



Research article

Evaluating the current management approach of scabies at selected primary health care in the Deder district, Ethiopia

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ABSTRACT

Background: Scabies is endemic in many resource-poor tropics, with an estimated average prevalence of 5–10% in children. The burden of scabies infestation and its complications place a huge cost on health systems. The aim of this study was to evaluate the current management approach to scabies at primary health care facilities in the Deder district, Ethiopia.

Methods: A qualitative research design was used to address the research objectives. Data were collected using in-depth interviews with 18 health care providers. Thematic analysis was performed on the verbatim transcriptions using Tesch's approach. Eight themes emerged after data analysis. These experiences regarding scabies management; medicine supply and accessibility for scabies management; unavailability of scabies management guidelines; scabies data management; suggestions regarding better management; linkage and communication at different levels; facilitators to scabies management; and health education regarding scabies.

Results: The study findings verified that there are different difficulties and challenges in diagnosing and managing scabies that need serious redress about improving the management of scabies in primary health care. These challenges contribute to low quality of health service with undesirable health outcomes.

Conclusions: In the health system, one of the imperatives is delivering appropriate health care management to those in need. The absence of constant and proper management of scabies in primary health care due to different challenges may cause the disease cycle to continue and affect the efforts directed at reducing the disease burden in the area.

1. Introduction

Globally, it is estimated that more than 300 million people are affected by scabies at any time [1], although an additional effort is required to establish the veracity of this evaluation. Scabies is endemic in many resource-poor tropics, with an estimated average prevalence of 5–10% in children. Prevalence estimates in the recent scabies literature range from 0.2% to 71% [2,3]. The burden of scabies infestation and its complications place a huge cost on health systems. In high-income economies, cases occur sporadically, but outbreaks in health care facilities and vulnerable communities in developing economies contribute to substantial economic costs of health services [2].

In sub-Saharan Africa, a study conducted in Nigeria showed the prevalence of scabies among children under 5 years and school-

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going children is about 2.9% and 4.7% respectively. Among children with scabies infestation, about 66.7% sought at least one form of treatment; however, 75% of those seeking treatment used traditional methods like local herbs and creams [4]. In another study undertaken in Cameroon, the prevalence of scabies was 17.8% among children and adolescents [5].

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 is much larger and the range was much wider from the estimated 2%–67%. The prevalence of scabies among children under 2 years, from 2 to 18 years, and under 18 years was 45.9%, 48.1%, and 18.6% respectively, and this shows the highest prevalence of the disease burden [6]. 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 of 5–14 years of age were the most affected. In the same study, most of the infected had shown signs of secondary infection attributable to scabies in the Badewacho district [7]. In another study in southern Ethiopia, the prevalence of scabies was 2.5% among the population with an age range of five to 65. This study identified the highest cases in children aged five to 14 years in the Kechabira district [8].

A recent report from the Federal Ministry of Health (FMOH) in Ethiopia shows that more than one million people were affected by scabies from five different regions of the country from July 2018 to January 2019 as obtained from the primary health care (PHC) facilities in the country [9]. This report showed that 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. Adequate knowledge about scabies by health providers and the community is crucial in combating the prevalence and spread of scabies.

The PHC unit is the most effective and sustainable point of health care delivery for communities [10]. In this setting, the health problem is diagnosed early and prompt treatment is provided to prevent the development of complications that are expensive to treat. Therefore, this study aimed to evaluate the current management approach of scabies at all primary health care in the Deder district to improve the system and provide quality health service delivery to the community.

2. Methods and materials

2.1. Study design

A qualitative research design was used to evaluate the current scabies management approach with health care providers working at the primary health care in the Deder district, Ethiopia.

2.2. Study setting

This study was conducted in the Deder district. Deder district is one of the districts in southeastern Ethiopia, in the East Hararge zone of the Oromia Region. There was one district hospital, nine primary health care facilities, and 40 health posts providing curative, preventing, promotive, and rehabilitative service to the community in the district.

2.3. Inclusion/exclusion criteria

Participants who have been working with the diagnosis and treatment of scabies for three months or more in the primary health care, and willing to participate in the study, and who sign an informed consent and are available during data collection in all primary health care facilities in Deder district were included in the study. Those who are recently assigned health care providers working in the primary health care facility and those not involved in diagnosing and treating scabies patients and all those who do not meet the inclusion criteria were excluded from the study.

