Vol. 15(2), pp. 48-56, July-December 2023
DOI: 10.5897/JAHR2023.0561
Article Number: E0DBF6571529
ISSN 2141-2359

http://www.academicjournals.org/JAHR

ACADEMIC JOURNALS
expand your knowledge

Journal of AIDS and HIV Research

Full Length Research Paper

Validation of women abuse screening tool (WAST-S) in the Mozambique National Health Service (significance for HIV prevention and ART treatment Adherence): A quasi-experimental crossover study

Joaquim Matavel[1,2]*, Khátia Munguambe[1,3] and Osvaldo Loquiha[4]

[1]Faculty of Medicine, Eduardo Mondlane University, Maputo, Mozambique.
[2]Department of Mental Health, Ministry of Health, Maputo, Mozambique.
[3]Manhiça Health Research Center, Maputo, Mozambique.
[4]Eduardo Mondlane University, Maputo, Mozambique.

Received 4 September, 2023; Accepted 30 October, 2023

Intimate partner violence (IPV), includes a wide range of abusive behaviors perpetrated by someone involved or who was involved in an intimate relationship with the victim. It is a serious and preventable public health problem globally. This article reports on the validation of an adaptation of the Women Abuse Screening Tool (WAST-S) in Mozambique and recommends its application for more effective prevention and ART treatment. The study utilized a quantitative approach in a prospective quasi-experimental crossover design, in which clusters, 4 health care units, were allocated to two intervention approaches in reverse order. IPV was measured using a translated, culturally-adapted version of WAST-S. This was compared to a standard clinical interview that included questions on IPV. There was a good agreement between the scales of WAST-Short and the standard clinical interview: 0.235 (95% CI: 0.219 - 0.250). The WAST-Short was found to be more effective than the standard clinical interview as an IPV screening tool. It provides information about intimate relationships and can measure the presence of violence. The standard clinical interview is less effective at obtaining this information. WAST-S proved to be a more reliable instrument than a clinically adapted interview, and can be applied in the screening of IPV in high patient volume settings and efficiently implemented in primary health care units which can then refer patients for specialized care. The two questions of the WAST-S provide insight into the intimate relationship measuring the presence of violence, information not easily accessible by the standard clinical interview. This information when provided to clinicians has the potential for assuring more effective prevention and treatment adherence.

Key words: Violence, intimate partner violence (IPV), validation, screening, partners, Women Abuse Screening Tool (WAST-S), HIV, antiretroviral therapy (ART).

INTRODUCTION

The World Health Organization classifies intimate partner violence (IPV) as a subset of gender-based violence, in which acts or threats of physical, sexual, and emotional violence are perpetrated by a current or former intimate

*Corresponding author. jmatavel@gmail.com.

partner of the victim (Righi et al., 2019). IPV is a serious and preventable public health problem worldwide (Tjaden et al., 2000; Yount et al., 2022). While the global prevalence of IPV is estimated at about 30%, it is particularly prevalent in sub-Saharan Africa, where the overall prevalence is 36%. Compared to the rest of the world, women in sub-Saharan Africa are more affected by domestic violence than men (Jethá et al., 2021). In some southern African countries, levels of sexual abuse of women are even higher (Ahinkorah et al., 2018). For instance, in Mozambique, 40% of women of reproductive age (15-49 years) reported experiencing physical, sexual, or emotional violence perpetrated by an intimate male partner in the last 12 months (Tura and Licoze, 2019).

Generally, IPV disproportionately affects more women than men. Worldwide, one in three women has been physically and/or sexually abused by her intimate partner or family members at some point in her lifetime, compromising their physical, mental, and reproductive health (Jethá et al., 2021). Violence in intimate partner relationships is usually attributed to gender norms that promote male dominance over women and women's acquiescence to male power (Shai et al., 2019). Indeed, gender theories suggest that IPV results from the way women are socialized to accept being sexually passive, dependent on men for protection and economic survival, and even being disciplined by their partners when they fail to behave according to their traditional roles (Shamu et al., 2018). Abuse by male partners results from the violation of such norms (Tura and Licoze, 2019), and the context in which IPV takes place can be of significant importance (Shai et al., 2019).

