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Effect of Access to Health Facilities on the Health Status of Rural Households at Kermanshah Province (Case Study: *Bisotoun* District)

Zahra Korani [1], Fateme Pourghasem [2] and Tahereh Emami [1]*

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Abstract

The main purpose of this study was to investigate effect of access to health facilities on the health status of rural households at Kermanshah Province. Statistical pupation of this study consisted of all heads of rural households at *Bisotoun* district in *Harsin* Township, Kermanshah Province, Iran (N=1020), that 278 of them were selected by the cluster random sampling method. The main instrument of this study was a questionnaire which its validity confirmed by a panel of experts and its reliability was calculated by Cronbach's alpha coefficient. The results showed that the health status of rural households was medium at the given district. The results of multiple regression analysis showed that 36% of the dependent variable (health status) is explained by five following variables: level of water availability, level of sewer system availability, and level of access to health services (e.g. toilet, bath, health home, etc.), access to resources and communication and information channels and the level of waste disposal system availability. The results of this study can be considered by authorities and politicians so that they can pay more attention to the rural health issues.

Keywords:
Health, Healthcare Facilities, Rural Households, Rural Development

[1] *Payame-noor University, Po-box-19359-3697, Tehran, Iran.*
[2] *Ph.D. Student, Department of Agricultural Extension and Education, Faculty of Agriculture, Razi University, Kermanshah, Iran.*
** Corresponding author's email: poorghasemf@yahoo.com*

INTRODUCTION

Health is considered as human need and right. Development levels of every community is also judged by quality of public health, the amount of equitable distribution of the health among different social classes and also the amount of protection of the poor against damaging elements now (Motlagh *et al*., 2007). Ministry of Health and Medical Education has importantly considered the increasing access to health services in order to reduce the incidence of contagious diseases and improving the public infrastructures including the provision of safe water and disposal of waste materials and water throughout community. Taking a look at the status of society and the realities of it, we found that it has been paid less attention to some of health needs of the rural societies.

Reports indicate that in 2000, approximately 4 billion people have no access to the sanitary tools of the sewage disposal (WHO and UNICEF, 2000). Many of the Iranian villages especially in the underprivileged locations have no access to the primary needs of health such as water plumbing and waste disposal systems. In Iran, only about 6.0% of villages of the country are covered by waste collection and disposal services (Fahiminia *et al*., 2006). A large number of villages are faced with the problem of waste disposal (Fahiminia *et al*., 2000). Unsanitary disposal of the sewage in rural areas has caused not only spread of contagious diseases but also increasing water and environmental pollution (Phaswana-Mafuya, 2006a). Sewage disposal facilities may not have a great impact on the health alone, unless the problem of drinking water to be solved (Alcock, 1999). Researches show that tens of thousands of people die daily due to the related diseases with wastewater and more than a thousand people suffer from health-related diseases as well (Tladi *et al*., 2002). Supply of safe drinking water in villages is one of the main issues that should be considered along with the increasing population in recent decades especially in rural areas and the increasing need for health promotion in rural communities (Bazrafshan *et al.*, 2009). A study conducted in the city of Kalat showed that there are about 88 of the rural residences (seventy resident villages), 68.5% of which have piped water (12.5% with filtered piped water) and 31.5% do not have (Motii-Langroodi, 2002). Lack of adequate and safe water will lead to the reducing the level of public health and will impact on quality of life and can lead to the mortality and disease (Tumwine *et al.*, 2003).

According to what was said, limited access to health resources has a potential risk for weakening the physical and mental health (Ricketts, 1999). However, development of the health is faced with some constraints. One of them is structural one including insufficient water resources, poor facilities for disposing of water waste and household waste and other wastes and inadequate toilets. In many cases, it is difficult to resolve these constraints because many of them are duo to the limited access to resources. Other limitations include the educational challenges such as lack of access to health education (Phaswana-Mafuya, 2006b). Economic and financial challenges including the high cost of health cares for low-income families, inadequate budget for providing health infrastructuresand lack of capital investment in health projects (Solo *et al*., 1993). Social challenges arise from the lack of public participation in the community health projects. Health projects should reflect local needs and resources and community expectations.

