

# A Community-Based Exploratory Cross-Sectional Study of Elder Abuse Perpetration or Victimization Among Elders in Ethiopia, 2022

Asrat Wolde<sup>1</sup> , Wadu Wolancho<sup>2</sup>, Yeshitila Belay<sup>2</sup> , Asamirew Alemu<sup>3</sup>, Ashenaf Asefa<sup>3</sup>, Tsehaye Gebremedhin<sup>3</sup>

<sup>1</sup>Department of Psychiatry, Mizan Tepi University, Mizan Aman, South West Regional State, Ethiopia; <sup>2</sup>Department of Nursing, Jimma University, Jimma, Oromia Regional State, Ethiopia; <sup>3</sup>Department of Nursing, Mizan-Tepi University, Mizan Aman, South West Regional State, Ethiopia

Correspondence: Asrat Wolde, Department of Psychiatry, Mizan Tepi University, Mizan Aman, South West Regional State, Ethiopia, Tel +251916389179, Email [Asratwolde2017@gmail.com](mailto:Asratwolde2017@gmail.com)

**Background:** Elderly abuse and comorbid problematic substance use, disability, and physical and mental illness have been major problems in low-income countries. In most countries, the elderly are the most neglected segment of the population, and there is insufficient information about elderly abuse perpetration or victimization in low-income countries like Ethiopia. Therefore, this study was aimed to assess elderly abuse perpetration or victimization among the elderly in Mizan Aman town, southwest Ethiopia.

**Methods:** A community-based cross-sectional study design was conducted among 268 elderly people from May to June, 2021, by using a systematic sampling technique. The elderly abuse and the ASSIST tools were used to assess the elderly abuse and khat, alcohol, cannabis, and tobacco use disorders, respectively. Moreover, multimorbidity and physical disability were also assessed. Data were entered into EpiData version 3.1 and exported to the Statistical Package for Social Science Version 23. A logistic regression model was used to identify independent predictors of elderly abuse.

**Results:** The prevalence of elder abuse was 41.8%, and the prevalence of poly substance, alcohol, khat, and tobacco use disorder was 32.5%, 19.4%, 12%, and 4.5%, respectively. Besides, the comorbidity of physical disability and multiple chronic diseases was 8% and 24.6%, respectively. Moreover, physical disability (AOR = 5.652, CI = 1.459, 21.894), multimorbidity (AOR = 3.972, CI = 1.898, 8.314), substance use disorder (AOR = 3.877, CI = 1.814, 8.286), age above 80 years (AOR = 8.452, CI = 2.273, 31.425), and poor social support (AOR = 3.372, CI = 1.043, 10.903) were positively associated with elderly abuse.

**Conclusion:** The magnitude of elder abuse and comorbid multimorbidity, physical disability, and substance use disorder was high, and having multiple chronic diseases, physical disability, substance use disorder, advanced age, and poor social support were risk factors for elderly abuse.

**Keywords:** elderly abuse, perpetration, victimization, khat use disorder, physical disability, multimorbidity, Ethiopia

## Background

Elder abuse, also known as older adult abuse, mistreatment, or maltreatment, is defined as a single or repeated act or an inappropriate action, occurring within any relationship where there is an expectation of trust that causes distress or harm to an older person.<sup>1</sup> Elder abuse can also be defined as an intentional action that creates a serious risk of harm to an elderly person by a perpetrator or caregiver who is in a trust relationship with the elderly person and a failure by the caregiver or perpetrator to satisfy their basic needs.<sup>2</sup> Types of elder abuse includes; psychological, financial, physical, sexual abuse, and neglect.<sup>3</sup> These can be committed individually or in groups, which is known as polyvictimization.<sup>3</sup> Elder abuse is a major public health problem that occurs in both developed and developing countries, and results in minor injuries, deterioration of health conditions, and an increased risk of hospitalization.<sup>4</sup> The World Health Organization reports that one in six older people has been abused within one year, and victims of elder abuse are twice as likely to die compared to those who did not report abuse.<sup>5</sup> Furthermore, elderly people with polyvictimization were more likely to

experience hospitalization,<sup>6</sup> all-cause mortality,<sup>7</sup> and poor health than single exposure to abuse.<sup>8</sup> In terms of the perpetrator's gender, female perpetrators were more likely to be loving and caring than violent, whereas male perpetrators were the reverse.<sup>9</sup> A study from a developed country revealed that more than half of the episodes of abuse were committed by men, while 47.5% by women.<sup>10</sup>

