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Validation of the English language version of the Violent Ideations Scale (VIS)

McKenzie, Karen.^{1*}, Murray, Aja. Louise.², Murray, George. Charles.¹, Maguire, Amy.¹,
Eisner, Manuel.², & Ribeaud, Denis.³

1 Northumbria University, UK

2 University of Cambridge, UK

3 University of Zurich, Zurich, Switzerland

* Corresponding author: Northumbria University, Department of Psychology,
Northumberland Building, City Campus, Newcastle upon Tyne, NE1 8ST. Email:
k.mckenzie@northumbria.ac.uk

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Abstract

This study used a within participant design to evaluate the concurrent validity and test-retest reliability of the Violent Ideations Scale in a general population, English-speaking opportunistic sample. Data from 116 adult participants (M age = 33.7, SD = 11.9, male = 30 [25.9%]) were used to compare scores on the Violent Ideations Scale and Aggression Questionnaire and responses to the Schedule of Imagined Violence. A sub-group of 27 participants (M age = 37.2, SD = 13.6, male = 8 [29.6%]) completed the Violent Ideations Scale on a second occasion, two weeks later. The Violent Ideations Scale was found to

correlate significantly with the Aggression Questionnaire subscale and total scores, with the strongest correlations being with physical aggression and total scores. Participants were more likely to be categorised as having experienced a violent ideation based on responses to the Violent Ideation Scale, compared to the Schedule of Imagined Violence, most likely due to the Schedule of Imagined Violence underestimating the prevalence of violent ideation. A significant, strong correlation was found between total Violent Ideations Scale scores at Time 1 and Time 2. Overall, the Violent Ideations Scale was found to have concurrent validity when compared with the Aggression Questionnaire and good test-retest reliability, suggesting that it would be suitable for use with a non-clinical, English-speaking sample.

Keywords: Violent Ideation Scale; validation; aggression; validity; reliability; psychometrics

Validation of the English language version of the Violent Ideations Scale (VIS)

Violent ideations (VI) represent the imagined harm (physical or non-physical) that we inflict on others. Their potentially important role in aggressive behaviour is acknowledged in many theories of aggression and violence (see Murray, Eisner, & Ribeaud, 2016 for a brief overview) and there is increasing interest in the extent to which they can be used to predict violence in forensic and clinical contexts (e.g. Grisso, Davis, Vesselinov, Appelbaum, & Monahan, 2000; Monahan et al., 2000; Walker, 2005). The latter refers to settings such as hospitals and in-patient units, or where violence may be exhibited in the context of the individual having a mental health problem. In general, measurement of VI has related to specific thoughts or fantasies, such as homicide (Crabb, 2000), and there are few multi-item measures of VI. The Schedule of Imagined Violence (SIV; Grisso et al., 2000) has eight questions; however, each of the questions are designed to be treated separately. This removes any possible reliability benefits of having a multi-item VI measurement tool.

The Violent Ideations Scale (VIS; Murray et al., 2016) was developed with the aim of creating a multi-item measure of VI that was brief to administer, reliable, and valid. Validated with 1,276 young adults, the authors found that the VIS was significantly associated with other constructs thought to be relevant to violence, including proactive and reactive aggression. It was also found to discriminate between those who had and had not reported previously engaging in criminal violence (defined by the authors as assault, robbery, extortion, or carrying a weapon), with sensitivity and specificity levels of 0.75 and 0.71 respectively. The VIS was initially developed in German and the authors highlight the need for it to be validated in other populations and languages, against other measures, and to investigate the test-retest reliability of scores. This brief report aims to address these three issues by investigating the concurrent validity of the VIS compared with the SIV and a

measure of aggressive behaviour, the Aggression Questionnaire (AQ; Buss & Perry, 1992), as well as the test-retest reliability of the VIS in an English-speaking population.

Method

Materials / Measures

The Violent Ideations Scale. The English translation presented by Murray et al. (2016) was used, omitting the items relating to suicidal and sexual assault ideation, following the authors' (2016) findings that the factor structure of the original VIS suggested the latter ideations could be differentiated from those of aggression. In line with the World Health Organisation definition of violence which focuses on physical force (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002), the items relating to psychological aggression were also omitted for the purposes of this study. Participants were asked to rate the frequency of VI in the past month in relation to the remaining ten items using a 5-point Likert scale, ranging from 'never' to 'very often'. Items related to injuring and killing someone who was known or a stranger either due to perceived provocation or for no reason e.g. 'I thought about killing someone I know.'

