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Aggression in mental health residential facilities: A systematic review and meta-analysis

Viola Bulgari[a,b,*], Clarissa Ferrari[c], Francesco Pagnini[b,d], Giovanni de Girolamo[a], Laura Iozzino[a]

[a] Psychiatric Epidemiology and Evaluation Unit, Saint John of God Clinical Research Center, Brescia, Italy
[b] Department of Psychology, Università Cattolica del Sacro Cuore, Milan, Italy
[c] Service of Statistics, Saint John of God Clinical Research Center, Brescia, Italy
[d] Department of Psychology, Harvard University, Cambridge, MA, USA

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ABSTRACT

Objectives: To estimate the prevalence of aggression exhibited by patients living in community residential facilities and to identify risk factors for such aggression.
Methods: A systematic review with meta-analysis was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The protocol was registered in the International Prospective Register of Systematic Reviews (PROSPERO) dataset (registration number: CRD42016042475). PubMed, Scopus and Web of Science were searched for studies published prior to February 21st 2017. Studies reporting the number of patients who perpetrated aggressive behavior in residential facilities were included. Methodological quality, publication bias, and the role of moderators were assessed. A pooled effect size was calculated for each outcome. Factors affecting between-study heterogeneity were analyzed using sub-groups and meta-regression analysis.
Results: Ten studies met the inclusion criteria, for a total sample of 3760 patients. The pooled prevalence of aggression in residential facilities was 29% (95% CI 0.17–0.42) with a high heterogeneity and variability among studies. History of violence, personality disorders, lifetime substance and alcohol misuse were found significantly associated with aggression.
Conclusion: Aggression in residential care services is common. Certain individual factors are associated to an increased risk for such aggression.

1. Introduction

Aggression in psychiatric services is a major concern because of its frequency (Bowers et al., 2011) and its adverse consequences for healthcare (Arnetz & Arnetz, 2001). For example, Iozzino, Ferrari, Large, Nielssen, & de Girolamo (2015) found that almost 1 in 5 patients admitted to acute psychiatric units commit an act of interpersonal violence during their hospital stay.

Risk factors need to be identified to improve the prediction and management of inpatient aggression. A theoretical model suggested that both individual and situational factors contribute to an increased risk for inpatient aggression (Nijman, à Campo, Ravelli, & Merckelbach, 1999). Individual risk factors include static factors, which refer to patients' characteristics that cannot be changed with intervention, and dynamic factors, which can be potentially improved with interventions (Rueve & Welton, 2008). Research found that the individual risk factors for inpatient aggression are generally static factors and include younger age, male gender, involuntary admissions, not being married, a diagnosis of schizophrenia, a great number of previous admissions, a history of violence or self-destructive behavior and a history of substance abuse (Dack, Ross, Papadopoulos, Stewart, & Bowers, 2013). Situational risk factors for inpatient aggression in psychiatric settings refer to the features of the institutional environment where the aggression took place (Megargee, 1982). They include low security level, number of patients, younger and inadequately trained staff, poor communication between patients and staff (Gadon, Johnstone, & Cooke, 2006; Welsh, Bader, & Evans, 2013).

The frequency of inpatient aggression has been well investigated in psychiatric wards (Cornaggia, Beghi, Pavone, & Barale, 2011; Iozzino et al., 2015), psychiatric emergency services (San et al., 2016), forensic hospitals (Sedgwick, Young, Das, & Kumari, 2016) as well as through clinical staff experiences (Gudde, Olsø, Whittington, & Vatne, 2015). However, past research focused on inpatient aggression especially in psychiatric hospitals and forensic units (Bowers et al., 2011; Dack et al.,

* Corresponding author at: Psychiatric Epidemiology and Evaluation Unit, Saint John of God Clinical Research Centre, via Pilastroni 4, 25125 Brescia, Italy.
E-mail address: vbulgari@fatebenefratelli.eu (V. Bulgari).

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2013). To our knowledge, fewer studies examined the frequency and the causes of aggression by patients living in community-based Residential Facilities (RFs). This may relate, at least in part, to the difficulty in defining community RFs worldwide, as they differ in levels of assistance and treatment types (Lelliott, Audini, Knapp, & Chisholm, 1996; Tansella, 1986). Other concerns may have relied on the great heterogeneity of aggressive outcomes and measures used in mental health research (Harris, Oakley, & Picchioni, 2013).

