

ORIGINAL ARTICLE

Healthcare users' knowledge and experiences regarding the management of scabies in the Deder district, Ethiopia

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Abstract. Background. Scabies is an ectoparasitic, highly contagious skin disease caused by a human itch mite infestation of the skin, and it is the leading cause of morbidity and disease burden in developing countries. The purpose of this study was to investigate healthcare users' current knowledge and experiences with scabies management provided at primary healthcare facilities. Materials and Methods. A qualitative research design was used to address the research objectives. Focus group interviews with 58 health care users were used to collect data. Thematic analysis was performed on the verbatim transcriptions using Tesch's approach. Results. The findings showed that the knowledge of healthcare users who participated in the study on scabies, its management, prevention, and control was limited. Health care users experience different challenges regarding scabies and the management thereof. Five themes emerged after data analysis. These were knowledge regarding scabies, knowledge regarding the management of scabies, knowledge regarding the prevention of scabies, perceptions regarding receiving treatment for scabies, and recommendations regarding the availability of materials and medication. Conclusions. Healthcare users in the area had limited knowledge and experienced different challenges regarding scabies and their management. These challenges contribute to low-quality health services with undesirable health outcomes. To narrow this gap, consistent and programed health education was provided to the community through different modalities by using the existing health system to increase awareness regarding scabies. Following the implementation of community awareness, each community member was positioned to prevent and control scabies.

Introduction

Scabies is the major cause of morbidity and disease burden in developing countries. This disease affects both sexes of all ages and all ethnic groups and socioeconomic levels, but the most affected age groups are small children and the elderly in resource-poor societies. This disease affects people who are exposed to scabies as well as the secondary complications of the infestation (1). The problem of scabies infestation and its attendant complications astronomically raise the cost of the health care system (2).

In Ethiopia, a scabies epidemic occurs in many parts of the country, making this a public health problem affecting diverse geographic areas and populations. In one study conducted after an epidemic outbreak in northern Ethiopia in the Amhara region, the prevalence was much higher and the range was much wider, from the estimated 2 to 67%. The prevalence of scabies among children under 2 years, from 2-18 years, and above 18 years was 45.9, 48.1, and 18.6%, respectively, and this shows the highest prevalence of the disease burden (3). In a study conducted in southern Ethiopia, the prevalence of scabies was about 11% among the population with an age range of eight months to 70 years, and children aged 5 to 14 were the most affected. In the same study, most of the infected showed signs of secondary infection attributable to scabies in the Badewacho district (4).

Scabies exerts a significant economic burden on individuals, families, communities, and health systems. The intense discomfort caused by the disease, the life-threatening complications of secondary bacterial infection, as well as the challenges and costs of correct diagnosis and appropriate treatment make the disease a public health concern. Therefore, the purpose of this study was to investigate health care users' knowledge and experience with scabies management at the primary health care level in order to improve scabies management at the primary health care level.

Materials and methods

Study design. A qualitative research design was used to gain an in-depth understanding of healthcare users' current knowledge and experience regarding the management of

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1 scabies at primary healthcare facilities in the Deder district,
2 Ethiopia. Purposive sampling was used for selecting health
3 care users.

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5 *Study setting.* This study was conducted in the Deder
6 district. Deder district is one of the districts in southeastern
7 Ethiopia, in the East Hararge zone of the Oromia Region.
8 In the district, there was one district hospital, nine primary
9 health care facilities, and 40 health posts providing curative,
10 preventive, promotional, and rehabilitative services to the
11 community.

12
13 *Inclusion/exclusion criteria.* Participants in the study
14 were those who had lived in the area for three months or
15 more, were over the age of 18, were willing to participate
16 in the study, signed an informed consent form, and were
17 available during data collection. Those who are critically
18 ill or have not been diagnosed with scabies, as well as those
19 who do not meet the above criteria, were excluded from the
20 study.

21
22 *Data collection and management.* During data collection,
23 healthcare users who came in for their regular service were
24 selected based on inclusion criteria, informed about the study's
25 purpose, and asked to participate. Before the discussion began,
26 those willing to participate in the focus group interview were
27 asked to provide written consent. To avoid long wait times, the
28 researcher planned to select six to eight participants before the
29 service began, and focus group discussions were held after the
30 services were completed in a location that was convenient for
31 the participants.