The Aggression Questionnaire (Buss & Perry, 1992). This 29 item self-report questionnaire measures four subscales: Physical Aggression (PA), Verbal Aggression (VA), Anger (A), and Hostility (H). Respondents are asked to rate the extent to which the statements are applicable to them on a 5-point Likert scale, ranging from 1 (extremely uncharacteristic) to 5 (extremely characteristic). Questions cover topics such as the extent to which the respondent has threatened, and been aggressive towards others, is able to keep his/her temper and hide irritation; and views others in terms of suspicion and jealousy e.g. 'I have threatened people I know.' Two items are reverse scored. A total aggression score is obtained by summing the four subscale scores. The AQ was chosen for use in the present study because it is a commonly used measure of aggression which has generally been found

to have good psychometric properties (Harris, 1997), although Tremblay and Ewart (2005) argue that it could be improved with the exclusion of a few items. It is also similar to the VIS in being a self-report measure designed for non-clinical participants.

The Schedule of Imagined Violence (Grisso et al., 2000). The SIV is a set of eight questions; completion is contingent on a positive answer to Question 1, which asks ‘Do you ever have daydreams or thoughts about physically hurting or injuring another person?’ The subsequent questions regard other features of their VI, such as recency, frequency and chronicity of these fantasies, similarity or diversity in the type, the severity of the harm, or level of control over them. This self-report measure was chosen for use in the present study because it has been successful in distinguishing between those at a low and high risk of violence in both non-clinical (i.e. non-patient samples such as general population or student samples) and clinical patient samples (Grisso et al., 2000), as well as predicting future violence (Monahan et al., 2000). It is also commonly used in clinical and research contexts, both for assessing risk (Monahan et al., 2000) and for evaluating theories of violence (Nagtegaal, Rassin, & Muris, 2006).

Participants were also asked to provide basic demographic information including age, gender, and occupational status.

Participants

Participants were included if they were adults and could provide informed consent. In total, 116 people participated (age range = 18-66, M age = 33.7, SD = 11.9, male = 30 [25.9%]). Fifty-five (47.4%) were employed, 46 (39.7%) were students, and 15 (12.9%) were unemployed or retired. A sub-group of 27 people (age range = 18-66, M age = 37.2, SD = 13.6, male = 8 [29.6%]) completed the VIS on a second occasion to provide test-retest reliability data. Ten (37%) were employed, 11 (40.7%) were students, and 6 (22.2%) were unemployed or retired.

Procedure

Ethical approval was obtained from the first author's educational establishment. The three measures (all in English) were included in an online questionnaire and data were collected in 2016. Potential participants were recruited via social media, online psychological research sites, and via university student recruitment sites. No reward was given for participation. They were provided with information about the study; those who consented were asked to complete the demographic information section and the three measures. Participants were advised prior to completing any of the measures that 'research suggests that violent thoughts, daydreams, and fantasies are very common.' Those who were willing to complete the VIS on a second occasion were asked to leave an email address. Only those who did so were sent a link to the second VIS questionnaire two weeks after they had completed the first. The email address was then deleted.

Analysis strategy

Factorial validity. We evaluated the factorial validity of the scale by fitting a one-factor confirmatory factor analysis model using diagonally weighted least squares estimation in the lavaan package within R statistical software (R Core Team, 2016; Rosseel, 2012). The VIS was designed to be unidimensional, therefore we fit a one-factor model. If the model fit well by conventional criteria ($CFI > 0.95$, $TLI > 0.95$, $RMSEA < 0.08$) and if all factor loadings were statistically significant and salient (> 0.30), then factorial validity was supported. Parallel analysis and a minimum average partial (MAP) test were also conducted to provide evidence on the number of factors optimal to describe the scale.

Internal reliability. Cronbach's alpha was used to calculate the internal reliability of the items on the VIS.

Concurrent validity. Total VIS scores were correlated with AQ total and subscale scores using Pearson's correlation. Comparison with SIV responses was undertaken by

coding those who responded 'Yes' and 'No' to the first question of the SIV into separate groups. In addition, those scoring 10 points (indicating 'never' to all VIS items) were coded into one group, while those scoring over 10 points (indicating at least one VI) were coded into another. These different categories were then compared using the McNemar test, with the dependent variable being conceptualised as 'experienced violent ideations' and the grouping variable being 'Yes' or 'No.' It should be noted that the two measures refer to a different time period, with the SIV asking if the respondent has ever experienced VI and the VIS referring only to the past month.

Test-retest reliability. The association between total VIS scores of participants completing the measure on the two separate occasions was assessed using a Pearson's correlation.

Results

Table 1 illustrates the scores on the AQ, VIS, and categorisation in relation to experiencing VI according to responses to the SIV and scores on the VIS.

