

# Assessment of Knowledge and Attitude of Community on Leprosy Patients in Kuyera Town, West Arsi Zone, Oromia Region Southeast Ethiopia

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## Abstract

**Background:** Leprosy is caused by bacteria mycobacterium leprae though very few believed this. In perception of community leprosy is disabling, incurable, hereditary disease, and associated with dirtiness, oozy and bad smelling wounds. Negative perceptions result in reduced quality of life for leprosy patients and hold back their access to health care services. In Ethiopia Leprosy was identified as major health problem since 1950 and it is still endemic in Oromia, Amhara and Southern Ethiopia.

**Objectives:** To assess knowledge and attitude of the community on leprosy.

**Methods:** Community based cross sectional study was conducted. 296 houses were selected using systematic random sampling. Data was cleared, checked and analyzed by master sheet, scientific calculator, and computer and presented by using tables, figure and narrative texts. Chi-square test was done and p-value <0.05 was considered statistically significant.

**Results:** Overall 57 (19.31%) of the respondents had high level knowledge on leprosy. Majority 205 (69.26%) knew that leprosy can lead to deformities and disfigurements, 143 (48.31%) believe the disease is caused by bacteria, 120 (40.54%) believe it is due to curse or punishment by God and 228 (77.03%) said it is hereditary. 105 (35.47%) believe leprosy is transmitted by having sexual contact with leprosy patients. 275 (92.91%) said leprosy can be treated by drugs. 107 (36.15%) did not want to sit with leprosy patients. Age, religion and educational status had association with knowledge of leprosy.

**Conclusion:** About four fifth had low level knowledge and majority had negative attitude on leprosy. Majority knew multiple causes for leprosy. Less than half replied that leprosy is caused by bacteria and more than one third said it is caused by curse or punishment from God. Health education to reduce stigmatizing behaviors and improve the community knowledge of and attitude to leprosy should be given focus.

**Keywords:** Leprosy; Knowledge; Attitude; Community

**Abbreviations:** AA: Abebe Abera; EMIC: Explanatory Model Interview Catalogue; IRB: Institutional review board; KAP: Knowledge, Attitude and Practice; MB: Mohammed Beriso

## Introduction

Leprosy is caused by slowly multiplying bacteria called Mycobacterium leprae, an acid-fast bacillus which can remain potent even when dried out. It occurs in large numbers in the lesions of lepromatous leprosy and has a unique ability to enter nerves [1].

In the perception of community leprosy is a disabling disease that is incurable, hereditary, and associated with dirtiness, oozy and bad smelling wounds [2]. It was found that both the leprosy patients as well as community members were still not sure about the cause of leprosy [3]. Leprosy is a form of punishment for wrong actions or deeds committed sometime in the past or present life according to perception of community [2]. Very few participants believed that it is caused by a bacterium and more than two fifths (45.7%) believed that skin-to-skin contact with an infectious person could be a possible cause. Breach of taboos and intake of wrong food were other possible reasons for leprosy [4]. 37% of family members of leprosy patients were aware that leprosy is caused by a germ [5].

The negative perceptions may result in reduced quality of life for leprosy patients and holdback their access to health care services [2]. More than half of the participants (54.5%) perceived shame or embarrassment in community due to leprosy. Similarly, 49.8% dislike to buy foods from leprosy patients and 47.1% responded it was difficult to find work for leprosy patients [6]. Prejudice was still present in the wider community and a significant minority believed that patients should be kept apart from other people and emphasis needs to be placed

on education regarding transmission and the low rate of infectivity of leprosy [7].

A study in India revealed that respondents believed that leprosy was transmitted through sharing food and drinks, utensils, contact with the leprosy patient's sweat, mosquito or insect bites and sexual contact with a person with leprosy. 70.20% of the respondents reported painless or non-itchy white patches on the body as early signs of leprosy. Two third also reported anaesthesia, numbness and red patches as early signs and disfigurement due to delay in seeking treatment leads to deformity [4].

