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Health needs assessment of the residents of the informal settlements in South-Eastern Iran: A case study of Bam city

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Abstract:

BACKGROUND: Informal settlements are considered as one of the social problems in societies. As the residents do not have adequate access to basic services, including health services, their health is at risk. This study was conducted to evaluate the access to health services and determine the health needs of informal settlements in Bam city.

MATERIALS AND METHODS: This cross-sectional study was carried out in the spring of 2020 in Bam. The sample size was 400 residents of informal settlements in Bam, and the multi-stage random cluster sampling was used. A researcher-made questionnaire was used to collect the required data. The validity of the questionnaire was confirmed using the content validity, and its reliability was 85% by Cronbach's alpha. The data were analyzed using the SPSS version 23 software and descriptive statistics (frequency, mean, standard deviation, and percentage) as well as analytical statistics (Mann-Whitney and Kruskal-Wallis tests).

RESULTS: More than 50% of the individuals had good access to general practitioners and health centers. However, over 50% had poor access to dental, para-clinical, specialist, and hospital services. Furthermore, 49.3% of the people assessed their health status as poor in the previous year. A total of 46 items in the areas of communicable and non-communicable diseases, women's health, mental and social health and addiction, environmental health, etc., were identified as the most important health needs of the informal settlement residents.

CONCLUSION: Informal settlements are facing various health problems including environmental health, mental and social health, and addiction, meeting which requires collaboration of all stakeholders as well as provision of a comprehensive program and appropriate service packages.

Keywords:

Bam, health access, health needs assessment, informal settlements, South-eastern Iran

Introduction

The world has witnessed a rise in urbanization since 1990, and this has been more prominent in low- and middle-income countries.^[1,2] The increase in informal settlements has become one of the challenges city authorities have been facing, especially during the last two decades.^[1]

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About one billion people live in informal settlements throughout the world. The number has been increasing and is estimated to reach two billion in 2030.^[2,3] According to the World Bank report, 73% of Iran's population in 2015 was urban dwellers, and it is estimated that the number will increase to 83% by 2050. The number of informal settlements has been on the rise in Iran since 1961, and according to the

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2015 census conducted by the Ministry of Health and Medical Education, 10,280,270 people were living in 700 informal settlements quarters.^[4,5] In the city of Bam, the two informal settlements are Zeid region (Qeshmi's neighborhood) and Besat.

According to the records of the IHS (Integrated Health System) affiliated to the Ministry of Health and Medical Education, 6713 households with a population of 22,510 live in these two areas.^[6]

Informal settlements are the representation of poverty, injustice, and deprivation in many developing countries. They are a product of failed policies, poor governance, corruption, inadequate rules and regulations, unaccountable financial systems, and lack of political will.^[1,7] Providing services to marginalized poor and low-income populations has some difficulties, even in developed countries. For instance, a study in Canada showed that informal settlement dwellers did not have sufficient access to services, and the most significant challenges included insufficient education, service providers' lack of awareness of the problems in those neighborhoods, lack of work force, incongruous budgeting, lack of health centers, and inadequate services in the suburbs.^[8]

The high levels of poverty, illiteracy, unemployment, migration, mendicancy, addiction, violence, public safety, cultural conflicts, pollution, unfavorable housing conditions, high population density, mother and infant mortality, improper health status, and especially environmental health and waste water disposal are among the most important structural issues of informal settlements which will cause irreparable crises if not dealt with.^[9,10]

Informal settlements have devastating effects on sustainable urban development in terms of environmental, mental and social health, and urban stability.^[9,11] They are considered a source of developing social issues, such as crime, drug and alcohol addiction, high prevalence of mental diseases, and suicides.^[12,13] Slum dwellers living in insanitary settings with a high population density are prone to various infections and diseases.^[2]

Moreover, hazardous behaviors, such as intravenous drug use expose these people to communicable diseases such as hepatitis B or C and other STDs.^[12,13] Authorities should provide access to basic services such as public health; however, the lack of suitable basic infrastructures and services has been one of the challenges related to informal settlements.^[1]