Discussions surrounding psychiatric violent patients who need longer-term care have taken place in several countries. For example, in Italy there is an increasing number of former forensic psychiatric patients being committed to community-based residential care, as a consequence of the Law 81/2014 (Barbui & Saraceno, 2015; Peloso, D'Alema, & Fioritti, 2014). This posed the problem of estimating the frequency of violence in the existing residential care services as well the need to identify possible causes for such violence. For example, Preti et al. (2008) found that the rate of violence in RFs was low and limited to a subgroup of former forensic patients. They concluded that former patients are suitable for relocation to ordinary RFs, as they may not pose a significant risk for violence. However, more recently de Girolamo and colleagues (2016) found that n = 64 (46%) of the 139 total patients (27% coming from forensic hospitals) committed aggression (especially verbal) in RFs over a period of 12 months. These inconsistent results emphasize the need for a detailed analysis of the extent of patient aggression in RFs as well as of the characteristics of residential patients with a history of violent crime compared with those who have not such history.

Therefore, the purposes of this study are to conduct a meta-analytical exploration of the literature with the aims (i) to estimate the period prevalence of patient aggression in community RFs, and (ii) to identify individual and situational risk factors for aggression by patients in RFs.

2. Materials and methods

The method used to complete the meta-analysis is conformed to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement (Moher et al., 2015). Details of the protocol for this systematic review may be found in PROSPERO dataset (registration number: CRD42016042475) and can be accessed at https://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42016042475.

2.1. Definitions

2.1.1. Community-based residential care facilities (RF)

We defined community RF as “a non-hospital, community-based mental health facility that provides overnight residence for people with mental disorders. Usually these facilities serve users with relatively stable mental disorders not requiring intensive medical interventions.” (World Health Organization, WHO, 2005, p. 11). Accordingly, these types of RFs met the inclusion criteria: “supervised housing, group homes, un-staffed group homes, group homes with some residential or visiting staff, hostels with day staff, hostels with day and night staff, hostels and homes with 24-hour nursing staff, halfway houses, therapeutic communities (WHO, 2005, p. 11)”. Both public and private nonprofit and for-profit facilities were included. We did not consider community RFs for children and adolescents or for other specific age groups (e.g., elderly).

2.1.2. Aggression

In this study, we used the term “aggression” to denote a wide range of hostile or violent conducts, as it was defined as “any behavior directed toward another individual that is carried out with the proximate (immediate) intent to cause harm” (Anderson & Bushman, 2002, p. 28). Violence is an extreme form of aggression, which result in more tangible harms (Anderson & Bushman, 2002).

2.1.3. Main outcome

The prevalence of aggression was defined as the proportion (in terms of percentage) of patients who committed aggression in RFs (aggressive patients / total sample * 100). Hereafter, the terms percentage and proportion are considered exchangeable. The rate of aggression was measured in terms of period prevalence, as we considered patients who committed at least one act of aggression during the observation period, regardless of whether they have committed aggressive behavior in the past (Iozzino et al., 2015). It worth noting that period prevalence could coincide with incidence if patients are considered as not violent at the beginning of the observation period (Samet, Wipfli, Platz, & Bhavsar, 2009).

2.2. Search strategy

The search was conducted until February 21st 2017 in three electronic databases: Pubmed, Scopus and Web of Science. The search strategy was “((violen* OR aggressi* OR assault*) AND (schizophreni* OR psychosis OR psychotic OR mental* disorder*) AND (“therapeutic commun*” OR “resident* facilit*” OR “halfway hous*” OR “staff* hostel*” OR “unstaff* hostel*” OR “group* home*”)).

Further references were selected by hand search, based on the references listed in the studies included in the analysis. In case of incomplete or unclear data, we contacted the corresponding authors for information. If data were still unclear or if we did not receive any reply, we excluded the study from the analysis. No attempts were made to search for unpublished results.

2.3. Inclusion and exclusion criteria

Studies were included if they:

- were conducted in a community RF as defined above;
- focused on cohorts of residential patients with a primary diagnosis of mental disorders and an age from 18 to 65 years;
- were written in English;
- were peer-reviewed publications accessible through an on-line platform, regardless of institutional subscription.

Studies were excluded if they:

- did not report data on inpatient aggression exhibited during their stay in RFs,
- focused on clinical services not included in the definition of community RFs as previously provided (e.g., psychiatric hospitals, acute or emergency wards, forensic units, outpatient facilities),
- focused on patients with a primary diagnosis of dementia, intellectual disabilities or mental retardation or it was impossible to distinguish cohorts of patients with different mental disorders;
- had a sample already included in our dataset.

We first screened studies for titles and abstracts including only those that provided a clear description of clinical settings. After that, we considered only those studies that also reported data about the number of patients who behaved aggressively during their stay in RF. Tables 1 and 2 report the list of the facilities and aggression definitions.

2.4. Data extraction

VB and LI independently extracted the data. The inter-rater reliability for the selection of studies was almost perfect (Cohen's k = 0.9) (Landis & Koch, 1977). Conflicts were resolved by consensus. Below there is the list of the data extracted:

- **Study characteristics**: Authors; year of publication; country;
- **Study methodology**: study design: retrospective vs prospective,