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ORIGINAL RESEARCH

Adapted tool for the assessment of domestic violence against women in a low-income country setting: a reliability analysis

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Background: One-in-three women has experienced domestic violence, which is a serious public health problem and a human right violation. Domestic violence is a common life experience among women in Ethiopia. The tool used to assess violence against women (VAW) has not been validated to assess its consistency. Cronbach's alpha (α, or coefficient alpha) is a measure of internal consistency, or reliability, that is, how closely a set of items are related as a group. Reliability is how well a test measures what it should. Therefore, the aim of this study was to estimate the inter-item correlation (reliability) of the tool adapted from literature.

Methods: A community-based study was conducted in Northwestern Ethiopia between November 15, 2017 and December 31, 2017. A total of 1,269 women at their permanent place of residence (specifically at their households) were recruited using the multistage stratified systematic sampling method. A structured questionnaire was adapted from literature. Also, 12 trained female data collectors collected the data using the face-to-face interview method. Data were entered into EpiData 3.1.0 and exported to SPSS 23.0 for analysis. Descriptive statistical analysis was carried out to estimate the reliability of the response(s).

Results: Overall, Cronbach's alpha was higher than the minimum recommended value of 0.70. Cronbach's alpha for specific sections were 0.764 for women's decision-making autonomy (13 items); women's accepting attitude toward justified wife-beating (five items, 0.894); physical violence (seven items, 0.876); psychological violence (15 items, 0.925); sexual violence (five items, 0.812); and inequitable gender-norms (seven items, 0.867).

Conclusion: The tool used to assess domestic VAW in Northwestern Ethiopia had a high reliability. Therefore, researchers can adapt the tool and further assess its reliability in other settings to have a common and validated tool to study VAW in a low-income countries.

Keywords: violence against women, tool reliability analysis, low-income countries

Introduction

Violence against women (VAW) is a global public health pandemic and a serious human rights violation. Worldwide, one-in-three women has experienced VAW.[1–8] Domestic VAW is a common experience in the lives of women in Ethiopia. A World Health Organization's (WHO's) multi-country study indicated that domestic VAW in Ethiopia was 71%, which is the highest in the world.[9] A systematic review conducted in Ethiopia (2000–2014) indicated that domestic VAW is a common phenomenon ranging from 20% to 78%.[10] Women's favorable attitude toward justifiable wife-beating, exacerbated by traditional gender-norms is a key underlying factor explaining domestic VAW. Currently, women's receptive attitude toward justified wife-beating has declined from 81%[11] to 69%;[12] however, this is still unacceptably high.

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In response to the high prevalence of domestic VAW, the government of Ethiopia has incorporated women's right and gender equality in the constitution [Art-35 and 89(7)[13] and other proclamations: Criminal code under proclamation No 414/2004 (Art 564)[14] and Family Code Proclamation No 213/2000].[15] Violence against a marriage partner or a person cohabiting, even in an irregular union, is prohibited. Moreover to help implement this, the Ethiopian Ministry of Health has developed a standard operating procedure for the response and prevention of VAW in 2016.[16] Most of the studies on domestic VAW that have been conducted in Ethiopia, like ours, have adapted tools from existing literature, including the WHO's domestic VAW assessment tool.[13,16–34]

Cronbach's alpha (α, or coefficient alpha) is a measure of internal consistency, or reliability, that is, how closely a set of items are related as a group. Cronbach's alpha is developed by Lee Cronbach in 1951, which measures reliability of the tool. Reliability is how well a test measures what it should.[17,18] A review of all the studies showed that the level of Cronbach's alpha of the domestic VAW assessment tools is not reported in most of the studies, which have been conducted in low-income countries (particularly Ethiopia). The consistency of the items of domestic VAW assessment tool is a core component of the studies, and Cronbach's alpha is not estimated and reported. We could not find a literature that reported the reliability (Cronbach's alpha) estimates of the domestic VAW assessment tool. Hence, the main objective of this study was to estimate the inter-item-correlation (reliability) of the tool adapted from any literature on domestic VAW in low-income country settings. This study tool was adapted from literature to assess the level of domestic VAW in the Northwestern Ethiopia. Therefore, this study may contribute to filling the literature gap of reliability estimates of tools that often used to assess domestic VAW.