IPV affects one-third of all women, and the data from the majority of studies on screening and interventions for IPV are based on interview-based reports, such as those by Tura and Licoze (2019), which rely on self-reported violence. Their main limitation is that they do not involve specific instruments for IPV screening and diagnosis. Another limitation is that cases of IPV may be under-reported and neglected (Jethá et al., 2021) due to concealment, subtle or absent overt signs of violence, or failure to recognize that a relationship is abusive. Nevertheless, the trauma inflicted on the victims, ranging from gastrointestinal disturbances, chronic pain, and cardiovascular problems to spontaneous abortions, suicides, and depression (Stephenson et al., 2013; Tura and Licoze, 2019), suggests the need for proper screening of all patients (universal screening), including asymptomatic individuals whose suffering may have been triggered by IPV. Clinical and laboratory screening tests are especially important in the absence of signs of an underlying disease (Eluf-Neto and Wünsch-Filho, 2000). Healthcare professionals should routinely ask all women about domestic violence, and the screening might encourage women who would not otherwise do so to disclose abuse or recognize their own experiences as abuse (O'Doherty et al., 2015). However, there is controversy regarding the clinical merits of universal screening for violence in the healthcare setting (Sprague et al., 2016).

IPV and HIV related health consequences

Mental distress is hypothesized to be a pathway connecting IPV to HIV-related consequences (Hatcher et al., 2022). Prevalent mental health issues such as depression, anxiety, and post-traumatic stress syndrome are strongly associated with women's involvement in IPV. These outcomes have been reported in several longitudinal studies on IPV and depression (Buller et al., 2014), anxiety (Lagdon et al., 2014), and PTSD (Dillon et al., 2013). Consequently, depression is related to long-term declines in ART adherence. Furthermore, there is likely an interactive relationship that exacerbates each situation (Wagner et al., 2020). Post-traumatic stress and anxiety are significantly correlated with poorer ART adherence in cross-sectional studies (Glynn et al., 2021). Other studies in South Africa focused on perinatal women with HIV found that those highly affected by the violence in their relationship with their partner made intentional efforts to self-harm by interrupting their treatment (Hatcher et al., 2022).

The primary goal of IPV screening is to improve case detection and implement appropriate interventions that reduce exposure to violence and related problems. Ideally, the screening tool should encompass different aspects of violence, including physical, psychological, and sexual dimensions, using psychometric scales (Krug et al., 2002). However, many countries have inadequate IPV screening protocols due to systemic barriers, including time constraints (Erickson et al., 2001; Sprague et al., 2012), lack of protocols, policies, and screening procedures (Waalen et al., 2000). Additional barriers include health professionals' perceptions of IPV (Matavel, 2020), personal discomfort with the subject, inadequate resources, training, or privacy for screening, the view that screening for IPV is not the clinician's role, fear of offending patients, and a lack of knowledge on how to deal with women who qualify as victims of IPV (Sprague et al., 2012). A systematic review documented that only 9 to 40% of physicians screen for IPV (Todahl and Walters, 2011).

In Mozambique, despite high rates of self-reported violence, the magnitude of IPV is likely to be underestimated, mainly because of the lack of diagnostic screening tools within the National Health Service. Given this, the aim of this work was to validate the short version of Woman Abuse Screening Tool (WAST-Short) adapted for the cultural context in Mozambique. The study used WAST since a systematic review of 33 studies in which multiple screening tools were compared found WAST to be the most reliable and valid instrument for violence screening, with a sensitivity and specificity of 47 and

96%, respectively (Rabin et al., 2009). By evaluating the reliability or consistency of the adapted tool, we sought to demonstrate an equivalence of concepts and semantics between the original and back-translated versions and the pilot testing of the of the adapted WAST in Mozambique showed good internal consistency (Matavel et al., 2023).

MATERIALS AND METHODS

Study design

The study was conducted in four primary health care units in two southern Mozambique provinces, Maputo and Gaza. A prospective quasi-experimental crossover designed study design was utilised in which clusters or health care units were allocated to two intervention approaches at different times. The work used a quantitative approach. The intervention consisted of IPV screening using the WAST in individuals of both sexes, female (n = 220) and male (n = 140). Although the WAST is an instrument originally designed for IPV screening in women, WAST was here applied to both genders, as pre-test results indicated that the two scales of the instrument do not discriminate between genders (WAST-Short p = 0.204, WAST-Long p = 0.271), and are not sensitive to the individual items that make up the scales (p> 0.05) (Matavel et al., 2023).

