Original Article

Prevalence and factors associated with suboptimal foot self-care practices among adult diabetic patients in governmental hospitals in Hawassa city, Sidama Region, Ethiopia: A cross-sectional study

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Abstract

Background: Diabetic foot self-care is essential in preventing foot ulcers and lower extremity amputations, two severe complications of diabetes. However, poor self-care practices are common and significantly contribute to these outcomes. This study aims to assess the prevalence of poor foot self-care practices and identify associated factors among adult diabetic patients in Hawassa City, Sidama, Ethiopia.

Methods: A hospital-based cross-sectional study was conducted from February to March 2023 among 420 diabetic patients using systematic random sampling. Data were collected using a structured interviewer-administered questionnaire and analyzed using binary logistic regression in SPSS version 25. Variables with a P-value < 0.25 in bivariate analysis were included in the multivariate model. Statistical significance was set at P < 0.05.

Results: The response rate was 100%. One-third (33.3%) of participants exhibited poor foot self-care practices. Significant factors associated with poor self-care included being a private employee [AOR = 0.27, 95% CI: 0.08–0.89], having foot care information [AOR = 0.50, 95% CI: 0.29–0.88], poor family support [AOR = 1.85, 95% CI: 1.10–3.09], poor knowledge [AOR = 2.26, 95% CI: 1.34–3.81], and alcohol consumption [AOR = 8.60, 95% CI: 2.65–27.52].

Conclusion: One-third of diabetic patients had poor foot self-care practices. Key associated factors included lack of foot care knowledge, inadequate family support, and alcohol consumption. Interventions to improve patient education and family involvement are essential to enhance foot self-care practices.

Keywords: Diabetic foot care, self-care practices, Ethiopia

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Introduction

Globally, diabetes continues to rise at an alarming rate, with 537 million diabetics reported in 2021, projected to increase to 643 million by 2030 and 783 million by 2045, according to the International Diabetes Federation (1). In Africa, over half of the adult diabetic population resides in some of the continent's most populous countries, such as South Africa, the Democratic Republic of Congo, Nigeria, and Ethiopia (2). The growing prevalence of diabetes in these regions highlights the urgent need to address its associated complications and improve patient care strategies.

Diabetic patients are at a significantly higher risk of developing multiple complications, including cardiovascular, renal, and ophthalmic conditions, along with lower limb issues (2). Among these, foot ulcers and amputations are particularly devastating and can severely impact a patient's quality of life. Diabetic foot complications often arise from peripheral neuropathy, leading to sensory loss in the feet, combined with peripheral vascular disorders, which reduce blood flow to the tissues, increasing the risks of infection, gangrene, and, ultimately, amputation (3).

To combat these risks, diabetic foot self-care practices are essential. These practices, which are preventive interventions carried out at home, aim to reduce the likelihood of foot ulcers (4). Diabetic foot self-care involves regular inspection of footwear, avoiding walking barefoot, refraining from using tight socks, maintaining proper hygiene through foot washing and drying, cutting nails properly, and applying emollients to prevent skin dryness (5). By adhering to such practices, patients can significantly lower the chances of developing gangrenous or ulcerated feet (6).

However, a major challenge to the prevention of diabetic foot complications is the lack of awareness and education regarding the symptoms, risks, and early detection of diabetic foot issues. Identifying risk factors and implementing proper foot care practices are critical in reducing these complications (7). Strategies such as patient education, interdisciplinary care, and close monitoring have been shown to alleviate the burden of diabetic foot disease. Furthermore, Poor diabetic foot care practice increases the risk of ulceration, infection, and limb loss. It imposes heavy emotional, financial, and societal burdens, affecting not only patients but also their families and healthcare systems (8,9).

The global prevalence of diabetic foot ulcers is approximately 6.3%, with North America reporting the highest prevalence at 13.0%, while Oceania reported the lowest at 3.0%. In Africa, the prevalence was 7.2%, higher than in Asia (5.5%) and Europe (5.1%) (10). Specifically in Ethiopia, the prevalence of diabetic foot ulcers varies by region, with rates ranging from 8.47% in Jimma to 31.1% in Addis Ababa (11). These regional differences suggest that diabetic foot complications are a significant public health concern, particularly in low-resource settings where access to care may be limited.

Diabetes-related lower extremity complications (DRLECs) account for approximately 80% of all lower limb amputations worldwide, leading to significant reductions in quality of life (12). In fact, one lower limb is amputated every 20 seconds due to diabetic complications, with 85% of these cases preceded by foot ulcers (7). Early detection and treatment of diabetic foot problems can reduce ulcer incidence by 44% to 85% and lower limb amputations by 49% to 87% (13). Therefore, focusing on preventive measures and improving foot self-care education is crucial to

reducing the global burden of diabetic foot disease.