In general, marginalization and social deprivation affect people's health.^[4] In addition, marginalization limits

people's access to health-care services and affects the residents' lives.^[14-16] However, health is a key factor in the well-being and development of countries, especially in low- and lower-middle income countries.^[17]

Thus, the sustainable development plan emphasizes public access to health services and insists that no one should be left out. Furthermore, one of the sustainable development targets is to "insure all people's access to housing and sufficient, safe, and cost-effective basic services and to improve living conditions in slums."^[18] However, due to the unequal distribution of health resources, the existing systems have failed to guarantee access to health services for all people.^[12]

Therefore, providing health services for people, especially in less privileged areas, has always been one of the goals and priorities of the MOHME in Iran,^[19] and measures have been taken to achieve this goal. In the Health System Reform Plan, the MOHME deputy of health assigned one health post per 12500 slum dwellers and one health center per 25000–50000 ones.^[4]

Since the health status of informal settlement residents is one of the greatest concerns of the Ministry of Health and the Health System Reform Plan,^[10] it is evident that responding to and handling their needs requires an accurate assessment and consultation with local residents.^[2] Therefore, conducting a precise needs assessment seems crucial to realize the real needs of informal settlements, and heeding health needs and satisfying them in these areas can lead the inhabitants toward an improved health status.

Owing to the significance of Bam as a historical tourist attraction, this study was conducted to assess the accessibility of health services and to perform a health and medical needs assessment of informal settlements in that city to plan for the improvement of their health status, reduce the risks of living in such areas, and realize their most important needs. In addition to assessing the people's needs, the relationship between some variables, such as gender, age, education, occupation, and health insurance, was analyzed as well.

Materials and Methods

This study is a cross-sectional, descriptive, analytical research conducted in Bam in the spring of 2020. The study population included all informal settlements residents of Bam city. A researcher-made questionnaire was used to collect the data.

Data collection tools

The questionnaire consisted of 94 questions on demographic information (8 questions), the level of health services and service providers (24 questions),

and diseases and health problems of marginal areas (62 questions). There were 11 yes/no questions, and 75 questions were developed using the 5-point Likert scale. Regarding diseases and health problems, “strongly agree” and “agree” selected by the respondents meant they needed such services, and “disagree” and “strongly disagree” mean they did not.

The content validity was used to examine the validity of the questionnaire. In other words, the first draft of the questionnaire was designed, and then, using the experts’ opinions, it was corrected and confirmed. The Cronbach’s alpha used to check the reliability of the questionnaire was 85%. The primary aim of the questionnaire was to ascertain the accessibility of health services and the most important health needs in slums.

Considering the level of education and knowledge in the target population, the questionnaires were distributed among and completed by the participants, and collected by a trained questioner, who had complete knowledge of the questions, in his visits to the target population’s living quarters.

Sample size and sampling method

The sample size was determined to be 376 using the Cochran formula. However, 400 questionnaires were distributed and collected to avoid the attrition caused by the confounding data.

Considering the nature of the study, the multistage random cluster sampling was applied for data collection. First, Zeid and Besat, the two informal settlements of Bam, were selected as the two clusters. The sample sizes were determined using the stratified sampling method based on the population of each area (182 participants from Zeid and 218 from Besat). Afterward, 2 points were selected for random sampling in each area. Finally, the cluster head in each point was specified, and the sampling began from that unit, and the questionnaires were completed in every fourth house by a family member, preferably the head of the household. It is worth noting that before the questioning, the aims of the study were explained to the participants, and the questions were asked if their consent was provided.

Data analysis

In the end, the data were analyzed using the IBM SPSS version 23 software as well as descriptive statistics (frequency, mean, standard deviation, and percentage), normality, Mann–Whitney, and Kruskal–Wallis tests. The Kolmogorov–Smirnov test showed that the *P* value was lower than the significance level (0.05); therefore, the data had not been normally distributed. Accordingly, the nonparametric Mann–Whitney test and the Kruskal–Wallis test were used

for two and more than two groups’ comparisons, respectively.