IPV screening was also carried out on the same individuals using an adapted clinical interview to which specific questions about IPV were added in order to validate the WAST-Short. Both WAST and the adapted clinical interview were implemented twice over a period of 4 months in the four primary health care units (HC I, II, III and IV). The units were randomly selected from other primary health care settings in Maputo (HC I and IV) and Gaza (HC II and III) Provinces. Study subjects in the units included all users of the Emergency, Gynecology/Obstetrics or Maternity services, Mother and Child Health, Stomatology, Psychiatry and Mental Health, and Assistance Service for Victims of Violence.

To meet the inclusion criteria, subjects had to be aged 18 years or over and to be or have been in an intimate relationship in the last 6 months. All subjects had to voluntarily agree to participate in the study and sign a form of informed consent. Patients below 18 years of age and those who have not been in an intimate relationship in the last 6 months prior to the intervention were excluded.

Data collection and analysis

Health professionals at each health care unit were initially invited to participate in a training/familiarization session on the application of the two interventions – WAST and the adapted clinical interview. The health care units were randomly assigned to implement one of the two interventions: AB and BA, two for each approach for the first 2 months, before switching over (crossover) to the other approach during the next 2 months. According to the order of arrival, participants (patients) of both sexes were then screened for IPV using the following approaches:

1. Approach AB: Patients responding first to the WAST and then to the adapted clinical interview. This approach was first implemented in health care units I (Maputo) and III (Gaza).
2. Approach BA: Patients responding first to the adapted clinical interview and later to WAST. This approach was first implemented in health care units II (Gaza) and IV (Maputo).

Data from the participants were collected using a simple randomization process at the healthcare unit outpatient and mental health consultation rooms where the instruments were applied.

Data collection involved the use of paper-based forms for the adapted instruments, which were later converted into an electronic dataset. To be eligible for participation, subjects had to be aged 18 years or older, currently or previously in an intimate relationship within the last 6 months, willing to participate voluntarily, and had to provide informed consent by signing a consent form.

Instruments

WAST (woman abuse screening tool)

This instrument was developed in the USA to screen women exposed to physical, psychological and sexual abuse (Brown et al., 1996) and subsequently translated and adapted to the Mozambican cultural context (Matavel et al., 2023). WAST is short and easily understood by users and 90% of users reported that were comfortable or very comfortable with the questions (Brown et al., 2000; Salahi et al., 2017). The instrument consists of 8 Likert-type questions about (a) the degree of stress in the relationship; (b) the difficulty in resolving discussions and (c) the existence of violent episodes at an emotional, psychological, physical or sexual level (Binfa et al., 2018). The validity and reliability of the original WAST version were confirmed in different studies, as shown by high internal consistency, Cronbach's alpha: 0.75, sensitivity: 92%, specificity: 100% (Brown et al., 1996).

WAST has three response categories (1 to 3) for each item related to violence or its prediction. The first 2 items, known as WAST-Short, are used to screen for the presence of abuse, assessing the level of tension a woman feels in the relationship with her husband/partner, and the difficulty in resolving the discussions, on a scale from 1 (no tension/no difficulty/no problems) to 3 (a lot of tension/great difficulty/very problematic). The following 6 items were then used to obtain a complete assessment of the frequency of abuse (WAST-Long) in the three areas of IPV (physical, sexual and psychological) in the case of the presence of tension in the relationship according to the answers to questions 1 and 2 on a scale of 1 (never) to 3 (often/ many times) (Salahi et al., 2017).

The total score for WAST ranges from 8 to 24, ranging from 2 to 6 for WAST-Short. The tool developers proposed a score of 13 for positive cases of IPV in the overall 8-item WAST score (Brown et al., 1996). In the WAST-Short dichotomous score, a score of 0 is considered as "no tension/no difficulty/no problem" (Brown et al., 2000).

Adapted clinical interview

This is an assessment procedure that involves a personal exchange between the clinician and the client, designed to gather the information necessary for diagnosis and treatment (Allen and Becker, 2019). For the purposes of this study, specific questions about IPV were added, to be used as a gold standard, such as: (a) fear of the partner; (b) past year history of physical abuse by partner; (c) past year history of psychological or emotional abuse by partner; and (d) history of abuse or threat of sexual abuse in the last year by the partner. These terms were adapted from DVIS – Domestic Violence Initiative Screening (Iskandar et al., 2014), an IPV "Yes/No" tracking tool. The answers to each question are scored separately (Basile et al., 2007).