Diabetic patients with peripheral neuropathy are significantly more prone to developing foot ulcers. Studies indicate that these patients are eight times more likely to develop foot ulcers compared to those without neuropathy, and individuals with severe neuropathy are 24 times more likely to be affected (6). In the Ghana Volta region, 63% of diabetic patients demonstrated appropriate knowledge about foot self-care practices (14). Meanwhile, a systematic review and meta-analysis conducted in Ethiopia found that the prevalence of foot care practice was 58% (15). However, in Gonder, 46.4% of diabetic patients exhibited poor foot self-care practices (4). In contrast, in Jimma, 92.5% of diabetic patients regularly examined their feet, and 82.27% bathed their feet at least once a day (16).

Various factors increase the risk of foot ulceration and limb amputation in diabetic patients, particularly those with older age, long-term diabetes, poor glycemic control, peripheral neuropathy, smoking, foot deformities, peripheral arterial disease, and a history of foot ulceration or limb amputation. These risks are further intensified in individuals with visual impairment and diabetic kidney disease, especially in patients undergoing dialysis. Additionally, factors such as sex, educational level, place of residence, and participation in diabetes education programs influence the quality of foot care among diabetic patients (16, 17). Despite diabetes being a serious health issue with several complications, research in Ethiopia has often overlooked foot self-care practices, leading to a significant knowledge gap on the topic. Therefore, this study aims to assess foot self-care practices and associated factors among adult diabetic patients in Ethiopia.

diabetes, or had undergone previous both legs amputations above the ankle were excluded.

Methods and materials

Study design and period

This was a hospital-based cross-sectional study conducted from February 20 to May 31, 2023, in Hawassa City, Sidama Region, Ethiopia.

Study Setting

The study was conducted at the Hawassa city administration's governmental hospitals located in the Sidama region of Ethiopia. The city administration is located in the city of Hawassa, 275 km from the capital city of Ethiopia, Addis Ababa. According to 2024 the Regulatory Department of the Hawassa City Health Office, now in the city has five governmental public hospitals, which are Hawassa University Comprehensive Specialized Hospital, Adare General Hospital, Hawela Tula Primary Hospital, Motite Furra Primary Hospital and Alamura Primary Hospital.

Source population

All Adult diabetic patients who attended the diabetic follow-up clinic of the Hawassa city administration governmental hospitals were considered as source populations of the study.

Study Population

The study population included all adult diabetic patients attending the diabetic follow-up clinics at the four governmental hospitals during the study period.

Inclusion and Exclusion Criteria

Inclusion criteria were adult diabetic patients aged 18 years or older with at least one month of diabetes diagnosis. Patients who, had gestational

Sample Size and Sampling Procedure

The sample size was calculated using the single population proportion formula, assuming a

46.4% prevalence of poor foot self-care practices based on previous studies (4). A total of 420 participants were included after adjusting for a 10% non-response rate. Systematic random sampling was used to select participants from the hospital registry. The sampling interval (k) for each hospital was calculated and used to select the study units as follows: Hawassa University Comprehensive Specialized Hospital (79/29 = 3), Adare General Hospital (856/306 = 3), Hawela Tula Primary Hospital (148/53 = 3), and Motite Furra Primary Hospital (81/29 = 3).

Data Collection Tools and Procedures

Data were collected using a pre-tested, structured, interviewer-administered questionnaire, translated into Sidamigna and Amharic. The questionnaire was adapted from the Nottingham Assessment of Functional Foot Care and validated in a previous study. Four trained health professionals administered the survey.

Operational definitions:

Comorbidity: A diabetic patient was regarded as having comorbidity if they also had a known condition that was unrelated to diabetes mellitus: hypertension, heart failure, asthma, others.

Diabetic complications: By looking at the patient chart, it was determined that diabetic patients had complications if they had any of the following: retinopathy, nephropathy, neuropathy, myocardial infarction, or stroke.

Family support: Participants were characterized as having good family support if their scores on the family adaptation, partnership, development, affection, and resolution (APGAR) scale were mean or above. Participants with scores below the mean were categorized as having poor family support. Scale was scored as follows: Almost always (2 points), some of the time (1) point, or hardly ever (0). The scores for each of the five questions are then totaled. A score of 7 to 10 suggests a highly functional family. A score of 4 to 6 suggests a moderately dysfunctional family. A score of 0 to 3 suggests a severely dysfunctional family.

Good Foot self-Care Practice: Participants who scored above the mean on practice-related questions were considered to have good practice.

Poor foot self-care practice: Participants who scored below the mean on practice-related questions were considered to have poor practices.

