

Determinants of Traditional Cauterization in Patients Visiting Massawa Hospital, Eritrea

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Abstract

Background: Traditional cauterization, one of the ancient modalities of traditional medicine, has been practiced with the application of hot metal rods/knives over diseased body parts with the intention to treat different diseases. In Eritrea, a recent study reported a high prevalence of traditional cautery in patients visiting Massawa hospital and this study was conducted to explore determinants of traditional cautery using the data collected previously.

Methods: This was a hospital based cross sectional study in patients visiting Massawa hospital of Eritrea. Data was collected through face to face interview using structured questionnaire. Both univariate and multivariate analysis were carried out to identify determinants of cautery.

Results: The study enrolled 900 patients with a median age of 42 years (Interquartile range: 20). Those who were aged (adjusted Odds Ratio (aOR): 2.3; 95% CI: 1.5-3.5; p<0.001), had no access to health facility (aOR: 6.9; 95% CI: 3.5-13.8; p<0.001) and had poor availability of means of transportation to health facility (aOR: 5.0; 95% CI: 2.7-9.3; p<0.001) were more likely to use traditional cautery compared to their counterparts. On the other hand, having relatively higher educational level (aOR: 0.2; 95% CI 0.2-0.3; p<0.001), monthly income of above 1000 Eritrean Nakfa (aOR: 0.4; 95% CI: 0.3-0.6; p<0.001), employed (aOR: 0.7; 95% CI 0.5-0.9; p<0.005) and living in urban Massawa sub-zone (aOR: 3.0; 95% CI 1.9-4.7; p<0.001) were less likely to practice traditional cautery compared to their counterparts.

Conclusion: Higher illiteracy rate, older age, limited access to health facility, poor means of transportation and having lower monthly income were the main determinants for the higher prevalence of traditional cautery on patients visiting Massawa hospital of Eritrea.

Keywords: Traditional cautery; Prevalence; Determinants, Illiteracy rate

Introduction

Traditional cauterization is one form of traditional practice mainly performed with heated metal, burning a skin with the intention to treat different ailments [1]. It has been practiced by ancient Egyptians since 1550 BC and was a popular treatment in Greek, India and ancient China [2,3]. During those old days, there was a belief that says, "What drugs will not cure, the knife will; what the knife will not cure, the cautery will; what the cautery will not cure must be considered incurable". Although, it is a very painful and dangerous practice that could lead to different complications and permanent scar, it's still widespread mode of treatment in various cultures and a central modality among Israeli Bedouins [4-6]. The long standing survival of cautery has been associated with its significance and effectiveness in mitigating human sufferings and diseases [7].

Many patients in developing countries use traditional therapies before seeking medical advice; it is a common belief since ancient times, that cautery is the treatment of choice or the first resort to many diseases. It has been noticed that parents were among the main influencers on seeking cautery treatment and the patients claiming traditional cautery were with a low education level if not uneducated. Studies from Eastern Sudan and Saudi Arabia showed that patients with lower educational levels and those living in rural areas were more likely to undergo cautery [8]. Other studies from developing countries showed that unaffordability, prolonged waiting time and inaccessibility

of healthcare system, cultural familiarity with traditional medicine, religious belief, family influence and trying to seek answers for chronic diseases were the major reasons for the continued visits to traditional healers [9].

In a recent cross sectional study conducted by the same authors, a high prevalence (43.6%) of traditional cautery associated with poor knowledge, attitude and practice was reported among patients visiting Massawa hospital of Eritrea [10]. This analysis was carried out, using the already collected data, to identify the main determinants for the

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high prevalence of traditional cauterization that would help decision makers and regulators to take appropriate risk mitigation strategies.

Materials and Methods

The detailed method of this study was fully described in our previous publication. Briefly, it was a cross sectional hospital based study that enrolled visitors of Massawa hospital of Eritrea between February 20, 2019 to April 20, 2019. A consecutive sampling method was used to recruit all eligible participants and data was collected through face to face interview using a structured questionnaire.

Data was entered and analyzed using CPro version 7.2 and SPSS software version 21 respectively. To identify the traditional cautery determinants, first univariate analysis was performed using odds ratio as a measure of association with 95% Confidence Interval (CI) and p-values. All variables that were independently associated, p-value <0.05, with the outcome of interest (cautery) in the univariate analysis were considered for the multivariate logistic regression model. Likelihood ratio statistic was used to build the final model by including, independent risk variables one after the other. Variables which improved the model fit were retained and the final analysis was obtained based on these variables.