Statistical analysis

Pilot testing of the adapted WAST in Mozambique showed good internal consistency: WAST-Short scales (α = 0.813) as compared to the WAST-Long instrument (α = 0.834) (Matavel et al., 2023). Data analysis for each step was performed using the statistical

Table 1. Socio-demographic data of the study participants.

Variable		Frequency (n)	Percent
Age (years)	18-21	28	7.8
	22-25	66	18.3
	26-29	175	48.6
	>30	91	25.3
Sex	Male	140	38.9
	Female	220	61.1
Marital status	Single living with partners	144	40.0
	Legally married	168	46.7
	Divorced	29	8.1
	Widower/Widow	19	5.3
Occupation	Student	64	17.8
	Domestic servant	89	24.7
	Salaried	137	38.1
	Self-employed	70	19.4
Education	Illiterate	22	6.1
	Primary school	90	25.0
	Secondary school	178	49.4
	High school	70	19.4

programs IBM® SPSS® Statistics 24.0 and RStudio (R Foundation), and the significance level adopted for all tests and confidence intervals was 0.05. A cumulative scale was used to create two scales based on the WAST questionnaires: WAST-Short (sum of questions 1 - 2) and adapted clinical interview (sum of questions 1 - 4). The values of the WAST-Short scale and the adapted clinical interview were dichotomized as abusive IPV (if the sum ≤ 4) and non-abusive (if the sum > 4).

Positive Percent Agreement (PPA) and Negative Percent Agreement (NPA) were used to assess performance on the WAST-Short scale to identify abusive IPV, using the adapted clinical interview as a comparison. The overall agreement observed and corrected for the possibility of random agreement was computed using Cohen's Kappa coefficient, with values < 0 indicating lack of agreement; 0 - 0.20 as mild; 0.21 - 0.40 as reasonable; 0.41 - 0.60 as moderate; 0.61 - 0.80 as substantial and 0.81 - 1 as almost perfect agreement (Landis and Koch, 1977). To investigate whether there was any difference in misclassification rates between approaches AB and BA, a logistic regression was applied, taking into account the clustering effect of health facilities using generalized estimating equations, assuming an exchangeable working correlation matrix (Hardin and Hilbe, 2002).

Informed consent statement

Informed consent was obtained from all subjects involved in the study.

RESULTS

Characteristics of participants

Of the 440 patients assessed for eligibility, 89 were excluded: not meeting inclusion criteria (n= 52), declined to participate (n= 37). In the total study participants (n=360) who agreed to participate, 220 (61.1%) were female and 140 (38.9%) male. The majority of participants (175, 48.6%) were between 26 and 29 years of age and legally married (168, 46.7%) or single living with partners (144, 40.0%), and the majority had completed secondary school (178, 49.4%), as shown in Table 1.

Agreement between WAST-Short and adapted clinical interview

Using approach AB, the misclassification rate was 36.9% (95% CI: 29.4 - 44.9%) and the overall agreement measured by Cohen's Kappa was 0.258 (95% CI: 0.224 - 0.292), indicative of reasonable agreement between the scales. The proportion of the adapted clinical interview with an abusive IPV score and an abusive IPV score on the WAST-Short or PPA was estimated to be 65.9% (95% CI: 57.7 - 74.1%) and the NPA estimated to be 59. 9% (95% CI: 50.5 - 69.2%), both values indicating a weak agreement between the scales (Table 2).

A slightly higher misclassification rate of 39.0% (95% CI: 32.2 - 46.1%) and overall agreement of 0.216 (95% CI: 0.189 - 0.244) was found for Approach BA. The results imply fair agreement between the scales (Table 3). The PPA was estimated at 63.6% (95% CI: 56.0 - 71.1%) and the NPA estimated at 58.1% (95% CI: 49.6 – 66.5%). Overall, there was fair agreement between the

Table 2. Measures of agreement for approach AB.

Approach AB		WAST-short scores		
		Abusive	Non-abusive	Total
Adapted Clinical Interview	Abusive	57	30	87
	Non-abusive	29	44	73
	Total	86	74	160

Measure	Estimate	Stand. error	95% CI	
			Lower	Upper
Misclassification rate	0.369	0.038	0.294	0.449
Cohen's Kappa	0.258	0.017	0.224	0.292
Observed agreement	0.631	0.038	0.346	0.706
Chance agreement	0.503			
Positive agreement	0.659	0.042	0.577	0.741
Negative agreement	0.599	0.048	0.505	0.692

Table 3. Measures of agreement for approach BA.