2.4. Data collection and management

A semi-structure interview guide was prepared in the English language, and further, it was translated into the participant's native language (Afaan Oromo) and reviewed by the authors. Another expert independent translator (who had proficiency in translating colloquial language) conducted back-translation from the Afaan Oromo into the English language, and then again it was cross-checked by the authors to ensure the essence of the language. Participants were encouraged to interact and share their thoughts according to their experiences [11].

The first part of the interview guide included participants' details, such as age, marital status, level of education, and profession. The second part of the interview guide was designed to evaluate current scabies management approach at primary health care facilities. Before the data collection, the interview guide was pre-tested among five health care providers working in the scabies management in a similar primary health care facility. It helped in testing for content validity, face validity, and clarity; and for additional editing in the interview guide, as per study context.

Data were collected until data saturation was reached. They had a sample of 18 healthcare providers from nine primary healthcare facilities. All audio recorded data from an in-depth interview were transferred into a computer following translation from Afaan Oromo to English and then transcribed verbatim. Each of the transcripts was also compared to the field notes collected and coded into themes and sub-themes.

2.5. Data analysis

Thematic data analysis approaches were used to evaluate the current scabies management approach at the primary healthcare facilities using Tesch's approach. Data analysis included a total of 18 in-depth interviews with health care providers. Data were analysed and presented based on the generated themes and sub-themes.

2.6. Ethical approval and consent to participate

The study was approved by the University of South Africa Department of health studies higher degrees committee (HSHDC/1016/2020, August 5, 2020), Oromia Regional Health Bureau research ethics review committee (BEFO/AHBIFH/1–16/410, August 20, 2020) and Armauer Hansen Research Institute board of ethics review committee (PO30/20, September 03/2020). Informed written consent was obtained from each participant. All data collected was kept confidential.

3. Results

Eleven of the eighteen healthcare providers were male. Most of the healthcare providers were in the age range of 26–34. Regarding the level of education, 13 were nurses. Most of the participants were 3–5 years of work experience. A total of eight themes was identified from in-depth interviews of the participant. Table 1 below depicts the themes and sub-themes emerging from data analysis.

The below section discusses the themes developed concerning the current scabies management approach at the primary health care facilities. The themes include experience regarding scabies management, medicine supply and accessibility for scabies management, unavailability of scabies management guidelines, scabies data management, suggestions regarding better management, linkage and communication at different levels, facilitators to scabies management, and health education regarding scabies.

3.1. Theme 1: experience regarding scabies management

This section discusses the themes that emerged concerning health care providers' experience regarding scabies management. Under this theme, there are five sub-themes which included treatment of scabies, referral system, delays in health-seeking behaviour, lack of urgent attention given to the disease and water shortage were discussed.

3.1.1. Sub-theme 1.1. Treatment of scabies

Some health care providers diagnosed and treated scabies using the history and physical signs and symptoms of the patient. At the same time, these officials provided health education on how to prevent and use the medication.

“Regarding the treatments, first, we assess them clinically by asking about the signs and symptoms, the location, the severity and duration of the symptoms. All the itching cannot be scabies. So that we need to differentiate the time of itching because most of the time ectoparasites are active at night and in the location. After we differentiate all these clinical features, we decide on the treatments. Before and after giving the medication, we educate the client on how to use the medication, how to prevent

Table 1
Schematic presentation of themes and sub-themes developed with health care providers.

Phase two	Themes	Sub-themes
Health care providers	1. Experience regarding scabies management	1.1. Treatment of scabies 1.2. Referral system 1.3. Delays in health-seeking behavior 1.4. Lack of urgent attention given to the disease 1.5. Water shortage
	2. Medicine supply and accessibility for scabies management	2.1. Shortage of medicine for scabies management 2.2. Support from NGOs
	3. Unavailability of scabies management guidelines	3.1. Need for continuous professional development for scabies management 3.2. Need for scabies management guidelines
	4. Scabies data management	4.1. Registration and reporting system with regards to incidence of scabies 4.2. Surveillance system for scabies
	5. Suggestion regarding better management	5.1. Recommendation regarding drug supply 5.2. Recommendation regarding capacity building
	6. Linkage and communication at a different level	6.1. Communication between the health system 6.2. Communication with the different health sector
	7. Facilitators to scabies management	7.1. Health system/Human health workforce
	8. Health education regarding scabies	8.1. Personal and environmental hygiene 8.2. Lack of awareness

the problems, how to keep personal hygiene by using water and soap and using boiled water to clean clothes before reusing once wearing” (HCP 6).

