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Psychometric properties of the WHO Violence Against Women instrument in a female population-based sample in Sweden: a cross-sectional survey

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ABSTRACT

Objective: To explore psychometric properties of the Violence Against Women instrument in a randomly selected national sample of women (N=573) aged 18–65 years and residing in Sweden.

Design: Cross-sectional survey study.

Setting: Sweden.

Participants: A postal survey was sent to 1006 women between January and March 2009, during which 624 women (62%) returned the questionnaire. 51 women who did not answer any of the violence items were excluded from the analyses, resulting in a final sample of 573 women.

Primary and secondary outcome measures: Self-reported exposure to psychological, physical and sexual intimate partner violence.

Results: Cronbach's α coefficients were 0.79 (psychological scale), 0.80 (physical scale), 0.72 (sexual scale) and 0.88 (total scale). A predetermined three-component solution largely replicated the explored three component conceptual model of the Violence Against Women instrument. The instrument was able to discriminate between groups known from previous studies to differ in exposure to physical and/or sexual violence, that is, respondents with poor versus good self-rated health and witnessed versus not witnessed physical violence at home when growing up. Past-year prevalence of physical (8.1%; 95% CI 5.9 to 10.3) and sexual (3%; 1.6 to 4.4) violence was similar to that reported in other Nordic studies; however, earlier-in-life prevalence was lower in the current study (14.3%; 95% CI 11.4 to 17.2 and 9.2%; 95% CI 6.8 to 11.6, respectively). Reported exposure rates were higher than those obtained from a concurrently administered instrument (NorVold Abuse Questionnaire).

Conclusions: The Violence Against Women instrument demonstrated good construct validity and internal reliability in an adult female population in Sweden. However, further studies examining these and other psychometric properties need to be conducted in other countries.

ARTICLE SUMMARY

Article focus

- WHO's Violence Against Women instrument (VAWI) has been used in several countries around the world in order to investigate violence against women by their intimate male partners, but aspects of reliability and validity have seldom been investigated.
- The aim of the current study was to explore selected psychometric properties of VAWI in a randomly selected national sample (n=573) of women.

Key messages

- The current study provides preliminary support for the VAWI subscales of psychological, physical and sexual violence in a Swedish adult female population.
- This adds to the knowledge of the instrument's cross-cultural validity and reliability, which are significant when comparing the intimate partner violence prevalence rates between countries.

Strengths and limitations of this study

- Cross-sectional study design.
- Further aspects of validity and reliability need to be explored and studies from a diverse range of countries are needed for further cross-cultural assessment.

INTRODUCTION

While prevalence studies investigating violence against women perpetrated by intimate male partners have become more frequent,[1–4] sizeable differences in reported exposure occur both between and within study sites. These differences may be explained in part by differences in questionnaire administration methods (eg, personal interviews vs self administration), questionnaire content, target populations, or definitions and severity of the violence assessed; however, such differences may also reflect true variation and cultural differences in violence perpetration.[1 4] Standardised methodologies for assessing intimate partner violence (IPV) may help to enhance the reliability of results obtained from such studies and aid in comparing prevalence rates from diverse settings.

With this in mind, WHO constructed a questionnaire for the WHO Multi-country Study on Women's Health and Domestic Violence against Women.[5] The study questionnaire includes the Violence Against Women instrument (henceforth referred to as 'VAWI') assessing exposure to psychological, physical and sexual IPV. VAWI was developed in collaboration with several networks and expert groups and was based partly on the original[6] and revised Conflict Tactics Scales,[7] as well as on work that originated from its critics.[8] Extensive pretesting, independent back translations and piloting of the questionnaire were conducted.[9] The prevalence rates from the ten countries included in the Multi-country Study vary greatly, with lifetime estimates ranging between 20% and 75% for psychological violence, 13–61% for physical violence and 6–59% for sexual violence.[5] Since the Multi-country Study was performed, VAWI has been used in several more countries.[10–15]

Despite VAWI's relatively wide use, few peer-reviewed studies have evaluated its psychometric properties. Internal reliability (Cronbach's α) was assessed and confirmed in the Multi-country Study[9]; however, only one study, conducted in Brazil, has explored aspects of validity.[16] In that study, analyses of data from two female populations, one urban (São Paulo, n=940) and one combined urban and rural area (Zona da Mata, n=1188), supported the construct validity and internal reliability of the instrument.