Approach BA		WAST-short scores		
		Abusive	Non-abusive	Total
Adapted clinical interview	Abusive	68	39	107
	Non-abusive	39	54	93
	Total	107	93	200

Measure	Estimate	Stand. error	95% CI	
			Lower	Upper
Misclassification rate	0.390	0.034	0.322	0.461
Cohen's Kappa	0.216	0.014	0.189	0.244
Observed agreement	0.610	0.034	0.341	0.678
Chance agreement	0.502			
Positive agreement	0.636	0.038	0.560	0.711
Negative agreement	0.581	0.043	0.496	0.665

scales: misclassification rate was 38.1% (95% CI: 33.0 - 43.3%), and overall agreement was 0.235 (95% CI: 0.219 - 0.250) (Table 4). The PPA was 64.6% (95% CI: 59.1 - 70.1%) and the estimated NPA was 58.9% (95% CI: 52.6 - 65.1%).

Effect of approach on misclassification rate

From the tables, misclassification rates differed slightly between the two approaches used. Before any adjustment, the odds of misclassifying the IPV using approach AB or BA were similar (odds ratio, OR = 1.09; 95% CI: 0.78 - 1.51) (Table 5). After adjusting for age, sex, and marital status, the chance of misclassification for IPV using approach BA was lower (OR = 0.59; 95% CI: 0.41 - 0.84) than that of approach AB and was modified by age. For example, the chance of misclassifying IPV using approach BA increased by 14% for patients aged 26 to 29 years (p-value = 0.003) and was twice as high for those aged 30 and over years (p-value = 0.001) than approach AB.

In addition, misclassification of IPV was less likely in women than in men (OR = 0.78, 95% CI: 0.69 - 0.86), for a given method, age, and marital status. Misclassification was also less likely for patients older than 30 years compared to those aged 18 - 21 years (OR = 0.49, 95% CI: 0.43 - 0.57) when using approach AB, but about 3 times higher for divorced compared to single patients (OR = 2.5, 95% CI: 2.36 - 2.81).

DISCUSSION

Screening for violence in general and IPV, in particular, is highly recommended, especially when referral services

Table 4. Overall agreement measures.

Overall		WAST-short scores		
		Abusive	**Non-abusive**	**Total**
Adapted clinical interview	Abusive	125	69	194
	Non-abusive	68	98	166
	Total	193	167	360

Measure	Estimate	Stand. Error	95% CI	
			Lower	**Upper**
Misclassification rate	0.381	0.026	0.330	0.433
Cohen's Kappa	0.235	0.008	0.219	0.250
Observed agreement	0.619	0.026	0.360	0.670
Chance agreement	0.503	-	-	-
Positive agreement	0.646	0.028	0.591	0.701
Negative agreement	0.589	0.032	0.526	0.651

Table 5. Adjusted odds ratio estimates for incorrect classification of IPV.

Effect	OR	95% CI		p-value
		Lower	**Upper**	
Method				
1	1			
2	0.588	0.411	0.839	0.003
Age (years)				
18-21	1			
22-25	0.939	0.717	1.229	0.645
26-29	1.181	0.838	1.664	0.342
30+	0.496	0.431	0.570	0.000
Sex				
Male	1			
Female	0.775	0.698	0.860	0.000
Marital status				
Single	1			
Widow	0.681	0.308	1.509	0.344
Divorced	2.507	2.235	2.812	0.000
Married	0.862	0.553	1.341	0.509
Method |Age				
2| 30+	3.572	1.696	7.523	0.001
2| 26-29	1.938	1.259	2.982	0.003
2| 22-25	0.862	0.462	1.608	0.641

OR = Odds ratio.

are available for individuals identified as victims. It is, therefore, important to have screening instruments that take into account the specific country's context. While research suggests that current instruments for screening IPV still require refinement (Iskandar et al., 2014), a good approach is to develop or select from existing instruments

one that can be adapted, tested, and validated for the social and cultural context of the country where it will be applied (Fogarty and Brown, 2002). The aim of this study was to validate the WAST-Short for use in Mozambique.

Analysis of the data revealed fair agreement between the WAST-Short and the adapted clinical interview scales regarding the detection of IPV. Moreover, the reliability of the WAST-Short yielded Cronbach's alpha coefficients similar to those reported by Iskandar et al. (2015): 0.667 for items 1 to 2, with all correlations significant at $p < 0.001$ (Iskandar et al., 2015). Strikingly, the results of this study suggest that the WAST is a more effective IPV screening tool than the adapted clinical interview. The WAST-Short, based on two questions, provides insight into the intimate relationship, confirming or denying the occurrence of a single act of violence in a relationship, information not easily accessible through the standard clinical interview.