32 A pre-tested interview guide was used to collect information
33 from health care users regarding their knowledge and
34 experience in the management of scabies in primary health
35 care. Data were collected using a focus group interview until
36 saturation was reached. They had a sample of 58 healthcare
37 users from nine primary health care facilities. All audio
38 recordings from the focus group interview were transferred to
39 a computer following translation from Afan Oromo to English
40 and then transcribed verbatim. Each of the transcripts was also
41 compared to the field notes collected and coded into themes
42 and sub-themes.

43
44 *Data analysis.* Thematic data analysis approaches were used
45 to explore and describe the current knowledge and experience
46 of health care users regarding the management of scabies at the
47 primary health care facilities using Tesch's approach (5). Data
48 analysis included a total of nine focus group interviews with
49 health care users. Data were analysed and presented based on
50 the generated themes and sub-themes.

51
52 *Ethical considerations.* The study was approved by the
53 University of South Africa Department of Health Studies
54 Higher Degrees Committee (HSHDC/1016/2020, August
55 5, 2020), the Oromia Regional Health Bureau research
56 ethics review committee (BEFO/AHBIFH/1-16/410, August
57 20, 2020), and the Armauer Hansen Research Institute
58 board of ethics review committee (PO30/20, September 3,
59 2020). Informed written consent was obtained from each
60 participant. All the data collected was kept confidential.

Results

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Forty-one of the fifty-eight participants were female. The majority of the participants were in the age range of 18-25. With respect to the level of education, 35 were illiterate. Most of the participants were married (see Table I).

A total of five themes were identified from the focus group interviews with the participants. The themes include knowledge regarding scabies, knowledge regarding the management of scabies, knowledge regarding the prevention of scabies, perceptions regarding treatment received for scabies, and recommendations regarding the availability of materials and medication for scabies.

Theme 1: knowledge regarding the scabies. This section discusses the themes that emerged concerning health care users' knowledge regarding scabies. Under this theme, there are three sub-themes that include the understanding of scabies symptoms, assumptions regarding the cause of scabies, and understanding the transmission of scabies.

Sub-theme 1.1. Understanding of scabies symptom. Scabies symptoms place a significant burden on individuals, often due to intense, intolerable itching. The symptoms continue as long as scabies has not been treated, and these generally become quite chronic due to the persistence of itching.

'Uhuuu... it is a very dangerous disease. It is not comparable. It makes you hungry, and what you eat is not helpful to you. A very dangerous problem! It itches throughout the day and night, morning and evening. There was no rest at all. I was suffering from the disease.' (Focus Group Interview (FGI) 6, Participant (P) 1).

The symptom of itching was so intense that individuals scratched their skin unconsciously until it caused a wound in the affected area, and various approaches were applied to get relief of the itching, even for a short period of time.

'Burning sensations are common. Hunger burning and restlessness are common. You will be sweating during the itching time. You cannot see anyone around you; even you will be unconsciously responding to the sensation of itching. Abdominal burning and hooting are common during the itching response. 'I rinsed the body with water to relieve the pain' (FGI 6, P3).

Sub-theme 1.2. Assumptions regarding the cause of scabies. Most of the study participants, instead of reporting mites as the cause of scabies, assumed the cause of the scabies disease was mere exposure to an environment rather than any predisposing factors.

'Scabies are caused by internal body weakness. 'Malnutrition from a lack of a balanced diet is one cause of scabies' (FGI 6, P2).

'The primary cause of scabies is the lack of enough food... 'So the main cause of scabies is poor personal hygiene and a lack of getting enough food' (FGI 2, P4).

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Table 1. Socio-demographic characteristics of health care users who participated in the study, Deder district in 2021.

Characteristics	Frequency (%)
Age	
18-25	22 (38)
26-34	20 (34)
>35	16 (28)
Sex	
Male	17 (29)
Female	41 (71)
Marital status	
Married	56 (97)
Unmarried	2 (3)
Educational status	
No formal education/ illiterate/	35 (60)
Grade 1-4	10 (17)
Grade 5-8	8 (14)
Grade 9-10	5 (9)

Some study participants explained that scabies was caused by a lack of personal hygiene, and that once it occurs, it is difficult to cure.

'It is caused by malnutrition and a lack of personal hygiene' (FGI 7, P3).

'Scabies comes to us due to poverty' (FGI 5, P1).

Sub-theme 1.3. Understanding regarding the transmission of scabies. Most of the study participants recognised scabies, which can be transmitted from person to person.

