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## Assessing the risk of imminent aggression in institutionalized youth offenders using the dynamic appraisal of situational aggression

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Aggressive behavior in incarcerated youth presents a significant problem for staff, co-residents and the functioning of the institution. This study aimed to examine the predictive validity of an empirically validated measure, designed to appraise the risk of imminent aggression within institutionalized adult psychiatric patients (Dynamic Appraisal of Situational Aggression; DASA), in adolescent male and female offenders. The supervising staff members on the residential units rated the DASA daily for 49 youth (29 males and 20 females) over two months. The results showed that DASA total scores significantly predicted institutional aggression in the following 24 and 48 hrs; however, the predictive validity of the DASA for institutional aggression was, at best, modest. Further analyses on male and female subsamples revealed that the DASA total scores only predicted imminent institutional aggression in the male subsample. Item analyses showed that *negative attitudes*, *anger when requests are denied*, and *unwillingness to follow instructions* predicted institutional aggression more strongly as compared with other behavioral manifestations of an irritable and unstable mental state as assessed by the DASA.

**Keywords:** aggression; dynamic variables; institutionalized youth offender; predictive validity; risk assessment; violence

### Introduction

Psychiatric units, prisons, and youth correctional facilities are unique institutional environments where people are typically detained against their will, restricted in their daily activities and movement, and supervised by authority figures (e.g. nurses, corrections officers, and supervision staff)

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(Gadon, Johnstone, & Cooke, 2006). Aggression within these institutions is common (Daffern & Howells, 2002), and frequently occurs consequent to the anger that is aroused by the restrictions and demands that are placed on individuals to maintain the regime and to facilitate treatment adherence (Daffern, Howells, & Ogloff, 2007). Violence risk assessment has become a cornerstone of aggression prevention and management programs in these institutions. As such, there has been an increase in the development and testing of structured risk assessment instruments.

### ***Dynamic risk assessment measures***

Several violence risk assessment measures that appraise risk for imminent aggression within the institutional context have been developed (e.g. the Brøset Violence Checklist [BVC; Almvik, Wood, & Rasmussen, 2000], and the Dynamic Appraisal of Situational Aggression [DASA; Ogloff & Daffern, 2002]). These measures comprise dynamic variables that appraise *risk state*, the so-called intraindividual variability in violence potential (Douglas & Skeem, 2005). Within the inpatient or institutional setting, risk management and treatment decisions are required frequently (Daffern, 2007). Day-to-day appraisals of risk state are of central importance to staff working in these restrictive institutional settings, as appropriate monitoring of risk state can assist staff to manage individuals on the unit, as well as to plan and facilitate treatment, rehabilitation, and recreational activities that are affected by the likelihood of violence (e.g. Does the patient require additional interventions [e.g. biological, social, and psychological] today? What level of supervision is required for this patient today?) (Daffern & Howells, 2007).

Clearly, the dynamic nature of the patient or offender's mental state would have implications on the risk of aggression, which subsequently affect management strategies. For example, a patient or offender who is assessed as being at high risk of imminent aggression may receive more intensive supervision or biopsychosocial intervention, but this may not be necessary when the risk of aggression abates. In fact, Daffern and colleagues (2007) have shown that it is unnecessary and inadvisable for restrictive management strategies (e.g. sedation, restraint, seclusion, increased observation, and restrictions to liberty) to be implemented invariably throughout the patient and offender's admission, as this can lead to frustration and ultimately aggressive behaviors. Taken together, the risk assessment system within the institutional setting should be responsive to rapid changes in the level of risk, so that management strategies can change accordingly (Daffern, 2007).

In this aspect, the BVC and the DASA are sensitive to change, and the items are straightforward and simple to score, thereby allowing regular efficient appraisals of violence risk. Dynamic risk assessment measures have generally been found to have moderate to strong predictive validity for

inpatient and institutional aggression in the short-term (see Chu, Thomas, Ogloff, & Daffern, in press; Daffern, 2007 for reviews). The BVC has been shown to significantly predict inpatient violence (Area Under Curves [AUCs] = 0.69–0.94) in samples of hospitalized psychiatric patients within the next 12–24 hrs (Abderhalden et al., 2004; Almvik et al., 2000; Almvik, Woods, & Rasmussen, 2007; Woods & Almvik, 2002). The DASA has been shown to significantly predict interpersonal violence within inpatient forensic psychiatric settings (AUCs = 0.61–0.82) (Barry-Walsh, Daffern, Duncan, & Ogloff, 2009; Daffern & Howells, 2007; Daffern et al., 2009; Ogloff & Daffern, 2006; Vojt, Marshall, & Thomson, 2010).