In fact, there is a great variation in the prevalence and health consequences of elder abuse, which causes the medical and psychological burden of older people in various countries. Specifically, the prevalence of elder abuse in Europe varies from 2.2% in Ireland to 61.1% in Croatia. In Asia, the highest was in mainland China at 36.2%, and the lowest was in India at 14%.<sup>11</sup> However, only a few studies conducted in Africa have been found, and the prevalence varies from 14.7% in Nigeria to 81.1% in Kenya.<sup>12,13</sup> A meta-analysis from 52 independent studies in 28 countries disclosed that the pooled prevalence rate for overall elder abuse was 15.7%, and psychological, financial, neglect, physical, and sexual abuse were 11.6%, 6.8%, 4.2%, 2.6%, and 0.9%, respectively.<sup>14</sup>

Psychiatric disorders such as dementia, depression, and cognitive impairment are also positively associated with elder abuse because the elderly with chronic psychiatric disorders have functional disability and need help with self-care activities and more complex everyday activities.<sup>15–20</sup> Studies from developed countries have revealed that elderly people with physical disabilities and functional limitations are at a high risk of being abused due to their dependence on care givers.<sup>21–27</sup> Furthermore, problematic substance use is positively associated with elder abuse because alcohol or substance use in old age is associated with impaired body and cognitive function compared to younger age.<sup>28</sup> As one ages, the lean body mass, total body water, and the ability of the liver to process alcohol or other substances decrease. Also, during old age, the blood-brain barrier permeability and neuronal receptor sensitivity to alcohol or drugs in the brain is increased.<sup>29–32</sup> Thus, alcohol (drug) use at older age puts the elderly at risk of elder abuse by exposing them to alcohol-related health problems and basic functional impairment, such as impaired activities of daily living.<sup>33</sup> Drugs like benzodiazepines are known as fat-soluble drugs; as elderly adults have low muscle mass and higher body fat, these drugs have a longer duration of action that can cause excessive sedation.<sup>34</sup>

The prevalence of elder abuse increases due to different factors; among them, low income, physical disability, psychological problems, being widowed or divorced, and living alone are the main ones.<sup>19,35</sup> Some studies have indicated that small or large family members, poor relationships with family members, substance abuse, depression, and chronic disease are also associated with elderly abuse.<sup>36,37</sup> Other documented risk factors for elder abuse include: being female, low socioeconomic status, poor level of education, and advanced age.<sup>38,39</sup> Moreover, cognitive impairment like dementia of the victim, and perpetrators' dependence for emotional, financial, and housing on their victims,<sup>40</sup> Financial dependence,<sup>41</sup> race or ethnicity,<sup>25</sup> having care givers with anxiety, depression, and substance use disorder,<sup>42</sup> being in urban area,<sup>43</sup> having negative attitude towards aging,<sup>40</sup> and poor social support<sup>44</sup> were risk factors for elder abuse.

Elder abuse has devastating consequences for elderly individuals; such as poor quality of life, emotional distress, and increased morbidity and mortality.<sup>1</sup> In Ethiopia, only 1 qualitative study with fifteen elderly people was conducted in the Dangla region disclosed that the risk factors for elder abuse were lack of respect, poverty, and poor family support.<sup>45</sup> However, despite extensive research in the developed world on the prevalence and burden of elder abuse among the elderly, little is known in Africa and sub-Saharan Africa, including our own country, Ethiopia. To the best of our knowledge, this is the first quantitative and explorative study to assess elder abuse and its predictors among Ethiopian elders. Therefore, the aim of this study was to assess the prevalence of elder abuse and associated factors among elderly people in Mizan Aman town, southwest Ethiopia.

## Methods

### Study Design, Setting, and Population

The community-based cross-sectional study design was conducted in Mizan Aman town, Bench Sheko zone, Ethiopia from May 1 to May 30, 2021. Bench Sheko zone is one part of the South West Regional State, which is one of the 11 regional states in Ethiopia, and the town has a total population of 53,860, of which 24,765 are men and 29,095 are females. In this town, there are three public health institutions, namely: Mizan Tepi University Teaching Hospital, Mizan

Health Center, and Aman Health Center. The town was subdivided into five large kebeles, namely: Addis Ketema, Shesheka, Edget, Hibert, and Kometa, with a total of 10,456 households.

## The Study Design and Time Frame

A community-based cross-sectional study was conducted from May 1 to May 30, 2021.

## Source Population

All the elderly population in Ethiopia were the source population, while randomly selected elderly who fulfilled inclusion criteria were the study population.

## Criteria for Inclusion and Exclusion

### Inclusion Criteria

All the participants who were in that respective place during the data collection period for at least 6 months were included.

### Exclusion Criteria

The participants who were unable to respond due to severe mental illness or severe physical illness were excluded from the study.

## Sample Size and Sampling Procedure

The sample size of this study was determined using the single population proportion formula. The assumptions for the sample size calculation were as follows: the proportion of elderly abuse is 50% because no research has been conducted in Ethiopia; a confidence level of 95%; marginal error of 5% and a non-response rate of 10%. Moreover, the correction formula was used since the source population was less than ten thousand, and the final sample size was 276.