The aim of this study was to explore psychometric properties of VAWI in a randomly selected national sample (n=573) of women aged 18–65 years residing in Sweden. Sweden provides an interesting comparative context owing to its linguistic, cultural and socioeconomic differences from Brazil.

METHODS

Procedure, study population and response rate

A sample of 1006 women, aged 18–65 years and residing in Sweden, was randomly selected by Statistics Sweden from the national population register. Data were collected by means of a postal survey between January and March 2009. A requirement for the sample selection was that the respondent was currently or had previously been in an intimate relationship. The response rate was 62% (n=624). Women who did not respond to any of the violence items (n=51) were excluded from the analyses, resulting in a total sample of 573 women.

Criterion validity was explored by comparing prevalence reported in the VAWI versus the NorVold Abuse Questionnaire (NorAQ).[17] A second data collection was performed for this purpose. Statistics Sweden sent out VAWI and NorAQ to 20% (n=125) of the respondents from the initial data collection between November 2009 and January 2010. NorAQ was chosen since it is the only questionnaire measuring violence that has been validated in Sweden in both a female and male (see companion article) population-based sample. The response rate was 65.6% (n=82) for VAWI and 63.2% (n=79) for NorAQ.

Dropout analysis

A two-proportion z test was used to assess statistical significance between the dropout and the final sample regarding age, country of birth, civil status and the respondents' yearly income before tax. A Bonferroni adjustment to the α level was applied.

A comparison of those who did not return the questionnaire (n=382) with the final sample of analysis (n=573) revealed that significantly lower response rates were found among non-respondents who were 18–29 years of age, unmarried, foreign born and had low yearly income of 0–159 999 Swedish kronor (SEK) before tax. Internal dropout rates, that is, respondents who did not endorse any violence item (n=51), were significantly higher among women who were 18–29 years of age, unmarried and had a low yearly income in comparison to the final sample of analysis.

Of those who did not return the questionnaire during the second data collection (n=46), significantly lower response rates were found for women who were unmarried, widowed or divorced.

Assessment instruments: VAWI and NorAQ

VAWI consists of behaviour-specific items related to psychological (four items), physical (six items) and sexual violence (three items). The physical violence items are further divided into 'moderate' (the two first items) and 'severe' (the following four items) violence based on the likelihood of physical injury.[5] For each question, respondents were asked whether they had experienced the specific act during the *past year* and *earlier in life*. The VAWI items were translated and adapted to a Swedish context by a senior researcher (GK) with extensive knowledge about IPV.

NorAQ has been validated in a Swedish context[17] and measures emotional (three items), physical (three items) and sexual (four items) abuse, including different perpetrators, as well as abuse in the healthcare system. The NorAQ violence items applicable to an intimate partnership (see online supplementary appendix 1) were included with the intention of comparing prevalence rates with those obtained by use of VAWI. The second sexual violence item was adapted for use in both the male and female population, as the questionnaire constructed for this study was sent to a male population as well (see companion paper entitled 'Psychometric properties of the WHO Violence Against Women instrument in a male population-based sample in Sweden').

Statistical analyses

Principal components analysis (PCA) was conducted to explore the internal construct validity of the violence items. A promax rotation was chosen owing to the high intercomponent correlations (eg, r=0.49–0.61 for the three dimensions). Decisions on the number of components to extract were based on parallel analysis, Kaiser's eigenvalue-greater-than-one rule, total proportion of variance explained and Cattell's scree plot. This was

followed by a predetermined solution with three components as conceptualised in VAWI.

The internal reliability of VAWI was assessed with Cronbach's α for each subscale and for the total violence scale. An α of 0.70 or higher was considered satisfactory.[18]

Known-groups comparisons were performed to investigate VAWI's external construct validity. The aim was to see if the instrument was able to differentiate between groups known to differ in exposure to IPV.[19] The following hypotheses were postulated: women who are exposed to physical and/or sexual IPV (lifetime exposure, 'yes/no') would have poorer self-perceived health[2 20–24] and have grown up in a home where they witnessed physical violence between their parents.[10 25–27] The Mantel-Haenszel test was used to control for age, income, civil status, education and country of birth. Statistical significance was set at $p<0.05$.