Ethical considerations

Ethical considerations including obtaining the code of ethics (IR.IAU.TNB.REC.1399.003) receiving required permissions from Bam University of Medical Sciences for data collection, anonymity of the questionnaires, obtaining informed verbal consent, and ensuring the confidentiality of respondents’ information were all observed.

Results

Approximately 100% of the participants responded to the questions. Table 1 shows demographic information of the study participants.

The results revealed that 95% of the study population was aware of the health services provided in the health

Table 1: Comparison of mean scores need for health services among informal settlement inhabitants in Bam

Variable	Frequency (%)	Mean±SD	<i>P</i> *
Gender			
Female	290 (72.5)	246.42±17.88	>0.001
Male	110 (27.5)	238.05±21.34	
Age (years)			
15-30	186 (46.5)	239.8±17.7	>0.001
31-45	154 (38.5)	248.6±19.28	
46-60	60 (15)	245.8±21	
Marital status			
Single	74 (18.5)	238.7±24	0.013
Married	326 (81.5)	245.6±18.2	
Education			
Uneducated	89 (22.25)	241.84±21.46	>0.001
Without (under) diploma	185 (46.25)	241.78±17.25	
High school and diploma	119 (29.75)	248.08±19.47	
Undergraduate	7 (1.75)	267.29±9.62	
Occupation			
Housekeeper	269 (67.25)	246.74±17.47	>0.001
Unemployed	49 (12.25)	244.2±25	
Worker	69 (17.25)	233.8±18.15	
Employed	7 (1.75)	238.57±24.46	
Self-employee	5 (1.25)	249.4±6	
University students	1 (0.25)	257±	
Insurance			
Covered	322 (80.5)	244.2±17.76	0.872
Not covered	78 (19.5)	243.7±24.56	
Insurance type			
Health insurance	232 (58)	241.96±16.07	>0.001
Social security	70 (17.5)	255.6±17.09	
Relief foundation	20 (5)	244.75±29.15	
Others	15 (3.75)	244.33±14.13	
Supplemental insurance			
Covered	8 (2)	255±21.99	0.098
Not covered	390 (97.5)	243.7±19.02	

SD=Standard deviation

centers. In addition, 94% believed that sufficient education regarding disease prevention and health promotion had been provided, and 91% stated that they were examined regularly by health-care providers (doctors, midwives, health-care workers, etc.). On the other hand, 77% claimed that no one from the health centers had made any house calls. Of the participants, 15% and 20% reported that they had not started any treatment and withdrawn from the treatment, respectively [Graph 1].

The results also showed that 70% of the participants were able to arrive at the nearest health center in <30 min. However, 73% of them stated that they used traditional and herbal medicine instead of going to the doctor and 89% of the respondents reported that women could easily visit the health centers without needing anyone's permission. In addition, 92% believed that health authorities were aware of the health problems in the neighborhood (located in the city outskirts) [Graph 1].

Furthermore, the results showed that >50% of the respondents had access to general practitioners (75%) as well as health posts and health centers (83%)