Results from the healthcare units in both of the two Mozambican provinces proved to be highly consistent. However, it is important to be cautious about the generalizability of the findings to other provinces in Mozambique without specific testing, as different socio-cultural contexts, including variations in the prevalence of IPV (Feinstein and Cicchetti, 1990), and differences in service availability may exist.

Although the results obtained in the testing indicate that the WAST is an adequate IPV screening tool in the context in which it was tested, the challenge remains to develop consistent and effective preventative actions against violence and victim assistance policies, including intersectoral coordination (Binfa et al., 2018). Reaching the ultimate goal of preventing and reducing IPV will depend strongly on screening tools to increase awareness of the problem and establish referral services for victims to receive specialized victim support. However, the controversy surrounding universal IPV screening cannot be ignored, especially among those who support universal screening in healthcare settings, claiming that screening increases IPV detection rates, and those who do not support universal screening, claiming that there is insufficient evidence to support implementation (Sprague et al., 2016).

In terms of socio-demographic characteristics, the results of the present work show greater participation by women (61.1%) than men (39.9%). This apparent imbalance most likely reflects the primary focus of some of the healthcare units included in the study. For example, gynecology/obstetrics and maternal-infant health services are primarily attended by women, and as a result, more women report and discuss their experiences of IPV with healthcare professionals in these settings. Additionally, previous studies have reported that a relatively large number of women (67%) voluntarily disclose their encounters with IPV when questioned by a physician (Yut-Lin and Othman, 2008) in a respectful and considerate manner (Brown et al., 2000).

Conclusion

The present study has successfully validated the WAST-Short in a Mozambican context as an effective instrument for IPV screening in specific healthcare facilities in two Mozambican provinces. The WAST-Short proved to be a more reliable instrument than an adapted clinical interview that included specific questions about IPV. In comparison to the standard clinical interview, the two questions in the short version (WAST-Short) provide insight into the intimate relationship, measuring the presence of violence, which is information not easily accessible through the standard clinical interview. Therefore, the WAST can be applied for IPV screening in high patient volume settings and efficiently implemented in primary healthcare units, which can then refer patients for specialized care. The results have shown that WAST-Short is a simple, easy-to-apply, and comprehensive IPV screening tool that can be used by any health professional in any healthcare service. This is especially important for providing HIV prevention counseling and antiretroviral treatment information. HIV/AIDS-focused healthcare services serve as a significant point of entry for identifying, informing, and assisting women affected by violence. Providing individuals conducting HIV counseling and healthcare providers treating patients experiencing domestic violence with instruction on the use of the WAST-Short will sensitize them to the importance of connecting patients with related services such as psychosocial therapy, prevention of mother-to-child transmission (PMTCT), and antiretroviral treatment (Basile et al., 2007; Li et al., 2014).

Limitations

The study has certain limitations that should be discussed. Firstly, it is important to acknowledge that violence in general and IPV, in particular, is often concealed, underreported, or inaccurately reported due to cultural norms that discourage victims from sharing their experiences. This limitation implies that the subjects used to validate the screening instrument described here may represent a selective population of victims.

Secondly, this study was conducted in a single geographic area (although in 2 provinces) of Mozambique, a country with a diverse and heterogeneous population with varying cultural norms. Consequently, the results of this study may not be readily generalizable to other regions of Mozambique without further location-specific investigations.

Thirdly, while IPV is more commonly experienced by women than men, our cohorts included a significantly higher number of women than men due to the nature of the two healthcare units from which subjects were recruited. This potential bias may have been further exacerbated by the fact that we did not perform a sample

size calculation. As a result, the study's findings may not be adequately powered to compare the two screening instruments. Nonetheless, according to Jones (2003), the sample size used would be expected to provide estimates of the performance of the WAST tools with a precision of at least 5%.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

ACKNOWLEDGEMENTS

The authors appreciate all participants in the study for their valuable contribution. They are also grateful to all health professionals and administrative staff for their invaluable and unreserved cooperation during the data collection.

REFERENCES

Ahinkorah BO, Dickson KS, Seidu AA (2018). Women decision-making capacity and intimate partner violence among women in sub-Saharan Africa. Archives of Public Health 76(1):5.

