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Knowledge, attitude, and practices related to cutaneous leishmaniasis in an endemic focus of cutaneous leishmaniasis, Southern Iran

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PEER REVIEW

Peer reviewer

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Comments

From an epidemiological and public health point of view, measuring people's awareness about different features of cutaneous leishmaniasis is important when planning control programs. Lack of information about people's KAP about diseases like leishmaniasis impedes the implementation of preventive measures. Considering the aforementioned point, findings of this study can be appropriately used for proper achievement of preventive programs for cutaneous leishmaniasis.
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ABSTRACT

Objective: To assess knowledge, attitudes, and practices (KAP) of inhabitants of an endemic area in Fars province toward cutaneous leishmaniasis (CL).

Methods: The study was carried out in Lapui district in Fars province, south of Iran, one of the most important foci of CL in this province. Sample size (237 residents) was calculated based on population. House-to-house survey was done to collect the data regarding knowledge, attitudes, and practices of the inhabitants. The head of each household was interviewed by a trained staff to assess his/her KAP related to CL. A semi-structured KAP questionnaire was used for data collection.

Results: Mean age of participants was 39 and more than half of the respondents were in the age group of 31-40. Males constituted 172 (72.5%) of subjects. Most of the respondents (84.3%) were literate. The majority of the study population (83%) had heard about *Salak* (local name for CL) and most of these respondents (91%) were aware that CL is presented with a cutaneous lesion. Nearly two-third of the participants (63.5%) stated the bite of mosquito (not specifically sandflies) for CL transmission. The respondents' attitude regarding the treatment of CL was not satisfactory since only 48% believed that CL can be treated by medicine. A noticeable proportion of respondents (21%) believed in indigenous medicine for the treatment of CL. A small proportion of respondents (14%) stated that traditional healers are good at treating this disease. More than two-third (69%) of respondents believed that the disease is preventable although most of interviewees did not know about preventive measures.

Conclusions: In this study, insufficient knowledge of community about infection nature, vector, transmission mode and preventive measures of CL, highlights the needs for a health education initiative to enhance the awareness of people about CL. This would improve inhabitants' contribution in control program of CL in this area.

KEYWORDS

Knowledge, Attitudes, Practices, Cutaneous leishmaniasis, Iran

1. Introduction

Cutaneous leishmaniasis (CL) is a disease which is common to both human and animals and is transmitted by female phlebotomine sandflies. In the Middle East, the disease is mainly caused by *Leishmania major* and *Leishmania tropica*[1].

CL which is popularly known as *Salak* in Iran is endemic in few provinces of the country including Fars, Isfahan, Kerman, Yazd and Khorasan[2-6]. Among these provinces, Fars, located in south of Iran, is one of the most important foci of CL and also visceral leishmaniasis[2,5,7]. For unknown

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reasons the number of cases of CL is increasing during the last several years in this area. Only in 2008, three thousand cases of CL has been reported from this area, and most of them were from a county named Lapui which is just 25 kilometer far from the capital of the province, Shiraz.

The number of cases of CL in this area (Lapui) is quite alarming and caused concern for health authorities in the area. The scale of the problem in recent years was so high that the mayor of Shiraz asked the health authorities in the region to bring about all the necessary measures to control the disease in the region. Therefore control of the disease is one of the most important priorities of health authorities and also other governmental agents in this region.

For the success of prevention and control programs of any disease, the most important requirement is community participation. Collaboration of the affected population is crucial in the achievement of the goals of control plan. Program implementers need to understand the disease-related knowledge, attitude, and practices (KAP) of the community, because these are the important determinants of community participation.

The current study aimed to assess KAP of inhabitants of a CL-focus (Lapui district) in Fars province regarding CL, since there are no data focusing on these aspects of the disease from this highly CL-endemic area. Such information may guide future health education efforts contributing to leishmaniasis control in this and other CL-endemic areas.

2. Materials and methods

The study was carried out in Lapui district in Fars province, south of Iran. Fars is one of the 30 provinces of Iran and its capital is Shiraz. It has an area of 122 400 km^2. Lapui (29°45′N, 52°32′E) is a district which is just 25 km far from Shiraz. At the 2010 census, its population was 6 439, in 1 460 families. The district is located at northeast of Shiraz. Lapui is one of the most important foci of CL in Fars province, and only in 2008 more than 600 cases of CL have been reported from this confined area.