Those who misunderstood about leprosy had higher EMIC score (Explanatory Model Interview Catalogue) [6]. A majority of respondents had some knowledge of leprosy but no one knew early signs or symptoms or where to get proper diagnosis and treatment [8]. Only 15% of the communities were aware of the early signs of the disease and 54% of them felt that leprosy is contagious [9]. Study in Nepal shows that 95% of the leprosy patients known by the community have observable signs like wounds, swellings and deformed feet or

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hands [10]. Skin patches and loss of sensation as symptoms of Leprosy were known to 73% of the family members [5].

Almost all stated that leprosy was curable [11]. 60% of the community believes that leprosy is curable while many (64%) believe that it is associated with deformities and disabilities. Most of the community (79%) said it is necessary to attend hospital for leprosy treatment whereas 60% of them felt that it is necessary to segregate leprosy patients [9].

A study by Nighat Nisar showed lack of knowledge about the cause, sign symptom, treatment and prevention of disease and positive attitude towards the patient showing sympathy but significant level of stigma was found about the leprosy patient among the community. The majority of people did not receive any health education session and only 3% were aware of leprosy center in the area [12].

Study done in Guadalajara showed that 67% responded that leprosy is an infectious disease, 64% knew presence of skin lesions as a sign of leprosy, and 60% knew that a microbe causes the disease. 45% said leprosy is associated with poverty and 40% said it is disabling. Only 31% stated that leprosy is curable. 57% had negative attitude towards employing a leprosy patient and 30% had negative attitude to have a leprosy patient as a spouse or partner [13].

Half of the respondents said leprosy must be treated separately from general patients but they had no hesitation in working with or visiting a leprosy patient [8]. Health education campaign had a favorable impact on the knowledge and attitude of school children about leprosy [14]. 64% family members said that leprosy was curable. About 82% of the family members stated that deformities can be prevented by early and regular treatment [5].

A study demonstrates a relationship between increased knowledge of leprosy and a positive, less stigmatizing attitude. Low level of education, rural residence, older age, female gender and Muslim religion were associated with stigmatizing attitude and beliefs towards leprosy [14]. Multivariate analyses, adjusted for sex, confirmed the significant association of literacy with both knowledge and attitudes [11].

Almost everyone knew of leprosy. A vast majority mentioned bad blood, or divine curse as the cause of leprosy. Less than 10% of illiterates and only about 40% of literates reported infection as the cause of leprosy [11]. Very few people among the community know that leprosy is caused by a germ (8%) (9). A high knowledge level did not necessarily generate positive attitudes towards leprosy but there were situations in which it helps to have positive attitudes. There was a general negative attitude even though 35% to 50% of the respondents had high knowledge level [15]. Nearly 50-60% reported that there was discrimination and close to 70% felt that leprosy affected social participation, over 90% attributing this to adverse social stigma [11]. Motives for negative community behavior are found because people fear infection by germs, but fear of a curse from God is also mentioned and negative community behavior is still present in eastern Nepal [10]. Most of the family members (73%) did not share articles used by patients and 91% of them felt leprosy patients can be employable. About 45% the family members opined that a cured leprosy patient can marry. All family members were found to be willing to support their leprosy affected relatives [5]. Social stigma of leprosy encountered patients needs to be addressed especially in peri-urban areas [3].

Before developing any interventions to address leprosy related low awareness and stigma, better understanding about its cause, means of transmission and nature is required. With this background this study was aimed with the main objective of assessing the community

knowledge and attitude about leprosy among family members in Kuyera Town West Arsi, Oromia region of Ethiopia.

## Methods and Materials

### Study setting and period

The study was conducted from February 15-22, 2015 at Kuyera town, West Arsi Zone Oromia region South East of Ethiopia 235 km from Addis Ababa. The town has a total population of 4,534; out of which 2,358 were female with a total household of 1,089. The weather condition of the town is woinadega.

**Study design:** Community based cross sectional study was conducted.

**Study population:** One eligible member of selected households in Kuyera town was involved in the study.

**Exclusion criteria:** Individuals who are under the age of 18 years and above 65 years, those who have hearing impairment and mental illness were excluded.