### ***Gender differences***

In general, studies on risk assessment measures have mainly examined male samples, and (until recently) have not conducted separate analyses for the male and female samples. Nevertheless, there has been considerable theoretical and empirical literature that suggests that there may be unique risk factors of violence for females (e.g. Cale & Lilienfeld, 2002), and these unique factors may affect the predictive validity of the risk assessment measures, which may have been developed with predominantly male samples. Although some researchers did not find any significant differences in the predictive validity of an adult violence risk assessment measure (i.e. Historical, Clinical, Risk Management – 20 Factors [HCR-20]) for males and females (e.g. Strand & Belfrage, 2001; Webster, Douglas, Eaves, & Hart, 1997), other scholars have suggested that there may be gender differences when clinicians predict outcomes using risk assessment measures (e.g. Coid et al., 2009; de Vogel & de Ruiter, 2005; Manchak, Skeem, Douglas, & Siranosian, 2009; Nicholls, Ogloff, & Douglas, 2004). In any case, it is apparent this issue has been seldom examined in the risk assessment literature.

### ***Applicability of adult risk assessment measures in youth populations***

Compared with the increased attention on dynamic risk assessment within adult psychiatric and correctional institutions, fewer published studies have examined the utility of dynamic risk assessment measures for institutionalized youth. There are several studies that have tested the predictive validity of violence and general criminal recidivism risk assessment measures within institutional settings (e.g. Gammelgård, Koivisto, Eronen, & Kaltiala-Heino, 2008), but these studies have exclusively employed measures that are designed to predict aggression or violence in the medium to long term (several months to years), including the Structured Assessment of Violence Risk in Youth (SAVRY; Borum, Bartel, & Forth, 2003).

Though these measures may identify incarcerated youth who require additional supervision or intervention over the longer term due to their higher *risk status*, they are unwieldy for daily assessment. In particular, their capacity to measure change in risk state on a daily basis is also unknown; moreover, as noted previously, daily assessments of risk are a fundamental part of management and treatment decision-making within institutional settings (Daffern & Howells, 2007). However, given that developmental factors may moderate the accuracy of risk assessment measures that have been developed for adults when used with young persons and youth (e.g. Viljoen, Elkovitch, Scalora, & Ullman, 2009; Viljoen et al., 2008), it is important to examine whether adult risk assessment measures are suitable for use in youth populations. Presently there is no empirically derived and validated violence risk assessment measure that is capable of assisting staff to identify incarcerated or hospitalized youth at risk of imminent aggression.

### ***Study aim***

To the best of our knowledge, there are currently no published studies that have examined the very-short-term predictive validity (i.e. 24 and 48 hr follow-up) of dynamic risk assessment measures for institutionalized youth. Importantly, there has been very little documentation on gender differences when examining the predictive validity of risk assessment measures in youth. Given these limitations to the extant literature, the present study seeks to investigate the very-short-term predictive validity of a dynamic risk assessment measure (DASA) for institutional aggression in a sample of young offenders and to examine differences in predictive accuracy of the DASA between male and female youth offenders. The DASA assesses an irritable and disagreeable state preceding aggression that may be common to aggressive individuals of any age, as well as some known precipitants of youth violence such as restlessness/irritability and negative/antisocial attitudes (Daffern & Howells, 2007; Farrington, 1989; Klinteberg, Andersson, Magnusson, & Stattin, 1993; Williams, 1994); as such, it was hypothesized that the DASA would significantly predict institutional aggression. Given the limited previous research examining gender differences, it was hypothesized that there would be no differences in the predictive validity of the DASA between males and females.

## **Method**

### ***Settings***

The settings for this study were the Singapore Boys' Home and the Singapore Girls' Home. These are high-security youth correctional institutions in Singapore, with full capacities of 300 and 120 beds respectively. Both institutions provide rehabilitation services to youth

offenders (aged up to 19.5 years old). For the purpose of this study, subjects comprised 49 youth (29 males and 20 females) from two units within the Singapore Boys' Home and Singapore Girls' Home. The mean age of the subjects was 15.42 years ( $SD = 1.37$ , range = 12.22–18.24). Due to the demands on staff of the study protocol, only two units (instead of the all the units within the institutions) were permitted to engage in the study by the superintendents of the two institutions.