The systematic random sampling technique was used in this particular study. Thirty percent of the smallest administrative unit (kebele) was selected, namely, Kometa and Idget kebele from the total of 5 kebeles. The sample size was distributed proportionally among selected kebeles based on the total number of households. A list of households was obtained from health extension workers.  $K$  was calculated by dividing total households in the kebele to sample size, and it was three. After obtaining a list of participant households, every 3rd household was recruited by labeling each household that had an elderly person aged 60 and above until the required sample size was fulfilled. The starting household was selected by a simple random sampling method, and a lottery method was used if there were more than one eligible elderly person in a household.

## Data Collection Tools and Procedures

For data collection, an interviewer-administered questionnaire was used. Data were collected by two trained psychiatry professionals and supervised by one MSc mental health clinician. The questionnaire was prepared in English and then translated to Amharic, which is a local language, and then back-translated into English by independent language experts. The questionnaire has five parts, which are adapted from a study conducted after reviewing different literature.<sup>12,46,47</sup> The data collection tool includes; socio-demographic factors, behavioral factors, clinical factors, substance use factors, functional status-related factors, and diagnostic criteria for elder abuse. For the elder abuse part (physical abuse 3 items, psychological abuse 6 items, neglect abuse 7 items, financial abuse 4 items, and sexual abuse 3 items), functional-related, and disease-related factors.

Elderly abuse is measured by reviewing different tools: if the elderly have experienced at least one type of abuse, such as psychological abuse, caregiver neglect, physical abuse, financial abuse, or sexual abuse. Physical abuse: One or more positive responses to physical abuse items such as hitting, kicking, pushing, slapping, burning, and other events that cause bodily harm or pain. Positive responses to psychological abuse, such as putting someone down, humiliating them, or making them feel bad. If the elderly have positive responses to the total number of items, such as is there anyone taking care of them if they get sick or a failure to meet an elderly person's basic needs. Financial abuse: One or more

positive responses to financial exploitation, such as illegally misusing an elderly person's money, property, or assets. One or more positive responses from the sexual abuse items.<sup>47,48</sup> The reliability (Cronbach's alpha) in this study was 0.88.

Substance use patterns were measured by the ASSIST questionnaire, which was validated by the World Health Organization, and assesses the pattern of life-time substance use, substance use in the past three months, a series of complications due to substance use, the impact of substance use on daily function, a concern of some one on the client's pattern of substance use, and if the client tried to end substance use. Question two up to seven is added, and the score of twenty-seven and greater was considered as people with specific substance use disorders (dependence), and those who used substances in the past 3 months were considered current substance users. The reliability (Cronbach's alpha) in this study was 0.84.<sup>49</sup>

## Operational Definitions

Substance use disorder (dependence): ASSIST score of 27 or above.<sup>49</sup>

Alcohol use disorder: ASSIST score of 27 or above.<sup>49</sup>

Cannabis use disorder: ASSIST score of 27 or above.<sup>49</sup>

Amphetamine (khat) use disorder: ASSIST score of 27 or above.<sup>49</sup>

Physical disability: Disability in at least one domain of the body, such as a lower limb, upper extremity, loss of vision, birth defect, etc.

Chronic disease: Elderly who has at least one chronic disease that has been diagnosed by a doctor.<sup>50</sup>

Multimorbidity: Elderly people who have been diagnosed with two or more chronic diseases.<sup>50</sup>

Mental illness: Elderly people who report having a mental illness that has been diagnosed by a psychiatrist.<sup>50</sup>

## Data Processing and Analysis

The data were edited, coded, and entered into EpiData version 3.1 and exported to SPSS version 25 for analysis. Descriptive statistics such as frequency, percentage, standard deviation, and mean were used to summarize the data. Bivariate logistic regression analysis was used to see the effect of each independent variable on the dependent variable. Variables with a *p* value of less than 0.25 in the bivariate analyses were considered as candidates for multivariable logistic regression. A multivariable logistic regression model was fitted to identify independent predictors of elderly abuse. Finally, variables with a *P* value of 0.05 or less were considered statistically significant in the final multivariable logistic regression model. Model fitness was checked by Hosmer and Lemeshow (Hosmer and Lemeshow = 0.73) and omnibus likelihood test (*P*-value: 0.02). The adjusted odds ratio (AOR) with a 95% confidence interval (CI) was computed to determine the strength of association between the variables of interest.

## Results

### Socio-Demographic Characteristics

Only 268 respondents participated, with a response rate of 99.3%. The mean age of the study participants was 74 (SD  $\pm$  12.5) years, and the minimum and maximum age were 60 and 98 years, respectively. More than half of the respondents (54.5%) were female. One hundred twenty (44.8%) participants were aged 80 and above, and concerning the religious distribution of study participants, 105 (39.2%) were orthodox. Regarding the educational level of participants, one hundred five (39.2%) could only read and write. Concerning the employment status of respondents, less than half (42.5%) were self-employed. As to the family size of the study participants, more than half (56.6%) were those who had a family size of 3–5 individuals. The majority of respondents (185, or 69.0%) were living with their spouses and children. More than half (51.9%) of the study participants had an average monthly income of 301–1200 Ethiopian birr (Table 1).

