought to balance the samples on factors occurring prior to assignment and was not intended to and therefore did not adjust for factors that followed from or were a result of the intervention.

We estimated propensity scores using the R-MatchIt package with full matching, using the default propensity score based on logistic regression [36,37]. People assigned to AOT were given a weight of 1; persons in the control group were weighted according to the propensity score.

We used multilevel modeling (MLM) to analyze the data, which is well suited for longitudinal designs with repeated observations nested within individuals. In the present study, assessment time points (level 1) were nested within participants (level 2), allowing us to model within-person change over time while accounting for the non-independence of repeated measures. This approach permits the estimation of both time-varying effects (e.g., changes in service use) and between-person differences (e.g., AOT vs. NCT), and allows for the inclusion of participants with incomplete follow-up data under standard missing-at-random assumptions. The first model included only AOT, the second model added PCL and SOTS values, and the third model included the frequency of case manager visits, psychiatrist or psychologist visits, visits to outpatient clinics over all follow-up points as explanatory variables. For a more detailed description of the MLM model construction, please refer to Schneeberger, Huber, Lang, et al. [13].

Results

The AOT subgroup had slightly more men, participants were mostly single and African American or Hispanic (Table 1). Most people in both groups were unemployed at the time of the baseline interview.

Table 1 Sociodemographic characteristics of the study sample at baseline

[Table 1 content to be inserted]

Table 2 presents the clinical data at baseline. The AOT group had more people diagnosed with schizoaffective disorder, while the NCT group showed a higher level of major depressive disorder. In regards to functional impairment as assessed by the Global Assessment of Functioning scale (GAF), participants presented with moderate-to-severe functional impairment [38]. The two subgroups did not differ regarding level of functioning. There was also no difference regarding the age of first contact with a psychiatrist, psychologist, or social worker. The two subgroups displayed no dissimilarities in regard to other variables (e.g., socioeconomic status, psychiatric comorbidities, co-occurring substance use disorders, and criminal histories).

Table 2 Clinical characteristics of the study sample at baseline

[Table 2 content to be inserted]

Violence perpetration

Table 3 presents the violent acts at baseline. Behaviors as a perpetrator are most often pushing/grabbing/shoving someone, followed by hitting someone with a fist or beating someone up, and firing a gun at someone or using a weapon at that person.

Table 3 Violent acts and victimization experiences at baseline

[Table 3 content to be inserted]

We further constructed multilevel models to examine the effect of AOT versus NCT assignment on violent acts toward others using longitudinal data, controlling for diagnostic categories. AOT demonstrated a persistent benefit over NCT in reducing violent acts as a perpetrator.

As shown in Table 4, AOT was associated with a reduced frequency of violent behaviors against others over all follow-up points $F(1,130)=2.021$, $p=0.049$. Adding posttraumatic symptoms significantly improved model fit (χ^2 change = 158.366, $df = 67$, $p < .05$). Both PCL ($F(1,63) = 4.736$, $p = .033$) and SOTS scores ($F(1,63) = 11.718$, $p = .001$) were associated with higher frequencies of violent behavior as a perpetrator.

Subsequent inclusion of health care service variables further improved model fit (χ^2 change = 177.514, $df = 21$, $p < .05$). Greater frequency of psychologist or psychiatrist visits was associated with reduced violent acts ($F(1,42) = 11.132$, $p = .002$). In this final model, the effect of AOT lost statistical significance. These findings are consistent with a mediation process whereby AOT exerts its beneficial effect on violent behavior primarily by increasing utilization of mental health services, particularly contacts with psychologists and psychiatrists.

Table 4 Multilevel models predicting violent behavior and victimization over 12-month follow-up

[Table 4 content to be inserted]

Violent victimization

Table 3 shows the types of victimization experiences at baseline. Most people endorsed being threatened with a knife, gun, or any other weapon, followed by other people firing a gun at them or using a knife or any other weapon on them.