Some of the healthcare providers were treating a patient from their medical experience and discussing amongst themselves as practitioners.

“We work by discussing with each other. By sharing experiences from each other. I didn’t see a guideline regarding scabies management. We treat it by experiences” (HCP 7).

3.1.2. Sub-theme 1.2. Referral system

Some health care providers referred scabies patients to the nearby hospital for better management and getting the drugs because there was a shortage in their facility.

“Currently we do not have medication to treat a patient. All medications were stocked out because of that, they refer the patient to the hospital. In a private facility or pharmacy, the price of BBL is very expensive. We have a shortage of medication in this facility. I can say that the service given here is not satisfactory and almost null” (HCP 9).

3.1.3. Sub-theme 1.3. Delays in health-seeking behaviour

The majority of the study participants described scabies affected individuals who do not come to the health facility until it becomes severe due to fear of the social impact, and they assumed that scabies was a self-limited disease. Some of them utilise traditional medicine, and when they get re-infected, only then do they come to the health facility.

“The symptoms are very embarrassing. It has itching and a wound on the site. So that people are not approaching them. They delay seeking treatments because of fears” (HCP 6).

“They do not give attention to get help. It is believed that scabies is a self-limited disease. The problems are very high but do not come to the health centres. Traditional treatments are also used here. They seek help after the problems become very severe and complicated. There is discrimination by the community because of scabies. We have referred the patient to the hospital” (HCP 9).

Some of the participants described the delay in seeking health care of infected individuals as being due to fear of social avoidance and the absence of scabies medication in the facility. They came to the facility when the wound became infected and complicated.

“In this area, the patient comes to the health facility when they are infected and develop complications. This occurs because if they come early, there is no drug to treat, and there is also an assumption that scabies is self-limited, and they hide from the community to fear social avoidance or discrimination” (HCP 18).

3.1.4. Sub-theme 1.4. Lack of urgent attention given to the disease

Most of the healthcare providers describe the attention given to scabies management by the official as less than satisfactory. Every assigned health care provider works blindly without any training on the necessary techniques of diagnosing and treating like other diseases. There was no focal person in the facility to follow the cases and report to the responsible body.

“Regarding scabies, it should have the owner. No one pays attention to it, we diagnose when they come with a severe form of the disease at the nutrition room, MCH or OPD. It needs a focal person like other diseases. The drug should also be free. Attention should also be given to protecting personal hygiene since both urban and rural has health extension workers, which needs to strengthen education on personal hygiene” (HCP 1).

“For the example, if you report 2 or 3 people who had diarrhea, everybody starts to rash out starting from Woreda to the region. But, when you report repeatedly many mothers and children suffering from scabies, no one gives you any response. Scabies is also a very bad disease, so necessary attention should be given regarding the necessary technique to diagnose and necessary treatment strategies like other diseases” (HCP 12).

3.1.5. Sub-theme 1.5. Water shortage

The study identified that there was a water shortage in the area, due to that it was difficult for the health care providers and health extension workers to advise the community on personal hygiene. Health care providers describe the issue as below.

“... On top of that, there is no water at all in this area. People use it by collecting the rainfall on the land. There is no water at all. Now the season is very good to move into the community to provide necessary health education since there is no mad. The bad thing is that the lack of water makes it difficult to advise people to wash while it is known that there is no water at all” (HCP 14).

“The main cause of scabies is the lack of personal hygiene. In our catchment area, it is more prevalent in areas where the scarcity of water is high. Because of this, we focus on providing health education and, in addition, giving the drug” (HCP 5).