### Factors Related to Disease, Function, and Behavior

In this study, the number of elderly people living with a single chronic disease was 97 (36.2%), of which hypertension accounted for the highest number, 30 (30.9%), and the number of elderly people living with two or more chronic diseases was 66 (24.6%). Also in this study, the number of participants with mental illness was 44

**Table I** Sociodemographic Characteristics of Elderly Respondents in Mizan Aman Town, Bench Sheko Zone, Ethiopia, from May 1–30, 2021, (n=268)

Socio-Demographic Variables		Frequency	Percentage
Age	60–69	46	17.2
	70–79	102	38.1
	>80	120	44.7
Sex	Male	122	45.5
	Female	146	55.5
Marital status	Married	184	68.7
	Single	6	2.2
	Divorced	45	16.8
	Widowed	33	12.3
Ethnicity	Oromo	30	11.2
	Amhara	76	28.4
	Bench	67	25
	Kefa	50	18.7
	Tigrie	24	9
	Sheka	13	4.9
	Other	8	3
Religion	Orthodox	105	39.2
	Muslim	53	19.8
	Protestant	81	30.2
	Catholic	29	10.8
Occupation	Retired	9	3.4
	NGE	6	2.2
	Self-employed	114	42.5
	Housewife	61	22.8
	Farmer	78	29.1
Educational level	Unable to read and write	29	10.8
	Only Read and write	105	39.2
	Primary (1–8)	59	22
	Secondary (9–12)	52	19.4
	Diploma	19	7.1
	Degree and above	4	1.5
Average Monthly Income	0–300	66	24.6
	301–1200	139	51.9
	1201–2000	34	12.7
	2001–3199	20	7.5
	>3200	9	3.4
Living arrangement	Living alone	17	6.3
	Living with a spouse	10	3.7
	Living with spouse and children	185	69
	Living with other families	11	4.1
	Living with children's	45	16.8
Household size	<3	50	18.7
	3–5	151	56.6
	>5	66	24.7

(16.4%). Among the total participants, 23 (8.6%) of the elderly had a physical disability, and among them, more than half (12, or 52.2%) of the study participants were elderly with loss of lower limbs. In terms of substance use patterns, 87 (32.5%) of the total respondents had one or more substance use disorders, and 152 (71.6%), 100 (37.3%), and 52 (19.4%) were life-time alcohol users, current alcohol users, and people with alcohol use disorders, respectively. From the total respondents, 112 (42%), 89 (33%), and 12 (4.5%) were life-time tobacco users, current tobacco users, and

people with tobacco use disorders, respectively, and 23 (8%), 11 (4%), and 8 (3%) were lifetime cannabis users, current cannabis users, and people with cannabis use disorders, respectively. Furthermore, 112 (42%), 89 (33%), and 32 (12%) were lifetime khat users, current khat users, and people with khat use disorders, respectively (Table 2).

## The Prevalence of Overall Elder Abuse and Specific Elder Abuse

Of the total of 268 elderly participants, 112 (41.8%) were suffering from at least one type of elder abuse. Physical abuse accounted for 17 (15.1%) of total elder abuse, psychological abuse accounted for 42 (37.5%), neglect abuse accounted for 36 (32.1%), financial abuse accounted for 23 (20.5%), sexual abuse accounted for 8 (7.1%), and multiple abuse accounted for 16 (14.3%). Regarding the source of elder abuse, the majority of 98 (78.4%) were abused by families, and the remaining 27 (21.6%) were by neighbors. And as for the frequency of abuse, 86 (76.8%) were abused two or more times, and 26 (25.2%) were abused once only (Table 2).

## Bivariate Logistic Regression

In bivariate analysis; sex, age, marital status, religion, income, ethnicity, occupation, educational level, living arrangement, family size, chronic disease, physical disability, and substance use disorder were found to have a statistically significant association with elder abuse. However, in a multivariable logistic regression analysis; age, chronic disease, physical disability, family size, and substance use were found to be significantly associated with elder abuse.