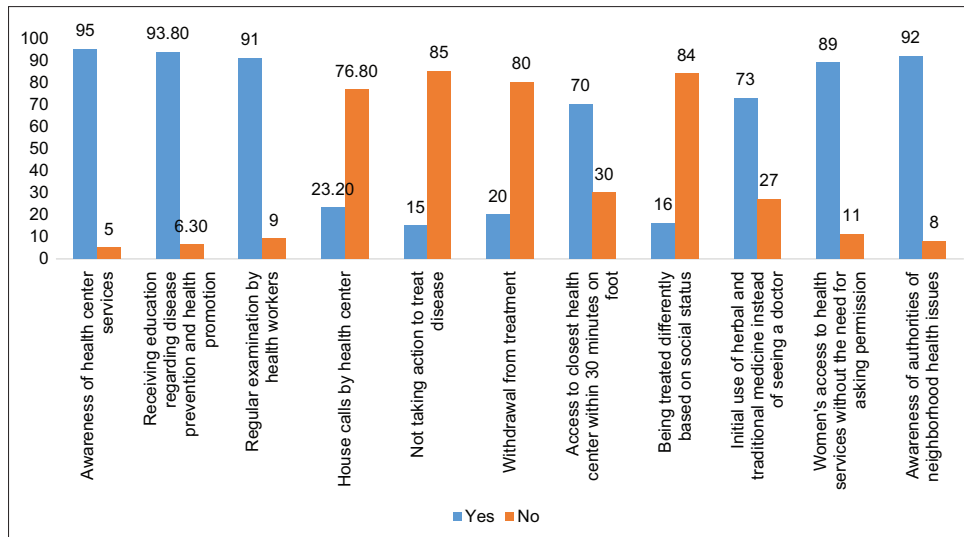
to benefit from their services. On the other hand, over 50% claimed that they had poor (low or very low) access to dentistry (94%), physiotherapy (87.3%), surgery (85%), pediatricians (83.5%), imaging (80.8%), laboratories (79.8%), internists (76%), hospitals (61.8%), and pharmacies (53.3%) [Graph 2]. In total, 49.3% and 39% of the participants reported poor and average health status within the past year, respectively.

In this study, health needs and problems on which >50% of the participants agreed or completely agreed were identified as the health needs of the informal settlements in Bam. As shown in Table 2, according to the respondents, 46 health needs and problems were selected as the most important. They were classified into the following groups: Communicable diseases, non-communicable (chronic) diseases, women's health, mental and social health, addiction, environmental health, etc., [Table 2].

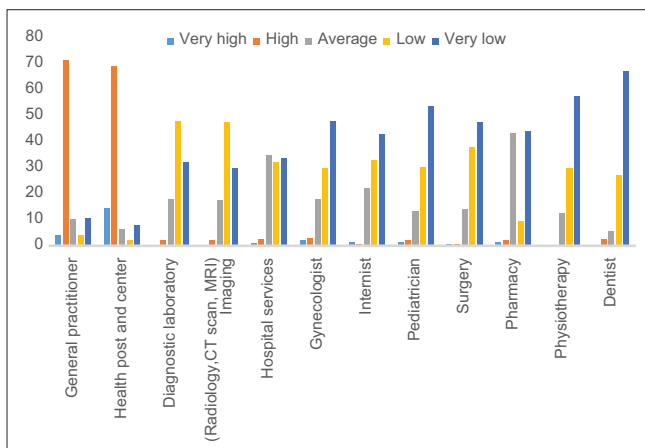
The results in Table 2 show that the most important needs of informal settlement residents in Bam were measuring and controlling high blood pressure (98.8%), sanitary disposal of wastewater (98.5%), sanitary disposal of

Table 2: Identified health care and medical needs in informal settlement inhabitants in Bam