### Sample size determination and sampling technique

**Sample size determination:** The sample size was determined by using single population proportion formula and correction formula giving the sample size of 312 and finally 296 respondents were participated in the study by giving complete information. The response rate was 94.87% and the rest 5.13% were discarded because of incompleteness of information.

**Sampling technique:** Systematic random sampling technique was used by collecting data from every third household to get 312 households from 1,089 households of the study area and the first household was selected by lottery method from the first three houses. The list or registration number of households was received from the kebele administrative.

### Operational definition

**High level Knowledge:** respondents who are able to answer  $\geq 75\%$  of knowledge questions correctly were regarded as having high level knowledge.

**Low level knowledge:** respondents who correctly respond to  $< 75\%$  of knowledge questions were regarded as having low level knowledge.

**Favorable attitude:** those who are able to answer  $\geq 50\%$  of the attitude questions correctly were regarded as having favorable attitude.

**Unfavorable attitude:** those who are able to answer  $< 50\%$  of attitude questions were regarded as having unfavorable attitude.

### Data collection tools and procedure

Structured closed ended questionnaire which has three parts was prepared after review of relevant literatures. The first part of the questionnaire was used to assess socio-demographic characteristics of the community, the second part was used to assess knowledge of the community and the third part to assess attitude of the community towards leprosy and leprosy patients.

**Data collection procedure:** Data was collected by two trained 4th year nursing students through face to face interview. The data was collected from the members of each selected household whose age was greater than 18 years old and less than 65 years. The purpose of data

collection was explained first to respondents to increase their awareness about the study before the start of the interview.

**Data processing and analysis:** After collecting the data it was cleared, checked and analyzed by using scientific calculator, tally sheet and computer. Finally the analyzed data was presented by using frequency tables, graphs and narrative texts. Chi-square test was calculated at 5% level of significance and p-value was used to observe whether there is difference statistical significance or not.

**Data quality assurance:** To maintain the quality of data pre-test was done on 5% of the sample to know whether the questions is clearly understandable or not before moving to the study and data collectors were trained before actual data collection. The collected data was checked daily for completeness and consistency before data processing and analysis.

### Ethical Consideration

Ethical clearance letter was obtained from Jimma University College of Health Science institutional review board (IRB). Further, for each study participant the objective of the study was stated by data collectors. In addition participants were informed that they have full right to refuse participating in the study and can interrupt the interview if not comfortable with it, but they were informed that their participation in the study is very important. Confidentiality of the information was assured and privacy of the study population was respected and kept as well.

## Results

### Socio-demographic characteristics of respondents

A total of 296 respondents involved in the study by giving complete information. More than half 158 (53.38%) were females. About one third 100 (33.78%) of the respondents were in the age group of >=35 years followed by age group between 30-34 years 64 (21.62%). Regarding ethnicity the most dominant ethnic group is Oromo accounting for 235 (79.39%) followed by Amhara 23 (7.77%). Around two third 196 (66.22%) of the community were Muslims followed by protestant 50 (16.89%) and regarding marital status about two third 205 (69.26%) were married whereas 50 (16.89%) were single. Concerning educational status less than one third 91 (30.74%) of the participants were illiterate. More than one third 102 (34.6%) of the community were farmers and 39 (13.18%) were government employees (Table 1).

### Knowledge of the community about leprosy

Only 57 (19.26%) of the respondents have high level of knowledge on leprosy and the remaining 239 (80.74%) had low level knowledge. All of the respondents have heard about the disease called leprosy. Regarding sign and symptoms of the disease majority 205 (69.26%) of the respondents knew that leprosy can lead to deformities and disfigurements followed by leprosy can present as loss of sensation which accounts 132 (44.59%). Regarding the cause of the disease majority of the respondents report multiple causes of the disease. 228 (77.03%) of the respondents believe that leprosy is hereditary disease, whereas 143 (48.31%) believe that it is due to germs (bacteria), 120 (40.54%) believe that the disease is due to curse or punishment by God. Most of the participants were unaware of the way of transmission of the disease and they report more than one way of transmission. More than one third 105 (35.47%) of the community believe that leprosy is transmitted by sexual contact with leprosy patients and 38 (12.84%) believe that it is transmitted by air or flatus of the leprosy patients. Regarding treatment of the disease majority 275 (92.9%) responded that leprosy can be treated by pharmaceutical drugs, followed by medicinal herbs which accounts 16 (5.41%) (Table 2).