Those elderly who had an age greater than 80 were 8.45 (AOR = 8.452, CI = 2.273, 31.425) times more likely to experience elderly abuse compared to those in the age group between 60–69 years. Physically disabled respondents were

**Table 2** Frequency of Disease, Functional, and Behavioral Related Factors Among Elderly in Mizan Aman Town, Bench Sheko Zone, Ethiopia, from May 1–30, 2021, (n=268)

S. no	Variables			Frequency	Percentage
1	Chronic disease Types of chronic diseases	Yes		97	36.2
		Diabetes mellitus		29	29.9
		Heart disease		16	16.5
		Hypertension		30	30.9
		Epilepsy		10	10.3
		Stroke		4	4.1
		HIV AIDS		8	8.2
2	Multi-morbidity	Yes		66	24.6
	Physical Disability	Yes		21	8
	Types of Disability	Lower limb		12	52.2
		Upper limb		3	13
		Loss of vision		6	26.1
3	Substance use	Alcohol Use	Life time	192	71.6
			Current	100	37.3
			AUD	52	19.4
		Tobacco Use	Life time	48	18
			Current	12	4.5
			TUD	12	4.5
		Cannabis Use	Life time	23	8
			Current	11	4
			CUD	8	3
		Khat Use	Life time	112	42
			Current	89	33
			KUD	32	12
		Poly substance use disorder		87	32.5
		Mental illness		44	16.4%

**Note:** AUD, TUD, KUD, and CUD stands for alcohol, baccho, khat, and cannabis use disorder, respectively.



5.652 times more likely to be abused than healthy elderly (AOR = 5.652, CI = 1.459, 21.894), and those with chronic diseases were four times more likely to develop elder abuse than those without the chronic disease (AOR = 3.972, CI = 1.898, 8.314). When compared to non-users, those who had substance use disorders were nearly four times more likely to be abused (AOR = 3.877, CI = 1.814, 8.286). Elderly abuse was also found to be 3.372 times more likely (AOR = 3.372 CI = 1.043, 10.903) in elderly people with a family size of less than three than in those with a family size of 3–5 (Table 3).

**Table 3** Bivariate and Multivariable Logistic Regression Association of Factors Associated with Elderly Abuse Among Elderly Living in Mizan Aman Town, Bench Sheko, Ethiopia, from May 1–30, 2021, (n=268)

Variables		Elder Abuse		COR (95% CI)	AOR (95% CI)	P- value
		Abused	Not Abused			
Age	60–69	14 (30.5%)	32 (69.5%)	1	1	1
	70–79	43 (42.2%)	59 (57.8%)	7.653 (2.553, 22.951)	7.928 (2.070, 30.362)	0.002*
	≤80	65 (54.2%)	55 (45.8%)	12.409 (4.186, 36.784)	8.452 (2.273, 31.425)	0.003*
Sex	Male	45 (36.9%)	77 (63.1%)	1	1	1
	Female	67 (45.9%)	79 (54.1%)	0.689 (0.422, 1.126)	1.890 (0.787, 4.538)	0.154
Marital status	Married	60 (32.6%)	124 (67.3%)	1	1	1
	Single	4 (66.7%)	2 (33.3%)	4.133 (0.730, 23.202)	4.464 (0.341, 87.602)	0.230
	Divorced	28 (62.2%)	17 (37.8)	3.404 (1.730, 6.698)	1.215 (0.349, 4.228)	0.734
	Widowed	20 (60.6%)	13 (39.4%)	3.179 (1.482, 6.821)	1.033 (0.269, 3.964)	0.938
Ethnicity	Oromo	11 (36.7%)	19 (63.3%)	0.759 (0.313, 1.840)	0.711 (0.261, 1.941)	0.744
	Amhara	28 (36.7%)	48 (63.3%)	1.008 (0.413, 2.385)	1.143 (0.450, 2.901)	0.993
	Bench	29 (43.3%)	38 (56.7%)	1	1	1
	Kefa	15 (30.0%)	48 (70.0%)	1.351 (0.518, 3.520)	1.101 (0.427, 2.836)	0.566
	Tigre	14 (58.3%)	10 (41.7%)	0.414 (0.138, 1.242)	2.508 (0.799, 7.875)	0.073
	Sheka	9 (69.2%)	4 (19.8%)	0.257 (0.064, 1.035)	3.487 (0.816, 14.910)	0.296
	Others	6 (75.0%)	2 (25.0%)	0.193 (0.33, 1.126)	3.724 (0.905, 36.194)	0.911
Religion	Orthodox	38 (36.2%)	67 (63.8%)	1	1	1
	Muslim	22 (41.5%)	31 (58.5%)	0.799 (0.407, 1.571)	1.2554 (0.612, 2.568)	
	Protestant	36 (44.40%)	45 (55.6%)	0.709 (0.392, 1.282)	1.348 (0.719, 2.527)	
	Catholic	16 (55.2%)	13 (44.8%)	0.461 (0.100, 1.060)	1.928 (0.768, 4.839)	
Occupation	Retired	4 (44.4%)	5 (55.6%)	1	1	1
	NGO	1 (16.7%)	5 (83.3%)	0.509 (0.129, 2.016)	0.836 (0.23–30.109)	0.219
	Self employed	33 (28.9%)	81 (71.1%)	0.315 (0.172, 0.576)*	0.164 (0.012, 12.109)	0.055
	Farmer	30 (49.1%)	31 (50.9%)	0.748 (0.382, 1.465)	1.034 (0.029, 37.282)	0.871
	Housewife	44 (56.4%)	34 (43.6%)	0.155 (0.017, 1.385)	0.156 (0.008, 3.022)	0.604
Educational level	Illiterate	18 (62%)	11 (38%)	2.885 (1.234, 6.745)	1.448 (0.025, 83.755)	0.858
	Read and write	38 (36.1%)	67 (63.9%)	1	1	1
	Primary	25 (48%)	34 (52%)	1.296 (0.675, 2.488)	0.456 (0.009, 24.102)	0.698
	Secondary	23 (44.2%)	29 (55.8%)	1.398 (0.711, 2.751)	0.847 (0.016, 44.803)	0.935
	Diploma	7 (36.8%)	12 (63.2%)	1.029 (0.373, 2.834)	1.986 (0.059, 66.297)	0.701
	Degree and above	1 (25.0%)	3 (75.0%)	0.588 (0.059, 5.850)	1.005 (0.072, 14.03)	0.993
Average monthly Income	0–300	30 (50%)	29 (50.0%)	1.206 (0.671, 2.169)	4.349 (0.363, 52.058)	0.246
	301–1200	63 (45.3%)	83 (54.6%)	1	1	1
	1201–2000	10 (29.4%)	24 (70.6%)	0.503 (0.224, 1.130)*	2.878 (0.229, 36.139)	0.413
	2001–3199	5 (25.0%)	12 (75.0%)	0.402 (0.139, 1.167)*	0.970 (0.69, 13.595)	0.982
	≥3200	6 (88.9%)	1 (11.1%)	0.151 (0.018, 1.238)	0.822 (0.06, 10.248)	0.872