Inadequate sanitation not only causes economic losses but also is predisposing of some of the social unrests. Thus providing enough resources for health in rural communities is a legal requirement and also a social necessity for them. It requires effective use of all internal resources (Phaswana-Mafuya, 2006b). Health promotion and its progression have many advantages for the community (Tumwine *et al*., 2003). Thus, this studyaims to "the effect of access to health facilities on the health status of rural households at *Bisotoun* district in *Harsin* city, Kermanshah Province". It can be helpful in planning for health promotion in the community.Succeeding in achieving good health depends on the joint efforts of policymakers, allocators ofbudget and citizensof the community (Phaswana-Mafuya, 2006b), and health indexes including households

having hygienic bathroom, waste collection systemand hygienic toilet and sanitation will be promoted after the implementation of the community health projects (Fadaei and Zahedi, 2005).

The main purpose of this study was to investigatethe effect of access to health facilities on the health status of rural households at Kermanshah Province and objectives were:

1- Prioritizing the health status of the rural households;

2- Study the relationship between access to health factors and the health status of rural households;

3- Determine the effect of access to health factors on health status of the rural households.

MATERIALS AND METHODS

The present descriptive - correlational study was designed by main purpose of investigation the effect of access to health facilities on the health status of rural households at Kermanshah Province. Statistical population consisted of all heads of rural households at *Bisotoun* district in *Harsin* Township, Kermanshah Province (N=1020). The sample size was calculated based on the table of Krejcie and Morgan (1970), whose 278 ones (n=278) were selected by the cluster random sampling method. The main instrument for data collection was a researcher-made questionnaire. The questionnaire included two parts of the personal and professional characteristics and 21 statements used to measure the health status of the rural households.To check the validity of the questionnaire, we ask the viewpoints a number of the faculty members and PhD students of Department of Rural Extension and Development, Razi University in Kermanshah, Iran. Cronbach's alpha coefficient was used to assess the reliability of the questionnaire, which its coefficients were reported higher than 0.7. The data was analyzed by using SPSS software in two parts: descriptive statistics (frequency, percentage, mean, standard deviation), and inferential statistics (correlation and regression analysis).

RESULTS

Based on the findings 69.4% of the heads of surveyed rural households are men and the rest are women. The mean age of rural households were 42 (SD=0.84) and most of them (85.3 percent) were married. 42.1% of whose were illiterate and the average of their income level is estimated 315 Dollars per month. 36.7% of the rural households have 2 persons and 59.0% of whose have 2 to 5 persons. 60.4% of the rural households are farmer and 23.4% are rancher.

Based on the findings,the rural households of the *Bisotoun* district rated medium their level of availability to the factors such as: level of water system, level of sewer system and level of access to health services (e.g., toilet, bath, health home, etc.). However, based on the findings, the given rural households rated low their level of availability to the factors such as: access to resources and communication and information channels and the level of waste disposal system. As a whole, based on the findings, rural households rated medium their status of availability to the health factors (M=3.02 of 5, SD=1.54), at *Bisotoun* district in *Harsin* Township, Kermanshah Province (Table 1).

Prioritizing the health status of the rural households at *Bisotoun* district in *Harsin* city, Ker-

Table 1: Stouts of the rural households to health factors.

Variables	Mean*	SD
Access to water system	3.83	1.69
Access to sewer system	3.25	1.02
Access to health services	3.17	1.87
Access to resources and communication and information channels	2.53	1.35
Access to waste disposal system	2.43	1.87
Total	3.02	1.54

* Scale: none= 0 Very much= 5

Table 2: Health status of the rural households

Health status	M *	SD
Daily cleaning of the house	4.89	1.5
Washing dishes and placing them in the right place	4.88	1.64
Using appropriate detergents	4.71	0.93
Under 12 years of age children's use of toilet	4.65	1.67
Washing hands after going to toilet	4.60	0.78
Washing hands after contact with animals	4.52	1.34
Washing hands before eating each meal	4.45	2.00
Lack of cutaneous diseases outbreak, worms (parasites), eye infections, and… in recent years in the village	4.12	0.67
Washing vegetables before consumption	4.01	1.68
Use of personal belongings such as towels, toothbrushes, combs and ...	3.92	2.69
Reusing of waste materials such as cans and plastic bags	3.83	2.77
Water purification (boiling, chlorination etc.) in the situations of having no access to the safe water	3.69	1.78
Having bath a few times a week	2.63	1.2
Weekly cleaning toilets	2.62	1.02
Washing fruits before eating	2.51	2.12
Going to a doctor for a sick	2.48	2.74
Weekly shortening of the fingernails	2.44	0.75
Preventing insects and vermin entry into the house	2.39	2.78
Daily tooth brushing	1.19	0.98
Landfill waste (Kitchen trash cans, plastic boxes, etc.)	1.13	2.85
Weekly changing clothes	1.12	0.49
Total	3.37	1.63