Self-perceived health was assessed by "How would you say that your general health has been during the past year?" Response options were dichotomised into 'very good/good' and 'neither good nor bad/bad/very bad'. *Childhood exposure to violence* was assessed with the question: When you were growing up, did you see your parents (or equivalent) regularly physically hurt one another? ('no' and 'yes/unsure').

Prevalence of psychological, physical and sexual violence was calculated for the past year and for earlier in life, for comparisons with prevalence rates presented in other studies.

In addition, lifetime prevalence of IPV was compared between VAWI and NorAQ and Fisher's exact test was used to test for statistically significant differences at the 95% CI level. Only those respondents who had answered both VAWI and NorAQ were included (n=77) in this analysis.

Ethical considerations

The Regional Ethics Review Board located in Gothenburg gave approval for this study (Dnr: 527–08) and the WHO ethical and safety recommendations for research on domestic violence against women as applicable to a postal survey were followed.[28] For example, a letter was sent to prospective respondents in advance to inform them about the upcoming survey; this provided them with the opportunity to decline the survey before receiving it. Also, although the sampling frame was based on registered individuals, only one survey per household was sent for ethical and safety reasons. Additionally, full anonymity and confidentiality were guaranteed and contact information to a general practitioner (GK), a psychologist and a contact person at Statistics Sweden was provided for additional information and/or referral. The survey was entitled "A study on conflicts, relationships and health." The study description that followed the title stated that the study assesses IPV.

RESULTS

Study population

Nearly half of the women had at least 3 years of university education (n=270, 47.2%) and the mean age was 43 years (SD=13). Of the total sample, 85.1% (n=484) were currently in a relationship (ie, boyfriend or girlfriend, married, registered partnership or cohabiting), of which the majority were heterosexual relationships (n=566, 98.8%). The rest of the sample was single, widowed or divorced, but had previously been in a relationship (see table 1).

Internal validity

The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.89 and Bartlett's test of sphericity was significant ($p<0.05$), verifying a good fit of the data to the PCA. Parallel analysis, Kaiser's criterion and Cattell's scree test suggested two components (not in table), explaining

Table 1 Sociodemographic and psychosocial factors of the total sample (N=573)

	N (%)
Age groups	
18–29	107 (18.7)
30–39	138 (24.1)
40–49	125 (21.8)
50–59	136 (23.7)
60–65	67 (11.7)
Partner status	
Single/widowed/divorced	85 (14.9)
Boyfriend/girlfriend	64 (11.2)
Married/cohabitant/registered partnership	420 (73.8)
Heterosexual relationship	477 (83.2)
Same-sex relationship	7 (1.2)
Educational level (highest)	
University	270 (47.2)
High school (10–12 years)	211 (36.9)
Compulsory (≤9 years)	91 (15.9)
Annual income (before tax, SEK)	
0–159999	168 (29.3)
160000–234999	175 (30.5)
235000–309999	143 (25.0)
310000 or more	87 (15.2)
Employment status	
Employed	396 (69.7)
Student	35 (6.2)
Retired	47 (8.3)
Sick leave (more than 3 months)	8 (1.4)
Parental leave or leave of absence	35 (6.2)
Unemployed	23 (4.0)
Other	24 (4.2)
Country of birth	
Sweden	519 (90.6)
Other Nordic country	15 (2.6)
Other European country	18 (3.1)
Country outside Europe	21 (3.7)
Self-rated health	
Very good/good	511 (90.0)
Neither good nor bad/bad/very bad	57 (10.0)
Grew up in a home where physical violence occurred	
No	542 (94.6)
Yes/unsure	31 (5.4)

SEK, Swedish kronor.

57.4% of the total variance. The first component consisted of all physical and sexual violence items in the VAWI conceptual model, except the two items representing the least severe forms of physical and sexual violence. In addition, the component included the psychological violence item referring to the threat of injury. The second component comprised the remaining three psychological violence items as well as the first physical and sexual violence items.

A three-component solution (table 2) explained 64.4% of the total variance. The third component had an initial eigenvalue close to 1 (0.9) and comprised two of the three sexual violence items; otherwise, the structure was identical to the two component solution and largely mirrored VAWI's physical, psychological and sexual violence subscales.

Internal reliability

Cronbach's α coefficient (table 3) was satisfactory for all subscales in the VAWI conceptual model: 0.79 (psychological scale), 0.80 (physical scale), 0.72 (sexual scale) and 0.88 (total scale). The α coefficient for the sexual violence scale increased from 0.72 to 0.77 after deleting the item "Demanded to have sex with me even though I did not want to (but did not use physical force)."