Physical activity: at least 30 minutes of aerobic activity per day or $\geq$ 3 days per week was considered good physical activity.

Good knowledge: Patients with DM who score greater than or equal to the mean score on knowledge-related questions were considered to have good knowledge.

Poor knowledge: Patients with DM who score less than the mean score on practice-related questions were considered to have poor knowledge.

Data Management and Analysis

Data were entered into EpiData version 4.6 and analyzed using SPSS version 25. Descriptive statistics were used to summarize socio-demographic and clinical characteristics. Binary logistic regression was used to assess the association between foot self-care practices and potential predictors. Multicollinearity was checked before running multivariable logistic regression analysis to see if there was intercorrealtedness between independent variables by using variance inflation factor (VIF). Accordingly, if the value of VIF is <10, then multicollinearity is not a problem. Crude and adjusted odds ratios with their 95% confidence intervals were calculated and variables having p value < 0.05 in the multivariable logistic regression were considered as significantly associated.

Results

Socio-Demographic Characteristics

Of the 420 participants, 51.9% were male, and the median age was 50 years (IQR =24). The majority of participants (68.1%) were married, and 33.3% had attained a college-level education or higher. More than half (64.3%) resided in urban areas (Table 1).

Table 1: Socio-demographic characteristics of diabetic patients (n=420)

Variable	Category	Number	Percent
Age in years	18-27	31	7.4
	28-37	58	13.8
	38-47	91	21.7
	48-57	90	21.4
	58-67	81	19.3
	>67	69	16.4
Sex	Male	218	51.9
	Female	202	48.1
Marital status	Single	84	20.0
	Married	286	68.1
	Widowed	33	7.9
	Divorced	17	4.0
Educational status	Cannot read and write	91	21.7
	Primary	90	21.4
	Secondary	99	23.6
	College and above	140	33.3
Occupation	Farmer	69	16.4
	Merchant	87	20.7
	Government employee	108	25.7
	Private employee	36	8.6
	Student	33	7.9
	Unemployed	87	20.7

Table 1 continued

Variable	Category	Freque-ncy	Percent
Income (monthly in birr)	2500-8900	214	51.0
	>8900	34	8.1
	<2500	172	41.0
Residence	Rural	150	35.7
	Urban	270	64.3

Clinical Characteristics

Among the total diabetics' participants, 58.8% had type 2 diabetes, and 40.5% had at least one comorbid condition, with hypertension being the most common (26%). The prevalence of diabetic foot ulcers was 16.9% (95% CI [13.31-20.5]) (Table 2).

Table 2: Clinical characteristics of diabetic patients (n=420)

Variable	Category	Number	Percent
Type of diabetes	Type 1	173	41.2
	Type 2	247	58.8
Family history of diabetes	Not sure	103	24.5
	Yes	121	28.8
	No	196	46.7
Duration of DM in years	1-5	187	44.5
	6-10	134	31.9
	>10	99	23.6
History of comorbidity	Yes	170	40.5
	No	250	59.5
Type of comorbidity (n=170)	Hypertension	109	26.0
	Heart failure	32	7.6
	Asthma	17	4.0
	Others	12	2.85
Diabetic complication	Yes	114	27.1
	No	306	72.9
Type of complication (n=114)	Nephropathy	14	3.3
	Neuropathy	49	11.7
	Retinopathy	29	6.9
	Cardiovascular disease	22	5.2

Table 2 continued

Variable	Category	Number	Percent
History of foot ulcer	Yes	71	16.9
	No	349	83.1
Type of medication	Injection only	168	40.0
	Pills only	170	40.5
	Both injections and pills	82	19.5
Foot self-care information	Yes	266	63.3
	No	154	36.7
Source of information(n=266)	health care provider	237	56.4
	Social and mass media	16	3.8
	My relatives	13	3.1

Family support

In this study, 66.7% of diabetic patients reported good family support. Additionally, 54.5% were consistently satisfied with family help, 52.1% with problem-solving discussions, and 47.4% with support for lifestyle changes (Table 3).

Behavioural Characteristics

Physical activity was practiced by 46.7 % (n=197) of participants, while alcohol consumption was reported by 5.2% (n=22) (Figure 1).