3.2. Theme 2: medicine supply and accessibility for scabies management

This section discusses the themes that emerged concerning Medicine supply and accessibility for scabies management. Under this theme, there are two sub-themes which included a Shortage of medicine for scabies management and Support from NGOs were discussed.

3.2.1. Sub-theme 2.1. Shortage of medicine for scabies management

This study revealed that health care providers treat the patient with the drug supported by the NGO previously. After the NGO support was stopped, the health centre management discussed and purchased the drug from the PFSA to manage scabies, but they didn't get an adequate supply. Due to the shortage of medicine in the facility, the patient returned home without any medication. The health care providers mentioned the following statement.

"We don't have a drug to manage. Previously, an NGO was providing the drug, but currently, it is interrupted. After the NGO's support stopped, we have decided by the management and started to ask PFSA (Pharmaceutical Fund and Supply Agency), and we had sulphur and BBL until recent time, but we finished it currently" (HCP 3).

"What I think as a barrier is repeated interruption of scabies drug. The drugs are not found here. Many times, we return the patient without giving any treatment due to the lack of the drug. We send patients home only by giving health education due to the lack of drugs, as I have said" (HCP 4).

Some of the health care providers also mentioned the following;

"There is no medication supply for the treatments of scabies. The problem is very high. But almost all the clients do not get medication. Because there is no medication supply for health centres. We haven't seen any medication for the last 2 years. Clients do not want to come to our health facilities because they didn't get medication from our health facility. They want a private clinic where the medication is available. But all cannot buy the medication because of economic problems" (HCP 8).

Other participants describe;

"A shortage of medication is the one. There is a medication supply here for scabies treatments during epidemics but not continuously available for clients to treat every day in this facility. If cases come to this facility, they are referred to Deder Hospital or other private clinics. And there is also a gap in treating a patient because no training was given as in the other program, and there is no guideline to treat the patient accordingly" (HCP 10).

Some health care providers have explained the shortage of medication at the health centres, and if the facility purchased medicine, it was expensive, and the patient can't afford it due to their economic status.

"Drug supply may be a problem sometimes. Like another drug, scabies drug may not be available sometimes. There is no scabies guideline, and having a guideline is very essential. The drug found in the health centre was provided with a cost that may be difficult for some people to afford. Thus, it would be good if support for the drug could be obtained so that those who have the need could get it for free" (HCP 16).

3.2.2. Sub-theme 2.2. Support from NGOs

Most of the study participants described that the support given to the community helped in decreasing the incidence of scabies and treating each case with appropriate treatment without any charge.

"Previously, an NGO gave us drugs such as permethrin and soap. But there is no drug in our health centre now, so we prescribe it to outside if they could get it. We provide education on the communicability of the disease and how to prevent the transmission from the person who has the disease, especially on how to protect their family's hygiene and the importance of seeking health care if another family member develops a similar disease" (HCP 2).

3.3. Theme 3: unavailability of scabies management guidelines

This section discusses the themes that emerged concerning the unavailability of scabies management guidelines. Under this theme, there are two sub-themes which included the need for continuous professional development for scabies management and the need for scabies management guidelines were discussed.

3.3.1. Sub-theme 3.1. Need for continuous professional development for scabies management

This study has identified that the health care providers working in the primary health care facility provided treatment for scabies patients with the knowledge acquired from professional education. There was no training or orientation for professionals to develop their skills in the area, and it needs attention from higher officials.

"First, it is a must to update professionals regarding the management of scabies at health centres through training and other motivations" (HCP 9).

“... human resource development and motivation by training, capacity building regarding scabies management is very important. The staff should be motivated. Training should be given to at least one person per year. The top managers of the health system should also know and discuss the solution” (HCP 6).

Other participants explained;

“I think it is very good if you give the necessary training and orientation so that we can go down in the community and serve our communityFor example, it is not as difficult to get, for example, training for malnutrition, so it should be like that for scabies. Necessary materials for scabies should also be available too. The guideline is also very essential. In general, the attention given to scabies by the government is very low compared to other communicable diseases” (HCP 13).

3.3.2. *Sub-theme 3.2. Need for scabies management guidelines*

Most of the health care providers indicated that there was no management guideline for treating scabies like other diseases. They treat scabies by their experience and by the knowledge acquired from professional education.