Methods

Study design and setting

A community-based cross-sectional study was conducted in the Awi zone of Northwestern Ethiopia from November 15, 2017 to December 31, 2017. This was to serve as a baseline survey for a three-arm quasi-experimental study. Awi zone has nine districts, of which three districts were included in the study. It is located 447 km from Addis Ababa. According to the Awi zonal health department report published in June 2018, this zone has a total population of 1,285,242, of whom 631,054 (49.1%) are men and 654,188 (50.9%) are women. About 12.5% of the population in Awi zone live in urban areas. Almost 93.5% of the population are Ethiopian Orthodox Christian while 5.4% of the population are Muslim.[11] Very little is known about domestic VAW in Awi zone, but one study shows the level of VAW to be as high as 78.0%.[13]

Sample size determination and sampling procedures

Sample size was calculated using a statistical formula[19] with 5% margin of error, 95% significance level, 80% power, desired intervention effect of 13%, and design effect of 1.11.[12] Eventually, the final sample size was 1,269 married or cohabitating women (15–49 years). Married or cohabitating women (15–49 years) who had lived at least 12 months with their current husband and lived at least 6 months in the selected sub-districts were eligible. Three out of nine districts were selected randomly in the Awi zone by a lottery method. Then two (urban and rural) sub-districts were selected purposefully considering their appropriateness, resource, time, and geographical non-proximity to reduce threats to validity arising from possible information contamination. Sampling frame was constructed from the health extension workers' household registry (family-folder) to recruit eligible women from each selected sub-district. Multistage, stratified, and systematic sampling methods were used to recruit women at their permanent places of residence. The first household (random start) was recruited by lottery method using the first eligible household numbers (1 to kth value =2). In the case of two eligible women being present in a single household, one woman was selected for the interview using the lottery method (Figure 1). For further details, the protocol has been registered (ClinicalTrials.gov ID: NCT03265626) and published elsewhere.[20]

The protocol was reviewed and approved by the Institutional Health Research Ethical Review Committee, College of Health and Medical Sciences, Haramaya University (Ref. No IHRERC/146/2017). This study was conducted in accordance with the Declaration of Helsinki,[21] and written informed consent was obtained from each study participant (woman), and the information was kept confidential and anonymous. Confidentiality of the information was maintained, among others by avoiding personal identifiers, locking the metallic cabinet for hardcopy questionnaire and investigators placing password on computers with stored data. Participant's deidentified data that support the analysis finding of this study as well as further analysis works will be shared as per official and valid request to the corresponding author (AS). Participant deidentified data will also be available online in the protocol registration database (ClinicalTrials.gov ID: NCT03265626), and also this journal web-pages as necessary as soon as further analysis for additional manuscripts is