* Scale: none= 0 Very much= 5

manshah Province: In this section, we examined health status of the rural households at *Bisotoun* district in *Harsin* city, Kermanshah Province (Table 2).

As it can be seen in table 2, rural households are in the good status of the health in the following components: daily cleaning of the house, washing dishes and placing them in the right place, using appropriate detergents, under 12 years of age children's use of toilet, washing hands after going to toilet, washing hands after contact with animals, washing hands before eating each meal, lack of cutaneous diseases outbreak, worms (parasites), eye infections, and… in recent years in the village and washing vegetables before consumption. Findings also suggest that the rural households are in the medium status of the health in the viewpoint of the following components: use of personal belongings such as towels, toothbrushes, combs and ... reusing of waste materials such as cans and plastic bags, water purification (boiling, chlorination etc.) in the situations of having no access to the safe water. However, the rural households are in a low and undesirable level of hygienic status in terms of the number of bathing per week, weekly cleaning toilets, washing fruits before eating, going to a doctor for a sick, weekly shortening of the fingernails, preventing insects and vermin entry into the house.Rural households are also in a low and undesirable level of hygienic status in terms of the components such as: daily tooth brushing, landfill waste (kitchen trash cans, plastic boxes, etc.) and weekly changing clothes. As a whole, based on the findings, health status of the rural households is assessed medium at *Bisotoun* district in *Harsin* Township, Kermanshah Province (M=3.371 of 5, SD=1.63).

Pearson's correlation coefficient was used to study the relationship between access to health factors and the health status of rural households. The results can be seen in Table 3.

As it can be seen in the above table, there is a significant positive correlation amongall components of access to health factors and the dependent variable of the health status of rural households at the level 0.01. Stepwise multiple

Table 3: The relationship between access to health factors and the health status of rural households.

Row	Variable	Type of scale	Type of test	Correlation coefficient	Significant
1	water system availability	Interval	Pearson	0.376**	0.000
2	sewer system availability	Interval	Pearson	0.259**	0.000
3	access to health services	Interval	Pearson	0.217**	0.000
4	access to resources and communication and information channels	Interval	Pearson	0.195**	0.001
5	waste disposal system availability	Interval	Pearson	0.188**	0.005

**p<0.01

Table 4: Regression model's table.

Model	R	R^2	Adjusted R Square	Std. Error	F	p-value
1	0.376	0.141	0.138	0.4847	43.325	0.000
2	0.509	0.259	0.253	0.4511	45.825	0.000
3	0.580	0.337	0.329	0.4270	44.177	0.000
4	0.602	0.362	0.352	0.4220	36.864	0.000
5	0.613	0.376	0.364	0.4164	31.207	0.000

regression analysis was used to study the effect of access to health factors on health status of the rural households.Based on the adjusted coefficient of determination, 36% of change in the dependent variable (health status of the rural households) is explained by five following variables: water system availability, sewer system availability, access to health services (toilet, bath, home health, etc.), access to resources and communication and information channels and waste disposal system availability (Table 4).

F test is also significant at level 99% (Sig=0.000), indicating that the regression is significant. As it can be seen in the above table, five variables including access of rural households to the water system, sewer system availability, access to health services (toilet, bath, home health, etc.), access to resources and communication and information channels and waste disposal system availability are significant.