“Availability of guidelines is also very good. For example, if I have a guideline, I will read it and can manage the disease more appropriately. It also helps us to develop our skills and to provide quality services for the community” (HCP 14).

“We have no guidelines for the management. We work with other diseases, otherwise, there is no separate guideline for scabies treatments. I do not know the reason why it can't have guidelines. There is no training for scabies management. We diagnose the disease by looking at its signs and symptoms” (HCP 17).

3.4. *Theme 4: scabies data management*

This section discusses the themes that emerged concerning scabies data management regarding the management of scabies in primary health care. Under this theme, there are two sub-themes which included registration and reporting system with regards to incidence of scabies and surveillance system for scabies were discussed.

3.4.1. *Sub-theme 4.1. Registration and reporting system with regards to incidence of scabies*

The finding indicated that there was a need for a registering and reporting system in most health care facilities. They did not give attention and give space for the registration and reporting of the case in the monthly and weekly reporting format. The health care providers share their concerns as detailed below.

“It shouldn't only be when it became an epidemic, both the Woreda health office, as well as the Regional health bureau (RHB), don't raise the issue when there is no epidemic, they through the agenda after the epidemic is controlled. This is a highly communicable disease, so it should be considered, and we must run it with other communicable diseases. The RHB speak about it when NGOs talk about it. It shouldn't be this way. RHB didn't give necessary attention even during the epidemic and forgot it totally after the NGO stopped working on it. When we see its effect, it deserves the attention given to nutrition as it is also highly connected. Disease such as malaria has a weekly report format. Scabies should also be entered in daily, weekly and monthly report formats. Currently, it has no reporting format. We send the report simply by writing it on paper. Doing unreported activity doesn't give you a moral to do. It should have a detailed reporting system, including who affected, how many family members affected and the like starting from the health post” (HCP 1).

3.4.2. *Sub-theme 4.2. Surveillance system for scabies*

Some of the study participants mentioned that to improve the management of scabies, strengthening the surveillance system and improving the reporting mechanism were mandatory.

“The surveillance should be strengthened. Currently, I am working on the surveillance, I am reporting it by filling it in by pen on the form since scabies doesn't include in the surveillance reporting format. The format has all the list of diseases under surveillance but has no scabies. So that most of the time health extension workers missed reporting. I have asked them to tell me on the phone and then add on the booklet by hand and send it to the Woreda” (HCP 15).

“Currently, they have sent both weekly and monthly reports filling 0 on scabies since they stopped diagnosing the disease and couldn't do anything about it. So, health extension workers should be re-organized and work on entering the community on such issues as malnutrition and other communicable diseases” (HCP 2).

3.5. *Theme 5: suggestions regarding better management*

This section discusses the themes that emerged concerning suggestions regarding better management of scabies in primary health care. Under this theme, there are two sub-themes which included recommendations regarding drug supply and recommendations regarding capacity building were discussed.

3.5.1. Sub-theme 5.1. Recommendation regarding drug supply

Some of the health care providers give some recommendations regarding drug supply to improve the system and provide appropriate medication for the client by improving the scabies management of a primary health care facility.

“As a strategy, medication supply should continue for health centres. The problem is high in the community. Most clients are far from the health facilities, and it is difficult to come and get treatments. If all are trained and ready to treat the patients, it is good. The ministry of health should think about the treatments and drug supply. Mass awareness and treatment are good strategies. There is no focal person for scabies. All other problems have a focal person but not scabies. The reporting system is just by collecting information from each health post. If we face severe cases, we refer them to Deder Hospital. The main problem here is the lack of medication and water supply” (HCP 11).

“... The guideline is needed for the management. Drugs also should supply to health facilities. Training should give to health professionals and the focal person must assign for the case management. The community must follow health extension workers’ health education about the prevention and treatments of scabies. The Health development army should strengthen in the community to facilitate treatment modalities” (HCP 17).

3.5.2. Sub-theme 5.2. Recommendation regarding capacity building

The finding of this study shows that health care providers recommend improving their capacity through training and other capacity-building schemes. The participant mentioned the following:

“All health professionals should be trained properly and participate in the management of scabies as explained before. Training is important to create awareness. There is no focal person here. To me, awareness is created, and training should be given accordingly” (HCP 10).