Ethical approval to conduct this research was obtained from the research ethical and protocol review committee of the ministry of health of Eritrea. Furthermore, approval from the ministry of health Northern Red Sea Zone branch and written consent from the study participants was obtained. Efforts were made to deanonymize personal identifiers to protect participants' confidentiality.

Results

Socio-demographic characteristics

A total of 900 patients were enrolled with a median age of 42 years. The study population was dominated by muslims (81.4%) with the

following distribution of their ethnicity: Tigre (30.9%), Afar (23.0%), Saho (20.0%) and Tigrigna (19.3%). About half (47%) of the study participants had no formal education and only 15% of the patients were single. Majority (66%) were inhabitants of Massawa subzone and the rest were either referred or self-referred from other sub zones around Massawa subzone. Health facility was accessible to 43.4% of patients and moderately accessible to 51.1%. About 92% of the study participants reported that they require means of transportation to a nearby health facility and means of transportation was easily available for 45.1%. Detailed socio demographic characteristics of the study participants were reported elsewhere.

Risk factors for prevalent use of traditional cautery

The study participants reported that, people use traditional cautery when they are told that their condition cannot be treated with conventional medicine (60.8%), because they believe it is more effective and safer (38.9%), due to religious/cultural beliefs (26.1%) and accessibility of traditional healers (25.4%). Study participants who were aged 60 years and above (aOR: 2.3; 95% CI: 1.5-3.5), had no access to health facility (aOR: 6.9; 95% CI: 3.5- 13.8), had poor means of transportation to health facility (aOR: 5.0; 95% CI: 2.7-9.3), had lower monthly income (p<0.001) and unemployed (aOR: 0.7: 95% CI 0.5-0.9; P<0.005) were more likely to use traditional cautery compared to their counterparts. On the other hand, having relatively higher educational level (aOR: 0.2; 95% CI 0.2-0.3), had higher monthly income of above 1000 ERN Nakfa (aOR: 0.4; 95% CI: 0.3-0.6; p<0.001) and living in Massawa sub-zone, comparatively urban area, (aOR: 3.0; 95% CI 1.9-4.7) were less likely to practice traditional cautery. Compared to the Tigrigna ethnic group, Afar, Saho, Tigre and Rashaida were more likely to practice traditional cautery (p<0.001) (Table 1).

Demographic characteristics	Have you ever had traditional cautery in your life? N=858			p-value	AOR (95% CI)
	N (%)	Yes (%)	No (%)		
Age group				<0.001	1 1.65 (1.23-2.21) 2.27 (1.46-3.53)
18-39	371 (41.2)	37.4	62.6		
40-59	422 (46.9)	49.6	50.4		
60 and above	107 (11.9)	57.5	42.5		
Ethnicity				<0.001	1 17.90 (8.63-37.11) 14.77 (7.22-30.21) 14.77 (7.07-30.83) 31.44 (12.95-76.3) 1.90 (0.73-3.21)
Tigrigna	174 (19.3)	6.5	93.5		
Afar	207 (23.0)	55.3	44.7		
Tigre	278 (30.9)	50.5	49.5		
Saho	181 (20.1)	50.6	49.4		
Rashaida	54 (6.0)	68.5	31.5		
Other	6 (0.7)	33.3	66.7		
Education					

No education	422 (46.9)	59.5	40.5	<0.001	1
Primary	179 (19.9)	44.4	55.6		0.54 (0.38-0.77)
Middle and above	299 (43.2)	45.7	54.3		0.22 (0.15-0.31)
Marital status					
Single	136 (15.1)	29.1	70.9	<0.001	1
Ever married	764 (84.9)	48.6	51.4		2.3 (1.53-3.46)
Sub-zone					
Massawa	598 (66.4)	37.9	62.1	<0.001	1
Foro	122 (13.6)	61.2	38.8		2.6 (1.7-3.9)
Ghelaelo	103 (11.4)	64.7	35.3		3.0 (1.9-4.7)
Dahlak	30 (3.3)	63.3	36.7		2.8 (1.3-6.1)
Other	47 (5.3)	46.7	53.3		1.4 (0.9-2.6)
Access to health facility					
Accessible	391 (43.4)	30.9	69.1	< 0.001	1
Moderately accessible	460 (51.1)	53.9	46.1		2.62 (1.96-3.51)
Not Accessible	49 (5.4)	75.5	24.5		6.9 (3.46-13.75)
Availability of means of transportation					
Easily available	405 (45.1)	33.9	66.1	<0.001	1
Limited access	436 (48.5)	52.3	47.7		2.1 (1.6-2.9)
Not available	58 (6.5)	71.9	28.1		5.0 (2.7-9.3)
Distance to nearest health facility					
Less than 5	354 (39.3)	31.8	68.2	<0.001	1
5-10	302 (33.6)	47.4	52.6		1.9 (1.4-2.7)
10-20	157 (17.4)	61.9	38.1		3.5 (2.3-5.2)
above 20	87 (9.7)	62.8	37.2		3.6 (2.2-5.9)
Main occupation					
Unemployed	348 (39.4)	51.4	48.6	<0.005	1
Employed	510 (60.6)	41.8	58.2		0.7 (0.5-0.9)
Monthly family income (ERN)					
Less than 500	365 (40.6)	51.7	48.3	<0.001	1
500-1000	351 (39.0)	46.6	53.4		0.8 (0.6-1.1)
above 1000	184 (20.4)	30.2	69.8		0.4 (0.3-0.6)

