ORIGINAL ARTICLE

# Assessment of Health-Related Problems in Dizaj-e Siavosh Community of Urmia, Iran, Based on the North Carolina Model

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| ARTICLE INFO | ABSTRACT |
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| | **Introduction:** To determine the health-related strengths, resources, and needs of a given community, it is necessary to obtain complete and correct information about its healthcare system and the people's health problems. In this study, we identified and prioritized the health-related problems of the highly disadvantaged Dizaj-e Siavosh community of Urmia, Iran. **Materials and Methods:** This study was based on the so-called North Carolina Model. In this eight-step model, a community's health-related problems are identified in the first seven stages. In the eighth stage, an operational plan is developed with the goal of addressing, prioritizing, and solving the identified problems. **Results:** In this study, 10 different problems were identified, including improper removal of sewage and garbage; involuntary marriage of girls, especially at an early age; the large number of poor households; the lack of continuing education for girls after elementary school; keeping pets without observing principles of health; lack of respect for a 3-year child-bearing interval; a generally poor socioeconomic situation; unemployment; widespread substance abuse; and low level of education for men. These problems were prioritized respectively. **Conclusion:** Most problems identified in this study were associated with people's lack of knowledge about health-related issues, which is rooted in low social, cultural, and economic status. |

## INTRODUCTION

Community assessment is a process for identifying and understanding health-related problems, based on collecting, analyzing, and disseminating information about a given community's characteristics, strengths, resources, and needs. This assessment can be conducted by community leaders, public and private health officials, and educational personnel to address questions such as: 1) What are the strengths of the community? 2) What health-related concerns do community members have? (1). Community assessments also help local groups obtain important background information before remedial programs are implemented (2). The prioritization of problems is a crucial aspect of such a study; however, there is an easy way to prioritize health problems using the north carolona model and the health system's sources would cost only 10 % of health investments for 90% of health problems with prioritizing (3).

Community-based research conducted at universities has not effectively identified and addressed many public health needs and priorities. Indeed, traditional methods of research often pose challenges in obtaining accurate information and suggesting effective changes in local healthcare systems (4). In community assessments, data about health and the basic needs of a community are used to help officials prioritize responses and distribute resources (5). The goals of these assessments are to identify and properly address the needs of the people and the priorities of their community in an evidence-based manner (6). All communities are unique in terms of their needs, facilities, resources, and future potential; and an accurate community assessment can produce specific recommendations that are appropriate for each individual community (2). In the so-called North Carolina Model, the assessment process focuses on the people living in the community. They assume primary responsibility for conducting the assessment at all levels, including the collection and interpretation of data, the evaluation of health resources, the identification of health problems, and the development of strategies to remedy these problems. In other words, the community assessment is done *by* the community, not *on* the community (7).

Thus, in this North Carolina Model-based study, we sought to identify and address the health-related problems of

the Dizaj-e Siavosh community through the direct participation of the local people (8).

## MATERIALS AND METHODS

This study was conducted in Urmia, Iran, in 2016, based on the North Carolina Model. This model consists of eight steps, including forming the community health assessment (CHA) team, collecting primary data, collecting secondary data, analyzing and interpreting data, determining health priorities, creating a CHA document, disseminating the CHA document, and developing a community action plan (9).

Few studies have been conducted based on the North Carolina Model. In 2014, Naieni et al. (9) presented a proposed community assessment model for a generic Iranian community (Figure 1).

Community assessment models should consider factors such as how to achieve maximum community participation in all steps, how to prepare the infrastructure, how to implement all steps, and how to evaluate the results. Accountability to the community's needs, respect for and collaboration with community members, community empowerment, and the protection of members' intellectual rights are essential attributes of any community assessment.Our two-phase study was based on standard principles of epidemiology and on the North Carolina Model. In the first phase, demographic characteristics were identified; in the second phase, the views of targeted groups were obtained, using focus group discussion methods and in-depth individual interviews of people aged 15-65 years. The goal was to identify and prioritize community health-related problems.

This research was conducted by eight people in the Dizaj-e Siavosh Health Center (Number 15), which covers approximately 13,000 people. The eight researchers were:
1. Dr. Salarilak (epidemiologist)
2. Mr. Ghelichi Ghojogh (master of epidemiology)
3. Mr. Valizadeh (M.Sc. student of epidemiology)
4. Mrs. Shafiee (principal of Dizaj-e Siavosh Health Center)
5. Mr. Tayyari (bachelor of occupational health)



**Figure 1.** Proposed community assessment model for a generic

6. Mrs. Ghahramani (bachelor of diseases)
7. Mrs. Ebnabdollahi (bachelor of mental diseases)
8. Mr. Fazli (secretary of Dizaj-e Siavosh Health Center)

Following North Carolina Model principles, the CHA team held two sessions of focus group discussions regarding the community's health problems and its priorities. In a 1-hour meeting held by the executor of this study, Mr. Valizadeh, and the principal of Dizaj-e Siavosh Health Center, Mrs. Shafiee, and in another 1-hour meeting held by Mr. Valizadeh and Mr. Tayyari, bachelor of occupational health, the community's culture and customs in relation to its observed problems were discussed.