Factorial validity: The fit of a one-factor model for the VIS was good (CFI = 1, TLI = 1.04, RMSEA < 0.01, SRMR = 0.06). All loadings were > 0.30 and statistically significant. In addition, both parallel analysis and the MAP test indicated one dimension to retain.

Internal reliability: The value of Cronbach's Alpha was .925, indicating strong internal reliability of the 10 VIS items.

Concurrent validity: Table 2 illustrates the correlations between VIS total scores and AQ subscale and total scores. The VIS scores were found to correlate significantly with the subscale and total scores of the AQ.

Experiencing violent ideations according to VIS and SIV score categorisation: A McNemar test illustrated a significant difference in the categorisation of individuals according to whether this was based on responses to the SIV Question 1 or scores on the VIS

($p < 0.001$). Significantly fewer participants were categorised as experiencing VI based on their responses to Question 1 on the SIV compared with their scores on the VIS.

Test-retest reliability: A significant correlation was found between total VIS scores at time 1 and time 2 ($r(27) = 0.769, p < 0.001$).

Data relating to the paper can be accessed from the first author.

Discussion

This study aimed to explore some of the psychometric properties of the VIS with an English-speaking population. The results are consistent with previous research, indicating that VI are common (Crabb, 2000), with 69.6% of participants in the present study reporting that they had experienced at least one of the VI included on the VIS, compared with 60% in the study by Murray et al. (2016). These figures highlight the need for a better understanding of the link between those who experience VI and those who commit violence.

The VIS scores were found to correlate significantly with the subscale and total scores of the AQ, with the strongest correlations being with the physical aggression score and AQ total score. The AQ was chosen for this study as it has been found to have strong psychometric properties and, like the VIS, can be conceptualised as a measure of tendencies towards violence, as opposed to a measure of specific acts of violence (Archer & Web, 2006). The significant correlations found between the responses to the two measures suggest that they may both be tapping into similar constructs in relation to aggression.

In contrast, a significant difference was found between the categorisation of individuals into whether they experienced VI or not depending on whether this was based on the SIV or VIS responses. A significantly greater number of people were categorised as having experienced VI based on VIS scores compared with the SIV. The SIV, by design, is only completed if the participants respond positively to Question 1, which asks if they have ever experienced VI. The VIS asked participants to respond in relation to their thoughts over

the past month. While these time scales differ, those who responded to any of the VIS questions as at least experiencing this 'rarely' might have been expected to have responded 'Yes' to Question 1 of the SIV.

Only 34% of participants responded that they had ever experienced a violent thought or daydream on the SIV, compared with 69.6% on the VIS. It has previously been suggested that low responses on the SIV may be because participants are reluctant to admit having aggressive thoughts and fantasies. Nagtegaal et al. (2006), in their study of females in a non-clinical sample, advised participants that having aggressive fantasies was quite a common experience. The researchers suggested this change led to 33% of their sample reporting having aggressive fantasies on the SIV. A similar approach was taken in the present study, with participants being advised prior to completing any of the measures that VI are common. Despite this, a significantly lower number of participants acknowledged having VI based on the SIV compared with the VIS. The SIV is commonly used with clinical populations (e.g. Neal, Miller, & Shealy, 2015) and it may be that it is more appropriate for this use than for use with a general population sample. By contrast, the VIS would appear to be suitable for measuring VI in non-clinical samples based on the percentage of participants who acknowledged experiencing at least one VI, even if rarely.

The VIS scores were found to be significantly and strongly correlated over a two week time period. While this was based on a relatively small sub-sample of the main participant group, this result indicates that VIS scores can be considered to be relatively stable over a short period of time.

Overall, the VIS was found to have concurrent validity when compared against one measure of aggression, the AQ, but poor concurrent validity when compared with the SIV. The latter result is most likely due to the SIV underestimating the prevalence of VI because participants may be more likely to forget a VI than to falsely remember one (Brewin &

Andrews, 2016; Wright, Ost, & French, 2006). The VIS also showed good test-retest reliability over a two week period, although further exploration of the test-retest reliability with a larger sample size would be beneficial. Overall, the results suggest the measure may be suitable for use with non-clinical, English-speaking individuals, although it should be emphasised that the participants in the current study only represent a relatively small sample of this population and further research is required to confirm these findings.

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Table 2. The correlations between VIS total scores and AQ subscale and total scores

		AQ: Anger	AQ: Physical Aggression	AQ: Hostility	AQ: Verbal Aggression	AQ: Total Score
VIS	Pearson	0.442*	0.716*	0.351*	0.229**	0.590*
Total	Correlation					
Score	Number	106	103	105	105	102

* significant at the 0.01 level

** significant at 0.05 level