'It is transmitted from person to person. Avoiding body contact and clothing exchanges within the family is not good. Any sitting area and other materials should be cleaned.' Personal hygiene and washing before reuse are very important" (FGI 7, P3).

One study participant explains how to protect their child from scabies transmission as follows:

'What I am doing now is protecting the child from having contact with healthy children. He sleeps apart from the other children. The cloth and materials on which they sleep are also different from those of other children' (FGI 4, P1).

Theme 2: Knowledge regarding the management of scabies. This section discusses the themes that emerged concerning health care users' knowledge regarding the management of scabies. Under this theme, there are three sub-themes, which include the importance of personal hygiene, understanding regarding the treatment of scabies, and the use of traditional medicine.

Sub-theme 2.1. Importance of personal hygiene. The majority of study participants stated that maintaining personal and environmental hygiene was the best way to alleviate their problems.

'Previously, the majority of my body had a wound, but it has begun to dry after I frequently washed it with 'Ajax' and also applied a white medicine I obtained from someone who got it from this health center the previous time' (FGI 5, P1).

One of the participants explained that they practiced personal hygiene and providing a nutritious diet to the affected individual in order to cure scabies.

'Washing is what we can do because there is no medicine for it. The medicine they gave us did not cure the scabies. 'Scabies treatment is not available at this health center.' 'The skin on my children's bodies is currently severely damaged.' I brought it before, but no medicine was given to him. 'I now wash his body on a regular basis and try to feed him a variety of foods' (FGI 4, P1).

Sub-theme 2.2. Understanding regarding the treatment of scabies. Some study participants were unaware that scabies treatment was available in a health facility until a health extension worker informed their community.

'People were unaware of the availability of scabies medicine, but after Health Extension Workers taught us, many people understand the availability of scabies medicine and the need to obtain it.' (FGI 2, P1).

Sub-theme 2.3. The use of traditional medicine in treating scabies. This study confirmed that traditional medicine practices like using Keka and butter to treat scabies are widely practiced in the community.

'I also used traditional medications such as 'Keka' and butter swallowing. We also have special soaps for personal hygiene from the health center, and when I used all of this, I felt better' (FGI 6, P1).

The participants also explained the use of camel meat as nutritional management for scabies.

'Camel meat is also good for scabies treatments.' 'But it is used as nutritional management' (FGI 1, P2).

Theme 3: Knowledge regarding the prevention of scabies. This section discusses the themes that emerged concerning health care users' knowledge regarding the prevention of scabies. Under this theme, there are two sub-themes, which include seeking assistance at an early stage and the health education received regarding the prevention of scabies.

Sub-theme 3.1. Seeking assistance at early stage of symptoms of scabies. Some study participants described the need to seek help at the onset of symptoms and advised their neighbours