Socio-demographic characteristics		Frequency	Percentage
Age	15-19	30	10.14
	20-24	49	16.55
	25-29	53	17.91
	30-34	64	21.62
	>=35	100	33.78
	Total	296	100
Sex	Female	158	53.38
	Male	138	46.62
Ethnicity	Oromo	235	79.4
	Amhara	23	7.77
	Guraghe	14	4.73
	Others	25	8.45
	Total	296	100
Marital status	Single	50	16.89
	Married	205	69.26
	Widowed	20	6.76
	Divorced	21	7.1
	Total	296	100
Religion	Muslims	196	66.22
	Orthodox	43	14.53
	Protestant	50	16.89
	Others	7	3.57
	Total	296	100
Educational status	Illiterate	91	30.74
	Read and write	43	14.53
	Grade 1-6	100	33.78
	Grade 7-11	37	12.58
	Grade ≥12	25	8.45
	Total	296	100
Occupational status	Government employee	39	13.18
	Merchant	48	16.22
	Farmer	102	34.6
	Daily worker	37	12.5
	House wife	68	22.97
	Factory worker	2	0.68
	Total	296	100

**Table 1:** Percentage distribution of Socio demographic characteristics of the community in Kuyera Town, West Arsi Zone, Southeast Ethiopia, 2015 (n=296).

### Attitude of the community towards leprosy

The attitude of the community in this study towards leprosy patients is unfavorable. Most of the respondents have negative attitude towards leprosy patients. About 107 (36.15%) of the study subjects report that they did not sit with leprosy patients in public conveyance, 197 (66.55%) of them report that they would avoid leprosy patients in different activities, 254 (85.81%) did not share food from the same plate with leprosy patients, 145 (48.99%) report that they will not marry one with family history of leprosy, 72 (24.2%) said that it is difficult for leprosy patients to get married, 164 (55.4%) said that they did not agree to do work in the same place with leprosy patients, 97 (32.77%) said that they did not allow their children to play with child of leprosy patients, 177 (59.8%) feel ashamed if they have leprosy patient in their family but majority 290 (97.97%) of the respondents said that they support throughout the duration of the treatment if family member affected by leprosy while 6 (2.03%) did not, 288 (97.3%) of them report that they would participate on health education regarding leprosy if any, 292 (98.65%) of them said that they support leprosy patients financially if he/she is unable to work.

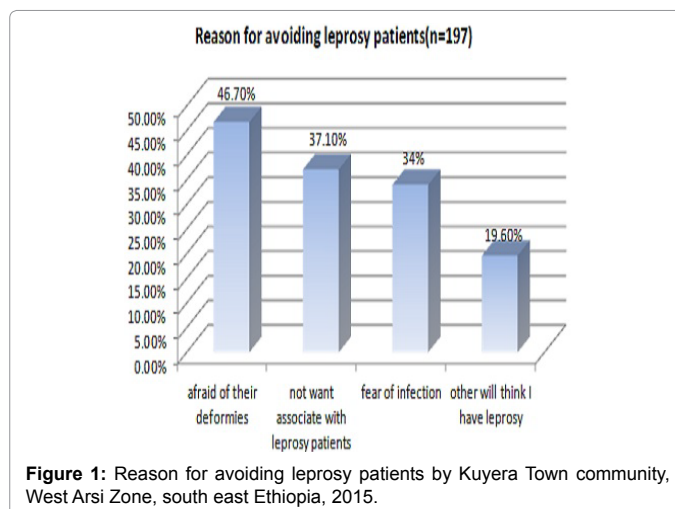
Majority of the respondents 288 (97.30%) advise him or her to seek treatment from hospital /poly clinic if the person they know contracts