### **Measure**

Using items from the BVC and the HCR-20, as well as novel items drawn from a functional analytical assessment of inpatient aggression, the DASA (Ogloff & Daffern, 2002) was developed to assess the risk of imminent aggression in hospitalized patients with mental illnesses. The DASA comprises seven dynamic violence risk items: *negative attitudes*, *impulsivity*, *irritability*, *verbal threats*, *sensitive to perceived provocation*, *easily angered when requests are denied*, and *unwillingness to follow directions*. Daily assessments using the DASA involve scoring each of the seven items for its presence or absence in the 24 hrs prior to assessment; well-known individuals (those who have been known to the assessor for at least one week) who show an increase in the behavior are scored as '1', whereas the individual's usual behavior while being nonviolent (i.e. if the person being rated is typically irritable but never aggressive) is scored as '0' (these scoring criteria are comparable with those used to score the BVC; Almvik et al., 2000). The DASA item scores can be summed to derive a total score (maximum score of 7). The seven items (which comprise the DASA) were moderately related to aggression within the following 24 hrs; moreover, the DASA total score was also shown to significantly predict interpersonal violence within 24 hrs (Ogloff & Daffern, 2006).

### **Procedure**

At the Singapore Boys' Home and Singapore Girls' Home, the supervision staff completed the DASA at 1400 hrs over a period of two months. In addition to the DASA, the supervision staff completed a record of various problematic behaviors, which included interpersonal violence and verbal threat; aggressive behaviors were recorded on a modified version of the Overt Aggression Scale (OAS; Yudofsky, Silver, Jackson, Endicott, & Williams, 1986) (acts of self-harm were not recorded). Standard institutional incident forms were also reviewed to identify any other acts of aggressive behavior that had not been recorded on the modified OAS. Acts of aggression were then classified as either *verbal threats* (threats to cause bodily harm to others) or *interpersonal violence* (biting, hitting, kicking, punching, and throwing objects intending to injure). These definitions are

similar to the definitions adopted by Steadman et al. (1998). *Any inpatient aggression* referred to the presence of *interpersonal violence* and/or *verbal threat*. The supervision staff members who rated the DASA were blind to the participants' behaviors that occurred in subsequent shifts. Incident reports were also used to supplement these records of institutional aggression to ensure that all the problem behaviors were recorded accurately. At the completion of the two-month data collection phase of the study the DASA risk assessment ratings were then matched with the OAS and incident form data (for the 24 and 48 hrs following each set of ratings).

Prior to the study, the supervision staff members received training with regard to the principles of violence risk assessment and the scoring of the DASA. The criteria for scoring were discussed in detail with the supervision staff members during the training session to ensure that there were no issues. Language did not appear to be a barrier to application in the Singaporean context and staff reported that the items were relevant to their context and intuitively related to violence risk in their incarcerated youth. To assist with inter-rater reliability, the supervision staff members were asked to rate two vignettes after the training session, and the intraclass correlation coefficient for single rater (absolute agreement definition) was 0.91, which was excellent (see Cicchetti & Sparrow, 1981 for a classification index).

### ***Statistical analyses***

Simple descriptive statistics were used to report the characteristics of the sample, as well as the DASA scores. The predictive validity of the DASA in this study was assessed using logistic regression analyses. In particular, logistic regression models were developed to calculate the association between the DASA total scores and perpetuation of aggressive behaviors in 24 and 48 hr follow-up periods. The odd ratios and confidence intervals were reported.

The predictive validity of the DASA in this study was also assessed using the Area Under the Curve (AUC) of the Receiver Operating Characteristic (ROC). This is a commonly used measure of predictive accuracy in violence risk assessment research, as it is less dependent on the base rate of violence than traditional measures of predictive accuracy (Douglas & Webster, 1999). The ROC plots the true positive rate (sensitivity) against the false positive rate (1-specificity), and generates an AUC. The AUC, which is an index of predictive accuracy, ranges from 0 (perfect negative prediction) to 0.50 (chance prediction) to 1.0 (perfect positive prediction) (see Hosmer & Lemeshow, 2000 for a classification index). The AUCs for the female and male youth samples were compared using *z*-tests for independent groups to ascertain whether they differed significantly (Hanley & McNeil, 1982).