External validity

Known-groups comparison

As hypothesised, exposure to violence as assessed by VAWI was significantly associated with self-rated health and having witnessed parental (or equivalent) physical violence when growing up. Specifically, a significantly larger proportion of respondents who reported exposure to violence also reported worse health (χ^2 (1, N=573)=26.1; p<0.05) and having witnessed parental physical violence (χ^2 (1, N=573)=11.5; p<0.05) than did those not reporting exposure.

Comparison of prevalence rates to other studies

As assessed with VAWI, 23.6% (n=123) of the respondents reported exposure to psychological violence, 8.4% (n=43) to physical violence and 3% (n=16) to sexual violence during the past year. Corresponding percentages for exposure to violence earlier in life were 23.6% (n=135), 14.3% (n=82) and 9.2% (n=53; table 4). Similar 12-month violence exposure rates for physical and sexual violence have been reported in two population-based studies—one in Finland (n=4464) and one in Sweden (n=4771)—using comparable methodologies and definitions.[29 30] However, the present study found lower prevalence for physical and sexual violence experienced earlier in life. The aforementioned studies did not report psychological violence.

VAWI and NorAQ

Higher prevalence was found by VAWI compared with NorAQ (see table 5). However, only the difference for psychological IPV was statistically significant (17.1% vs 2.6%; p<0.05). This difference principally arose due to the VAWI items "Insulted me in a way that made me feel

Table 2 Three-component solution for the VAWI psychological, physical and sexual violence items (N=534)

	Three-component solution		
Conceptual model	**C1**	**C2**	**C3**
Psychological violence			
Insulted me in a way that made me feel bad about myself		**0.89***	
Belittled and humiliated me in front of other people		**0.74**	
Tried to scare and intimidate me on purpose (eg, by the way he/she looked at you, by yelling or smashing things)		**0.64**	
Threatened to hurt me or someone I care about	**0.43**	0.33	
Physical violence			
Pushed or shoved me		**0.71**	
Threw something at me that could have hurt me	**0.38**		0.31
Hit me with his/her fist or with some other object that could have hurt me	**0.80**		
Kicked and dragged me and beat me up	**0.85**		
Choked me or burnt me on purpose	**0.67**		
Hurt me with a knife, a gun or some other weapon	**0.88**		
Sexual violence			
Demanded to have sex with me even though I did not want to (but did not use physical force)			**0.81**
Forced me to have sex against my will by using his/her physical strength (by hitting, holding me firmly or threatening me with a weapon)	**0.56**		0.55
Forced me to perform sexual acts that I experienced as degrading and/or humiliating			**0.88**
Accumulated variance (%)	46.1	57.4	64.4
Eigenvalues	6.0	1.5	0.9

*Loadings >0.30 are shown and highest loadings are boldfaced. List-wise deletion was used.
VAWI, Violence Against Women instrument.

Table 3 Cronbach's α of the VAWI psychological, physical and sexual violence scales and total scale, lifetime (N=573)

Scales	α if item deleted
Psychological violence	
Insulted me in a way that made me feel bad about myself	0.75
Belittled and humiliated me in front of other people	0.71
Tried to scare and intimidate me on purpose (eg, by the way he/she looked at you, by yelling or smashing things)	0.72
Threatened to hurt me or someone I care about	0.76
Total	**0.79**
Physical violence	
Pushed or shoved me	0.81
Threw something at me that could have hurt me	0.75
Hit me with his/her fist or with some other object that could have hurt me	0.73
Kicked and dragged me and beat me up	0.75
Choked me or burnt me on purpose	0.76
Hurt me with a knife, a gun or some other weapon	0.80
Total	**0.80**
Sexual violence	
Demanded to have sex with me even though I did not want to (but did not use physical force)	0.77
Forced me to have sex against my will by using his/her physical strength (by hitting, holding me firmly or threatening me with a weapon)	0.64
Forced me to perform sexual acts that I experienced as degrading and/or humiliating	0.54
Total	**0.72**
Violence scale, total	**0.88**

VAWI, Violence Against Women instrument.
Total scores of each subscale as well as for the total score of all sub-scales combined are boldfaced.

bad about myself" (16.9%), for which NorAQ has no corresponding item, and "Belittled and humiliated me in front of other people" (6.5%). Prevalence rates for the other two items on this scale were similar to the corresponding items in NorAQ (see online supplementary appendix 1).

