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Assessment and determinants of aggression in a forensic psychiatric institution in Hong Kong, China



Oliver Chan*, Kavin Kit-wan Chow

Department of Forensic Psychiatry, Castle Peak Hospital, 3-15 Tsing Chung Koon Road, Tuen Mun, Hong Kong

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ABSTRACT

Institutional aggression in forensic psychiatric setting is an under-researched subject, despite the magnitude of the problem. No studies have been conducted on the assessment of risk and the examination of predictors of aggression among the Chinese forensic psychiatric population. Our study aimed to examine the determinants of aggression in the only forensic psychiatric institution in Hong Kong, and to test the psychometric properties of a risk-assessment instrument, the Dynamic Appraisal of Situational Aggression (DASA). We recruited a representative sample of 530 consecutively admitted detainees. Qualified nurses completed two risk-assessment instruments, the DASA and the Brøset Violence Checklist (BVC), once daily during the participants' first 14 days of admission. Aggressive incidents were recorded using the revised Staff Observation Aggression Scale (SOAS-R), and participants' data were collected for multivariate analyses. We showed that female gender, diagnoses of personality disorder and substance-related disorder, and admission at other correctional institutions were associated with institutional aggression. Aggression was perpetrated by 17.7% of the participants, and the DASA was demonstrated to have good psychometric properties in assessing and predicting aggressive incidents. Our findings preliminarily support the use of daily in-patient risk-assessment and affirm the role of dynamic factors in institutional aggression.

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1. Introduction

Aggression poses significant problems for mental health services. For example, the estimated annual direct cost for patient aggression in healthcare settings in the United Kingdom was approximately 69 million pounds (Hankin et al., 2011). The psychiatric in-patient unit presents a unique environment for patients because of the various demands and restrictions in a hospital setting. In forensic services, the effect is further amplified by security concerns that curb an individual's liberty to a certain extent. A meta-analysis involving a total of 69,249 patients has shown that the mean rates of violence were consistently higher in forensic in-patient settings than acute psychiatric wards and mixed ward settings (Bowers et al., 2011). In-patient aggression can lead to poor morale, staff turnover and the annihilation of a therapeutic climate.

Endeavours to address the issue of risk-assessment for in-patient aggression have been made in the clinical and research fields of psychiatry over the years. All clinical decisions inevitably entail a degree of risk due to uncertainty, which can be classified as aleatory (statistical) or epistemic (systematic); violence risk prediction might include both (Crighton, 2011). Efforts to quantify risk can be viewed as

attempts to reduce epistemic uncertainties. Decision-making based solely on experience is prone to a number of errors and heuristic biases, including cognitive dissonance, groupthink and hindsight bias (Carroll, 2009). Since the twentieth century, several authors have demonstrated the need to employ dynamic risk-assessment measures, especially in institutional settings because these measures allow more accurate short-term predictions of aggression relative to static measures (Chu et al., 2013; McDermott et al., 2008). Theories of aggression, such as the general aggression model, also postulated that dynamic factors (such as environmental influences, attitudes, and mood) contributed more proximally to the expression of aggressive behaviour by an individual (Anderson and Bushman, 2002). Existing instruments used to assess in-patient aggression have displayed modest to excellent predictive validity, including the Dynamic Appraisal of Situational Aggression (DASA) (Ogloff and Daffern, 2006), the Brøset Violence Checklist (BVC) (Woods and Almvik, 2002), the Violence Screening Checklist (McNiel and Binder, 1994), the clinical scale of the Historical-Clinical-Risk Management-20 (Chu et al., 2013) and the Classification of Violence Risk (Snowden et al., 2009). However, concerns remain regarding the reliability and the utility of some of these tools and the small sample size in certain studies. Few tools have specifically been tested in a forensic population as well.

In the clinical context, patient factors associated with a higher risk of aggression during in-patient admission, as succinctly summarised in a recent systematic review and meta-analysis

* Corresponding author.