Furthermore, the DASA items were entered simultaneously into logistic regression models to examine whether they were significantly associated with aggression in 24 and 48 hr follow-up periods. Analyses were conducted using PASW version 19.

The current analyses used each daily risk assessment rating as a unit of analysis, which is an acceptable and appropriate comparison method in this area of study (e.g. Almvik et al., 2000; Barry-Walsh et al., 2009; Desmarais, Nicholls, Read, & Brink, 2010). The DASA examines dynamic risk states and it is clear that the individuals' mental state fluctuates; therefore the daily ratings are used as separate units of analysis (i.e. each individual clinical state is used to predict the subsequent behavior in the next 24 or 48 hrs).

## Results

### *DASA ratings and aggressive behavior*

A total of 2008 DASA risk assessments were completed, and the mean DASA (seven-item) total score was 0.23 (Mdn = 0, SD = 0.95, range = 0–7). The ratings showed skewness; specifically, there were 1856 total scores of 0 (92.4%), 46 scores of 1 (2.3%), 29 scores of 2 (1.4%), 25 scores of 3 (1.2%), 19 scores of 4 (0.9%), 10 scores of 5 (0.5%), 12 scores of 6 (0.6%), and 11 scores of 7 (0.5%). There were a total of 50 episodes of aggressive behavior during the follow-up, 26 episodes of interpersonal violence, and 24 episodes of verbal threat. Slightly more than a third of the youth (34.7%; 17/49) exhibited institutional aggression; 44.8% of the male youth (13/29) were aggressive as compared to 20% (4/20) of the female youth.

### *Predictive validity of the DASA*

#### *Predictive validity of the DASA total score*

Logistic regression analyses revealed that the DASA total score significantly predicted any aggressive episode in the next 24 hrs (odd ratios [OR] = 1.29, 95% confidence interval [95% CI] = 1.07–1.55,  $p < 0.01$ ) and 48 hrs (OR = 1.34, 95% CI = 1.16–1.54,  $p < 0.001$ ). The odds ratios suggest that for every one-point increase in DASA total score, there was 1.29 and 1.34 times increased likelihood that the youth would behave aggressively in the following 24 and 48 hrs respectively. The DASA also significantly predicted interpersonal violence in the next 24 hrs (OR = 1.33, 95% CI = 1.06–1.65,  $p < 0.05$ ) and 48 hrs (OR = 1.31, 95% CI = 1.09–1.57,  $p < 0.01$ ), and verbal threat in the next 24 hrs (OR = 1.36, 95% CI = 1.11–1.67,  $p < 0.01$ ) and 48 hrs (OR = 1.39, 95% CI = 1.18–1.63,  $p < 0.001$ ). Notwithstanding that the DASA total scores significantly predicted institutional aggression in the next 24 and 48 hrs, the ROC analyses indicate that the predictive validity



of the DASA total score for institutional aggression was generally poor to (at best) modest (see Table 1).

With regard to the male subsample, the DASA total score significantly predicted any aggression in the following 24 hrs (OR = 1.24, 95% CI = 1.02–1.51,  $p < 0.05$ ) and 48 hrs (OR = 1.29, 95% CI = 1.11–1.49,  $p < 0.01$ ). In addition, the DASA total score significantly predicted interpersonal violence (OR<sub>24hrs</sub> = 1.26, 95% CI = 1.01–1.57,  $p < 0.05$ ; OR<sub>48hrs</sub> = 1.23, 95% CI = 1.03–1.48,  $p < 0.05$ ) and verbal threat (OR<sub>24hrs</sub> = 1.34, 95% CI = 1.07–1.67,  $p < 0.05$ ; OR = 1.37, 95% CI = 1.16–1.62,  $p < 0.001$ ) in the following 24 and 48 hrs. For the female subsample, the DASA total scores did not significantly predict any aggression, interpersonal violence, and verbal threat in the next 24 and 48 hrs. Although the predictive validity (AUCs) for the male appeared to be somewhat higher than that for the female subsamples, the differences were nonsignificant (see Table 1).