1	and relatives to go to the health facility as soon as possible	that the community associated the disease with poverty. Most	61
2	before complications developed.	of the participants described how they begin to feel socially	62
3		handicapped and start to avoid certain situations. When an	63
4	<i>'We have to advise people with the disease to seek</i>	individual suffers from scabies, they experience stress and	64
5	<i>health care as soon as possible, before they reach the</i>	avoid social activities.	65
6	<i>stage where they feel ashamed to contract people'</i>		66
7	<i>(FGD 6, P5).</i>	<i>'A person with scabies is discriminated against by</i>	67
8		<i>others because it is seen as shameful.'</i> <i>'Distant because</i>	68
9	<i>'We must also advise our neighbors and relatives to</i>	<i>others fear you' (FGI 7, P1).</i>	69
10	<i>seek medical attention if their children become infected</i>		70
11	<i>with the disease. The education is excellent, but it is</i>	<i>'It was a shame to talk about scabies. It was a sign of</i>	71
12	<i>not as good as it once was. They have reduced it, but it</i>	<i>poverty, so people did not talk about it. They tried to</i>	72
13	<i>should be maintained. If anyone develops the disease,</i>	<i>hide their symptoms until they were infected and more</i>	73
14	<i>we must seek treatment' (FGI 3, P3).</i>	<i>visible. 'Hiding was not the solution' (FGI 6, P6).</i>	74
15			75
16	<i>Sub-theme 3.2. Health education received regarding preven-</i>	Some participants described hiding visible signs of scabies	76
17	<i>tion of scabies.</i> The majority of the study participants described	due to the stigma and fear of rejection by those in their circle.	77
18	the importance of health education proffered by health care		78
19	providers on the appropriate use of the medication and ways of	<i>'People with scabies were ashamed to scratch their</i>	79
20	preventing scabies.	<i>itching skin, ashamed to attend people's gatherings,</i>	80
21		<i>ashamed to eat with people, and it even disturbs a</i>	81
22	<i>'For example, in my neighborhood, some children</i>	<i>person who looks from outside' (FGI 3, P6).</i>	82
23	<i>haven't been mothered. All of them were badly affected</i>		83
24	<i>by scabies. Our health extension workers brought a</i>	<i>"Scabies was seen as an insulting word" (FGI 6, P3).</i>	84
25	<i>fluid white medicine and told them to apply it to their</i>		85
26	<i>bodies. They also told all of them to wash their clothes</i>	<i>Theme 5: Recommendations regarding availability of mate-</i>	86
27	<i>in boiled water before wearing them again. She also</i>	<i>rials and medication for scabies.</i> This section discusses the	87
28	<i>gave them soap and a jar for fetching water' (FGI 3,</i>	themes that emerged concerning health care users' recommen-	88
29	<i>P5).</i>	dations regarding the availability of materials and medication	89
30	Some of the study participants mentioned that maintaining	for scabies. Under this theme, there are two sub-themes,	90
31	personal hygiene and environmental hygiene and following	which include recommendations on material support and	91
32	the advice of the health care providers were important in	recommendations on medication.	92
33	preventing scabies from wreaking havoc in the community.		93
34		<i>Sub-theme 5.1. Recommendations on material support to</i>	94
35	<i>'Visiting health facilities and practicing what they tell</i>	<i>stem the tide of scabies.</i> As for most of the study participants	95
36	<i>you is important to treat scabies. Keeping personal</i>	mentioned before, there was material support given freely to	96
37	<i>hygiene, washing clothes and hands is important to</i>	the community by health care providers and health extension	97
38	<i>prevent scabies' (FGI 8, P5).</i>	workers for those who developed a symptom of scabies. So, the	98
39		participants recommended that the health facility continue the	99
40	<i>Theme 4: Perceptions regarding received treatment for scabies.</i>	support given to the community to solve the problem.	100
41	This section discusses the themes that emerged concerning		101
42	health care users' perceptions regarding receiving treatment	<i>'We need support from the health centre. Soaps, medi-</i>	102
43	for scabies. Under this theme, there are two sub-themes, which	<i>cation, and other support should be provided for us'</i>	103
44	include recurrence of the disease after treatment and social	<i>(FGI 7, P1).</i>	104
45	isolation due to the disease.		105
46		<i>'Materials and medicines should be provided to</i>	106
47	<i>Sub-theme 4.1. Recurrence of the disease after treatment.</i>	<i>clients' (FGI 1, P5).</i>	107
48	Most participants described that the recurrence of the disease		108
49	after getting the treatment was very high in the area.	<i>'Supporting the client with nutritional support,</i>	109
50		<i>providing a balanced diet are among the traditional</i>	110
51	<i>'If once treated, it reappears again. When we apply the</i>	<i>ways of treating clients from scabies' (FGI 1, P3).</i>	111
52	<i>medication, it may relieve for short periods, but the</i>		112
53	<i>chance of scabies reoccurring is high' (FGI 2, P4).</i>	<i>Sub-theme 5.2. Recommendations on medication.</i> In this	113
54		study, the majority of participants reported a lack of medication	114
55	<i>'We can get medication, but it relapsed after some</i>	during their visit, and some reported receiving the drug previ-	115
56	<i>time' (FGI 2, P6).</i>	ously but not currently available in primary health care during	116
57		their visit. In the face of such scarcity and unavailability, the	117
58	<i>Sub-theme 4.2. Social isolation due to the disease.</i> The	participants recommend that the government provide adequate	118
59	participants described having scabies as an embarrassment	medication for scabies management at primary health care	119
60	that compelled self-imposed isolation. Many also reported	levels so that people in their area can receive appropriate care.	120

1 *'We couldn't get the medicine in this health center*
 2 *sometimes, so we need the medicine to be sent to us.*
 3 *I say the government should give us enough medicine'*
 4 *(FGI 4, P3).*

5
 6 *'We need to get the necessary medicine in this health*
 7 *center because we don't want to go outside to find the*
 8 *medicine' (FGI 4, P2).*

9
 10 Some participants suggested that, in addition to using the
 11 medicine, maintaining personal hygiene was another method
 12 of preventing scabies.