Variables		Frequency	Percentage
Heard about leprosy	Yes	296	100
	No	0	0
Symptoms of leprosy	It causes skin irritation or itchiness	32	10.81
	It can present as skin patches	48	16.22
	Leprosy can present as loss of sensation	132	44.59
	It can lead to deformities or disfigurement	205	69.26
	Leprosy patients always end up with deformities	96	32.43
Causes leprosy	Unclean environment	30	10.14
	eating too much cool food	4	1.35
	A punishment for sins of parents or grand-parents	57	19.23
	Due to curse/ punishment by god	120	40.54
	Is hereditary	228	77.03
	immoral conduct	48	16.22
	germs (bacteria)	143	48.31
	Due to bad blood	7	2.37
Means of transmission of leprosy	air or flatus of the patients	38	12.84
	bathing in a river with leprosy patients	100	33.78
	contaminated soil	7	2.37
	sexual contact with leprosy patients	105	35.47
	prolonged close contact with leprosy patients	138	46.62
	sitting close to the leprosy patients	40	13.51
Treatment of leprosy	Pharmaceutical drugs	275	92.90
	Medicinal herbs	16	5.41
	Religious rituals	5	1.69
	Other	0	0

**Table 2:** Percentage distribution of knowledge of Kuyera Town community towards leprosy sign and symptoms, West Arsi Zone, South East Ethiopia, 2015 (n=296).

Attitudes of community towards leprosy		Frequency	Percentage
Sit side by side with leprosy patient in a public conveyance	Yes	189	63.85
	No	107	36.15
Avoid a leprosy patient For example, avoid having food or activities with him/her	Yes	197	66.55
	No	99	33.45
Share food with the patients	Yes	42	14.19
	No	254	85.81
Marry to family members who have history of leprosy	Yes	151	51.01
	No	145	48.99
It is difficult for leprosy patient to get married	Yes	72	24.32
	No	224	75.68
Work in the same environment with a leprosy patient	Yes	132	44.60
	No	164	55.40
Allow your children to playing with a child of a leprosy patient	Yes	199	67.23
	No	97	32.77
Feel ashamed to tell others if having any leprosy patient in your family	Yes	177	59.80
	No	119	40.20
Take food cooked by leprosy patients	Yes	13	4.39
	No	283	95.61
Support them throughout the duration of treatment of there is affected family members	Yes	290	97.97
	No	6	2.03
Participate on healthy education regarding leprosy if any	Yes	288	97.30
	No	8	2.70
Help leprosy patients financially if he or she is unable to work	Yes	292	98.65
	No	4	1.35
Share cloths or other materials with cured leprosy patients	Yes	10	3.38
	No	286	96.62

**Table 3:** Percentage distribution of Kuyera Town community based on their attitude towards leprosy patients, West Arsi Zone, southeast Ethiopia, 2015 (n=296).



**Figure 1:** Reason for avoiding leprosy patients by Kuyera Town community, West Arsi Zone, south east Ethiopia, 2015.

Socio demographic characteristics		Level of knowledge		Association test	
		High level knowledge	Low level knowledge	X <sup>2</sup>	p-value
Age	15-19	9	21	17.7273	0.001395*
	20-24	14	35		
	25-29	16	37		
	30-34	10	54		
	≥35	8	92		
Religion	Muslims	28	168	9.2955	0.02561*
	Orthodox	13	30		
	Protestant	14	36		
	*Others	2	5		
Educational Status	Illiterate	0	91	211.5377	<0.00001*
	Read and write	2	41		
	Grade 1-6	3	97		
	Grade 7-11	30	7		
	≥grade 12	22	3		

\*Statistically significant at p-value <0.05

**Table 4:** Association between selected socio demographic characteristics of the community and knowledge level on leprosy in Kuyera Town, West Arsi Zone, Southeast Ethiopia, 2015 (n=296).

leprosy while 84 (26.92%) of them advise the patients to seek treatment from traditional healer (Table 3).