Allen DN, Becker ML (2019). Clinical interviewing. In *Handbook of* Psychological Assessmen Elsevier pp. 307-336.

Basile K, Hertz M, Back S (2007). Intimate Partner Violence and Sexual Violence Victimization Instruments for Use in Healthcare Settings: Version 1. Atlanta, Georgia: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. http://www.cdc.gov/NCIPC/pub-res/images/IPVandSVscreening.pdf

Binfa L, Cancino V, Ugarte I, Mella M, Cavada G (2018). Adaptación del instrumento WAST para la detección de violencia doméstica en Centros de Salud. Revista Médica De Chile 146(3):331-340..

Brown JB, Lent B, Brett PJ, Sas G, Pederson LL (1996). Development of the Woman Abuse Screening Tool for use in family practice. Family Medicine *28*(6):422-428.

Brown JB, Lent B, Schmidt G, Sas G (2000). Application of the Woman Abuse Screening Tool (WAST) and WAST-short in the family practice setting. The Journal of Family Practice 49(10):896-903.

Buller AM, Devries KM, Howard LM, Bacchus LJ (2014). Associations between intimate partner violence and health among men who have sex with men: a systematic review and meta-analysis. PLoS Medicine 11(3):e1001609.

Dillon G, Hussain R, Loxton D, Rahman S (2013). Mental and Physical Health and Intimate Partner Violence against Women: A Review of the Literature. International Journal of Family.

Eluf-Neto J, Wünsch-Filho V (2000). Screening faz bem à saúde? Revista Da Associação Médica Brasileira *46*(4):310-311.

Erickson MJ, Hill TD, Siegel RM (2001). Barriers to Domestic Violence Screening in the Pediatric Setting. Pediatrics 108(1):98-102.

Feinstein AR, Cicchetti DV (1990). High agreement but low Kappa: I. the problems of two paradoxes. Journal of Clinical Epidemiology 43(6):543-549.

Fogarty CT, Brown JB (2002). Screening for abuse in Spanish-speaking women. The Journal of the American Board of Family Practice 15(2):101-111.

Glynn TR, Mendez NA, Jones DL, Dale SK, Carrico AW, Feaster DJ, Rodriguez AE, Safren SA (2021). Trauma exposure, PTSD, and suboptimal HIV medication adherence among marginalized individuals connected to public HIV care in Miami. Journal of Behavioral Medicine 44(2):147-158.

Hardin JW, Hilbe JM (2002). Generalized Estimating Equations (0 ed.). Chapman and Hall/CRC. https://doi.org/10.1201/9781420035285

Hatcher AM, Turan JM, Stöckl H, Woollett N, Garcia-Moreno C, Christofides NJ (2022). Intimate partner violence and HIV treatment adherence in urban South Africa: Mediating role of perinatal common mental disorders. SSM-Mental Health *2*:100112. https://doi.org/10.1016/j.ssmmh.2022.100112

Iskandar L. Braun KL, Katz AR (2014). Testing the Woman Abuse Screening Tool to Identify Intimate Partner Violence in Indonesia. Journal of Interpersonal Violence.

Iskandar L, Braun KL, Katz AR (2015). Testing the Woman Abuse Screening Tool to Identify Intimate Partner Violence in Indonesia. Journal of Interpersonal Violence *30*(7):1208-1225. https://doi.org/10.1177/0886260514539844

Jethá E, Keygnaert I, Martins E, Sidat M, Roelens K (2021). Domestic violence in Mozambique: From policy to practice. BMC Public Health 21(1):772.

Krug EG, Mercy JA, Dahlberg LL, Zwi AB (2002). El informe mundial sobre la violencia y la salud. Biomédica *22*(0):327. https://doi.org/10.7705/biomedica.v22iSupp2.1182

Lagdon S, Armour C, Stringer M (2014). Adult experience of mental health outcomes as a result of intimate partner violence victimisation: A systematic review. European Journal of Psychotraumatology *5*(1).

Landis JR, Koch GG (1977). The Measurement of Observer Agreement for Categorical Data. Biometrics 33(1):159.