Subjects of the study were the residents of Lapui district. House-to-house survey was done to collect the data regarding KAP of the inhabitants about CL. The head of each household was interviewed by a trained staff (a medical student) to assess his/her KAP related to CL. The head of the household was selected as the study subject since they play the main role in any decision-making affairs at the household in this region. If the head was not available, the most senior available family member was interviewed.

Sample size (237 residents) was calculated based on population and the sampling technique was systematic sampling. The names of the head of all of households were available in local health center (Lapui Health Center). A number, from 1 to 1460, was allocated to each name. Considering the sample size, the first name was selected from the first 10 numbers (from the list of 1460 households) and the next sample was the first selected number plus 14 (237/1640≈ 14). The sampling was continued till completing the sample size.

A semi-structured KAP questionnaire was used for data collection. The questionnaire contained all the necessary questions about KAP of peoples toward CL. The questionnaire was validated first by conducting a pre-testing on a small group of representatives of the population.

The ethics committee of Shiraz University of Medical Sciences approved the study and written informed consent of the interviewee was taken after explaining the aims of the study. Confidentiality of the details of the participants was guaranteed. Collected data were analyzed with SPSS, version 16 and $P< 0.05$ was considered statistically significant.

3. Results

The total respondents were 237 residents of the area. Mean age of participants was 39 and more than half of the respondents were in the age group of 31-40. Males constituted 172 (72.5%) of subjects whereas 65 (27.5%) of participants were female. The majority of the respondents (84.3%) were literate. From these educated respondents, 89 (37.5%) had more than 12 years of education. Illiterates constituted 16.7% of the participants.

Considering the occupational status of the participants, most of people were self-employed while 5.9% were unemployed. About 11.3% of respondents were single and 88.7% were married. Table 1 shows the details of sociodemographic characteristics of respondents.

Table 1

Sociodemographic features of participants (n=237).

Characteristics		Frequency (No.)	Percent (%)
Gender	Male	172	72.5
	Female	65	27.5
Age group	≥20	12	5.1
	21-30	37	15.1
	31-40	121	51.1
	41-50	43	18.2
	51 through higher	24	10.1
Marital status	Married	210	88.7
	Unmarried	27	11.3
Educational level	Illiterate	40	16.7
	Less than 12 years	89	37.5
	Secondary level (12 years)	61	25.7
	University level	32	13.5
Occupation	Employee	27	11.3
	Business (self-employed)	129	54.5
	Housewives	45	18.9
	Student	17	7.17
	Unemployed	14	5.9

The majority of the study population (83%) had heard about *Salak* (local name for CL) and most of these respondents (91%) were aware that CL is presented with a cutaneous lesion. More than half of the respondents reported microbe as the cause of disease while only 1.2% named *Leishmania* as the causative agent of the disease. Nearly two-third of the participants (63.5%) stated the bite of mosquito (not specifically sandflies) for CL transmission. In fact, more

than half of the respondents connected CL to a mosquito bite, although the rest had no appropriate idea about CL transmission. A very small proportion of the respondents (8%) stated a tiny biting flying insect as the cause of CL. Significant statistical association ($P<0.05$) was found between literacy and awareness about CL transmission.

Considering the breeding places of the vector, a significant proportion of the respondents (46.5%) had no idea or was wrong (39.5%) about breeding place of the vector. Most people mentioned dirty places, water ponds, garbage collection sites as the most probable breeding site for the vector. When the respondents were asked about the recognition of the vector, the majorities (82%) were not able to recognize the vector.

On being asked if they have seen a CL patient or have a CL patient in their family, 63% of the interviewees answered yes to this question.

The respondents' attitude regarding the treatment of CL was not satisfactory. Only 48% believed that CL can be treated by medicine. Some of participants believed that CL will get away eventually after a while. The correlation between this fact and educational level was significant ($P<0.05$).

A noticeable proportion of respondents (21%) believed in indigenous medicine (local available plants) for the treatment of CL. A small proportion of respondents (14%) stated that traditional healers are good at treating this disease.

Rearding the question "whether the disease is preventable", 69% of respondents believed that the disease is preventable although most of interviewees did not know about preventive measures. Using of bed net (37%), insecticide (41%), cleanliness (33%), proper washing of face and hand (19%), bathing (16.5%) were stated by the participants. Moreover, food or water hygiene, avoiding contact with animals or soil have been noted by few of the respondents.