Knowledge of diabetic patients

Of the study participants, 62.1% (95% CI [57,66]) (n = 261) had good knowledge about foot self-care practices; 91.4 (n = 384) knew the impact of regular taking of medication on the reduction of diabetic complications; an inspection of feet for foot ulcers was known to 57.1% (n = 240); and 47.4% (n = 199) participants knew wounds and infections might not heal quickly. The frequency of washing feet and wearing shoes and socks was known by 80.7% (n = 339) and 77.1% (n = 324), respectively. The temperature of water for washing feet was correctly answered by 31.7% (n=133) participants, and 63.1% (n=265) participants knew the impact of smoking on diabetic progression (Table 4).
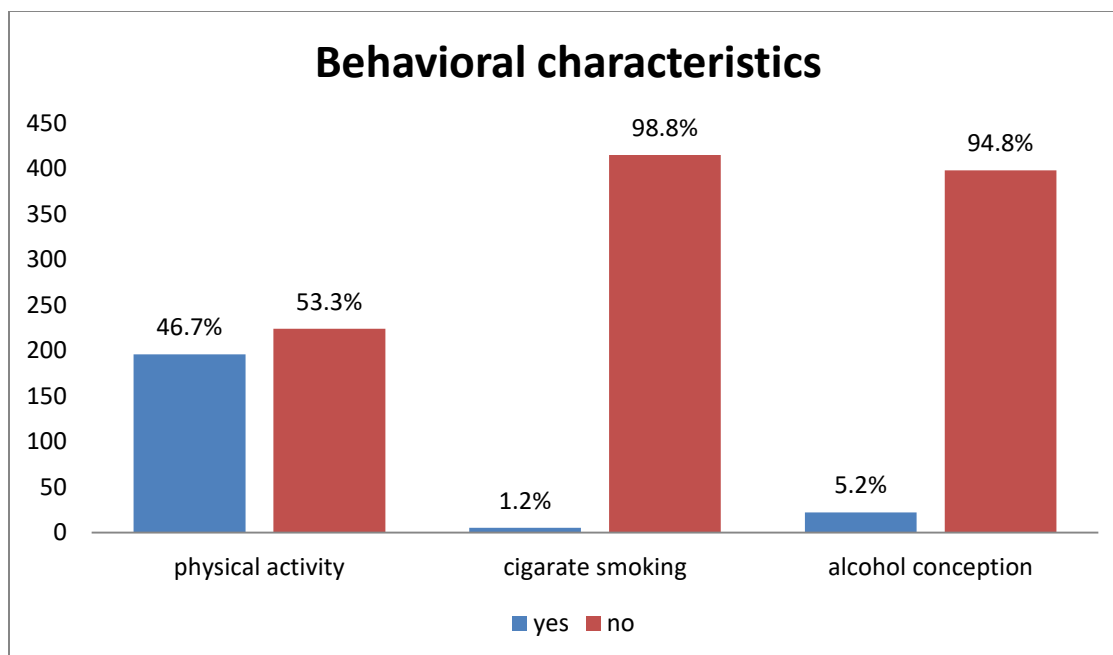
Table 3: Family support of diabetic patients (n=420)

Variables	Category	Frequency	Percent
Satisfied with the help of family when the same thing was troubling.	Almost always	229	54.5
	Some of the time	175	41.7
	Hardly ever	16	3.8
Satisfied with the way families discuss items of common interest and share problem-solving	Almost always	219	52.1
	Some of the time	178	42.4
	Hardly ever	23	5.5
Satisfied with the way the family accepted their wishes to take on new activities or make lifestyle changes	Almost always	199	47.4
	Some of the time	191	45.5
	Hardly ever	30	7.1
Satisfied with the family expressing affection and responding to feelings such as anger, sorrow, and love	Almost always	218	51.9
	Some of the time	181	43.1
	Hardly ever	21	5.0
Satisfied with their family and the amount of time spent together	Almost always	205	48.8
	Some of the time	190	45.2
	Hardly ever	25	6.0

Figure 1: .Behavioral characteristics of diabetic patients

Foot Self-Care Practices

In this study, 33.3% (95% CI [29–38]). of participants had poor foot self-care practices (Figure 2). Daily foot washing was reported by 50.5%, while only 9.8% used moisturizing cream on their feet daily. About 45.7% of participants wore slippers with fastening (Table 5).

Table 4: Knowledge of diabetic patients (n=420)

