

First survey on Knowledge, Attitude and Practice about Cutaneous Leishmaniasis among dwellers of Musian district, Dehloran County, Southwestern of Iran, 2011.

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Abstract: Cutaneous leishmaniasis is an important public health problem in Dehloran county, Southwestern of Iran. The knowledge, attitude and practice (KAP) on disease has not been studied in this area. This survey was carried out among 423 residents of 5 villages involved by disease. The study was a cross-sectional analytical survey. A questionnaire with 30 questions was prepared to evaluate the knowledge, attitude and practice of the respondents about cutaneous leishmaniasis. Altogether, 405 (95.7%) of respondents completed the questioners. One hundred and eighty (44.4%) of them were men and the rest (55.6%) were women. The mean \pm SD age of the cases were equal to 23.81 ± 14.83 years old. Only 47.9% of the population studied were aware about the disease. Less than 40% of the cases revealed that, sand fly is the vector of the disease. Almost, 47% of them had used drugs, insecticide sprays, repellents and bed net to protect themselves. Chi-square test indicated a significant difference between age and awareness about the disease ($p < 0.0001$). The results of present study revealed that it is necessary to prepare and organize a suitable health educational course for family members in this region.

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Introduction

Leishmaniasis is one of the most important public health problem in the world. The disease is endemic in more than 98 countries including Iran (WHO 2010, Yaghoobi-Ershadi, 2012, Kavarizadeh et al. 2013, Kassiri et al. 2011, Rassi et al. 2006, Rassi et al. 2007, Rassi et al. 2008, Rassi et al. 2011, Rassi et al. 2012, Rassi et al. 2012a). About 350 million people in 3 territories are at risk of infection (WHO 2010, Alvar et al. 2012). The incidence annual rate of the disease is 0.7 to 1.2 million cases around the world (Alvar et al. 2012). The important factors that leishmaniasis is a serious public health in many countries are increasing of deforestation, urbanization, human migration, and HIV/AIDS (Desjeux 2001). The disease, most affects the poor people, especially those with vulnerable housing and environmental conditions (Alvar et al. 2006).

Cutaneous leishmaniasis (CL) is an old endemic disease in Iran. The disease is observed in two forms, including: Zoonotic Cutaneous Leishmaniasis (ZCL) and Anthroponotic Cutaneous Leishmaniasis (ACL) (Rassi et al. 2006, Rassi et al. 2008, Rassi et al. 2011, Rassi et al. 2012). Annually, about 20,000 new cases of leishmaniasis are reported in Iran, but, real cases are 4-5 folds (Yaghoobi-

Ershadi, 2012). The ACL forms of the disease are endemic in 8 provinces and there several reports from different parts of the country, including: Tehran, Mashhad, Neishabur, Sabzevar, Shiraz, Kerman, Bam, Yazd, Kashan and Esfahan cities (Nadim & Tahvildari-Bidruni 1977, Yaghoobi-Ershadi et al. 2002, Yaghoobi-Ershadi 2012, Rassi et al. 2008, Rassi et al. 2011). The causative agent of ACL is *Leishmania tropica* (*L.tropica*) and the proven vector is *Phlebotomus sergenti* Parrot1917 (*P.sergenti*). Zoonotic Cutaneous Leishmaniasis is endemic in rural areas of 17 out of 31 provinces of Iran. This form of disease is a growing health problem in the country and about 80 percent of reported cases of leishmaniasis in the country are ZCL form (Yaghoobi-Ershadi 2012, Rassi et al. 2008, Rassi et al. 2011, Rassi et al. 2012). Dehloran county with 400 new cases of cutaneous leishmaniasis per year is one of the most important foci of ZCL in Iran (unpublished data, Ilam province health center). The agent of ZCL is *Leishmania major* (*L.major*) and *Phlebotomus papatasi* Scopoli 1786 (*P.papatasi*) is the only proven vector of the disease to human (Yaghoobi-Ershadi 2012, Rassi et al. 2008, Rassi et al. 2012).