DISCUSSION

The VAWI subscales of psychological, physical and sexual violence showed good internal consistency. PCA yielded a two-component solution and a three-component solution largely reflected VAWI's conceptual model. External validity was supported in that VAWI was able to discriminate between groups known to differ in exposure to physical and/or sexual IPV, that is, respondents with poor versus good self-rated health and witnessed versus not witnessed physical violence at home when growing up. Similar past-year prevalence to other Nordic studies was found. Differences in exposure rates of psychological IPV reported in VAWI and NorAQ exemplify the need for standardised instruments when comparing the prevalence of IPV between and within countries.

Internal validity

A two-component solution was suggested by the parallel analysis and Kaiser and Cattell's scree criterion (one psychological and one combined physical and sexual component). This solution is understandable in that physical and sexual violence occurs to a lesser extent in comparison with psychological violence, which generally is the most prevalent form of IPV.[22 31]

Despite the cultural and linguistic differences between Sweden and Brazil, results from the three-component solution in the current study were similar to those derived in the study conducted in Brazil, where a predetermined three component solution was investigated.[16] In the Brazilian study, the question "Threatened to hurt me or someone I care about" did not load on any component in Zona da Mata, although it loaded in its explored psychological violence component in São

Table 4 Past-year and earlier-in-life exposure to IPV as assessed with VAWI (N=573)

	Past year			Earlier in life		
	N	Per cent	95% CI	N	Per cent	95% CI
Psychological violence	123	23.6*	20.1 to 27.1	135	23.6	20.1 to 27.1
Physical violence	43	8.1	5.9 to 10.3	82	14.3	11.4 to 17.2
Sexual violence	16	3.0	1.6 to 4.4	53	9.2	6.8 to 11.6

*Percentage is given in valid per cent.
IPV, intimate partner violence; VAWI, Violence Against Women instrument.

Table 5 Lifetime prevalence of exposure to IPV as assessed with VAWI versus NorAQ (N=77)

	VAWI		NorAQ	
	N	Per cent*	N	Per cent*
Psychological violence	13	17.1	2	2.6
Physical violence	5	6.8	3	3.9
Sexual violence	7	9.3	5	6.5

*Percentage is given in valid per cent.
IPV, intimate partner violence; NorAQ, NorVold Abuse Questionnaire; VAWI, Violence Against Women instrument.

Paulo. In the current study, the item loaded both in the physical and psychological violence components. These findings indicate that the threat of physical violence might not belong as clearly as expected to the psychological violence component, which has in fact been a point of debate among researchers.[29] Threats of violence may both precede and follow violent acts themselves, either escalating into a violent act or, especially if the victim has been exposed to physical violence prior to the threat, the threat of violence might frighten the victim just as much as the violent act itself.[29] This could explain the finding that the threat of violence belonged to both psychological and physical violence. Moreover, both in Zona da Mata and in the present study, the item "Has your partner pushed or shoved you?" loaded on the psychological violence component rather than the physical violence scale in the WHO conceptual model. The observed cross-loadings of individual items as well as items that belonged to other domains than in the conceptual model may reflect that female victims often are not exposed to one form of violence in isolation of the other.[32] For example, the sexual violence item "Forced me to have sex against my will by using his/her physical strength (by hitting, holding me firmly or threatening me with a weapon)," which loaded in both the physical and sexual IPV components, is hard to divide into one or the other category.

Internal reliability

Cronbach's α coefficients reported for the subscales in this study are very similar to those found in other studies.[9 16] For example, for all sites combined in the WHO Multi-country Study, the reliability coefficient was 0.81 for physical violence and 0.66 for sexual IPV,[9] compared with 0.80 and 0.72, respectively, in the current study. These similarities indicate a consistency in the internal reliability of VAWI across countries despite the cultural and socioeconomic differences between the countries.

In the current study, deleting the item "Demanded to have sex with me even though I did not want to (but did not use physical force)" would increase α for the sexual violence scale from 0.72 to 0.77. However, given that the current study is explorative and hypothesis generating, further studies are needed to determine whether this item needs to be revised.