### Reason for avoiding leprosy patients

Regarding the reason for avoiding leprosy patients from those who avoid the patients (n=197) majority of them avoid the patients because of afraid of their deformities which accounts 92 (46.70%) and 73 (37.06%) of them did not want to have relation with leprosy patients, 67 (34.01%) of them fear that the patients will infect them (Figure 1).

### Factors affecting knowledge of the community

In this study regarding factors affecting community knowledge about leprosy; age, religion and educational status had significant statistical association with knowledge of the community (Table 4).

### Factors affecting community attitude towards leprosy patients

There was significant association between socio demographic characteristics like age, ethnicity and educational status and attitude of the community towards leprosy (Table 5).

### Discussion

In this study only 57 (19.3%) of the respondents had high level of



Socio demographic characteristics		Favorable attitude	Unfavorable attitude	X <sup>2</sup>	p-value
Age	15-19	12	18	12.12	0.016*
	20-24	16	33		
	25-29	13	40		
	30-34	16	48		
	≥35	47	53		
Ethnicity	Oromo	74	160	9.31	0.025*
	Amhara	14	9		
	Gurage	7	7		
	Others	9	16		
Educational status	Illiterate	13	78	33.35	<0.0001*
	Read and write	15	28		
	Grade 1-6	40	60		
	Grade 7-11	20	17		
	Grade 12+	16	9		

Statistically significant at *p*-value <0.05.

**Table 5:** Association between selected socio demographic characteristics and attitudes of the community in Kuyera Town, West Arsi Zone, Southeast Ethiopia, 2015 (n=296).

knowledge on leprosy and the remaining had low level knowledge. This finding is different from a study done in east Nepal which shows 35-50% of the respondents had high level knowledge about leprosy [15]. This discrepancy might be because of difference in socio-economic characteristics of the two communities or may be because of sample size.

In the recent study majority, 69.26%, of the respondents knew that leprosy can lead to deformities and disfigurements and 44.6% said that leprosy can present as loss of sensation, 16.22% and 10.81% responded presence of skin patches and skin irritations or itchiness as a sign and symptoms of leprosy respectively. This is different from study done in India in which 70.2% responded white patches, about two-third reported anesthesia, numbness, red patches and deformity as a sign and symptoms of leprosy. Study in Nepal indicated that 95% of the community responded wound, swelling, and deformed feet and hand [10] and 73% of the respondents reported skin patches and loss of sensation as sign and symptoms of leprosy [5].

In this study around half, 48.31%, of the respondents believe that the disease is due to germs (bacteria), 40.54% believe that it is due to curse or punishment by God, 77.03% said leprosy is hereditary, 19.23% believe that leprosy is punishment for sin of parents or grandparents, 16.23% believe that it is because of immoral conduct and 10.14% believe that leprosy is caused by unclean environment. This finding is different from study done in India which shows 37% of the participants believe that leprosy is caused by bacteria [5] and 45.7% believe that skin to skin contact with leprosy patient cause it [4]. Study in Mexico showed that 60% of the respondents said that leprosy is caused by microbes [13] and about 50% said leprosy is caused by infection [11] and very few 8% said that it is caused by germs [9]. This difference might be because of differences in community awareness about the disease and it also may be due to time difference.

In our study 46.62% of the respondents believe that leprosy is transmitted by prolonged close contact with leprosy patients, 33.78% said by swimming in river with leprosy patients, 13.51% said sitting close to leprosy patients, 35.47% believe it is transmitted by having sexual contact with leprosy patients, 46.28% by sharing personal items, and 12.84% by air or flatus of the patients. A study in India revealed that respondents believed that leprosy was transmitted through sharing food and drinks, utensils, contact with the leprosy patient's sweat, mosquito or insect bites and sexual contact with a person with leprosy [4].