Concerning inhabitants' attitude about control of CL, most of people (87%) mentioned CL as an important disease which should be controlled by health authorities. Regarding the community participation, attitude of interviewees was promising since most of respondents felt that this disease could be controlled through community contribution.

4. Discussion

Understanding the beliefs and practices of people is a pivotal step in the successful implementation of CL control activities in CL-endemic areas. It is important to know the level of KAP of a community and improve it to a satisfactory level before introducing any disease control program to get the most support from the community. By acquiring these data a successful control program can be planned. The current study aimed to evaluate the disease-related KAP of people in a highly endemic area of CL in south of Iran. Results of this study can help the health authorities for better implementation of the programs related to the control of CL in south of Iran. Moreover, findings of this study can be used for proposing a culturally sensitive and appropriate plan for prevention and control of CL in this area.

KAP of a given community toward CL or visceral leishmaniasis have been the focus of many studies in recent years[8-12]. The general awareness of participant in our study regarding the CL was satisfactory since about two-third of respondents knew that CL is an infectious disease. The knowledge about the vector was not satisfactory. This finding is in keeping with similar studies conducted in Saudi Arabia where only 37.4% of participants could identify sandfly as the vector of CL. Results of a study in Isfahan about KAP of students toward CL showed that 97.9% of students were aware that sandflies carry the CL, but only 28.6% were able to identify a sandfly[13]. In another study by Hejazi *et al*., in Isfahan, only 13.9% of respondents had enough information about characteristics of sand fly[14]. Findings of Alexander *et al*., study in Brazil, revealed that 23.1% of the study population were able to describe the sandfly as the vector of CL[15].

People awareness about CL vector is important in control program. Lack of information about CL vector is a matter of concern for implementation of preventive measures against the disease, because if people do not perceive sandfly to be the vector of CL, they usually do not take proper action to protect themselves from sandfly biting.

In our study knowledge and practice of respondents for preventive measures was very low. This is in consistent with Hejazi's study in Isfahan, who found that the lowest knowledge of study population was about preventive measures, such as covering of the lesion, using of mesh for windows and using bed net or replants[14]. In another study in Isfahan, Saberi *et al*. reported that 47.2% of students believed in fortune as a factor in acquisition of CL infection[13].

Our study showed a positive correlation between level of education and knowledge toward CL. In contrast to our findings, such correlation was not found in Hejazi's study in Isfahan. Study of Aljawabreh in Palestine demonstrated that lower incidence of CL were related to higher education level of the head of households[16].

In our study, a considerable proportion of the population sought treatment from local traditional healer. This might increase disease duration and in turn, increase the chance of transmission of CL to other people.

Taken together, in this study, insufficient knowledge of community about infection nature, vector, transmission mode and preventive measures of CL, highlights the needs for a health education initiative to enhance the awareness of people about CL. Health education and increasing the level of awareness of people about CL can improve the efficacy of any control program in this area of CL-endemic in Iran and also any other area with similar situation.

Conflict of interest statement

We declare that we have no conflict of interest.

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Comments

Background

Leishmaniasis is a major health problem in Iran and many studies have been done to reveal the different aspects, including epidemiological features of this disease. Authors of this study looked at the community's KAP about this important disease in south of Iran.

Research frontiers

KAP of people in an area with high annual rate of cutaneous leishmaniasis have been assessed in this study. Such information is important in planning, conducting and success of any control program, in such area around the world.

Related reports

KAP of different communities toward infectious or non-infectious diseases have been the focus of studies in Iran and the world. Nevertheless, no similar study conducted could be found in south of Iran.

Innovations and breakthroughs

Findings can be used for prevention programes of leishmaniasis in affected areas with a similar condition.

Applications

Findings of this study are applicable for prevention and control of cutaneous leishmaniasis either in Iran or in any other areas with similar situation, where this disease is prevalent.

Peer review

From an epidemiological and public health point of view, measuring people's awareness about different features of cutaneous leishmaniasis is important when planning control programs. Lack of information about people's KAP about diseases like leishmaniasis impedes the implementation of preventive measures. Considering the aforementioned point, findings of this study can be appropriately used for proper achievement of preventive programs for cutaneous leishmaniasis.

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