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Evaluation of seclusion and restraint reduction programs in mental health: A systematic review

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ABSTRACT

Context: The effectiveness of seclusion and restraint (SR) reduction programs has not been well established.
Objective: To examine the effectiveness of SR reduction programs in mental health settings.
Data sources: A systematic review of English and French articles, using CINALH, Web of Science, PubMed, Medline, Embase, and the Cochrane Library. Additional studies were added by searching the references of identified papers.
Study selection: All evaluative studies on SR reduction programs in mental health were included based on predefined criteria ($n = 23$ articles).
Data extraction: Data extraction of articles was performed using predefined data fields. The three authors conducted quality assessments independently.
Data synthesis: In the 23 articles analyzed, six key components were predominant in SR reduction programs: 1) leadership, 2) training, 3) post-seclusion and/or restraint review, 4) patient involvement, 5) prevention tools, and 6) the therapeutic environment.
Conclusion: Despite wide variability in SR indicators and methodological rigor, it remains that the outcomes argue in favor of SR reduction program implementation.

Contents

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1. Context

The scientific literature shows that the prevalence of seclusion and restraint (SR) remains high, with 7% mean percentage of patients exposed to coercion, ranging from 0 to 23% (Noorthoorn et al., 2015; Steinert et al., 2010). Moreover, the adverse effects of SR are largely identified among patients (injuries, feelings of anger and fear, recalling of traumatic memories, weakened therapeutic alliance), care providers (injuries, emotional discomfort), and organizations (financial impacts) (Hallett, Huber, & Dickens, 2014; Larue et al., 2013; Papadopoulos et al., 2012). Thus, there is global consensus on the need to reduce the use of SR, especially since the latest Cochrane Review points out that the therapeutic value of SR has never been demonstrated (Sailas & Fenton, 2012). The factors involved in decisions to use SR are numerous and interrelated, and include characteristics of the patients (age, sex, nationality, diagnosis), the care providers (education level, experience, stress level, training, attitude), the staff team (norms, freedom of expression), environment (internal and external to the hospital), and the organization (SR documentation, formation, SR reduction plan) (Bowers, 2014; Larue, Dumais, Ahern, Bernheim, & Mailhot, 2009). The relationships between factors involved in SR use are complex and need to be addressed at various levels.

A systematic review of interventions reducing mechanical restraint found that combined intervention programs were the most likely to reduce the frequency of mechanical restraint, followed by cognitive milieu therapy, representing a 76% reduction in mechanical restraint (Bak, Brandt-Christensen, Sestoft, & Zoffmann, 2012). However, the content of multi-component approaches is known to vary widely (Stewart, Van Der Merwe, Bowers, Simpson, & Jones, 2010). In the only review of the literature addressing evaluations of SR reduction programs, Scanlan (2010, p. 416) found that "in adult settings, broad-based programs that address the problem from a number of perspectives appear to be the most effective model." Note, however, that what the author means by "program" remains unclear, and that it is a review of the literature without the methodological rigor of a systematic review. Furthermore, the review was published in 2010 and does not include more recent studies. Finally, there is the ethical problem of implementing programs whose effectiveness is unknown, with the result that stakeholders wishing to achieve SR reduction in their settings do not have evidence-based programs to choose from.

The aim of this review was to examine the effectiveness of SR reduction programs with adults in mental health settings.

2. Method

2.1. Protocol

The protocol was developed prior to the authors conducting the review and was based on the PRISMA Statement, which aims to ensure a transparent and systematic review of studies evaluating health care interventions (Liberati et al., 2009; Moher, Liberati, Tetzlaff, & Altman, 2009). The results are presented according to the PRISMA Statement.

2.2. Eligibility criteria

The eligibility criteria for *report characteristics* were that papers be in English or French, present evaluations of SR reduction programs in adult mental health, and be published between 2010 and 2015, since the last literature review was conducted in 2010. For *study characteristics*, the studies had to have been conducted in an adult psychiatric setting, including forensic psychiatry. Intellectual disabilities, pedopsychiatry, and gerontopsychiatry were used as exclusion criteria, since SR utilization in these contexts often involves patients with different psychiatric and cognitive profiles and communication skills. Interventions examined in this review were *SR reduction programs*, defined by the authors as involving two or more activities aimed at reducing seclusion, restraint or aggression for inpatients in mental health and forensic settings. For the purpose of this systematic review, seclusion was defined as "a control measure that consists in confining an individual to a location for a specific period of time and from which the person may not leave freely" (Ministère de la Santé et des services sociaux, 2015). Restraint was defined as "a control measure that consists in preventing or limiting a person's freedom of movement by using human strength, any mechanical means or by depriving the person of an instrument used to offset a handicap." (Ministère de la Santé et des services sociaux, 2015). No exclusion criteria for outcome measures or length of follow-up were imposed.

2.3. Information sources

Articles were identified by searching electronic databases. The search was conducted by a student from the Department of Information and Library Science, guided by her professor and the authors. Six databases were consulted: CINAHL, Web of Science, PubMed, Medline, Embase, and the Cochrane Library. The first author examined reference lists of selected articles to ensure the completeness of the literature search. An example of the search strategy used to examine databases is presented in Table 1.

2.4. Study selection

The first author initially screened the titles and abstracts of the 6766 articles yielded by the database search (7884 before duplicates), retrieving 284 articles. Eligibility assessment of the articles was performed independently by the first two authors, who reached high levels of inter-rater reliability ($\kappa = 0.91$) for 20% of the material. Disagreements between reviewers were resolved by consensus. The first author continued the eligibility assessment, which yielded 22 papers. The search was updated in August 2015 for a total of $n = 23$ studies (see Fig. 1).

2.5. Data collection process and analysis

Data was extracted from the selected articles by the first author using the following predefined data fields: author, location, design, study purpose, setting, sample, length of follow-up, name of program, program component (leadership, staff training, review, patient involvement, increase in staff ratio, use of data, prevention tools, environment, others), outcomes (SR rates and length, injury, aggression, perception, others), and risk of bias. The second author verified the extracted data for incongruities. Authors were contacted for missing data.

Studies were assessed for quality independently by the three authors using the revised Cochrane Risk of Bias Tool. The tool assesses random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessment, incomplete outcomes data, selective outcomes reporting, and other sources of bias (The Cochrane Collaboration, 2011). Disagreements between authors were resolved by consensus.

Given the heterogeneity of identified outcomes, it was impossible to assess risk of bias across studies (measures of consistency, heterogeneity, and funnel plot with Egger's test). We were therefore unable to discuss missing studies or outcomes.

3. Results

Given that the study designs, programs, and outcome measures varied markedly, we focused on describing the studies, the programs implemented, and their results, rather than the planned meta-analysis.

3.1. Methods

Studies were conducted in the United States ($n = 10$), Australia ($n = 4$), the Netherlands ($n = 4$), the United Kingdom ($n = 3$), Sweden

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