(Continued)

**Table 3** (Continued).

Variables		Elder Abuse		COR (95% CI)	AOR (95% CI)	P- value
		Abused	Not Abused			
Living arrangement	Living alone	11 (64.7%)	6 (35.3%)	3.727 (1.316, 10.553)	0.488 (0.089, 2.687)	0.410
	With spouse	4 (40.0%)	6 (60.0%)	2.750 (0.550, 13.749)	0.274 (0.036, 2.073)	0.210
	With spouse and children	61 (32.9%)	124 (67.1%)	1	1	1
Family size	With other family	3 (27.3%)	8 (72.7%)	4.880 (0.931, 25.670)	0.267 (0.043, 1.663)	0.157
	With children	33 (73.3%)	12 (26.7%)	0.667 (0.202, 2.201)	0.304 (0.082, 1.125)	0.075
	<3	34 (68%)	16 (32%)	4.554 (2.070, 10.016)	3.372 (1.043, 10.093)	0.045*
	3–5	57 (37.7%)	94 (62.3%)	1	1	1
	>5	21 (31.8%)	45 (68.2%)	1.299 (0.703, 2.400)	0.585 (0.121, 2.866)	0.523
Chronic disease	Yes	58 (59.8%)	39 (41.2%)	3.22 (1.919, 5.411)	3.972 (1.898, 8.314)	0.011*
	No	54 (31.5%)	117 (68.5%)	1	1	1
Physical disease	Yes	14 (60.9%)	9 (39.10%)	4.474 (1.703, 11.749)	5.652 (1.459, 21.894)	0.011*
	No	98 (39.3%)	147 (60.7%)	1	1	1
SUD	Yes	57 (58.6%)	30 (41.4)	3.013 (1.801, 5.038)	3.877 (1.814, 8.286)	0.001*
	No	55 (31.9%)	126 (68.1%)	1	1	1

**Note:** \*Significant at P-value <0.05.

**Abbreviation:** SUD, substance use disorder.

## Discussion

This study identified the prevalence of specific substance use disorders, multimorbidity, physical disability, and elder abuse, and factors that are significantly associated with an increased risk of elder abuse in Mizan Aman town. The overall prevalence of elder abuse was 41.8%, and the prevalence of one or more substance use disorders, alcohol use disorder, khat use disorder, and tobacco use disorder was 32.5%, 19.4%, 12%, and 4.5%, respectively. Besides, the prevalence of physical disability and multiple chronic diseases was 8% and 24.6%, respectively. Furthermore, individuals who had a chronic disease, physical disability, substance use disorder, age greater than 80, and poor social support were at increased risk for elder abuse.

The prevalence of elder abuse in this study was higher than in a study conducted in the Mainland, China, where the prevalence of overall elder abuse was (32.2%), psychological abuse was (27.3%), and neglect abuse was (15.8%).<sup>50</sup> A study done in Ireland showed that 2.2% of elderly people had overall elder abuse, and another study done in Thailand also disclosed that 14.6% of the elderly had overall elder abuse, of which psychological abuse was 41.1% and financial abuse was 20.7%.<sup>36</sup> The discrepancy might be due to differences in socioeconomic status, differences in provisions and expectations of service, or welfare or social security levels in developing and developed countries.<sup>51</sup> However, this finding is lower than a study done in Yazd, Iran, which revealed that 79.6% of overall elder abuse with psychological abuse of (51.4%) and neglect abuse of (21.8%).<sup>52</sup> This gap might be due to the difference in sample size and study duration, because the time duration for other studies was throughout life experience, but the current study was conducted only in the past one year.