Regarding the fact that Kurdish peoples comprise the majority in this region, Mr. Ahmad (leader of the Sunni religion in this region) also provided information about the community's problems, considering that he was uniquely knowledgeable about the people's linguistic, religious, and cultural characteristics. We performed convenience sampling by way of face-to-face interviews and by soliciting input from the people of this community. Ten people were asked about the community's health problems, and most identified improper removal of sewage and garbage as a major problem.

Mullah Ahmad also identified improper sewage removal as a major health problem; in fact, he reported that wastewater containing human feces could be seen in some alleys. Indeed, improper sewage removal in the river bed of Dizaj-e Siavosh and the noxious smell of sewage in that area are major problems, principally owing to a general ignorance about the deleterious health effects of improper sewage removal.

## RESULTS

In this study, we identified 10 different problems, in order of importance:
1. Improper removal of sewage and garbage
2. Involuntary marriage of girls, especially at an early age
3. Large number of poor households
4. Lack of continuing education for girls after elementary school
5. Keeping pets without observing principles of health
6. Lack of respect for a 3-year child-bearing interval
7. Poor socioeconomic situation
8. High level of unemployment
9. Widespread substance abuse
10. Low level of education for men

At a meeting, we prioritized problems using a 1-10 scoring method based on the seriousness of the problem, its magnitude, and the feasibility of correcting it.

## DISCUSSION

A community evaluation identifies the needs and problems of local people and determines and prioritizes them to develop appropriate remedisal strategies (10).

A study in Region 17 of Tehran, Iran, under the auspices of the School of Public Health and in cooperation with the local people, identified 12 major health-related problems (11). In another study, this one by Karimi et al. and titled "Evaluation of the Shahinshahr community of Isfahan city
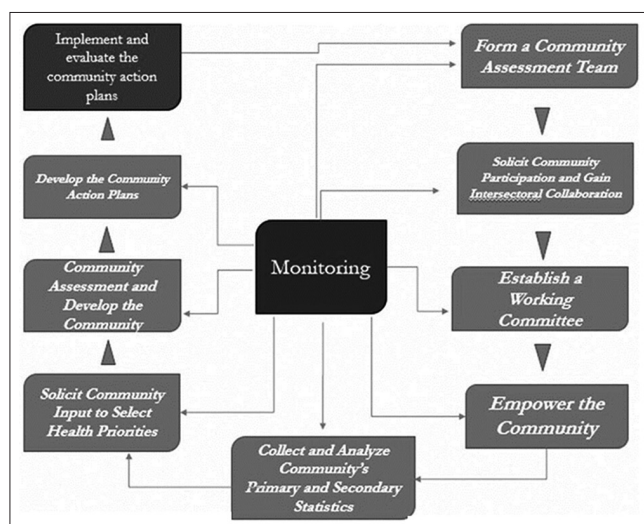
to make health operational program," 10 health-related problems in Isfahan City were identified and prioritized (12). In a study conducted in London, England, titled "Determine the health needs and gaining the viewpoints of clients and health services providers," problems such as widespread dissatisfaction with the healthcare system, lack of accessibility, and ineffective communication were reported (13). In a study conducted in Northern Ireland, problems such as lack of safe places, lack of support for the elderly, and increased use of psychiatric drugs (14) were reported. Finally, in a study conducted in Argentina to assess people's health needs, a wide variety of problems, from air pollution to alcohol and drug addiction, were reported (15).

In comparison with the results of other studies, many similarities and differences exist with our study— the differences owing mainly to each community's unique economic, social, and cultural characteristics. Therefore, in any community evaluation based on the North Carolina Model, it is essential that needs and problems be identified with the cooperation and assistance of local people, using their language and respecting their viewpoints.

## STUDY LIMITATION

This study was limited by the use of the convenience sampling method, which reduced generalizability and confined the results to a single community. We recommend that future studies employ a population-based sampling method with large sample sizes.

## SUGGESTION

To identify community health-related problems and develop solutions to them, we recommend that the Ministry of Health and Medical Education define such a task in the health system, perform regular evaluations, and seek the participation and cooperation of local health centers and family physicians.

## CONCLUSION

It is essential that people be instructed on how to safely remove sewage and wastewater. Sewage branches should be established and financial grants should be given to urban centers to support people with low economic statuses. Owing to unique social, cultural, and economic characteristics, each community's health-related needs and problems are different. Because of this, any evaluation of these needs and problems should be conducted with the participation and cooperation of the people in each local community.

## ACKNOWLEDGMENTS

## AUTHER CONTRIBUTIOB

All authors contributed equally to this study.

## CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest.

## COMPLIANCE WITH ETHICAL STANDARDS

This study is the result of training program in MSc course of epidemiology conducted on health center No.15. As a matter of fact all steps were done under observation of health center responsible and obtaining oral informed consent from all participants. The nature of confidentiality was observed in this study and observations reported without any name of participants.

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