There are few studies on Knowledge, Attitude and Practice of cutaneous leishmaniasis in Iran. In a

study in Abuzid abad, Kashan city, Esfahan province relation to knowledge of female students to cutaneous Leishmaniasis showed that, 59.8% of them had a good knowledge about life cycle and prevention of leishmaniasis (Dehghani et al. 2011). A study was conducted in Isfahan, central of Iran, indicated that, more than 90% of respondents had a good knowledge about the symptoms of the disease but only 28.6% of them have had knowledge on the vector of disease (Saberi et al. 2012). Another study in Yazd adjacent to Isfahan province revealed that about 21% of studied cases had a good knowledge about the vector (sand fly) of leishmaniasis (Mazloumi 2008). A KAP survey on visceral leishmaniasis in Sudan, revealed that, 95.6% of the respondents were aware about the disease and less than half of respondents had believed that visceral leishmaniasis (Kala-azar) was a more serious disease compared to malaria. The knowledge of respondents about breeding sites and biting time was also very poor (Hassan et al. 2012). A study in Colombia showed that about 35% of the cases believed that sand fly is the vector of leishmaniasis (Pardo et al. 2006). The results of a survey in Nepal was confirmed that, 1-2.2 percentage of the respondents believed that sand fly is the vector of Kala-azar (Koirala et al. 1998). Due to the few KAP studies on cutaneous leishmaniasis in Iran specially in endemic areas of the disease, this survey was done in Musian district, an endemic focus of zoonotic cutaneous leishmaniasis in south west of the country. The present study was the first attempt to determine the knowledge, attitude and practice of residents of Musian district. Awareness of people's knowledge of this region can help health authorities to control the disease in the region.

Materials & Methods

This study was carried out in 5 villages of Musian district (32°31'20"N 47°22'31"E), Ilam province south west of Iran during July to October of 2011. The selected villages were Patake Mousian, Nahr Anbar, Top Jlizi, Patake Aarab and Berah Bijah. Musian is located 119 meters above sea level with a warm and dry climate. Its area is 3051 square kilometers with 15933 population in 2008 (Kavarizadeh et al. 2013). The present survey was a cross-sectional analytical study. Based on formula of sampling data [$N = Z^2 p(1-p)/d^2$], $P=0.50$ and $d=0.05$], 384 persons of the region should be selected but with 10% of data loss 423 samples were selected. For data collection, the simple random sampling method was used. Data were collected using a questionnaire with 30 questions including demographic, knowledge, attitude and performance of respondents. Before completing the questionnaires, the importance of careful and correct response was expressed. The data

were analyzed by SPSS software ver. 16 with descriptive statistics formulas such as Chi-square, mean and standard deviation.

Results

Among the 405 respondents to questioners, 180 (44.4%) of them were male and the rest were women. The mean \pm SD age of the samples were equal to 23.81 ± 14.83 years old. The most frequent age group (71.6%) were 14 to 23 years old and the group of 34-43 years old had the lowest rate (2.5%). According to table 1., 71.6% of the respondents live in a family with >5 persons. Our results showed, 6.2 %, of the cases were illiterate, 53.1%, high school level, 13.6% with primary education. Only 4.9% of studied cases were collegiate. This study revealed that, 72.8% of the population were single and the rest of them were married (Table 1).

We found that, 47.9% of the population were aware to cutaneous leishmaniasis and 52.1% of them were not aware about the disease. Only 39.5% of the respondents were informed, sand flies are the vectors of CL and 37.3% of them did not any knowledge on the vectors of the disease. (Table 2).

Table 3 showed that only 7.4% and 30.9% of residents had used bed nets at night and Nets installed on doors and windows, respectively. For prevention of the disease, 16.1%, 14.8%, 3.7% and 12.3% of the population had used drug, insecticide sprays, repellents and bed net, respectively. The rest of respondents had used nothing for their prevention. There was a significant statistical difference between awareness about the disease and gender ($df=2$, $p=0.004$), marital ($df=2$, $p<0.0001$), level of education ($df=4$, $p=0.007$). More than 71.6% of respondents had good attitude. There was a significant statistical difference between attitude and level of education ($df=1$, $p=0.017$).