Based on Table 5, the equation of influence of access to health factorson the health status of rural households can be written for *Harsin* city as follows:

$$Y = 1.147 + 0.170X1 + 0.143\ X2 + 0.140\ X3 + 0.121\ X4 + 0.110\ X5$$

DISCUSSION AND CONCLUSIONS

Achieving sustainable development requires supplying of health and accessing to health facilities for different classes ofpeople. Based on the findings of rural households at *Bisotoun* district in *Harsin* Township, Kermanshah Province rated medium their level of availability to the factors such as: level of water system, level of sewer system and the level of access to health services (e.g., toilet, bath, health home, etc.). However, they rated low their level of availability to the factors such as: access to resources and communication and information channels and the level of waste disposal system. According to the study of Phaswana-Mafuya and Shukla (2005), the weakness of the waste disposal in rural areas is due to the lack of public services required for the waste disposal. As a whole, based on the findings of the surveyed rural households, they rated medium their status of availability to the health factors. Increasing access to health services is very important and necessary in order to reducing the incidence of contagious diseases as well as improving public infrastructures such as provision of safe water and disposal of waste materials.

Health status survey showed that the rural households at *Bisotoun* district in *Harsin* city, Kermanshah Province are in the good status of the health in the following components: daily cleaning of the house, washing dishes and

Table 5: Table of coefficients of independent variables.

Row	Variables	B	β	T	Sig
1	(Constant)	1.147		11.469	0.000
	water system availability	0.170	0.350	7.082	0.000
	sewer system availability	0.143	0.252	4.861	0.000
	access to health services	0.140	0.199	3.730	0.000
	access to resources and communication and information channels	0.121	0.172	3.153	0.012
	waste disposal system availability	0.110	0.124	2.415	0.016

placing them in the right place, using appropriate detergents, under 12 years of age children's use of toilet, washing hands after going to the toilet, washing hands after contact with animals, washing hands before eating each meal, lack of cutaneous diseases outbreak, worms (parasites), eye infections, and… in recent years in the village and washing vegetables before consumption. Washing hands after going to the toilet and after contact with animals has also been confirmed in previous studies. However, previous researches suggest that the majority of rural children less than 12 years of age do not use the toilet (Phaswana-Mafuya, 2006a). Also, some of these studies show a lack of washing vegetables before consumption in rural areas (Phaswana-Mafuya and Shukla, 2005). Findings also suggest that the rural households are in a low level of hygienic status in terms of the number of bathing per week, weekly cleaning toilets, washing fruits before eating, going to a doctor for a sick, weekly shortening of the fingernails, preventing insects and vermin entry into the house. Consistent with previous research, people in the most of cases behave in unhealthy ways, such as washing fruits and daily bathing (Phaswana-Mafuya and Shukla, 2005). Rural households are also in a undesirable level of hygienic status in terms of the components such as: daily tooth brushing, landfill waste (kitchen trash cans, plastic boxes, etc.) and weekly changing clothes at *Bisotoun* district in Harsincity. Previous studies also indicate that the frequency of tooth brushing among rural residents is less than those of urban residents (Rabei *et al.*, 2006), and also waste disposal is accomplished in unhealthy ways (Phaswana-Mafuya and Shukla, 2005).

As a whole, based on the findings, health status of the rural households is assessed medium at *Bisotoun* district in *Harsin* city, Kermanshah Province. This reason seems to be due to the lack of required knowledge about methods of good hygiene among rural people and also poor access to the health facilities and services. 36% of the dependent variable (health status at *Bisotoun* district in *Harsin* city, Kermanshah Province) is explained by five following variables: level of water availability, level of sewer system availability, and level of access to health services (e.g., Toilet, Bath, Health home, etc.), access to resources and communication and information channels and the level of waste disposal system availability. Accessing to health services is one of the most essential requirements for health promotion in the community and it cannot be thought to the improvement of the health without it. Health facilities in the villages are less than those of urban area wholly. Phaswana-Mafuya and Shukla (2005) also states that the rural areas health is not priorities of some of societies and adequate health facilities are not available in these areas. Accessing to information resources strengthening the health information is of important in addition to access to health facilities and can transfer lots of methods of good hygiene to the villagers correctly and completely.

Based on the findings, some recommendations are suggested:

1- Due to the medium access to the health facilities, it is recommended that relevant organizations such as municipalities and water and wastewater conduct the necessary measures in order to improve health facilities.

2- Health status shows that the health conscious of the people may not be enough, therefore it is suggested that the health education classes to be held by the Agricultural Extension and Education department relying on the existing shortcomings.

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