Another participant explained in the following vignettes:

“I never saw any health care provider who received training regarding scabies, so I believe the lack of training is also one possible barrier to scabies management. Since it is believed as a disease of the poor, many people also don’t want to expose their disease before it becomes severe. So, giving training for health professionals is one of the methods to solve the problems” (HCP 13).

3.6. Theme 6: linkage and communication at a different level

This section discusses the themes that emerged concerning linkage and communication at different levels regarding the management of scabies. Under this theme, there are two sub-themes which included communication between the health system and communication with different health sectors were discussed.

3.6.1. Sub-theme 6.1. Communication between the health systems

This study identified that communication within the health system about the service provided to the community was strengthened. If the communication between the systems was strengthened and well-functioning, the problem of the community has been solved. Some health care providers described the issue as below.

“In collaboration with health extension workers, we have registered many people with the disease and sent their list for office much time. But nothing has been done till now. Even to provide health education, needs to provide treatment for those who have the disease. So, availing the necessary treatment is crucial” (HCP 12).

“The relationship between the health centre and Woreda as well as the zone should also be strengthened. There should be good communication on the issues both on the phone as well as physically” (HCP 15).

3.6.2. Sub-theme 6.2. Communication with the different health sectors

This study has identified that communication with different sectors like education and agricultural sectors was mandatory to teach the community on the way of scabies prevention and control. Also, it helps to identify the case early and reach the community in different directions.

“There should be strategies which link the community agricultural extension workers to educate also on nutrition and teachers to provide education on scabies. The teachers could educate as they easily access children and teach them if they got the necessary training on the issues. In this way, we can easily prevent the disease. The regional health bureau should also give attention to scabies and strict follow-up like other diseases and even more. The drug should also be available like other basic drugs” (HCP 4)

“For me, it needs working on health extension workers. Because they are the ones in the community most of the time. If they must get the necessary training so that they can go through the community and provide health education. Close follow-up has also important to identify what they are doing. Training and involving DA and teachers is also very good to control scabies. A strong link is also important between the health centre, Woreda health office and the Zonal health department. Scabies should

be one point of discussion when they come together. Necessary support should also be given to us from the higher offices” (HCP 14).

3.7. Theme 7: facilitators to scabies management

This section discusses the themes that emerged concerning facilitators to scabies management. Under this theme, there is one sub-theme which are the health system/human health workforce were discussed.

3.7.1. Sub-theme 7.1. Health system/human health workforce

The study participants mentioned that the existing health system starting from the federal level to the community was one of the enabling factors to resolve all health-related issues including scabies if we use it properly.

“The structure is available starting from the ministry to the community. If we use the system appropriately, I think we can easily serve the community as needed” (HCP 10).

“In my opinion, the enablers are the system which gives service starting from the region to the community. This means the primary healthcare facility has five health posts under it and gives service to the nearby community. Each health post has two health extension workers to give this scabies management and health education on how to prevent and control the disease by using a women’s development army in a team of five households. This team discusses each issue every week and identifies the case and sends it to a health extension worker, but currently, there is a shortage of the drug in the health post, and she referred them to health centres after giving health education” (HCP 18).

This study also identified that the human health workforce in the primary health care facility was enough to give service to the community.

“The enablers for me are the presence of a health workforce like health extension workers. We trained them on the problem, and they provided health education for the community, and this helped us a lot to improve the prevalence of the disease” (HCP 3).

“If we used professionals, it would be enough to give the service to the community, but the gap was the absence of training in scabies like other diseases” (HCP 11).

3.7.2. Theme 8: health education regarding scabies

This section discusses the themes that emerged concerning health education regarding scabies. Under this theme, there are two sub-themes which include personal and environmental hygiene and lack of awareness were discussed.

3.7.3. Sub-theme 8.1. Personal and environmental hygiene

Most health care providers were good at offering health education to the community on personal and environmental hygiene during their day-to-day activity and outreach programme.

“... we teach them the importance of protecting personal and environmental hygiene. Also, we educate on the importance of separating the sleeping place of a diseased child from those who are healthy and washing clothes within boiled water before re-using after applying the drug” (HCP 4).