Li Y, Marshall CM, Rees HC, Nunez A, Ezeanolue EE, Ehiri JE (2014). Intimate partner violence and HIV infection among women: A systematic review and meta-analysis. Journal of the International AIDS Society 17(1):18845. https://doi.org/10.7448/IAS.17.1.18845

Matavel J (2020). Barriers faced by healthcare professionals in screening for Intimate Partner Violence (IPV) in Sub-Saharan Africa: A scoping review of the literature. Medicine and Medical Sciences 8(6):052-055. https://doi.org/10.15413/mms.2020.0109

Matavel J, Munguambe K, Wilson DR, Linn JG, Loquiha O (2023). Cross-cultural adaptation of an intimate partner violence screening tool (WAST) for the Mozambican context; implications for more effective HIV prevention and treatment counseling. Scientific African 20:e01664..

O'Doherty L, Hegarty K, Ramsay J, Davidson LL, Feder G, Taft A (2015). Screening women for intimate partner violence in healthcare settings. Cochrane Database of Systematic Reviews (8). https://doi.org/10.1002/14651858.CD007007.pub3

Rabin RF, Jennings JM, Campbell JC, Bair-Merritt MH (2009). Intimate Partner Violence Screening Tools. American Journal of Preventive Medicine *36*(5):439-445.e4.

Righi MK, Orchowski LM, Kuo C (2019). Integrated Intimate Partner Violence and Human Immunodeficiency Virus Interventions in Sub-Saharan Africa: A Systematic Review Targeting or Including Adolescents. Violence and Gender *6*(2):92-104.

Salahi B, Mohammad-Alizadeh-Charandabi S, Ranjbar F, Sattarzadeh-Jahdi N, Abdollahi S, Nikan F, Alizadeh-Asl R (2017). Psychometric Characteristics of an Intimate Partner Violence Screening Tool in Women with Mental Disorders. International Journal of Women's Health and Reproduction Sciences *6*(2):204-210.

Shai N, Pradhan GD, Chirwa E, Shrestha R, Adhikari A, and Kerr-Wilson A (2019). Factors associated with IPV victimisation of women and perpetration by men in migrant communities of Nepal. PLOS ONE *14*(7):e0210258.

Shamu S, Shamu P, Machisa M (2018). Factors associated with past year physical and sexual intimate partner violence against women in Zimbabwe: Results from a national cluster-based cross-sectional survey. Global Health Action 11(sup3):1625594.

Sprague S, Madden K, Simunovic N, Godin K, Pham NK, Bhandari M, Goslings JC (2012). Barriers to Screening for Intimate Partner Violence. Women and Health *52*(6):587-605.

Sprague S, Slobogean GP, Spurr H, McKay P, Scott T, Arseneau E, Memon M, Bhandari M, Swaminathan A (2016). A Scoping Review of Intimate Partner Violence Screening Programs for Health Care Professionals. PLOS ONE *11*(12):e0168502.

Stephenson R, Winter A, Hindin M (2013). Frequency of Intimate Partner Violence and Rural Women's Mental Health in Four Indian States. Violence Against Women 19(9):1133-1150.

Tjaden P, Thoennes N, US Department of Justice: Office ot Justice Programs: National Institute of Justice (2000). Extent, nature, and

consequences of intimate partner violence: (300342003-001) [dataset]. American Psychological Association.
Todahl J, Walters E (2011). Universal Screening for Intimate Partner Violence: A Systematic Review. Journal of Marital and Family Therapy *37*(3):355-369.
Tura H, Licoze A (2019). Women's experience of intimate partner violence and uptake of Antenatal Care in Sofala, Mozambique. PLOS ONE 14(5):e0217407.
Waalen J, Goodwin MM, Spitz AM, Petersen R, Saltzman LE (2000). Screening for intimate partner violence by health care providers Barriers and interventions. American Journal of Preventive Medicine 19(4):230-237.
Wagner GJ, Ghosh-Dastidar B, Mukasa B, Linnemayr S (2020). Changes in ART Adherence Relate to Changes in depression as Well! Evidence for the Bi-directional Longitudinal Relationship Between Depression and ART Adherence from a Prospective Study of HIV Clients in Uganda. AIDS and Behavior 24(6):1816-1824.
Yount KM, Cheong YF, Khan Z, Bergenfeld I, Kaslow N, Clark CJ (2022). Global measurement of intimate partner violence to monitor Sustainable Development Goal 5. BMC Public Health *22*(1):465.
Yut-Lin W, Othman S (2008). Early Detection and Prevention of Domestic Violence Using the Women Abuse Screening Tool (WAST) in Primary Health Care Clinics in Malaysia. Asia Pacific Journal of Public Health 20(2):102-116.