E-mail address: co258@ha.org.hk (O. Chan).

(Dack et al., 2013), include young age, involuntary admission, being unmarried, a diagnosis of schizophrenia, several prior admissions, a history of violence, a history of self-destructive behaviour and a history of substance misuse. Nevertheless, the lack of a consensual definition of aggression has introduced problematic heterogeneity into this field. The number of studies conducted in forensic facilities was also insufficient to allow conclusive comments be drawn for this specific clinical population. There is a dearth of studies examining in-patient aggression in the Chinese-speaking community (Leung, 2006; Liu, 2009; Wong, 2010), and no study has examined a forensic psychiatric population. Examples of how the risk of in-patient aggression should be assessed and conceptualised in the Chinese culture are lacking. Cultural variations (e.g., in the concepts of respect and disrespect) are possible and may interact with other factors of aggression (Crowner, 2008). Whether the existing instruments to assess in-patient aggression could be validly applied in Chinese population is in question. The first step to improve our understanding in this subject is, therefore, to investigate the epidemiology of the problem and to provide a framework on how the risk of forensic in-patient aggression could be reliably assessed.

The present study aimed to explore the determinants of aggression in a forensic psychiatric sample in Hong Kong and to test the psychometric properties of the Dynamic Appraisal of Situational Aggression (DASA) for assessing the risk of in-patient aggression. The DASA is a seven-item structured instrument that was developed in 2006 using an in-patient sample from a forensic psychiatric hospital in Melbourne, Australia. It was developed over several months by comparing structured and unstructured approaches. All items were independently related and presented large effect sizes in the original DASA study (Ogloff and Daffern, 2006). The current study utilised the Brøset Violence Checklist (BVC) as a comparison measure. This six-item checklist was devised to make short-term predictions of violence in psychiatric in-patients and is the only risk-assessment tool that was previously validated in the Hong Kong Chinese population (Wong, 2010). The DASA and BVC were selected among the pool of available instruments due to their clarity and brevity, which allowed them to be utilised in the daily (or between-shift) assessment of in-patient aggression. The DASA is potentially superior because it contains items that could identify the potential antecedents of aggression, in particular interactional and modifiable variables that were found to be important in previous studies, and it may be more clinically serviceable. We hypothesised that the DASA is a valid and reliable instrument in the assessment of the risk of in-patient aggression in the Chinese forensic psychiatric setting.

2. Methods

2.1. Setting

This prospective cohort study was conducted at the Siu Lam Psychiatric Centre (SLPC), a maximum-security correctional institution in Hong Kong. The SLPC was established in 1972 and is operated by the Correctional Services Department. It accommodates detainees of all categories (sentenced or on remand) who require psychiatric observation, treatment, assessment, or special psychological care, and this is the only institution in Hong Kong designated for this purpose.

2.2. Participants

Consecutive in-patients admitted to the SLPC between July 1 and December 31, 2012 were recruited. Previous local studies placed the prevalence of in-patient aggression between 10% and 30% (Leung, 2006; Liu, 2009; Wong, 2010). According to Kelsey and Fleiss (Joseph, 1981; Kelsey, 1996), the minimum sample size required to achieve a 95% confidence level and 80% power, assuming a 20% prevalence rate, is 154 for a cohort study. Inmates who failed to consent or were unable to give valid consent were excluded.

2.3. Measures

2.3.1. Dynamic Appraisal of Situational Aggression (DASA)

The DASA comprises seven items: irritability, impulsivity, sensitivity to perceived provocation, unwillingness to follow directions, easily angered when requests are denied, negative attitudes, and verbal threats. Each item is scored '0' if the corresponding behaviour was absent over the past 24 h and '1' if the behaviour was present. The DASA was developed in 2006 using an in-patient sample from a forensic psychiatric hospital in Melbourne, Australia. The DASA has been validated across various settings (Barry-Walsh et al., 2009; Chu et al., 2012; Griffith et al., 2013) and Western cultures (Dumais et al., 2012; Vojt et al., 2010). It has repeatedly exhibited good to excellent predictive accuracy for aggression. It is also viewed as clear, relevant and applicable to clinical practice (Dumais et al., 2012).