#### *Predictive validity of DASA items*

When entered simultaneously into a logistic regression model, analyses revealed that the following DASA items significantly predicted any aggression in the following 24 hrs (entire sample): Unwillingness to Follow Directions, OR = 29.87, 95% CI = 2.23–400.56,  $p < 0.05$ ; Easily Angered When Requests Are Denied, OR = 3.88, 95% CI = 1.13–13.16,  $p < 0.05$ ; and Negative Attitudes, OR = 4.39, 95% CI = 1.09–17.54,  $p < 0.05$ . However, only Negative Attitudes (OR = 3.80, 95% CI = 1.14–12.66,  $p < 0.05$ ) and Unwillingness to Follow Directions (OR = 5.49, 95% CI = 1.01–29.78,  $p < 0.05$ ) remained as significant predictors for any aggression in the following 48 hrs. Tables 2 and 3 present the significant predictors for the various types of institutional aggression in the 24 and 48 hr follow-up periods respectively.

#### **Discussion**

The aim of this study was to test the predictive validity of the DASA for imminent aggression in incarcerated male and female youth offenders. Similar to other DASA studies conducted with adult psychiatric inpatients (Barry-Walsh et al., 2009; Ogloff & Daffern, 2006), higher total scores on the DASA were significantly associated with a higher risk of imminent aggression. However, the predictive validity for institutional aggression found in this study was somewhat lower than those found in the adult studies (Barry-Walsh et al., 2009; Daffern & Howells, 2007; Ogloff & Daffern, 2006). Three possible reasons for the lower predictive validity found in this study are offered to explain these findings. Firstly, the lower predictive validity may have been due to the low supervision staff-to-young

Table 1. The predictive validity of the DASA total score for institutional aggression.

Type of institutional aggression	Entire sample ( $N_{\text{obs}} = 2008$ )		Male youth ( $N_{\text{obs}} = 1056$ )		Female youth ( $N_{\text{obs}} = 952$ )	
	AUC (SE)	95% CI	AUC (SE)	95% CI	AUC (SE)	95% CI
Any aggression						
24 hrs	0.59 (0.05)*	(0.50, 0.69)	0.60 (0.06)	(0.48, 0.71)	0.57 (0.10)	(0.38, 0.75)
48 hrs	0.57 (0.06)	(0.49, 0.64)	0.57 (0.04)	(0.49, 0.66)	0.51 (0.08)	(0.36, 0.66)
Interpersonal violence						
24 hrs	0.58 (0.06)	(0.46, 0.70)	0.59 (0.07)	(0.45, 0.72)	0.48 (0.14)	(0.21, 0.75)
48 hrs	0.55 (0.05)	(0.45, 0.64)	0.55 (0.05)	(0.45, 0.65)	0.48 (0.11)	(0.26, 0.70)
Verbal threat						
24 hrs	0.61 (0.06)*	(0.49, 0.73)	0.63 (0.08)	(0.48, 0.78)	0.58 (0.10)	(0.38, 0.77)
48 hrs	0.59 (0.05)*	(0.50, 0.69)	0.62 (0.06)*	(0.50, 0.73)	0.52 (0.08)	(0.35, 0.68)

Notes: The differences in AUCs for male and female subsamples were non-significant.

$N_{\text{obs}}$  refers to number of observations.

\* $p < 0.05$ .

Table 2. DASA items that significantly predicted institutional aggression in next 24 hrs.

DASA item(s)	Any aggression		Interpersonal violence		Verbal threat	
	OR	95% CI	OR	95% CI	OR	95% CI
<i>Entire sample</i>						
Negative attitudes	4.39*	(1.09, 17.54)	20.39*	(1.13, 366.52)	5.56*	(1.20, 25.64)
Irritability	3.88*	(1.13, 13.16)				
Easily angered when requests are denied	29.87*	(2.23, 400.56)				
<i>Male subsample</i>						
Unwillingness to follow directions	16.76*	(1.19, 235.81)				
<i>Female subsample</i>						
Negative attitudes	29.41*	(1.54, 500)			33.33*	(1.70, 500)
Easily angered when requests are denied	17.24*	(1.28, 250)			19.23*	(1.42, 250)

Note: \* $p < 0.05$ .

Table 3. DASA items that significantly predicted institutional aggression in next 48 hrs.