“Community awareness is very important to prevent scabies. So, health education may be one strategy to treat and prevent the disease. Latrine usage, personal hygiene, and other household utensils should be used in hygiene manners. We provide health education every morning in the health center” (HCP 6).

Some of the health care providers explain the importance of keeping personal and environmental hygiene as reflected in the following vignettes:

“First, hygiene is the best management for scabies. Keeping personal hygiene is one measure. Second, a balanced diet is important. Scabies may be high when the immunity of the individual decreased. In this area the community is poor, and they have not got enough balanced diet. Most of the children had malnutrition” (HCP 10).

“Lack of personal hygiene is one of the causes of scabies. Environmental sanitation is also a factor. Even though it is not present at the moment, there is BBL which is provided by GOAL (NGO). The case was disappeared for some time from the community, but now it is there. During 2009E.C there is an epidemic and the treatment was provided, and the case decreased, and in 2012/13E.C the cases come again. Now we observed that the problem is distributed in the community” (HCP 11).

Some of the health care providers described that educating the patients regarding the practice of personal and environmental hygiene, ways of medication use and separating the sleeping area of the infected individual from other family members was mandatory to stop the transmission spreading from one to the other.

“Concerning the management, the society can prevent and manage scabies by washing their body with the soap they could get, washing and changing the affected children’s clothes and feeding balanced nutrition. As the health centre, we are working on infection prevention. We educate the community when they come to the health centre on how to protect their environmental

hygiene, separating the cattle from home, washing their children's hands before eating, cleaning the dish on which the child eats, protecting children's hygiene in general and also how to protect their hygiene too" (HCP 12).

"The majority of the communities in our zone are poor. So that I believe poor economic status is one barrier to scabies management. The low practice of protecting personal hygiene is also other barriers. The community's way of life is also another problem. Our societies live together in one room in most cases, so they tend to contact each other or cannot maintain their distance while one person has the disease" (HCP 13).

3.7.4. Sub-theme 8.2. Lack of awareness

This study identified that most of the infected individuals did not come to the health facility early due to a lack of awareness, specifically assuming that scabies was caused by a lack of nutrition.

"Most of the people don't go to come to the health facility early due to the lack of enough awareness about the disease. They bring children after the whole-body part is wounded and sometimes infected and the disease is transmitted to all family members. In the rural area, everyone sleeps in one place, even people sleep with cattle in some cases" (HCP 4).

"Most of the people don't go to come to the health facility early due to the lack of enough awareness about the disease. People just believe it is caused by the lack of things to eat or lack of nutrition while the reality is due to poor personal hygiene because of the lack of water in some cases while other do not protect their hygiene even if they have water. Obtaining Ivermectin to be distributed as the campaign was a big opportunity in treating scabies and reducing its prevalence in the community although still highly prevalent in some Kebele" (HCP 5).

4. Discussion

This study explored health care providers' experiences and challenges in diagnosing and managing scabies in primary health care. The study revealed that health care providers diagnosed and treated scabies using the history and physical signs and symptoms of the patient. Vasanwala, Ong, Aw and How found a similar result which indicates that scabies was diagnosed by visual inspection, observing the characteristics of pruritic lesions and their distribution, together with the contact history of the patient [12]. In another study, the diagnosis was usually based on clinical features only [13], which validate our findings in the current study.

Duff, Desrosiers, Brodell and Helms also indicate that the diagnosis of scabies is confirmed by asking about the history and clinical symptoms with absolute confirmation of the diagnosis requiring the identification of the ever elusive yet pathognomonic burrow [14]. The classic method of diagnosis includes skin scraping, the burrow ink test, epidermal shave biopsy, the adhesive tape test, and dermoscopy, which contradicts the findings of this study.

Thadchanamoorthy and Dayasiri found that the management of scabies depends on the practice of health care providers, availability of drugs and cost-benefit ratio, which is consistent with the findings of the study [15]. According to the WHO, the highest rate of infestation of scabies and secondary complications occurs especially in overcrowded communities where poverty coexists, and where there is limited access to treatment [16]. In this study, there was limited access to appropriate medication and the patient was referred to other facilities for treatment and better management. This approach was very difficult to prevent transmission and control the development of the disease, and it needs attention.