2.3.2. Brøset Violence Checklist (BVC)

The BVC assesses changes in six behaviours (confusion, irritability, boisterousness, physical threats, verbal threats and attacks on objects). It can be rated in minutes, and the presence or absence of each behaviour is scored as '1' or '0', respectively. In addition to studies in Europe and Scandinavian countries (Abderhalden et al., 2004; Woods and Almvik, 2002), the BVC was validated in a civil in-patient psychiatric unit in Hong Kong in 2009, revealing an acceptable predictive validity for 24-h prediction and outstanding predictive validity for same shift (8-h) prediction of in-patient violence (Wong, 2010).

2.3.3. The revised Staff Observation Aggression Scale (SOAS-R)

The SOAS-R was used to record incidents of aggression for an unbiased reporting of events, as research on violence is often limited by under-reporting (Crowner et al., 1994). The SOAS-R defines aggression as 'any verbal, non-verbal or physical behaviour that is threatening (to self, others or property), or physical behaviour that actually does harm (to self, others, or property)' (Nijman et al., 1999). This definition was adopted for the current study to facilitate meaningful comparisons with other studies. Administering the SOAS-R does not require specialised training. Under this system, the severity of outwardly directed aggressive incidents varies from 0 (least severe form of aggression) to 22 (most severe form of aggression). A score of 9 or above indicates a severe level of aggression.

2.3.4. Staff training and data collection

Sixty-five staff members were involved in the administration of the DASA, the BVC and the SOAS-R. They had nursing qualifications and bilingual training. The official language used for documentation in the SLPC is English; therefore, translated versions of these tools were not necessary. Prior to the study, the author (OC) conducted an hour-long training to address the theoretical basis of the instruments and the scoring system. The training also included two practice assessments of videotaped hypothetical vignettes to study the inter-rater reliability. A 1-week trial of the study was followed, allowing officers to familiarise themselves with the logistics and ask questions on practical issues. The authors also visited the wards 5 days per week to ensure full compliance with the study protocol, and scoring guidelines were posted in heavy-traffic areas of the clinical facility.

The DASA and the BVC were completed at the same time of day (towards the end of the morning shift) during the first 14 days of admission of every participant. Two staff members completed the DASA and the BVC independently to avoid auto-correlation from the overlapping items on the two measures. In addition, staff members were asked to complete a SOAS-R form following each incident of aggression. A 14-day study period was selected because detainees are typically remanded at the centre for 2 weeks and because previous studies have shown that most in-patient aggression occurs shortly after admission (McNeil et al., 1988).

Sociodemographic characteristics; mental health information, including the diagnosis according to the International Classification of Diseases, 10th revision; and criminal records were obtained from the psychiatric and penal records of the participants and documented using a data retrieval form by the author (OC). OC also manually cross-checked all clinical notes to identify any missed incidents of aggression.

2.4. Statistical analyses

The data were analysed using the Statistical Package for Social Science (SPSS) Version 20.0 for Mac. The statistical significance level was set at $p < 0.05$. Descriptive statistics were used to characterise the sociodemographic and clinical profile of the study sample. The characteristics of the aggressive and non-aggressive groups were compared using a univariate analysis. The categorical variables were analysed using the chi-square (χ^2) test or Fisher's exact test if the expected cell count was less than five. The continuous variables were analysed using the t -test or the Mann-Whitney U test, depending on the data distribution.

The internal consistency of the DASA was examined using Cronbach's alpha. To assess the inter-rater reliability (as the DASA rating involves multiple observers), Krippendorff's alpha was used because it is applicable to any number of observers, any metric or level of measurement, and any sample size (Krippendorff, 2004). The

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