As shown in Table 4, AOT significantly predicted a reduction in victimization in the total sample over all follow-up points, $F(1,79) = 4.200, p = 0.044$. Adding posttraumatic symptoms improved model fit, χ^2 change = 139.822, $df = 37, p < 0.05$. Both PTSD symptoms (PCL) and complex PTSD symptoms (SOTS) were associated with lower victimization (PCL: $F(1,42) = 15.344, p = 0.016$; SOTS: $F(1,42) = 11.969, p = 0.001$). Adding health care services also improved model fit, χ^2 change = 12.679, $df = 18, p < 0.05$. More frequent case manager visits had a beneficial effect, significantly reducing violent victimization ($F(1,24) = 5.003, p = 0.035$). Thus, increased contact with case managers predicted fewer violent experiences as a victim.

Discussion

The present study advances the literature on Assisted Outpatient Treatment (AOT) by clarifying both its mechanism of action and its limitations. Two principal findings emerge. First, the association between AOT and reduced violent behavior and victimization appears to be mediated by increased engagement with mental health services. Second, complex posttraumatic stress symptoms predict violence and victimization independently of both AOT assignment and service utilization. Together, these findings suggest that AOT operates primarily through enhanced treatment exposure, while leaving trauma-related risk processes largely unaddressed.

Our findings support the interpretation that AOT's effectiveness is not driven by coercion per se, but by the increased intensity and continuity of care it facilitates. Participants assigned to AOT demonstrated higher levels of service utilization, and this increased engagement accounted for a substantial portion of the observed reductions in violent behavior and victimization. This is consistent with prior research indicating that the benefits of compulsory outpatient treatment attenuate when treatment intensity is held constant [3,10,39], and that AOT is most effective when paired with enhanced service provision [14].

This interpretation is further supported by evidence from intensive case management, which has been associated with improved clinical outcomes and reduced risk of violence in individuals with severe mental illness (SMI) [11,12]. Similarly, reductions in psychotic symptoms under AOT have been attributed to increased service availability rather than coercion itself [13]. Taken together, these findings suggest that AOT functions less as a therapeutic intervention in its own right and more as a structural mechanism for ensuring sustained engagement with care.

From a policy perspective, this distinction is critical. If comparable levels of engagement could be achieved through non-coercive means, similar benefits might be expected. While the present study does not directly test this counterfactual, it underscores the importance of focusing on treatment access and continuity as the primary drivers of improved outcomes.

In contrast, complex posttraumatic stress symptoms emerged as a robust and independent predictor of both violent behavior and victimization. These effects persisted after accounting for AOT assignment and service utilization, indicating that increased treatment exposure alone is insufficient to mitigate trauma-related risk.

This finding aligns with a substantial body of research demonstrating that trauma exposure and its psychological sequelae are central to both perpetration of violence and vulnerability to victimization in individuals with SMI [15,16,40]. Violence and trauma are dynamically linked: exposure to violence increases posttraumatic symptomatology, which in turn elevates the risk of subsequent violence and revictimization [17,18]. These bidirectional processes appear particularly pronounced in individuals with complex trauma histories [19,20].

The persistence of trauma effects in the context of increased service engagement suggests that standard psychiatric services, at least as delivered within AOT frameworks, may not adequately target trauma-related mechanisms such as affect dysregulation, hyperarousal, dissociation, and maladaptive interpersonal schemas. This is consistent with evidence that much of the elevated violence risk in SMI populations is attributable to comorbid and contextual factors, including trauma exposure, rather than to psychotic symptoms alone [21].

Taken together, these results point to a partial but incomplete model of risk reduction. AOT appears to reduce violence and victimization through increased treatment engagement, but this pathway does not extend to trauma-related processes, which remain independently associated with adverse outcomes. The longitudinal design strengthens this interpretation by demonstrating that changes in service use over time are associated with corresponding changes in outcomes, rather than reflecting static between-group differences. This distinction may help explain inconsistencies in the literature, where AOT demonstrates benefits in some studies, particularly those characterized by higher service intensity, while failing to produce robust effects in controlled designs where treatment exposure is equivalent [2,4].

These findings have direct implications for clinical practice and policy. If the effectiveness of AOT depends primarily on treatment engagement, then efforts should prioritize ensuring access to sustained, high-quality services, irrespective of whether treatment is mandated. At the same time, the persistence of trauma-related risk indicates that service intensity alone is insufficient. AOT programs may need to incorporate trauma-informed and trauma-focused interventions as core components rather than optional adjuncts.