13
 14 *'Thank you for talking to us, but we need medicine for*
 15 *scabies because the scabies is finishing us off.' 'What*
 16 *we need is the health of our child' (FGI 5, P4).*

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 18 *'Medication provision is needed.' 'Personal hygiene*
 19 *and a balanced diet are also needed' (FGI 6, P3).*

21 Discussion

22
 23 All healthcare users who took part in this study had lived
 24 in the area for at least three months, which allowed the
 25 researcher to avoid any recall bias regarding their experience
 26 and knowledge of scabies management at primary healthcare
 27 facilities. The age of the study participants was also distrib-
 28 uted across different age categories which assisted in the
 29 description and exploration of the experience and knowledge
 30 of the health care users. Furthermore, this study included
 31 both illiterate and literate healthcare users, allowing for a
 32 variety of educational backgrounds.

33 According to one study conducted in India, almost all
 34 scabies patients experience itching, which worsens during
 35 the night and causes moderate-to-severe sleep disruption (6).
 36 This symptom has a negative impact on the quality of life
 37 of those infected, resulting in stigma and social isolation.
 38 Bernigaud *et al* discovered a similar result, confirming
 39 that scabies causes severe itching, which becomes worse at
 40 night (7). Health care users' approach resolves the itching
 41 in their individual understanding and self-experience. To a
 42 limited extent, these methods worked, but they reflected the
 43 level of devastation experienced in attempting to relieve the
 44 itch. Rawat and Thakur discovered a similar result, indicating
 45 that bathing and focusing on work alleviated itching in the
 46 majority of participants (8).

47 In this study, no participant described scabies as being
 48 caused by mites; instead, they were persuaded by scabies'
 49 prevalence, environmental factors, personal hygiene
 50 practises, and close contact (9). This demonstrates that
 51 participants in this and the preceding study made incorrect
 52 assumptions about the cause of scabies, which is supported
 53 by the Fiji study. Only a few participants mentioned avoiding
 54 contact with an infected person as a preventive measure,
 55 and they were primarily concerned with transmission
 56 between children. Mitchell *et al* discovered a similar result,
 57 indicating that participants described scabies transmission
 58 via skin-to-skin contact while no participants mentioned
 59 breastfeeding or sexual contact (9). This is consistent with
 60 our findings.

61 The primary prevention of scabies, according to the study,
 62 is to maintain physical and environmental hygiene, wear clean
 63 clothes, and raise community awareness (10). Seetan *et al*
 64 discovered that daily body washing and personal hygiene
 65 help clear scabies, which is consistent with our findings (11).
 66 Although health extension workers in the study area provide
 67 community health education on a wide range of health topics
 68 through outreach activities and home-to-home visits, this assists
 69 the community in better understanding scabies treatment and
 70 service utilisation. According to Assefa *et al*, effective use of
 71 health extension workers increases health service utilisation,
 72 knowledge and health care seeking, outbreak reporting, and
 73 community satisfaction (12), which is consistent with our
 74 findings.

75 This study confirmed that traditional medicine practices
 76 like using Keka and butter to treat scabies are widely practiced
 77 in the community. Mitchell *et al* discovered that traditional
 78 medicine was used to treat scabies in both children and
 79 adults (9). This traditional medicine combines the medicinal
 80 plant's leaves (herbs) with coconut oil, which is applied to the
 81 affected area and allowed to dry. For 2-4 days, this helps to
 82 dry the wound and relieve itching. Sambo *et al* discovered a
 83 similar result, indicating that the majority of participants with
 84 scabies used traditional medicine in the form of local herbs
 85 and cream (13). Some of it agrees with our findings. The varia-
 86 tion was due to cultural and environmental differences in the
 87 community. Another study conducted by Gashaw discovered
 88 that more than 80% of the population uses traditional medi-
 89 cine due to cultural acceptability, ease of access, and low cost
 90 when compared to the difficult access to modern health care
 91 for various reasons (14). Some of the reasons had to do with
 92 our findings.