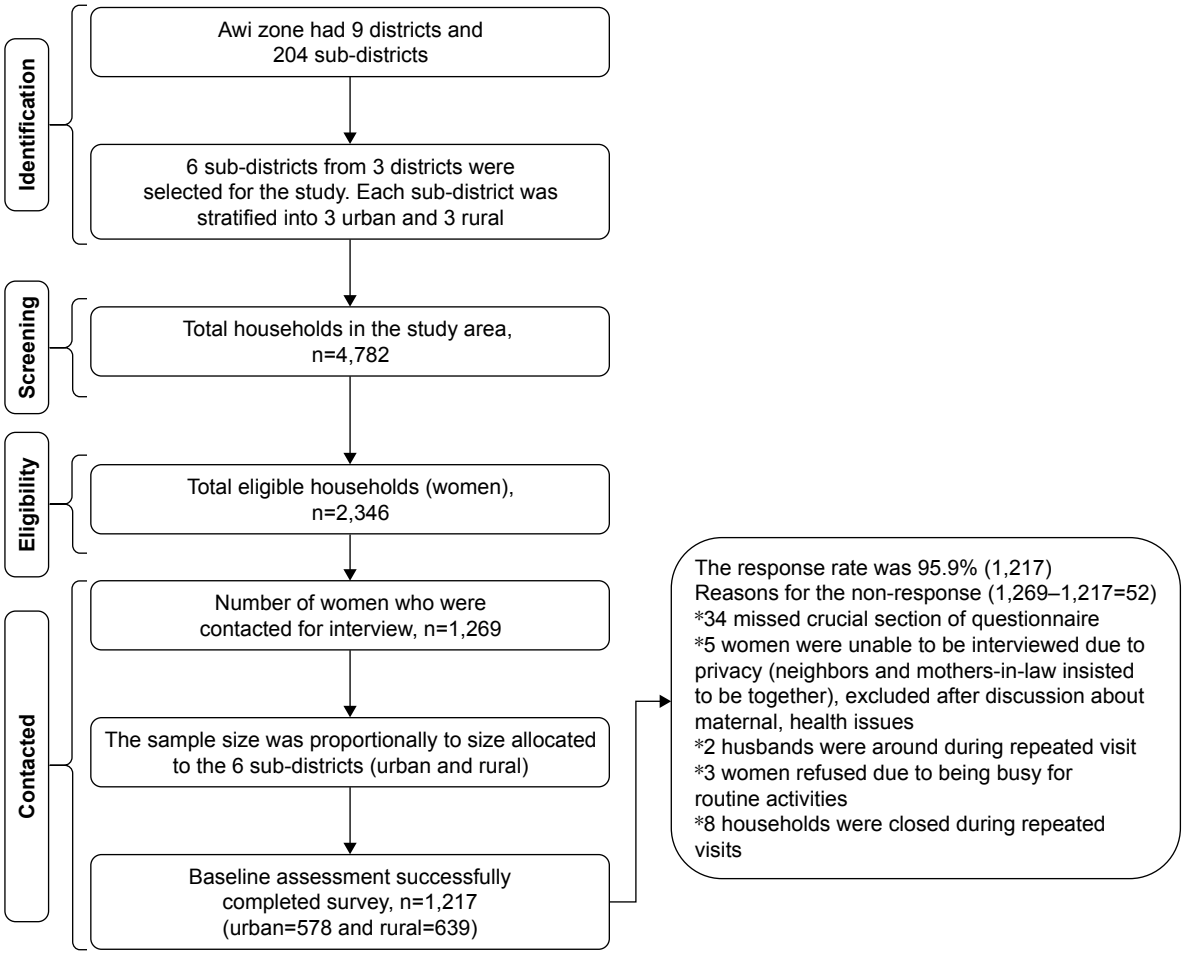


Figure 1 Illustration of participant recruitment process.

completed on SPSS (23.0) software after May 2019. In addition, ethical approval letter is available at any time.

Tool development and data collection methods

The data collection tool was adapted from several source in the literature[13,16–34] (Table 1). Face-to-face interviewer-administered method was carried out using the structured questionnaire administered by the 12 trained female data collectors. Data collectors' training, pretest, and supportive supervision were provided by the principal investigator to assure the quality of data collected. Qualified female professionals (midwives, nurses, or public health workers) who have experience in field surveys and were neither resident nor deployed at nearby health facilities were hired as data collectors in order to increase the trustworthiness of the information. The training of data collectors was focused on the questionnaires, interview techniques, sampling methods, protection of confidentiality, ethical issues of domestic VAW research, and data quality assurance. Necessary amendments were made based on feedback from study participants and comments from data collectors.

Data processing and analysis

Overall, the domestic VAW assessment tool comprised nine sections. Three of the sections were sociodemographic and economic characteristics of women; access to sources of information about VAW and gender equality; and their husbands' sociodemographic characteristics. The latter was not included in the reliability analysis. Six of the sections that covered the women's decision-making potential and women's access to household resources and control over autonomy (13 items);[35] women's accepting attitude toward justified wife-beating (five items),[28,36] physical violence (seven items), psychological violence (15 items), sexual violence (five items),[37,38] and gender inequitable norm (seven items).[23] The reliability analysis was carried out for the six sections of the tool. The gathered data were entered into