Such approaches could include structured trauma-focused psychotherapies, systematic assessment of trauma exposure and symptoms, and integration of trauma-informed care principles into routine service

delivery. Without these elements, AOT programs risk addressing only part of the causal pathway underlying violence and victimization.

Several limitations warrant consideration. First, the quasi-experimental design precludes definitive causal inference, and residual confounding cannot be excluded. Second, measures of violence, victimization, and service utilization relied on self-report, which may be subject to reporting bias, although repeated assessments likely reduced recall error. Third, trauma symptoms were assessed at baseline, limiting conclusions about their temporal dynamics. Finally, findings are based on a specific implementation of AOT and may not generalize to other settings with different legal and service structures.

Conclusions

This study clarifies both the promise and the limits of AOT. Its beneficial effects appear to operate through increased treatment engagement rather than coercion itself. However, trauma-related risk persists despite enhanced service use, highlighting a critical gap in current models of care. Addressing this gap will likely require the integration of trauma-focused interventions alongside efforts to sustain engagement in treatment.

Declarations

Ethics approval and consent to participate

The study protocol was approved by the institutional review boards of all participating sites, the New York State Office of Mental Health, and the New York State Psychiatric Institute. All participants provided written informed consent prior to participation. The study was conducted in accordance with the Declaration of Helsinki.

Consent for publication

Not applicable.

Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available due to participant privacy concerns but are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

BGL, KHM and DC designed the study. ARS and CGH wrote the initial draft of the paper. ARS, CGH, KHM, UEL, TL, and AM analyzed and interpreted the data. All authors have contributed to, read and approved the final version of the manuscript. ARS had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

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References

1. Kisely SR, Bull C, Newton-Howes G, et al. Expanding the use of compulsory community treatment: international perspectives. 2025.
2. Kisely SR, Campbell LA, Preston NJ. Compulsory community and involuntary outpatient treatment for people with severe mental disorders. *Cochrane Database Syst Rev*. 2024;(2).
3. Kisely SR, Campbell LA. Compulsory community and involuntary outpatient treatment for people with severe mental disorders. *Schizophr Bull*. 2015. doi:10.1093/schbul/sbv021
4. Weich S, Duncan C, Bhui K, et al. Community treatment orders: a systematic review and meta-analysis. 2020.
5. Steadman HJ, Gounis K, Dennis D, Hopper K, Roche B, Swartz M, Robbins PC. Assessing the New York City involuntary outpatient commitment pilot program. *Psychiatr Serv*. 2001;52(3):330-336.
6. Van Dorn R, Swanson J, Swartz M, Wilder C, Moser L, Gilbert A, Robbins PC. Continuing medication and hospitalization outcomes after assisted outpatient treatment in New York. *Psychiatr Serv*. 2010;61(10):982-987.
7. Phelan JC, Sinkewicz M, Castille DM, Huz S, Muenzenmaier K, Link BG. Effectiveness and outcomes of assisted outpatient treatment in New York State. *Psychiatr Serv*. 2010;61(2):137-143.
8. Swanson JW, Swartz MS, Wagner HR, Burns BJ, Borum R, Hiday VA. Involuntary out-patient commitment and reduction of violent behaviour in persons with severe mental illness. *Br J Psychiatry*. 2000;176(4):324-331.
9. Gilbert AR, Moser LL, Van Dorn RA, Swanson JW, Wilder CM, Robbins PC, Swartz MS. Reductions in arrest under assisted outpatient treatment in New York. *Psychiatr Serv*. 2010;61(10):996-999.
10. Kisely SR, Campbell LA, Scott A, Preston NJ, Xiao J. Randomized and non-randomized evidence for the effect of compulsory community and involuntary out-patient treatment on health service use:

- systematic review and meta-analysis. *Psychol Med*. 2007;37(1):3-14.
11. Dieterich M, Irving CB, Park B, Marshall M. Intensive case management for severe mental illness. *Cochrane Library*. 2010;6(10).
 12. Ziguras SJ, Stuart GW. A meta-analysis of the effectiveness of mental health case management over 20 years. *Psychiatr Serv*. 2000;51(11):1410-1421.
 13. Schneeberger AR, Huber CG, Lang UE, Muenzenmaier KH, Castille D, Jaeger M, Link BG. Effects of assisted outpatient treatment and health care services on psychotic symptoms. *Soc Sci Med*. 2017.
 14. Swartz MS, Swanson JW. Involuntary outpatient commitment, community treatment orders, and assisted outpatient treatment: what's in the data? *Can J Psychiatry*. 2004;49:585-591.
 15. Ford JD, Courtois CA. Defining and understanding complex trauma and complex traumatic stress disorders. *Treating complex traumatic stress disorders: An evidence-based guide*. 2009;13-30.
 16. Muenzenmaier K, Schneeberger AR, Castille DM, Battaglia J, Seixas AA, Link B. Stressful childhood experiences and clinical outcomes in people with serious mental illness: a gender comparison in a clinical psychiatric sample. *J Fam Violence*. 2014;29(4):419-429.
 17. Elbogen EB, Beckham JC, Butterfield MI, Swartz M, Swanson J. Assessing risk of violent behavior among veterans with severe mental illness. *J Trauma Stress*. 2008;21(1):113-117.
 18. Maniglio R. Severe mental illness and criminal victimization: a systematic review. *Acta Psychiatr Scand*. 2009;119(3):180-191.
 19. Ford JD, Mendelsohn M, Opler LA, Opler M, Kallivayalil D, Levitan J, Grennan MS. The Symptoms of Trauma Scale (SOTS): An Initial Psychometric Study. *J Psychiatr Pract*. 2015;21(6):474-483.
 20. Schneeberger AR, Dietl MF, Muenzenmaier KH, Huber CG, Lang UE. Stressful childhood experiences and health outcomes in sexual minority populations: a systematic review. *Soc Psychiatry Psychiatr Epidemiol*. 2014;49(9):1427-1445.
 21. Kisely SR, Bull C, Gill K. Violence risk in severe mental illness: the role of comorbid and contextual factors. 2025.
 22. Link BG, Castille DM, Stuber J. Stigma and coercion in the context of outpatient treatment for people with mental illnesses. *Soc Sci Med*. 2008;67(3):409-419.
 23. Schneeberger AR, Huber CG, Seixas A, Muenzenmaier KH, Lang UE, Castille D, Link BG. Alcohol consumption and the use of health care services in people with severe mental illness and stressful childhood experiences. *J Addict Dis*. 2017.
 24. WMA. World Medical Association Declaration of Helsinki. Ethical principles for medical research involving human subjects. *Bull World Health Organ*. 2001;79(4):373.
 25. Castille DM, Muenzenmaier KH, Link BG. Coercion - Point, Perception, Process. In: Kallert TW, Mezzich JE, Monahan J, editors. *Coercive Treatment in Psychiatry: Clinical, Legal and Ethical Aspects*. Chichester, UK: John Wiley & Sons, Ltd; 2011. p. 245-267.
 26. Blanchard EB, Jones-Alexander J, Buckley TC, Forneris CA. Psychometric properties of the PTSD Checklist (PCL). *Behav Res Ther*. 1996;34(8):669-673.