Needs and problems	Frequency (%)	Needs and problems	Frequency (%)
Communicable disease		Chronic (non-communicable) disease	
Hepatitis	294 (72.5)	Screening and early diagnosis of cancer	299 (74.8)
AIDS	302 (75.6)	Diagnosis and treatment of diabetes	303 (75.8)
Cutaneous leishmaniasis visceral leishmaniasis	324 (81.1)	Diabetic foot	204 (51.1)
Rabies	337 (84.3)	Diagnosis and controlling high blood pressure	395 (98.8)
Needle-sharing-transmitted diseases	320 (80)	Cardiovascular diseases	323 (80.8)
Sexually transmitted diseases	302 (75.6)	Thalassemia	309 (77.3)
Animal bites	361 (90.3)	Asthma	270 (67.5)
Children vaccination	351 (87.8)	Alzheimer's disease	228 (57.1)
Environmental health		Back pain	202 (50.6)
Insanitary garbage disposal	393 (98.3)	Mental and social health and addiction	
Insanitary wastewater disposal	394 (98.5)	Lack of life skills	303 (75.8)
Unhealthy drinking water	382 (95.5)	Lack of parenting skills	282 (70.5)
Insanitary toilet	364 (90.9)	Child abuse	281 (70.3)
Women's health		Violence against women	290 (72.5)
Sterility	211 (52.8)	Pathology of puberty in girls	202 (50.6)
Infections of the female reproductive system	315 (78.8)	Pathology of puberty in boys	209 (52.3)
Unintended pregnancy	276 (69)	Domestic accidents and injuries	306 (76.6)
maternal care before during and after pregnancy	301 (75.3)	Road traffic accidents and injuries	214 (53.6)
Complications in pregnancy and after delivery	297 (74.3)	Substance, psychoactive, and performance-enhancing abuse	316 (79.1)
Other		Tobacco addiction	336 (84)
Diarrhea	304 (76)	Suicide	237 (59.3)
Parasitic diseases of the digestive system	203 (50.8)	Depression	348 (87.1)
Iron-deficiency anemia	304 (76.1)	Stress and anxiety	375 (93.8)
Oral and dental diseases	372 (93)	Arbitrary drug use	220 (55)
Malnutrition	387 (96.8)		
Children's growth disorders	340 (84.9)		



Graph 1: Informal settlement inhabitants' access to health-care services in Bam



Graph 2: Informal settlement inhabitants' access to and use of health-care services based on provider

garbage (98.3%), dealing with malnutrition (96.8%), healthy drinking water (95.5%), dealing with stress and anxiety (93.8%), and treating oral and dental diseases (93%).

In addition, the results show that the most significant needs of those people were related to environmental health. In fact, >90% of the participants mentioned wastewater disposal, garbage disposal, unhealthy drinking water, and insanitary toilets as the most important health problems. Moreover, the results showed that mental and social health and addiction, accounting for 14 cases (30%), made up the majority of the health problems in those areas and needed to be addressed [Table 2].

The results of the Mann-Whitney test showed that there was a significant difference between health needs levels and gender ($P < 0.001$). However, there

was no significant difference between the health needs levels of those with and without medical insurance ($P = 0.872$) and also between those with and without supplemental insurance ($P = 0.098$). The results of the Kruskal-Wallis test showed that health needs levels were significantly different among variables of age ($P < 0.001$), marital status ($P = 0.013$), education ($P < 0.001$), occupation ($P < 0.001$), and type of medical insurance ($P < 0.001$). The mean score of health needs showed that people under 30 had fewer needs for health services. Moreover, the results showed that the mean needs of married people were higher than others. As represented in Table 1, the need for health services increased with education levels. In addition, the results showed that, compared with other groups, laborers reported lower levels of need for health services [Table 1].

Discussion

The present study aimed to assess the level of access to health services and identified the health and medical needs of informal settlement inhabitants in Bam. The results showed that variables of gender, age, marital status, education, occupation, and insurance type affected the needs levels. For example, regarding gender, there was a significant difference between males' and females' needs levels. In other words, women had greater health needs that had to be paid more attention. Moreover, the results showed that health and medical needs were different among the people with different types of insurance. Therefore, it is crucial that insurance companies take measures to improve their insurance coverage and include a wider range of health and medical services in their packages for this group of people. Previous research confirmed that due to the changes in the burden of diseases and the needs of societies, insurance services had to be

altered and updated according to the needs of the target population.^[20]

The results revealed that the majority of inhabitants in the informal settlements in Bam only had access to and benefited from general medical services. Most of them had low access to specialty and allied services (laboratory, imaging, physiotherapy, and pharmacy). Similar studies reported a low level of access to health services and stated that the highest number of referrals was for general practitioner services, which is confirmed by the present study.^[10,21,22] This might be due to the fact that there are health posts and general practitioners in informal settlements, but the residents do not have access to specialist clinics.