| Variable	Category	Frequency	Percent
Take medication regularly	No	36	8.6
	Yes	384	91.4
Controlling blood glucose can reduce DM complication	No	112	26.7
	Yes	308	73.3
DM patients should Look after their feet because wounds and infections do not heal quickly	No	221	52.6
	Yes	199	47.4
DM patients should Look after their feet because they may get foot ulcers	No	180	42.9
	Yes	240	57.1
Effect of Smoking on DM Progression	No	155	36.9
	Yes	265	63.1
Frequency of foot washing	No	81	19.3
	Yes	339	80.7
The temperature of water to use for washing feet	Cold water	287	68.3
	Warm water	133	31.7
Frequency of wearing shoes	Rarely	96	22.9
	Always	324	77.1
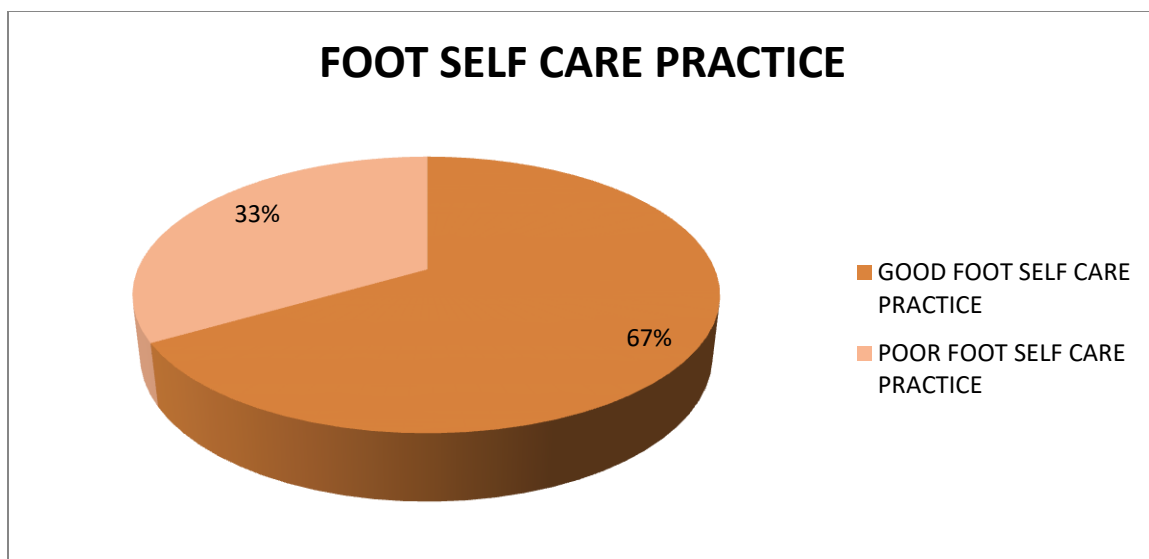
Figure 2: Diabetic patient's foot self-care practices

Factors Associated with Poor Foot Self-Care

Multivariate analysis revealed that being a private employee (AOR = 0.27, 95% CI: 0.08–0.89), having access to foot care information (AOR = 0.50, 95% CI: 0.29–0.88), and having good family support (AOR = 1.85, 95% CI: 1.10–3.09) were protective factors against poor foot care practices. Conversely, alcohol consumption (AOR = 8.6, 95% CI: 2.65–27.52) and poor knowledge of foot care (AOR = 2.26, 95% CI: 1.34–3.81) significantly increased the risk of poor self-care (Table 6).

Table 5: Diabetic patient's foot self-care practices (n=420)

Variable	Category	Frequency	Percent
Frequency of foot examination	Once a week or less	197	46.9
	More than once a day	44	10.5
	Once a day	99	23.6
	2-6 times a week	80	19.0
Check shoes before putting them on	Never	40	9.5
	Often	43	10.2
	Sometimes	223	53.1
	Rarely	114	27.1
Check shoes after when taking them off	Never	54	12.9
	Often	62	14.8
	Sometimes	218	51.9
	Rarely	86	20.5

Table 5 continued

Variable	Category	Frequency	Percent
Frequency of washing feet	A few days a week	33	7.9
	More than once a day	76	18.1
	Once a day	212	50.5
	Most days a week	99	23.6
Check that feet are dry after washing	Never	34	8.1
	often	57	13.6
	Sometimes	210	50.0
	Rarely	119	28.3
Do drying between toes	Rarely/never	88	21.0
	Always	175	41.7
	Often	49	11.7
	sometimes	108	25.7

Table 5 continued

Variable	Category	Frequency	Percent
Use a moisturizing cream on the feet	Never	146	34.8
	Daily	41	9.8
	Once a week	82	19.5
	About once a month	151	36.0
Put moisturizing cream between the toe	Daily	132	31.4
	About once a week	90	21.4
	About a month	48	11.4
	Never	150	35.7
Toenails cut	Never	134	31.9
	Less than once a month	117	27.9
	About e once a week	78	18.6
	Once a week	91	21.7
Wear slippers with no fastening	Most of the time	86	20.5
	Sometimes	78	18.6
	Never	192	45.7
	Rarely	64	15.2
Wear trainers	Never	82	19.5
	Most of the time	61	14.5
	Sometimes	211	50.2
	Rarely	66	15.7
Wear artificial fiber	Most of the time	90	21.4
	Some times	162	38.6
	Rarely	73	17.4
	Never	95	22.6