In the study conducted by Lopes, Da Silva, Ca et al., they indicate scabies infected individuals have visited health facilities lately due to different determinants such as cost and the distance of the health facility [17]. On the other hand, they go to traditional healers because they are related to beliefs regarding stigma and fear of the unaffordable cost of the treatment, which is consistent with the findings of the study.

Busetto, Lujikx, Calciolari, Ortiz and Vrijhoef found a similar result which indicates a lack of training or knowledge on how to perform the intervention develops fears around competencies, fear of change, and fear of making mistakes [18]. These were most of the barriers to health professionals while doing their day-to-day activities. Al-Zahrani, Nahar, Al-Zahrani, and Al-Zahrni found that lack of training, guidelines and other learning materials were reported as barriers for professionals to diagnose and manage dermatological disorders including scabies [19]. This could be explained by the health care providers in our study that the management of scabies was difficult and done with their experience when compared to other diseases treated in the primary health care facility.

Budimu, Emidi, Mkumbaye and Charles Kajeguka found that the reduction of infectious disease burden would not meet if health professionals do not have access to and use national diagnosis and treatment guidelines [20]. In addition to availability and use, regular training among health providers would be important in decreasing the cases. Lack of access and use of national diagnosis and treatment guidelines may have contributed to inattention to the guideline. This compromises the process of diagnosis and treatment of the disease.

Ng'etich, Voy, Kirinyet and Mutero state that the implementation of integrated disease surveillance and response (IDSR) integrates surveillance efforts with laboratory support to achieve effective public health action and response [21]. In Africa, most health systems, especially at peripheral levels, depend on paper-based reporting mechanisms due to limited technological and infrastructural capacity. It was difficult to achieve effective disease surveillance in a health system with the absence of adequate infrastructure and a limited workforce to the surveillance data reporting process [21]. Therefore, strengthening effective data reporting through appropriate reporting channels, appropriate methods and timely were vital for a well-functioning surveillance system.

Desta, Shifa, Dagoye, Carr, Roosmalen, Stekelenburg, Nedi, Kols and Kim also found that the support was given to the health care

providers and health extension workers more focused on reviewing records and reporting the case rather than giving an orientation on how to identify and treat cases and support [22]. This showed the massive gap in communication between the health care providers, the health extension workers and the district health office.

Lopes et al. found that keeping personal hygiene and avoidance of contact with an infected individual and their personal items was the principal method of preventing scabies [17]. Additionally, early treatment for those infected and giving focused health education was the main strategy for preventing the spread of the contagion, which emerges also in this study's findings. Rawat and Thakur found a similar result which indicated that a lack of awareness and knowledge among individuals infected by scabies occurs in various manifestations [23]. Increasing awareness and knowledge of the community through appropriate health education and psychological support that focuses on the special consideration for the most affected population lessens the burden of the disease.

We are aware that there are some limitations of our study. First, the study used a qualitative study design and involved health care providers who participated voluntarily. The experience of health care providers who did not participate in this study could offer different views. Second, the study was carried out in Deder district of the East Hararge zone of the Oromia region. This may limit the generalizability of the study findings to other areas. Despite this limitation, the themes and sub-themes that emerged from this study are also supported by other studies in a similar context, which allows the transferability of the study findings to other similar settings.

5. Conclusion

One of the imperatives in the health system is delivering appropriate health care management to those in need. The absence of constant and proper management of scabies in primary health care due to different challenges may cause the disease cycle to continue and affect the efforts directed at reducing the disease burden in the area.

Authors' contributions

Sagni C. Jira: Conceived and designed the experiments; Performed the experiments; Analysed and interpreted the data; Wrote the paper.

David D. Mphuthi and Kholofelo L. Matlhaba: Analysed and interpreted the data; Contributed reagents, materials, and analysis tools; Wrote the paper.

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Competing interests

The authors declared that there is no conflict of interest.

Disclaimer

We declare that all authors have read and approved the manuscripts and contributed significantly to the work, and the manuscript has not been previously published nor is it being considered for publication elsewhere at the moment.

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Abbreviation

NGO Non-governmental organization
HCP Health care providers

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