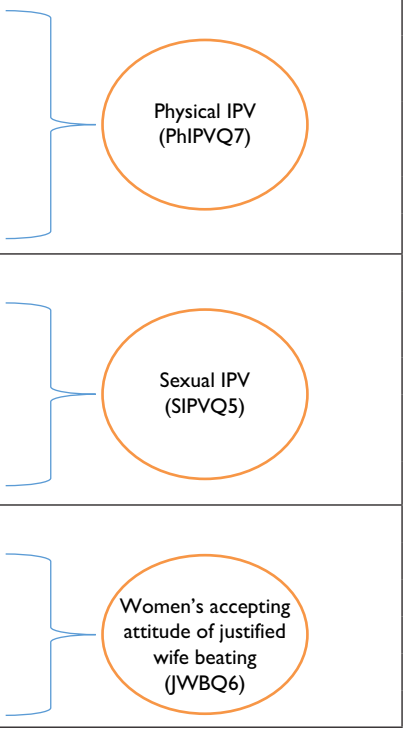
Table 1 Adapted tool to measure domestic violence against women in a low-income country setting

	Items	Outcome
Women's decision-making autonomy on household matters (WDMAQ) (1 – husband, 2 – wife, and 3 – joint)		
WDMAQ1	Who is the head of the household?	
WDMAQ2	Who should decide on the household matters in your family?	
WDMAQ3	Who makes large household purchases?	
WDMAQ4	Who makes small daily household purchases?	
WDMAQ5	Who is the decision maker when you want to visit family, friends, or relatives?	
WDMAQ6	Who is the decision maker on contraceptive to have planned family service?	
WDMAQ7	Who is the decision maker on antenatal care service utilization?	
WDMAQ8	Who is the decision maker on vaccination service utilization?	
WDMAQ9	Do you discuss about family planning with your husband?	
WDMAQ10	Who in your family makes decisions about health care for yourself?	
WDMAQ11	Do you have an autonomy to decide by yourself and go to health care facility to seek care for you and your children?	
WDMAQ12	Who is the decision maker to seek health care when one of family member get sick?	
WDMAQ13	Who is the decision maker if you want to attend workshop?	Women decision making autonomy (WDMAQ13)
Measures for gender inequity norms index assessment (GINQ) (yes/no)		
GINQ1	Is it fine for men to have more than one (sexual) partner?	
GINQ2	Is it a woman's duty to have sex with her spouse/partner even if she does not want to have?	
GINQ3	Is it more important for a woman to respect her spouse/partner than it is for a man to respect his spouse/partner?	
GINQ4	May a man beat his spouse/partner if she disobeys him?	
GINQ5	Can a man beat his spouse/partner if he believes she is having sex with another man?	
GINQ6	Is it more important for a boy to get an education than a girl?	Women's accepting attitude toward inequitable gender norm (GINQ7)
Psychological intimate partner violence assessment scale (PsIPVQ)		
PsIPVQ1	Is/was he jealous or angry if you (talk/talked) to other men?	
PsIPVQ2	Has he (insists/insisted) on knowing where you (are/were) at all time?	
PsIPVQ3	Have you ever been insulted by your husband using abusive language that made you feel bad about yourself?	
PsIPVQ4	Have you ever been threatened by your husband with an object such as a stick, belt, knife, gun, or other type of weapon, etc?	
PsIPVQ5	Have you ever been created financial hardship/not trust you by your husband to making money available to you?	
PsIPVQ6	Have you ever been frightened your husband by looking angrily at you?	
PsIPVQ7	Have you ever expressed suspicion/accused him that he is unfaithful to you?	
PsIPVQ8	Have you ever been ignored or shown indifference by your husband?	
PsIPVQ9	Have you ever been deprived from privileges in the family by your husband?	
PsIPVQ10	Have you ever been denied by your husband on your basic personal needs?	
PsIPVQ11	Have you ever been intentionally not involved by your husband on decision-making in the family?	
PsIPVQ12	Has he belittled or humiliated you in front of other people?	
PsIPVQ13	Has he done things to scare or intimidate you on purpose?	
PsIPVQ14	Have you ever been restricted by your husband from going to your parent's home or other places like friends'/relatives' house, places of worship, etc?	Psychological IPV (PsIPVQ15)

(*Continued*)

Table 1 (*Continued*)