In this study 92.89% of the study subjects respond that leprosy can be treated by pharmaceutical drugs and 5.41% said by medicinal herbs. A study done in India in 2006 reported that almost all believe that leprosy is curable [11] and the finding is different from other study in India in 2009 which indicate that only 60% of the participants said it is curable [9] and study in Mexico in which only 31% responded it is curable [13]. In another study 79% of the respondents said it is necessary to attend hospitals for treatment of leprosy [9].

In the current study most of the respondents have unfavorable attitude towards leprosy patients. 36.15% of the study subjects report that they did not sit with leprosy patients in public conveyance, 66.55% would avoid leprosy patients in different activities, 85.81% did not share food from the same plate with leprosy patients, 8.99% did not marry to someone who has family history of leprosy, 32.77% did not allow their children to play with child of leprosy patients. In study conducted in Thailand more than half of the participants (54.5%) perceived shame or embarrassment in community due to leprosy. Similarly, 49.8% dislike to buy foods from leprosy patients and 47.1% said it was difficult to find work for leprosy patients [6]. Other study in Guyana indicated that prejudice was still present in the wider community and a significant minority believed that patients should be kept apart from other people [7].

Regarding the reason why they avoid leprosy patients among those who avoid them, 46.7% reported afraid of their deformities, 37.1% did not want to have close relationship with leprosy patients and 34% fear of being infected from the patients. Study conducted in Nepal indicate that motives for negative community behavior are found because people fear infection by germs, fear of a curse from God and fear of social stigma [10].

In this study regarding factors affecting community knowledge of and attitude to leprosy age, religion and educational status had significant statistical association with knowledge of the community and age, ethnicity and educational status had significant association with attitude towards leprosy patients (*p*-value < 0.05). There is slight difference from study done in Tanzania where low level of education, rural residence, older age, female gender and Muslim religion were associated with stigmatizing attitude and beliefs towards leprosy [14] and study in India where multivariate analyses, adjusted for sex, confirmed the significant association of literacy with both knowledge and attitude [11]. This difference might be due to difference in socio-economic as well as socio-demographic differences among the study community.

Overall, like other studies this study identified that there was low level knowledge and unfavorable community attitude towards leprosy and leprosy patients that needs health education and behavior change communication to improve awareness and attitude of the community.

## Conclusion

More than half of the respondents were female, more than one third were farmers and around two third were Muslim.

Regarding the knowledge about four fifth of the participants had low level knowledge on leprosy whereas only one fifth had high level knowledge. More than two third of the respondents knew that leprosy can lead to deformity and disfigurement. Majority of the respondents reported multiple causes for leprosy. Less than half of the respondents replied that leprosy is caused by germs (bacteria) and more than one third responded that it is because of curse or punishment from God. More than one third of the respondents believe that leprosy is caused by sexual contact with infected patients and some believe that it is

transmitted by air or flatus of the patients. Majority of the study subjects responded that leprosy can be treated by pharmaceutical drugs.

Overall most of the respondents have unfavorable attitude towards leprosy patients. More than one third of the study subjects report that they did not want to sit with leprosy patients in public conveyance, about two third would avoid leprosy patients in different activities, majority did not want to share food from the same plate with leprosy patients, nearly half did not want to marry someone who have family history of leprosy, and around one third said they did not allow their children to play with child of leprosy patients. Most of the respondents feel ashamed if they have leprosy patient in their family but majority support throughout the duration of the treatment.

Regarding factors affecting community knowledge about leprosy age, religion and educational status had significant statistical association with knowledge while age, ethnicity and educational status are significantly related with attitudes of the community towards leprosy.

## Recommendation

The authors recommend health education to reduce stigmatizing behaviors and improve the community knowledge of leprosy and attitude to leprosy patients, taking local beliefs, attitudes, and perceptions into account. Importance of awareness programme to remove misconceptions related to cause and spread of the disease was stressed is also mandatory. A program to improve the patients self esteem and social participation should also be considered.

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## Authors' Contributions

AA: contributed a lot in title selection, proposal development, data collection, data analysis, interpretation, and report write-up. MB contributed a lot to the designing of the study starting from title selection through the methodology preparation, data collection and data analysis and report write-up.

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