This finding is in line with a study conducted in Nepal, which found 47.4% of overall elder abuse, and the most common types of specific elder abuse were neglect abuse (35.4%) and financial abuse (8.1%). Again, this finding is relatively the same as a study conducted in South Carolina with 39.5% of overall abuse, and of that specific abuse, psychological abuse (12.9%) and financial abuse (6.6%) were the most common types of abuse for the elderly,<sup>53,54</sup> but lower when compared with a study conducted in Tehran, Iran, which showed that 90.4% of overall elderly abuse and psychological abuse (64.6%) and financial abuse (45.6%) were the major types of specific abuse.<sup>47</sup> The discrepancy might be a difference in the methodology used, the life expectancy of participants, and the study design.



The current finding is higher when compared to the study conducted in Yugoslavia and Macedonia, which revealed that (15.7%) of overall elder abuse, (25.7%) of psychological abuse, and (12%) of financial abuse.<sup>55</sup> Similarly, the finding is higher than a study conducted in Japan, which showed that the overall rate of elder abuse was 25.6%, and the most common types of specific abuse were psychological abuse (11.1%) and financial abuse (1.45%).<sup>56</sup> The inconsistency might be due to differences in socioeconomic status between developed and developing countries. The other possible reason might be a difference in social security and support levels. In civilized countries, the elderly have a full guarantee that prevents mistreatment and get the necessary care from caregivers like home nurses at each home. The current study is lower than a study conducted in South Africa, which showed that (64.3%) of overall elder abuse, 69.2% of financial abuse, and (30.9%) of physical abuse.<sup>57</sup> The discrepancy might be due to differences in sample size, study setting, or the study population for other studies, which were conducted on large, scattered rural study participants.

This study also showed that substance use disorder is also one of the risk factors for elder abuse. Elders who had substance use disorders or dependence were nearly four times more likely to experience elder abuse than their counterparts. This result is in line with the study conducted in Tamil, Nada, India, and Nepal.<sup>37,48</sup> The possible reason might be that elderly individuals with substance use disorder might have poor impulse control, poor decision-making capacity, and poor conflict resolution skills, and mistreatment might be countered by family members and care givers. Another possible explanation could also be that elderly people with substance use problems are prone to impaired body and cognitive functions due to decreased ability of the liver to process the drug and increased sensitivity of receptors to the drug, which can lead to them having basic functional impairment such as impaired daily living activities that can make them to be dependent on their care givers.<sup>28–31,33</sup> Elderly people are generally susceptible to the risk of substance use disorders due to their changing metabolism, body composition, and comorbid poor health conditions, which all influence the use of substances to treat themselves and to avoid their withdrawal symptoms if they are dependent on substance and they can be isolated from the community and result in economic deprivation.<sup>58</sup>

Another possible reason might be the cultural influence of substance use among the elderly in Ethiopia. In the context of Ethiopian culture, both khat and alcohol are the cultural drugs cultivated and produced in the home environment, respectively. As a result, Ethiopian elderly people are at a high risk of alcoholism, which can increase the risk of elder abuse. Additionally, khat, a known amphetamine-type drug cultivated in Ethiopia and chewed by the elderly even after their teeth are destroyed due to increased chewing of khat is another risk factor for elderly abuse. Individuals chew khat to manage their personal distress and excessive work load, and during prayer, mourning, and wedding ceremonies to induce alertness, energy, concentration, feel free, and avoid hunger during the daytime. They also use alcohol at night to self-medicate themselves regarding the stimulative effect of khat on having a good sleeping pattern as well as using khat during the early morning as an eye opener, culturally called jebena. When the consumption is excessive and chronic, they develop dependency characterized by cravings and skipping meals while chewing khat, which can result in decreased appetite, malnutrition, physical illness, reduced body weight, social isolation, and being unable to work without khat. Finally, they develop an amotivational syndrome, culturally called jezba, that leads them to poor self-care, poor social support, living on the street, using leftover khat, and begging for daily khat consumption, which can result in elder abuse. As a result, Ethiopian elders are extremely vulnerable to substance abuse, which can put them at risk of elder abuse.

In our study, age is one of the factors for elder abuse, which means that elder abuse increases with the age of respondents. This finding is in line with the study conducted in Ireland, and a study done in Tabriz, Iran.<sup>18,59–61</sup> Our study also shows that elderly people aged 80 and older were approximately nine times more likely to experience elder abuse compared to the age group between 60 and 69 years. The possible reasons might be that, as age increases, older people become weaker and more dependent in different ways. Additionally, family members or caregivers may not provide the necessary care due to resource constraints, and very aged people are easily perceived or express abuse.