	Items	Outcome
Physical intimate partner violence assessment scale (PhIPVQ)		
PhIPVQ1	Has he pushed or shoved you, shaken you, or thrown something at you?	
PhIPVQ2	Has he punched or hit you with his fist, or twisted your arm or with something that could hurt you?	
PhIPVQ3	Has he slapped, kicked, dragged, or beaten you?	
PhIPVQ4	Has he attacked you with a knife, gun, or other type of weapon?	
PhIPVQ5	Have you ever been scalded or burnt purposefully by your husband?	
PhIPVQ6	Has he choked at you that may disgracing you?	
Sexual intimate partner violence assessment scale (SIPVQ)		
SIPVQ1	Have you ever been physically forced by your husband to have sex when you did not want to?	
SIPVQ2	Have you ever been intentionally denied or avoided sex by your husband?	
SIPVQ3	Did you ever have sexual intercourse when you didn't want because you were afraid of what he might do?	
SIPVQ4	Has he forced you to do something sexual that you found degrading or humiliating?	
Husbands can beat their wives if they have justifiable reasons (JWBQ)		
JWBQ1	If wife goes out without informing her husband?	
JWBQ2	If wife neglects the children?	
JWBQ3	If wife argues with her husband?	
JWBQ4	If wife burns the food?	
JWBQ5	If wife refuses to have sex with him?	



EpiData 3.1.0 and exported to SPSS 23.0 for further analysis. The frequency, percentage, mean, and standard deviations were computed for the participants' sociodemographic characteristics. To examine the reliability of the tool to assess domestic VAW, the following analyses were performed: mean, standard deviation, scale mean if item deleted, scale variance if item deleted, corrected item total correlation, and Cronbach's alpha if item deleted.

Results

The overall response rate of the survey was 95.9% (1,217/1,269). The reasons for non-response were described in detail in Figure 1. The mean age of the women was 30.0 (±7.1) years. The majority of women (98.8%, n=1,202) were formally married. Slightly more than half (52.5%, n=639) of the women were rural residents. The mean of women's marital duration was 11.5 (±7.9) years. Furthermore, the mean age of their husbands was 37.3 (±9.3) years. About one-quarter (24.9%, n=303) were unable to read and write. About half (50.7%, n=617) engaged in trade or income-generating activities. Three-fourth (75.0%, n=913) of the women's husbands had a history of addictive substance misuse. Of these, 99.9% (n=912) of husbands had a history of alcohol consumption. Almost one-quarter (26.4%, n=321) of the women knew their husbands' earning (Table 2).

Cronbach's alpha estimate of the domestic VAW questions

Cronbach's alpha is a measure of internal consistency (reliability) of the items in the tool, usually a scale. It shows how closely a set of items are rated as a group. It is expressed as a number between 0 and 1, the closer it is 1, the higher the reliability. Internal consistency describes the extent to which all the items in a tool measure the same concept, and hence, it is connected to the inter-relatedness of the items within the tool.[44] The overall Cronbach's alpha of the tool was higher than the minimum recommended value of 0.70. The women's decision-making and household resource control autonomy were assessed using 13 items and its mean was 30.2 (±5.4). The women's accepting attitude of justified wife-beating was assessed using five items with a mean of 10.6 (±2.6). The women's attitude toward inequitable gender-norms was assessed using seven items with a mean of 11.1 (±2.5). Cronbach's alpha for the women's decision-making autonomy, women's accepting attitude toward justified wife-beating, and inequitable gender-norm were 0.764, 0.894, and 0.867, respectively.

Table 2 Sociodemographic characteristics of women, Northwestern Ethiopia, December, 2017 (n=1,217)

Variables	n	%
Mean age of women (years)	30.0 (±7.1)	
Age of women (years)		
≤29	604	49.6
≥30	613	50.4
Relationship status		
Formally married	1,202	98.8
Cohabitating	15	1.2
Residence of women		
Rural	639	52.5
Urban	578	47.5
Marital duration of women (years)		
<10	665	54.6
>10	552	45.4
Educational status of women		
Illiterate	621	51.0
Able to read and write	152	12.5
1–6 grades	168	13.8
7–12 grades	216	17.7
12+	60	4.9
Occupational status of women		
Housewife/farmer	1,037	85.2
Trade/business	125	10.3
Employee (government/NGOs)	55	4.5
Pregnancy last 12 months (1,160)		
Yes	287	24.7
No	873	75.3
Number of children alive		
0	201	16.5
≤2	460	37.8
>2	556	45.7
Age of husband (years)	37.3 (±9.3)	
Age of husband (years)		
≤36	637	52.9
>36	568	47.1
Educational status of husband		
Illiterate	303	24.9
Able to read and write	379	31.1
1–6 grades	222	18.2
7–12 grades	227	18.7
12+	86	7.1
Occupational status of husband		
Trade/business	617	50.7
Farmer	489	40.2
Employee (government/NGOs)	111	9.1
Do you know your husband earnings		
Yes	321	26.4
No	896	73.6
Husbands' substance use (mainly alcohol)		
Yes	913	75.0
No	304	25.0