DASA item(s)	Any aggression		Interpersonal violence		Verbal threat	
	OR	95% CI	OR	95% CI	OR	95% CI
<i>Entire sample</i>						
Negative attitudes	3.80*	(1.24, 12.66)	6.17*	(1.49, 25.64)		
Unwillingness to Follow Directions	5.49*	(1.01, 29.78)				
<i>Male subsample</i>						
Negative attitudes	4.02*	(1.06, 15.15)	5.18*	(1.18, 22.73)		
Impulsivity					4.48*	(1.00, 20)
<i>Female subsample</i>						
Negative attitudes	62.50*	(3.80, 1000)			76.92**	(4.41, 1000)

Note: \* $p < 0.05$ ; \*\* $p < 0.01$ .

person ratio ( $\approx 1:30$ ) within both of the institutions studied (as compared to the high staff-to-residents ratio in forensic psychiatric hospitals). The low staff-to-young person ratio may have meant that the staff members were not able to dedicate sufficient time to each youth resident to ensure a valid and accurate DASA assessment; subsequently compromising the predictive validity of the DASA for institutional aggression. Secondly, the poorer predictive validity of the DASA in this study may possibly suggest that the aggressive behavior of youth are a result of risk factors that are somewhat different from those that lead to aggression in adults (as measured by the DASA). However, this should be further investigated before any firm conclusions can be made. Thirdly, the poorer predictive validity of the DASA in this study, as compared with other DASA studies conducted in adult forensic psychiatric settings (e.g. Barry-Walsh et al., 2009; Ogloff & Daffern, 2006) may also be due to the fact that the aggressive behavior of the youth in this sample was generated by factors different from the aggressive behavior of inpatients with mental illness. Daffern and Howells (2007) have previously shown that the DASA is less predictive of violence in patients with personality disorder. It is possible that the violence risk state aroused by acute symptoms of mental illness, which is identifiable with the DASA, is different to the violence risk state that precedes aggression in incarcerated patients with personality disorder and youth.

Furthermore, the results of this study showed that the DASA total scores only predicted institutional aggression in the male subsample and not for the female subsample. These results suggest that the state preceding aggression in male and female youth may differ and that the DASA may not be suitable for use with the female youth offender population. Disagreeableness was a significant predictor of institutional aggression for the male youth offenders, whereas negative attitudes and anger when requests are denied were significant predictors for the female youth offenders. These results suggest that clinicians and supervision staff may benefit from monitoring different psychological states when managing institutional aggression in male and female youth.

### ***Limitations and future research***

Firstly, the low supervision staff-to-young person ratio ( $\approx 1:30$ ) within both of the institutions studied may have meant that staff were not able to dedicate sufficient time to each youth resident to ensure a valid and accurate DASA assessment. This could have resulted in the poor to modest predictive validity that was observed in this study. Moreover, we must caution that our sample is relatively small, even though the number of ratings was substantial. Finally, like much violence risk assessment research, the predictive validity of the DASA may have been artificially lowered by supervision staff members' identification and diffusion of instances of potentially violent behavior in

high-risk state individuals via biopsychosocial interventions. As part of the institutions' standard operating procedures, these strategies were likely to have reduced the frequency of the institutional aggression that was exhibited by the youth, therefore attenuating the predictive accuracy of the risk assessment instruments. Notwithstanding the authors' instructions and advice that the usefulness of the DASA assessment during the data collection period was unknown, the participating staff members might have reacted to the risk assessment ratings and subsequently implemented some of these preventative strategies to avert aggressive incidents.

Future research should explore the reasons for the poorer predictive validity of the DASA in youth by: (1) Ensuring the DASA is tested in settings with better staff-to-youth ratios; and (2) testing the predictive validity of the DASA in youth with mental illness and youth without mental illness to determine whether the predictive validity of the DASA is better when assessing risk in youth with mental illness, as is the case in adult samples (Daffern & Howells, 2007; Ogloff & Daffern, 2006). In addition, future research should examine what other psychological states precede aggression in male and female youth offenders, as well as adolescent psychiatric inpatients. Such information can be incorporated into the DASA (or other risk assessment measures) to assist with the prediction and prevention of institutional aggression.

## Conclusion

Overall, these findings suggest that the DASA may have some utility for the identification of youth at risk of imminent aggression within institutional settings, though the results are far from compelling as compared with the previous studies on adult populations (Barry-Walsh et al., 2009; Daffern & Howells, 2007; Ogloff & Daffern, 2006). It is evident that a high ratio of supervision staff to residents is important to ensure that the predictive validity (of any risk assessment measure for violence) is acceptable, and the low staff-to-residents ratio in this study may have compromised the predictive validity of the DASA in this study. Nonetheless, the DASA is quick and easy to use. It also has potential to provide staff with some information about each youth's propensity for aggression within the coming 24 hrs, and subsequently allow unit/ward staff to implement biopsychosocial preventive strategies to avert aggression and to make decisions about care and management that are influenced by violence risk state.

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