Table 5 continued

Variable	Category	Frequency	Percent
Wear shoes without socks/tights/stoking	Often	43	10.2
	Never	103	24.5
	rarely	63	15.0
	sometimes	211	50.2
Change socks/tights/stoking	Less than four times a week	88	21.0
	More than once a day	91	21.7
	Daily	192	45.7
	4-6 times a week	49	11.7
Walk around the house in bare feet	Often	45	10.7
	Sometimes	121	28.8
	Rarely	72	17.1
	Never	182	43.3
Walk outside with bare feet	Often	35	8.3
	Sometimes	97	23.1
	Rarely	69	16.4
	Never	219	52.1
Put feet near the fire	Often	31	7.4
	Sometimes	95	22.6
	Rarely	43	10.2
	Never	251	59.8
Put the dry dressing on a blister	never	197	46.9
	Rarely	68	16.2
	Sometimes	143	34.0
	Often	12	2.9
Put dry dressing a dry dressing on cut/burn/graze	never	204	48.6
	Rarely	65	15.5
	Sometimes	139	33.1
	Often	12	2.9

Table 5: Factors associated with foot self-care practice

Variables	Category	Foot self-care practice		OR with 95% CL	
		Good	Poor	COR	AOR
Occupation	Farmer	41	28	1	
	Merchant	60	27	0.90(0.48,1.71)	0.59(0.25,1.36)
	government employee	79	29	0.53(0.29,0.99)	0.56(0.23,1.33)
	private employee	28	8	0.48(0.26,.86)	0.27(0.08,0.89)*
	Student	27	6	.284(.112,.717)	0.33(0.09,1.24)
	Others	45	42	.210(.074,.594)	1.02(0.45,2.33)
Foot self-care information	Yes	203	63	0.31(0.20,0.47)	0.50(0.29,0.88)*
	No	77	77	1	
Family support	poor family support	78	62	2.06(1.35,3.14)	1.85(1.10,3.09)*
	good family support	202	78	1	
Drinking alcohol	Yes	8	14	5.48(2.08,14.4)	8.6(2.65,27.52)*
	No	277	121	1	
Knowledge of the patient	poor knowledge	84	77	2.85(1.87,4.34)	2.26(1.34,3.81)*
	good knowledge	196	63	1	

AOR, adjusted odds ratio; COR, crude odds ration; *statistically significant at p-value < 0.05

Discussion

In this study, the proportion of diabetic patients who practice poor foot self-care was found to be 33.3% (95% CI [29–38]). The finding was consistent with a previous study conducted in Hawassa referral hospital, Ethiopia, which was (34.8%) (18), Spain (30.2%) (19), and Turkey (29.5%) (20). However, this finding was lower than studies conducted in Ethiopia (42%) (21), Gondar Ethiopia (46.4%) (95% CI [41.1-51.6]) (4), and Kenya (51.2%) (22). These discrepancies may be attributed to differences in participant characteristics, data collection methods, study settings, sample sizes, and socioeconomic factors

One study used a systematic review and meta-analysis to assess diabetic self-care practices in Ethiopia, focusing on four domains: food choice, physical activity, foot care, and blood glucose monitoring. However, the analysis was limited to specific regions; potentially underestimating the overall prevalence of poor foot care practices. (21). The study conducted in Gondar was done in one comprehensive, specialized hospital, which may increase bias and underestimate foot care practice (4). In Kenya, the study was conducted on one hundred thirty-three study participants with type 2 DM patients, and foot care practice was assessed using ten-foot care practice-related questions, which may underestimate the level of foot care practice (22).

The current study, on the other hand, conducted on type 1 DM and type 2DM, used the Nottingham assessment of functional foot care, which is a valid and reliable tool to assess diabetic foot care practice and is conducted at all health facility levels, like primary, general, and comprehensive specialized hospitals, and

governmental hospitals found in city administration.

Diabetic patients employed in the private sector were 73% less likely to engage in poor foot self-care practices compared to those working as farmers.. The reason for this may be that employees can easily access the internet, which provides information to help them understand the disease process and their self-care practices. They also have access to meetings with different people, allowing them to receive information from coworkers. This study is consistent with a previous study conducted in North Shewa, Ethiopia (23).

Those respondents who had previous information about foot self-care practices were nearly 50% less likely to have poor foot self-care practices compared to their counterparts. The study was consistent with studies conducted in Diredawa (24), North Shewa (23), Gondar Ethiopia(4), and Istanbul, Turkey (25). People who have previous information about health can take better care of their health because they understand the damage that the disease can cause and update their understanding through books and social media

The participants who were drinking alcohol were nearly nine times more likely to have poor foot self-care practices than their counterparts. Similar findings were reported by a study conducted in southwest Ethiopia. This might be because drinking alcohol can lower self-esteem (26).