Abbreviation: NGO, nongovernmental organization.

In addition, physical domestic VAW was assessed using seven items, and the mean was 12.9 (±1.8). Psychological domestic VAW was assessed using a tool with 15 items with the mean of the scale analysis of items being 27.1 (±4.0). Sexual domestic VAW was assessed using a five-item questionnaire with the mean of the scale analysis of items being 9.2 (±1.3). The Cronbach's alphas for physical, psychological, and sexual domestic VAW assessment questions were 0.876, 0.925, and 0.812, respectively. The overall Cronbach's alpha of the domestic VAW assessment tool was 0.785 (Table 3).

Discussion

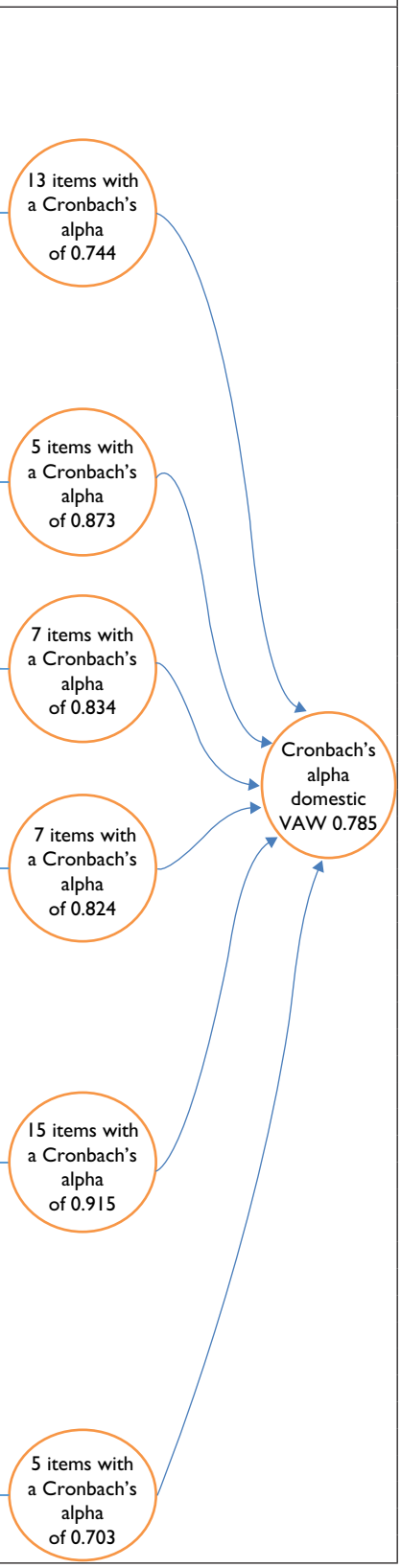
This reliability analysis estimated the consistency of response from the adapted structured questionnaire(s) that were used to assess domestic VAW. Generally, the adapted survey tool had Cronbach's alpha score of 0.785, higher than the recommended minimum of 0.70. Specifically, Cronbach's alphas were women's decision-making autonomy (13 items, 0.764); women's accepting attitude of justified wife-beating (five items with 0.894); physical violence (seven items, 0.876); psychological violence (15 items, 0.925); sexual violence (five items, 0.812); and gender inequitable norm (seven items, 0.867). This tool had a Cronbach's alpha consistent with other studies with a range of 0.68–0.80,[39] higher than 0.80,[40] and greater than 0.90.[41] Furthermore, this finding is similar to that of a study conducted in Sweden which showed that the Cronbach's alpha of the VAW assessment tool was higher than the minimum recommended value (>0.70).[42]