Discussion

This is the first attempt to explain the knowledge, attitude and practice associated to CL disease in Musian district, Dehloran county, Ilam province, southwestern of Iran.. All of 5 villages live near to rodents borrow and this is one of the most important risk factors for CL infection (Rassi et al. 2006, 2007, 2008, 2011, 2012, WHO 2010). The results of the present survey related to use of fine nets for windows is different from a study in Yazd (Dehghani Tafti et al. 2011). They showed 70.3% of the respondents used fine nets for windows but, in present study, only 30.9% of respondents used nets to protect themselves. In a study in Colombia, more than 85% of the respondents had good knowledge on cutaneous leishmaniasis and 35% of them were informed the sand flies as the vectors of the disease

(Raul et al. 2006), while, our results indicated that, less than half of the population had a good knowledge on disease and its vectors. Furthermore, in rural areas of Nepal, only 1-2.2 percent of the respondents have believed that sand flies are the vectors of Visceral leishmaniasis (Koirala et al. 1998). Awareness about symptoms and signs of CL can help the respondents and their family members to prevent themselves from the disease (Sabeti et al. 2012). Although the disease is endemic for long time in this region (Yaghoobi-

Ershadi 2012, Rassi et al. 2008, 2011, 2012), the knowledge of the people about the disease and its vector was poor. It is clear that, low awareness of Public about the disease, vectors and methods of disease control can be dangerous for the health of dwellers. The performance of the population in this survey was the same as a study in Isfahan city (Hejazi et al. 2010). Almost about 52% of respondents had poor knowledge regarding to cutaneous leishmaniasis that is similar to Hejazi's et al., 2010 findings.

Table 1: Characteristics of the study population in Musian district, Dehloran county, 2011

Characteristics	Categories	No (%) of study population					Total (n=405)
		Nahr Anbar (n=185)	Patake Mousian (n=75)	Berah Bijah (n=65)	Patake Aarab (n=45)	Top jlizi (n=35)	
Sex	i. male	55(29.7)	65(86.7)	10(15.4)	45(100)	5(14.3)	180(44.4)
	ii. female	130(70.3)	10(13.3)	55(84.6)	0(0.0)	30(85.7)	225(55.6)
Age	i. 14-23	145(78.4)	10(13.3)	65(100)	45(100)	25(71.4)	290(71.6)
	ii. 24-33	30(16.2)	20(26.7)	0(0.0)	0(0.0)	5(14.3)	55(13.6)
	iii. 34-43	5(2.7)	5(6.7)	0(0.0)	0(0.0)	0(0.0)	10(2.5)
	iv. 44-53	0(0.0)	10(13.3)	0(0.0)	0(0.0)	5(14.3)	15(3.7)
	v. >54	5(2.7)	30(40)	0(0.0)	0(0.0)	0(0.0)	35(8.6)
No. of family members	i. < 3	10(5.4)	25(33.3)	0(0.0)	0(0.0)	0(0.0)	35(8.6)
	ii. 3-5	25(13.5)	35(46.7)	5(7.7)	10(22.2)	5(14.3)	80(19.8)
	iii. > 5	150(81.1)	15(20)	60(92.3)	35(77.8)	30(85.7)	290(71.6)
Education	i. illiterate	0(0.0)	25(33.3)	0(0.0)	0(0.0)	0(0.0)	25(6.2)
	ii. primary	30(16.2)	20(26.7)	0(0.0)	0(0.0)	5(14.3)	55(13.6)
	iii. guidance	30(16.2)	0(0.0)	45(69.2)	0(0.0)	15(42.8)	90(22.2)
	iv. high school	115(62.2)	30(40)	20(30.8)	45(100)	5(14.3)	215(53.1)
	v. collegiate	10(5.4)	0(0.0)	0(0.0)	0(0.0)	10(28.6)	20(4.9)
Marital	i. single	150(81.1)	10(13.3)	65(100)	45(100)	25(71.4)	295(72.8)
	ii. married	35(18.9)	65(86.7)	0(0.0)	0(0.0)	10(28.6)	110(27.2)
Previous infection to CL in the family members	i. Yes	95(51.4)	60(80)	20(30.8)	20(44.4)	15(42.9)	210(51.9)
	ii. No	90(48.6)	15(20)	45(69.2)	25(55.6)	20(57.1)	195(48.1)