Table 1: Socio-demographic characteristics and prevalence of traditional cautery.

Discussion

In this study, respondents who had limited access and no readily available means of transportation to health facilities, with lower monthly income and no formal education were more likely to practice traditional cautery in relation to their counterparts. The accessibility of health facilities, within 10 kilometers, reported in about three fourth of the study population shows the commendable efforts that has been made by the ministry of health of Eritrea in providing equitable

healthcare services; given the challenging landscape of the Northern Red Sea Zone (study area). The fact that a substantial number of the study participants require means of transportation, which was limited or not available at all in more than half of respondents, calls in strengthening of universal health coverage in the zone which would play a major role in minimizing the practice of traditional cautery.

In Eritrea, healthcare is provided by the Government of the State of Eritrea through its public health facilities. Guided by health for all policy and social justice, in lower healthcare facilities including health stations, health centers and community hospitals, patients are charged nominal user fees, with 83% subsidy [11]. Thus, the low monthly income and being unemployed reflected as determinants in this study were less likely to be associated with unaffordability of the direct healthcare service costs. Rather, they can be associated with the indirect costs like transportation and other related expenses to visit health facilities. The reflection of these variables might also be due to a common response bias or the effect of residence or access as majority of the respondents involved in traditional cautery were from rural areas having lower monthly income and unemployed. In some developing countries, affordability and accessibility of healthcare services, prolonged waiting time and cultural familiarity of traditional medicine were identified as triggering factors for visiting traditional healers.

Respondents who were elderly and illiterate were also more exposed to traditional cautery probably due to their poor knowledge, limited awareness on the harmful effects of cautery and long standing cultural beliefs. Similarly, other studies reported that traditional cautery was more common in elderly and in the illiterate compared to their counterparts [12]. As most of the ethnic groups were Muslims, the higher practice compared to Tigrigna (mainly Christians) might be associated with high cultural and religious conviction and this was found to be consistent with a recently reported finding. Furthermore, study participants from the rural areas were more likely to use traditional cautery possibly due to the limited access to health facility and unavailability of transportation services. Popularity of traditional healers among their community, accessibility of traditional medicine and lack of awareness might also be contributing factors.

The study has the following limitations:

- Determinants of traditional cautery were mainly identified quantitatively and it would benefit from a qualitative data.
- The fact that it was a health facility based, participants' openness might be limited.
- This study was conducted in a specific geographic region and thus; results lack external generalizability to residents of other regions.

Conclusion

Limited access and unavailability of means of transportation to health facilities, lower monthly income, older age, being unemployed and lack of formal education were found to be the main determinants for the high prevalence of traditional cautery in patients visiting Massawa hospital. Policy makers and programmers are recommended to conduct campaigns aimed at raising community awareness on the risks of traditional cautery, strengthen universal health coverage, secure availability of transportation services and take appropriate regulatory actions to protect public health. Further qualitative studies are also required to better understand the determinant of traditional cautery.

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Competing Interests

The authors declared that they had no conflicts of interests.

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Ethics and Consent to Participate

The study was approved by the ministry of health research ethics and protocol review committee and written consent obtained from all participants prior to commencement of the study.

Authors' Contribution

BT, FK and MR conceived the idea and all authors participated in the designed and conduct of the study. LH translated the data collection tool into a local language. AD, SM, FG and BT participated in the data collection, supervision of the study and data entry and FK analyzed the data. All authors had contributed in the interpretation and analysis of the findings and the last manuscript was drafted and reviewed by all the authors.

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