In addition, the Cronbach's alpha of the tool is also consistent with the tools used to assess the risk of domestic VAW in China which indicated a Cronbach's alpha of 0.76.[43,44] However, this study finding is a bit lower than a study conducted in the USA to assess VAW which showed that Cronbach's alpha of 0.96.[45] Nevertheless, this finding shows a relatively higher reliability than a study conducted on measurement tool used for physician assessment which has a Cronbach's alpha of >0.65.[46] There are some arguments behind the value of Cronbach's alpha. It is argued that it is a coefficient of the reliability or internal consistency of the items, but not a statistical test.[44] In addition, a high value for alpha does not imply that the measure is unidimensional.

The study's finding can motivate researchers to adopt this consistent tool, which would have a great implication on the analysis of data to inform evidence-based decision-making. This is important since concrete evidence on the level of domestic VAW to understand the problem is needed to help make appropriate decisions. Therefore, this tool can be used by researchers, policy makers, clinicians, and other key stakeholders in sub-Saharan

Table 3 Item characteristics, item-total correlation, and alpha if item-deleted of the different types of domestic violence against women (VAW) assessment items (n=1,217)

Items	Range	Mean (SD)	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted	Overall Cronbach's alpha from all participants and items
Women decision-making autonomy assessment items							
WDMAQ1	[1,3]	1.81 (0.975)	28.34	23.176	0.555	0.728	
WDMAQ2	[1,3]	1.83 (0.957)	28.32	22.713	0.626	0.719	
WDMAQ3	[1,3]	1.84 (0.974)	28.31	22.896	0.589	0.724	
WDMAQ4	[1,3]	2.28 (1.153)	27.87	23.781	0.376	0.755	
WDMAQ5	[1,3]	2.55 (0.813)	27.60	24.313	0.544	0.732	
WDMAQ6	[1,3]	2.68 (0.630)	27.47	25.101	0.608	0.732	
WDMAQ7	[1,3]	2.77 (1.031)	27.38	25.296	0.287	0.763	
WDMAQ8	[1,3]	2.73 (0.521)	27.42	26.153	0.547	0.741	
WDMAQ9	[1,3]	1.27 (0.480)	28.88	30.154	−0.199	0.786	
WDMAQ10	[1,3]	2.80 (0.531)	27.35	26.594	0.450	0.747	
WDMAQ11	[1,3]	2.00 (0.980)	28.15	28.385	−0.001	0.795	
WDMAQ12	[1,3]	2.83 (0.536)	27.33	26.719	0.420	0.749	
WDMAQ13	[1,3]	2.76 (0.599)	27.39	26.100	0.470	0.744	
Women's acceptance attitude toward justified wife-beating assessment items							
JWBQ1	[1,2]	1.43 (0.495)	9.19	4.957	0.697	0.878	
JWBQ2	[1,2]	1.43 (0.496)	9.18	4.881	0.735	0.874	
JWBQ3	[1,2]	1.52 (0.500)	9.10	4.826	0.756	0.871	
JWBQ4	[1,2]	1.58 (0.493)	9.04	4.960	0.698	0.878	
JWBQ5	[1,2]	1.50 (0.500)	9.11	4.852	0.742	0.873	
Women attitude toward inequitable gender-norm assessment items							
GINQ1	[1,2]	1.87 (0.334)	9.14	5.286	0.387	0.876	
GINq2	[1,2]	1.53 (0.500)	9.48	4.386	0.648	0.847	
GINQ3	[1,2]	1.45 (0.498)	9.56	4.239	0.735	0.834	
GINQ4	[1,2]	1.61 (0.487)	9.39	4.379	0.676	0.843	
GINQ5	[1,2]	1.64 (0.479)	9.37	4.464	0.641	0.848	
GINQ6	[1,2]	1.58 (0.4)	9.43	4.420	0.640	0.848	
GINQ7	[1,2]	1.32 (0.468)	9.69	4.328	0.742	0.834	
Physical VAW assessment items							
PhIPVQ1	[1,2]	1.78 (0.417)	11.21	2.078	0.830	0.833	
PhIPVQ2	[1,2]	1.80 (0.401)	11.18	2.103	0.848	0.830	
PhIPVQ3	[1,2]	1.80 (0.401)	11.19	2.127	0.822	0.834	
PhIPVQ4	[1,2]	1.98 (0.155)	11.01	3.030	0.360	0.889	
PhIPVQ5	[1,2]	1.98 (0.155)	11.01	3.030	0.360	0.889	
PhIPVQ6	[1,2]	1.92 (0.267)	11.06	2.726	0.513	0.875	
PhIPVQ7	[1,2]	1.78 (0.417)	11.25	1.960	0.887	0.824	
Psychological VAW assessment items							
PsIPVQ1	[1,2]	1.67 (0.469)	25.39	13.267	0.729	0.917	
PsIPVQ2	[1,2]	1.67 (0.470)	25.39	13.276	0.725	0.917	
PsIPVQ3	[1,2]	1.73 (0.442)	25.33	13.531	0.693	0.918	
PsIPVQ4	[1,2]	1.97 (0.174)	25.09	15.394	0.404	0.926	
PsIPVQ5	[1,2]	1.83 (0.371)	25.23	14.078	0.632	0.920	
PsIPVQ6	[1,2]	1.74 (0.441)	25.33	13.434	0.726	0.917	
PsIPVQ7	[1,2]	1.74 (0.437)	25.32	13.400	0.745	0.916	
PsIPVQ8	[1,2]	1.87 (0.341)	25.19	14.196	0.648	0.920	
PsIPVQ9	[1,2]	1.89 (0.308)	25.17	14.387	0.640	0.920	
PsIPVQ10	[1,2]	1.85 (0.354)	25.21	14.163	0.633	0.920	
PsIPVQ11	[1,2]	1.89 (0.311)	25.17	14.350	0.649	0.920	
PsIPVQ12	[1,2]	1.92 (0.276)	25.14	14.827	0.505	0.924	
PsIPVQ13	[1,2]	1.89 (0.313)	25.17	14.666	0.505	0.923	
PsIPVQ14	[1,2]	1.83 (0.379)	25.24	13.973	0.656	0.919	
PsIPVQ15	[1,2]	1.56 (0.496)	25.50	12.941	0.781	0.915	
Sexual VAW assessment items							
SIPVQ1	[1,2]	1.72 (0.449)	7.52	0.842	0.771	0.722	
SIPVQ2	[1,2]	1.95 (0.218)	7.29	1.395	0.456	0.818	
SIPVQ3	[1,2]	1.93 (0.263)	7.32	1.283	0.546	0.795	
SIPVQ4	[1,2]	1.93 (0.260)	7.32	1.284	0.552	0.794	
SIPVQ5	[1,2]	1.72 (0.448)	7.52	.817	0.814	0.703	