In this study, diabetic patients who have poor family support were nearly two times more likely to have poor foot self-care practices than those who have good family support. This finding is consistent with a study conducted in Gondar (4) and Tigray, Ethiopia (27); this might be because family increases one's pleasure and satisfaction. Spending time with family can lower stress and anxiety and promote a healthy life.

Participants who had poor knowledge about foot self-care practices were two times more likely to have poor foot self-care practices than those who had good family support. This finding is consistent with a study conducted in Dessie (17), Diredawa (24), Benishangul Ethiopia(28), and a primary health center in Kuwait (29). This may be the person who is knowledgeable about health and cares about his health, so the opportunity to take care of him expands.

Conclusion

The study has demonstrated that a significant proportion of diabetic patients in the sample have inadequate foot self-care practices. Poor foot care is particularly associated with factors such as alcohol consumption and lack of knowledge, while access to information, employment type, and family support serve as protective factors. These findings underscore the need for targeted interventions aimed at improving diabetic foot self-care, particularly through enhanced education, awareness campaigns, and family involvement. Health professionals should prioritize patient education on the importance of regular foot care, the impact of lifestyle behaviors, and the proper management of diabetes-related complications. Additionally, community health initiatives should focus on reducing barriers to accessing foot care information, especially among high-risk groups.

Acknowledgement

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Ethical considerations

Ethical clearance was obtained from the Institutional Review Board (IRB) of College of Medicine and Health Sciences, Hawassa University. Verbal consent of the respondent was taken prior to data collection. Privacy and confidentiality were maintained. Withdrawal from the study at any point if they wished was assured.

Data availability statement

The data of the study is available and can be provided whenever requested

Conflicts of interest

The authors declare that there is no conflict of interest regarding the publication of this paper.
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References

1. IDF Diabetes Atlas. IDF Diabetes Atlas 2021. Available from https://diabetesatlas.org/atlas/tenth-edition/.
2. Mutyambizi C, Pavlova M, Chola L, Hongoro C, Groot W. Cost of diabetes mellitus in Africa: A systematic review of existing literature. Global Health. 2018;14(1):1–13.
3. Abdulghani HM, AlRajeh AS, AlSalman BH, AlTurki LS, AlNajashi NS, Irshad M, et al. Prevalence of diabetic comorbidities and knowledge and practices of foot care among diabetic patients: A cross-sectional study. Diabetes, Metab Syndr Obes Targets Ther. 2018;11:417–25.
4. Mekonen EG, Demssie TG. Preventive foot self-care practice and associated factors among diabetic patients attending the University of Gondar Comprehensive Specialized Referral Hospital. BMC Endocr Disord [Internet]. 2022;1–11. Available from: https://doi.org/10.1186/s12902-022-01044-0
5. Guidelines I, Disease DF. IWGDF Guideline on the prevention of foot ulcers in persons with diabetes of Diabetic Foot Disease. 2019;
6. Shaki O, Gupta G, Rai S, Gupta T, Kumar Rv, Upreti V, et al. Awareness regarding foot self-care practices among diabetic patients in the Northeast part of India. Can primary care physicians make a difference? A hospital-based cross-sectional study. J Fam Med Prim Care. 2022;11(5):1834.
7. Edmonds M, Manu C, Vas P. The current burden of diabetic foot disease. J Clin Orthop Trauma [Internet]. 2021;17:88–93. Available from:
https://doi.org/10.1016/j.jcot.2021.01.017
8. Guidelines P, Development GC. IWGDF Guidelines on the prevention and management of diabetic foot disease. 2019;
9. Syndrome M. Diabetic Foot Self-Care Practices Among Adult Diabetic Patients : A Descriptive Cross-Sectional Study. 2020;4779–86.
10. Zhang P, Lu J, Jing Y, Tang S, Zhu D, Bi Y. Annals of Medicine Global epidemiology of diabetic foot ulceration : a systematic review and meta-analysis. 2017;3890.
11. Tolossa T, Mengist B, Mulisa D, Fetensa G, Turi E, Abajobir A. Prevalence and associated factors of foot ulcer among diabetic patients in Ethiopia: A systematic review and meta-analysis. BMC Public Health. 2020 Jan 10;20(1).
12. Zhang Y, Lazzarini PA, McPhail SM, van

Netten JJ, Armstrong DG, Pacella RE. Global disability burdens of diabetes-related lower-extremity complications in 1990 and 2016. Diabetes Care. 2020 May 1;43(5):964–74.