This finding shows that elderly people with multimorbidity were four times more likely to experience elder abuse when compared to healthy elderly people. This finding is in line with a study conducted in Yazd, Iran, and a study done in Nigeria.<sup>19,43,46,62–64</sup> The possible reasons include the disease's long-term effects, lack of appropriate treatment due to financial constraints, insufficient attention for diseases among caregivers, increased functional impairment, and a high demand for health care that might lead to increased care dependence, health care utilization, and functional

dependence.<sup>19,43,62–66</sup> Another possible reason might be due to a deep-rooted cultural belief in our country that diseases are caused by supernatural power, and the first possible treatment options are using holy water in churches and using traditional medicines by traditional healers for both physical and mental illnesses. Giving priority to traditional treatment and modern treatment as the last option is a major problem in Ethiopia, which has led to a series of delays in modern treatment of the elderly, which might increase dependency and elder abuse.

This study shows that elderly people with physical disabilities were 5.652 times more likely to experience elder abuse compared to their counterparts. This finding is in line with a study conducted in the Republic of China<sup>50</sup> and Ireland.<sup>51</sup> This might be due to elderly people with disabilities being unable to carry out their daily activities, needing continuous care every time and being dependent on their care givers for survival, which might increase stress among care givers, and inadequate resources as well as unstable living arrangements might lead to elder abuse.<sup>23,24,26,27</sup> Another possible cultural explanation in Ethiopia could be that people with physical and mental disabilities were stigmatized and had social isolation. Individuals with disabilities were put at home or begging at churches and on the street for their daily survival. Most of the disabled people had no infrastructure for transportation, education, and treatment insurance.

According to this study, elderly people with poor social support were 3.372 times more likely to experience elder abuse than elderly people with good social support. This finding is in line with a study done in Egypt, the USA, China, which shows that elderly people with a smaller family size were four times more likely to experience elder abuse.<sup>57,67–71</sup> The possible reason might be that those elderly living with a small family size or living alone were usually neglected because those groups are dependent on their family members, but caregivers are too busy helping their aged parents. Another explanation could be also the elderly with poor social support are more likely to be socially isolated and show negative health conditions.<sup>72</sup> In addition poor social help can expose the elderly to stressful life events such as abuse of any type and delay in help seeking behavior.

## Limitations of the Study

As existing data shows, this is the first quantitative study to assess elder abuse and its predictors among Ethiopian elders. However, the scientific community need to understand the following gaps while understanding the results. Interviewer and recall bias, and participants might deny substance use history. The medical record was not checked to confirm their physical and mental illness. Moreover, this finding was not generalized to elders with severe mental illness who were not able mentally to give a consent. Also, this finding is not generalized to elders with severe medical illness as mentioned in the exclusion criteria.

## Conclusions

The overall prevalence of elder abuse is high among elderly in Ethiopia. According to this study, advanced age, poor social support, having chronic disease, being physically disabled, and substance use disorder were risk factors for elder abuse in Ethiopia. The contribution of this study was great for minister of health, regional and zonal health departments, and community health extension workers to engage in awareness creation and regular screening of elder abuse for early detection, timely management or referral, and follow-up visits in order to prevent elderly abuse and its negative impacts in Ethiopia. Furthermore, we also recommended to establish rehabilitation centers for the elderly with chronic diseases, advanced age, elderly living alone, elderly with substance use disorders, and elderly with physical disability in order to improve their quality of life and reduce their social burden. Further studies using strong designs incorporating large sample size is recommended to explore more about elderly abuse and its risk factors.

## Abbreviations

AOR, Adjusted odds ratio; ASSIST, Alcohol, Smoking; Substances, Involvement Testing; CI, Confidence interval; COR, Crude Odds Ratio; DC, Data Collectors; DM, Diabetes Mellitus; ERB, Ethical Review Board; ETB, Ethiopian Birr; HEW, Health Extension Workers; SD, Standard Deviation; WHO, World Health Organization.

## Ethics Approval and Consent to Participate

Ethical approval was obtained from the Jimma University Institute of Health Institutional Review Board before its commencement. The procedure was carried out in accordance with the Declaration of Helsinki. Permission was obtained from the Mizan Aman town administrative office. Confidentiality was guaranteed by excluding names or any other personal identifiers from data collection sheets and reports. Participants were informed about the purpose of the study, the advantages of the study, and their rights to even stop the procedure in the middle of the study. Informed consent was obtained from the participants and all methods were carried out in accordance with relevant guidelines and regulations.

## Data Sharing Statement

Datasets obtained or analyzed during the study are available from the corresponding author with reasonable request.

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## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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## Disclosure

The authors declare that they have no competing interests.

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