Africa and other low-income settings to enhance studies on domestic VAW. It can also be used for need assessments, program implementation monitoring, and impact evaluations.

Strengths and limitations

This study has notable strengths including it being community-based, urban–rural mix of sample, well-defined study participants, and representative sample size that can allow for generalization of findings to the general community. However, this study also has some limitations. The disclosure of domestic VAW issues can be a sensitive private issue kept as family secret in most instances. This may be affected by social desirability bias. In addition, some women may suffer from recall bias, unable to remember some of the domestic VAW experiences that they may have accepted as a part of marital life. So social desirability and recall biases may result in underreporting of domestic VAW by the study participants.

Conclusion

The adapted tool used to assess domestic VAW in Ethiopia had high reliability. Therefore, the researcher can adapt the tool for future studies. Furthermore, assessment of the reliability of the tool in other settings is recommended to confirm its applicability as a tool for low-income countries to determine the level of domestic VAW.

Availability of data and materials

The data that support the findings are available upon submitting a reasonable request to the corresponding author.

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Author contributions

AS, KT, AM, and AA conceived and designed the study. AS carried out activities from inception to the draft of the manuscript. AS, KT, AM, NA, and AA extensively reviewed the manuscript. All authors contributed to data analysis, drafting and revising the article, gave final approval of the version to be published, and agree to be accountable for all aspects of the work.

Disclosure

The authors report no conflicts of interest in this work.

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