93 According to the study, maintaining personal and environ-
 94 mental hygiene, as well as following the advice of health care
 95 providers, is important in preventing scabies from wreaking
 96 havoc in the community. Trasia discovered that the primary
 97 prevention of scabies was to maintain physical and environ-
 98 mental hygiene, wear clean clothes, avoid sharing clothes
 99 with others, and maintain community awareness (10), which
 100 agrees with our findings. Lopes *et al* discovered that informed
 101 communities improve early health-seeking and reduce scabies
 102 stigma in the community (15), which supports our findings.
 103 According to Ahmed *et al*, the recurrence rate of scabies was
 104 high among participants who received scabies diagnoses in the
 105 health facility (16), which is consistent with our findings.

106 The researchers discovered a very high rate of disease
 107 recurrence after treatment in the area. According to
 108 Sanei-Dehkordi *et al*, people who shared beds on the floor
 109 developed more severe scabies infections and were re-infected
 110 more frequently. It has been established that the use of
 111 shared beds facilitates skin-to-skin contact and the trans-
 112 mission of scabies from infested to healthy individuals (17).
 113 Wochebo *et al* (18) reported similar findings. In crowded areas,
 114 the use of shared clothes, beds, and other materials may spread
 115 the scabies infestation, which is one of the factors contributing
 116 to its recurrence.

117 Scabies was identified as an embarrassment that compelled
 118 self-imposed isolation in the study, and the community asso-
 119 ciated the disease with poverty. They described how they
 120 began to feel socially deprived and avoided certain situations.

1 Because of the stigma and fear of rejection by those in their
2 circle, people who have scabies experience stress, avoid social
3 activities, and hide visible signs of scabies. According to Nair,
4 a scabies infection has a negative impact on a person's quality
5 of life, resulting in significant stigma and isolation from social
6 gatherings. As a result, anxiety, depression, anger, and shame
7 may result (5). The findings of this study are consistent with
8 ours. Engelman *et al* discovered a similar result, indicating
9 that scabies was the primary cause of stigma, shame, and
10 decreased health-seeking behaviour, which resulted in a lower
11 quality of life (19). Cox *et al* discovered that physical manifes-
12 tations of the disease impose a significant burden of stigma,
13 discrimination, and pain, which can have an impact on quality
14 of life (20). The majority of the patients were socially isolated
15 and barred from participating in activities.

17 Limitations

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19 The study used a qualitative study design and involved health
20 care users who participated voluntarily. The knowledge and
21 experience of healthcare users who did not participate in this
22 study could offer different views. Although adequate and detailed
23 information was collected through a focus group interview with
24 health care users regarding their knowledge and experience
25 of scabies management in primary health care, the researcher
26 cannot exclude the existence of recall bias. But, to minimize
27 the existence of recall bias, the researcher used participants who
28 had lived in the area for more than three months and those who
29 had short-term experience related to scabies.

31 Conclusions

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33 Healthcare users in the area had limited knowledge and faced
34 a variety of challenges when it came to scabies and their
35 management. These obstacles contribute to low-quality health
36 care with negative health outcomes. They also discussed their
37 perceptions of receiving treatment for scabies management at
38 the primary health care level, the recurrence of the disease
39 after treatment, and the social isolation they felt while infected
40 with the disease. To narrow this gap, consistent and programed
41 health education was provided to the community through
42 different modalities by using the existing health system to
43 increase awareness regarding scabies. Once community aware-
44 ness was enacted, each community member was positioned to
45 prevent and control scabies.

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48
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50 facilitating our study and the participants for their unreserved
51 effort to participate in the study.

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54
55 None.

57 Contributions

58
59 SCJ, conceived the original idea, designed the outline of the
60 study and wrote the first draft of the manuscript; SCJ, DDM,

61 KLM, analyzed and interpreted the data and prepared the
62 document; DDM, KLM, critically revised the manuscript for
63 intellectual content. All authors read and approved the final
64 version to be published.

Ethical approval and consent to participate

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66
67
68 The study was approved by the University of South Africa
69 Department of Health Studies Higher Degrees Committee
70 (HSHDC/1016/2020, August 5, 2020), the Oromia
71 Regional Health Bureau research ethics review committee
72 (BEFO/AHBIFH/1-16/410, August 20, 2020), and the Armauer
73 Hansen Research Institute board of ethics review committee
74 (PO30/20, September 3, 2020).

Availability of data and materials

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78 Not applicable.

Informed consent

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82 Informed written consent was obtained from each participant.
83 All the data collected was kept confidential.

Conflict of interest

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