External validity

Known-groups comparison

Of the two known groups used in the comparison, the strongest relationship found in the literature was regarding exposure to physical and/or sexual IPV and poorer self-rated health.[2 20–24] There is also strong evidence that those who are exposed to physical and/or sexual IPV have witnessed their father use physical violence against the mother during childhood.[10 25–27] We found support that the combined VAWI subscales of physical and/or sexual violence could discriminate between respondents who had poor versus good self-rated health and between those who had witnessed versus not witnessed their parents engage in physical violence. There is only scant knowledge about how these variables relate to psychological violence, and hence these analyses were not deemed appropriate for the purpose of assessing validity.

Comparison of prevalence rates to other studies

Comparisons of our prevalence rates with those in other studies are challenged by differences between methodologies, definitions and reporting styles. Nevertheless, our 12-month violence exposure rates for physical and sexual violence were similar to those reported previously in population-based studies in Finland and Sweden[29 30] using similar definitions and methodologies. However, we found lower rates for earlier-in-life estimates of physical and sexual IPV. The Swedish study found that 28% of women were exposed to physical violence and 16% to sexual violence by a former partner, compared with 14.3% for physical violence and 9.2% for sexual IPV during the earlier-in-life time frame in the current study. The figures for the Finnish study were 29% for severe physical violence and 16% for sexual IPV. These differences are most likely due to some minor differences in the definitions between the studies as well as to changes in prevalence rates over time and actual differences between countries. However, they may also be due to an oversight in the questionnaire layout, where the box for ticking violence experienced earlier in life was somewhat unclearly placed. Studies assessing psychological violence in a Nordic context using similar definitions as in the current study could not be found.

VAWI and NorAQ

As the type and number of acts assessed in VAWI and NorAQ varied at the outset, some differences in the results from the two instruments were expected. The two questionnaires have also been developed with different aims in mind. NorAQ was developed for investigations in healthcare settings and for comparisons in the Nordic countries of various forms of violence, not specifically IPV. On the other hand, VAWI was developed specifically for global comparisons on IPV. For example, the NorAQ

psychological violence items reflect a more systematic form of violence experienced during a longer time period or under fear or threat. Although these seem to capture similar levels of exposure to the more severe psychological violence items of VAWI, milder forms of psychological violence are also represented in VAWI, and thus the instrument captures a broader range of psychologically violent acts. The sample size used in this comparison prohibits any strong conclusions; however, it further illustrates the importance of using standardised questionnaires when comparing prevalence, as results may vary to a large extent depending on the instrument used.

Methodological considerations

VAWI was designed for and is primarily used in face-to-face interviews,[5] whereas the current study administered VAWI via a postal survey. The implications of different modes of data collection are difficult to assess because of multiple influencing factors, including the method of initial contact with the respondents, visual versus oral presentation of response choices, method of sampling as well as differing cultural and social contexts.[33] Previous studies have found disclosure of sensitive topics to be higher in self-administered modes compared with face-to-face interviews,[33] and also when assessing IPV.[34] However, there is a scarcity of experimental or randomised study designs comparing different modes of data collection.[33]

Nonetheless, the main known limitation of postal surveys is lowered response rates.[34] The current study included two reminders in an effort to minimise dropout rates. Non-responders were over-represented by young and unmarried women, women with low annual income and by those born outside Sweden. Exposure rates of IPV have been found to be especially high in these groups,[21 25] which may further contribute to underestimated prevalence rates and less robust component solutions in our study. Furthermore, the earlier-in-life estimates may have been underestimated due to a minor detail on the questionnaire layout. In addition, the under-reporting common in surveys assessing IPV[3 35] has probably contributed to a further underestimation of the IPV prevalence rates. Reasons for under-reporting IPV include forgetting violent acts that took place further back in life,[36] normalising the violence, blaming the violence on oneself[37] and being fearful of a violent and controlling partner.[38] Finally, the sub-sample of respondents who answered both VAWI and the NorAQ is small, which limits our ability to draw conclusions or generalise to the target population.

Conclusion

Our analysis indicated that VAWI has good construct validity and internal reliability in a Swedish context. The results obtained were similar to those reported in the Brazilian study, which implies that VAWI has good cross-cultural construct validity and internal reliability in an adult female population. However, further studies examining these and other psychometric properties need to be conducted in other countries.

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Notes