13. Abdissa D, Adugna T, Gerema U, Dereje D. Prevalence of Diabetic Foot Ulcer and Associated Factors among Adult Diabetic Patients on Follow-Up Clinic at Jimma Medical Center, Southwest Ethiopia, 2019 : An Institutional-Based Cross-Sectional Study. 2020;2020.

14. Sena L, Felix T, Nyande K, Agordoh PD, Taful S. Knowledge and practice of diabetic foot care and the prevalence of diabetic foot ulcers among diabetic patients of selected hospitals in the Volta Region, Ghana.

15. Gemeda ST, Woldemariam ZB. Assessment of self-care practice amongst patients with type II diabetes attending Adama Hospital Medical College, Ethiopia. BMC Endocr Disord. 2022 Dec;22(1).

16. Hirpha N, Tatiparthi R, Mulugeta T. Diabetic foot self-care practices among adult diabetic patients: A descriptive cross-sectional study. Diabetes, Metab Syndr Obes Targets Ther. 2020;13:4779–86.

17. Tuha A, Faris AG, Andualem A, Mohammed SA. Knowledge and practice on diabetic foot self-care and associated factors among diabetic patients at the Dessie referral Hospital, northeast Ethiopia: Mixed method. Diabetes, Metab Syndr Obes Targets Ther. 2021;14:1203–14.

18. Degefa G, Wubshet K, Tesfaye S, Hirigo AT. Predictors of Adherence Toward Specific Domains of Diabetic Self-Care Among Type-2 Diabetes Patients. Clin Med Insights Endocrinol Diabetes. 2020;13.

19. González-de la Torre H, Quintana-Lorenzo ML, Lorenzo-Navarro A, Suárez-Sánchez JJ, Berenguer-Pérez M, Verdú-Soriano J. Diabetic foot self-care and concordance of 3 diabetic foot risk stratification systems in a basic health area of Gran Canaria. Enferm Clin. 2020 Mar 1;30(2):72–81.

20. Yılmaz Karadağ F, Saltoğlu N, Ak Ö, Çınar Aydın G, Şenbayrak S, Erol S, et al. Foot self-care in diabetes mellitus: Evaluation of patient awareness. Prim Care Diabetes. 2019 Dec 1;13(6):515–20.

21. Ketema DB, Leshargie CT, Kibret GD, Assemie MA, Alamneh AA, Kassa GM, et al. Level of self-care practice among diabetic patients in Ethiopia: A systematic review and meta-analysis. BMC Public Health. 2020 Mar 12;20(1).

22. syombua c, mwenda m, mbugua rg, njau s. Determinants of foot self-care practices among diabetic patients attending diabetic clinic at a referral hospital, Meru county - determinants of foot self-care practices among diabetic patients attending diabetic clinic at a referral. 2019;(october).

23. Region O, Sahile LZ. Diabetic Self-Care Knowledge and Associated Factors Among Adult Diabetes Mellitus Patients on Follow-Up Care at North Shewa Zone Government. 2021;2111–9.

24. Getie A, Geda B, Alemayhu T, Bante A, Aschalew Z. Self-care practices and associated factors among adult diabetic patients in public hospitals of Dire Dawa administration, Eastern Ethiopia. 2020;1–8.

25. Diabetes PC. Foot self-care in diabetes mellitus : Evaluation of. 2019;1–6.

26. Kassahun T, Gesesew H, Mwangi L, Eshetie T. Diabetes-related knowledge, self-care behaviors and adherence to medications among diabetic patients in Southwest Ethiopia: A cross-sectional survey. BMC Endocr Disord. 2016 May 31;16(1).

27. Molalign G, Id T, Weharei MA, Kidanu HTM, Gebrekidan KG, Gebregiorgis BG. Diabetes self-care practice and associated factors among type 2 diabetic patients in public hospitals of Tigray regional state, Ethiopia : A multicenter study. 2021;46:1–11. Available from: http://dx.doi.org/10.1371/journal.pone.0250462

28. Chali SW, Salih MH, Abate AT. Self-care

practice and associated factors among Diabetes Mellitus patients on follow up in Benishangul Gumuz Regional State Public Hospitals, Western Ethiopia : a cross-sectional study. BMC Res Notes [Internet]. 2018;1–8. Available from: https://doi.org/10.1186/s13104-018-3939-8

29. Alsaleh FM, Albassam KS, Alsairafi ZK, Naser AY. Knowledge and practice of foot self-care among patients with diabetes attending primary healthcare centers in Kuwait : A cross-sectional study. Saudi Pharm J [Internet]. 2021;29(6):506–15. Available from: https://doi.org/10.1016/j.jsps.2021.04.006.

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