The results indicated that environmental health issues such as sanitary garbage and waste disposal were very important to the inhabitants of the informal settlements, and they expected these issues to be addressed. Other studies stated that in informal settlements, environmental indices such as wastewater disposal, healthy drinking water, garbage disposal and recycling, public transportation, public safety, street lighting, stray animal control, quality of alleys, roads, and streets and their asphalt were poor, unfavourable, and sub-standard, which is in line with the findings of the present study.^[23-25]

Another significant challenge in such areas was malnutrition. Almost 97% of the participants stated that solving this problem was one of their main needs. This is in line with the results of others studies. For instance, Heidari Jamebozorgi and Kimani-Murage *et al.* reported 82% and 85% food insecurity prevalence in informal settlements of Kerman and Kenya, respectively.^[10,26]

Assessment of the needs emphasized by the informal settlements inhabitants showed that the most significant challenges that needed to be dealt with could be categorized into addiction and mental and social health. Other studies showed that informal settlement inhabitants were more susceptible to developing mental health complications and were in need of mental health services. Researchers believe that in addition to personal and economic problems, the physical and emotional status of the society are among the crucial determining factors of mental health. Therefore, the social and physical status of informal settlements creates chronic stress and mental health problems. Accordingly, conducting further studies and psychosocial interventions seem essential to improving mental health status in these people.^[19,27,28] Consequently, providing services related to these needs can play a significant role in securing and improving health among informal settlement inhabitants and is an effective step toward the realization of universal health coverage. Similar studies also stated that paying attention

to informal settlements was one of the necessities in achieving health equity.^[15,19] Considering that informal settlements and the problems they create are social problems, and that health is a multidimensional social issue, dealing with health issues and satisfying health needs require a comprehensive, inclusive, and universal approach emphasized by international approaches such as Social Determinants of Health (SDH) and Health in All Policies. The WHO believes that SDHs are the most effective factors in improving people's health and reducing inequalities.^[29,30] SDHs provide an accurate understanding of health and disease and show that in addition to the role of physiologic factors, social, economic, behavioral, and environmental factors should be addressed as well.^[31] The WHO stresses the importance of intersectoral collaboration regarding SDHs.^[32] From Mackenbach's point of view, if we do not pay attention to SDH, providing health-care services will not be effective in improving people's health.^[33]

Health in all policies is an approach introduced in 2013 to involve different sectors in health-related issues. One of the six key components of this approach is intersectoral collaboration in different levels of government to support policies for improving health, equity, and sustainability. Intersectoral collaboration is of great importance as a prerequisite for developing and implementing health in all policies.^[34-36] Moreover, the 2030 Agenda for Sustainable Development promotes a higher integration of policies across different sectors to achieve its goals.^[32] However, despite the fact that intersectoral collaboration is crucial in implementing health plans and is one of the efficient strategies for attaining the Millennium Development Goals, this strategy is not commonly supported by the authorities in developing countries such as Iran.^[37-38]

Therefore, it can be inferred that health is affected by the decisions and policies made not only by the health sector, but also by other sectors and other factors. Therefore, health sectors cannot solve fundamental health problems without the collaboration of other sectors in implementing policies for public health improvement. Accordingly, the basic principle that needs to be taken into account when dealing with the health needs of informal settlements is the role and position of all the beneficiaries and collaboration between them.

Examining the status of health needs assessment of informal settlement residents in South-eastern Iran was determined for the first time, and this was the strength of this study, and the limitation of the current study is that it was implemented only in one city in which the needs are based on the opinion of its residents and they may differ in other areas. Therefore, it is recommended that the needs assessment should also be done in informal settlements of other cities in future studies.

Conclusion

Informal settlements are facing numerous and various health problems. Dealing with the identified needs such as environmental, mental, and social health, and addiction requires intersectoral collaboration among beneficiary organizations. Therefore, it is recommended that an extensive plan and efficient service package be designed and implemented with the collaboration of all the beneficiaries to satisfy the health needs of informal settlement inhabitants and improve their health status.

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Conflicts of interest

There are no conflicts of interest.

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