27. Mueser KT, Goodman LB, Trumbetta SL, Rosenberg SD, Osher FC, Vidaver R, Foy DW. Trauma and posttraumatic stress disorder in severe mental illness. *J Consult Clin Psychol*. 1998;66(3):493.
28. Mueser KT, Salyers MP, Rosenberg SD, Goodman LA, Essock SM, Osher FC, et al. Psychometric evaluation of trauma and posttraumatic stress disorder assessments in persons with severe mental illness. *Psychol Assess*. 2001;13(1):110-117.
29. Ford JD, Schneeberger AR, Komarovskaya I, Muenzenmaier K, Castille D, Opler LA, Link B. The Symptoms of Trauma Scale (SOTS): Psychometric evaluation and gender differences with adults diagnosed with serious mental illness. *J Trauma Dissociation*. 2016;1-16.
30. Imbens GW. Nonparametric estimation of average treatment effects under exogeneity: A review. *Rev Econ Stat*. 2004;86(1):4-29.
31. Velentgas P, Dreyer NA, Nourjah P, Smith SR, Torchia MM. Developing a protocol for observational comparative effectiveness research: a user's guide. Vol. AHRQ Publication No. 12(13)-EHC099. Rockville, MD: Government Printing Office; 2013.
32. Swanson JW, Van Dorn RA, Swartz MS, Robbins PC, Steadman HJ, McGuire TG, Monahan J. The cost of assisted outpatient treatment: Can it save states money? *Am J Psychiatry*. 2013;170(12):1423-1432.
33. Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychol Bull*. 2003;129(5):674-697.
34. Noordraven EL, Wierdsma AI, Blanken P, Bloemendaal AF, Mulder CL. Depot-medication compliance for patients with psychotic disorders: the importance of illness insight and treatment motivation. *Neuropsychiatr Dis Treat*. 2016;12:269-274.
35. Rosenbaum PR, Rubin DB. The central role of the propensity score in observational studies for causal effects. *Biometrika*. 1983;70(1):41-55.
36. Ho DE, Imai K, King G, Stuart EA. MatchIt: Nonparametric Preprocessing for Parametric Causal Inference. *J Stat Softw*. 2011;42(8):1-28.
37. R Core Team. R: A language and environment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing; 2015.
38. Hall RC. Global assessment of functioning: a modified scale. *Psychosomatics*. 1995;36(3):267-275.
39. Kisely SR, Campbell LA, Preston NJ. Compulsory community and involuntary outpatient treatment for people with severe mental disorders. *Cochrane Database Syst Rev*. 2011;2.
40. Rosenberg S, Lu W, Mueser K, Jankowski MK, Cournos F. Correlates of adverse childhood events among adults with schizophrenia spectrum disorders. *Psychiatr Serv*. 2007;58(2):245-253.
41. Allen M, Smith VF. Opening Pandora's box: the practical and legal dangers of involuntary outpatient commitment. *Psychiatr Serv*. 2001;52(3):342-346.
42. Arseneault L, Cannon M, Fisher HL, Polanczyk G, Moffitt TE, Caspi A. Childhood trauma and children's emerging psychotic symptoms: a genetically sensitive longitudinal cohort study. *Am J Psychiatry*. 2011;168(1):65-72.

43. Bailey S. Violent children: a framework for assessment. *Adv Psychiatr Treat*. 2002;8(2):97-106.
44. Bindman J. Involuntary outpatient treatment in England and Wales. *Curr Opin Psychiatry*. 2002;15(6):595-598.
45. Classen CC, Palesh OG, Aggarwal R. Sexual revictimization: A review of the empirical literature. *Trauma Violence Abuse*. 2005;6(2):103-129.
46. Desmarais SL, Van Dorn RA, Johnson KL, Grimm KJ, Douglas KS, Swartz MS. Community violence perpetration and victimization among adults with mental illnesses. *Am J Public Health*. 2014;104(12):2342-2349.
47. Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, Marks JS. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *Am J Prev Med*. 1998;14(4):245-258.
48. Gledhill K. Community treatment orders. *J Ment Health Law*. 2007;16:149-169.
49. Hiday VA, Swartz MS, Swanson JW, Borum R, Wagner HR. Impact of outpatient commitment on victimization of people with severe mental illness. *Am J Psychiatry*. 2002;159(8):1403-1411.
50. Jaeger M, Rossler W. Enhancement of outpatient treatment adherence: Patients' perceptions of coercion, fairness and effectiveness. *Psychiatry Res*. 2010;180(1):48-53.
51. Opler L, Muenzenmaier K, Shelley A, Grennan M. Symptoms of Trauma Scale (SOTS) Manual. Toronto, Ontario, Canada: Multi-Health Systems Inc.; 2004.
52. Swanson JW, Swartz MS. Why the evidence for outpatient commitment is good enough. *Psychiatr Serv*. 2014;65(6):808-811.
53. Zinkler M, Von Peter S. End Coercion in Mental Health Services, Toward a System Based on Support Only. *Laws*. 2019;8(3):19.
54. Zinkler M, Weinmann S, von Peter S, Aderhold V. Ambulante Behandlungsweisungen – kritische Erörterung der Wirksamkeit und rechtliche Einordnung im Hinblick auf eine menschenrechtskonforme Reform der Versorgungsstrukturen. *Recht & Psychiatrie*. 2024 May 1;42(2):64-74.

Tables

Tables 1 to 4 are available in the supplementary files section.

Supplementary Files

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