Table 2: Knowledge of the respondents about Cutaneous leishmaniasis in Musian district, Dehloran county, 2011

Item	Responses	No (%) of responses					Total (n=405)
		Nahr Anbar (n=185)	Patake Mousian (n=75)	Berah Bijah (n=65)	Patake Aarab (n=45)	Top jlizi (n=35)	
Awareness about CL	i. Aware	89(48.1)	37(49.3)	28(43.1)	23(51.1)	17(48.6)	194(47.9)
	ii. Not aware	96(51.9)	38(50.7)	37(56.9)	22(48.9)	18(51.4)	211(52.1)
How is CL transmitted	i. Sand flies	90(48.6)	40(53.3)	0(0.0)	30(66.7)	0(0.0)	160(39.5)
	ii. water, air and soil	54(29.2)	20(26.7)	10(15.4)	0(0.0)	10(28.6)	94(23.2)
	iii. I don't know	41(22.2)	15(20)	55(84.6)	15(33.3)	25(71.4)	151(37.3)
Sand flies breeding places	i. Water	37(20)	5(6.7)	25(38.5)	10(22.2)	6(17.1)	83(20.5)
	ii. area around the villages	80(43.2)	30(40)	30(46.1)	5(11.1)	15(42.9)	160(39.5)
	iii. I don't know	68(36.8)	40(53.3)	10(15.4)	30(66.7)	14(40)	162(40)

Table 3: Knowledge CL related attitude and practices in Musian district, Dehloran county, 2011

Item	Responses	No (%) of responses					Total (n=405)
		Nahr Anbar (n=185)	Patake Mousian (n=75)	Berah Bijah (n=65)	Patake Aarab (n=45)	Top jlizi (n=35)	
Use of bed nets at night	i. Yes	30(16.2)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	30(7.4)
	ii. No	155(83.8)	75(100)	65(100)	45(100)	35(100)	375(92.6)
Nets installed on doors and windows	i. Yes	85(45.9)	5(6.7)	10(15.4)	10(22.2)	15(42.9)	125(30.9)
	ii. No	100(54.1)	70(93.3)	55(84.6)	35(77.8)	20(57.1)	280(69.1)
Prevention of CL	i. Drug use	35(19)	0(0.0)	15(23.1)	10(22.2)	5(14.3)	65(16.1)
	ii. Insecticide spray	20(10.8)	0(0.0)	30(46.1)	10(22.2)	0(0.0)	60(14.8)
	iii. Replents	10(5.4)	0(0.0)	5(7.7)	0(0.0)	0(0.0)	15(3.7)
	iv. Bednets	40(21.6)	0(0.0)	0(0.0)	0(0.0)	10(28.6)	50(12.3)
	v. Others	80(43.2)	75(100)	15(23.1)	25(55.6)	20(57.1)	215(53.1)
Place of sleeping	i. Houses	180(97.3)	75(100)	65(100)	45(100)	35(100)	400(98.8)
	ii. Shed	5(2.7)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	5(1.2)

A study in Isfahan, showed that 97.9% of residents were aware about CL, nevertheless, only 28.6% of respondents knew the sand flies. (Saber et al. 2012). Mazlomi's et al., 2008 confirmed that only 21.2% of people had knowledge on sand fly as a vector of the disease that is similar to our study. In another study in Kashan, 55.9% of the dwellers were aware on CL that is similar to the results of our study (Dehghani et al. 2011). All of these data highlights this fact that providing enough information on cutaneous leishmaniasis and the factors affecting it in endemic areas of disease is necessary. This information should be provided by health care systems.

Conclusion

Based on the findings of the present study, it is recommended to prepare and organize a suitable health educational course for family members especially for students and health volunteers to get better understanding of the cause, main routes of spread and prevention of the disease for control and decline in prevalence of CL in the region.

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