Changing the Care Process: A New Concept in Iranian Rural Health Care

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Introduction

Rural health is the subject of attention in recent years and delivery of rural health care is a national topic of concern and debate (Ross, 2008). Approximately half of the world’s population reside in rural areas. The health of these people is a major concern for health care providers as well as for health care delivery systems (Carty, Alzayer, Arietti, & Lester, 2004). Rural populations should be entitled to adequate health care and a social system that provides such care. Individuals have the right to access health care services, regardless of location. However, rural communities continue to experience an array of health problems (Jackman, Myrick, & Yonge, 2010; Thomlinson, McDonagh, Crook, & Lees, 2004).

Primary health care program strategy is most commonly used throughout the participating regions to meet rural health needs (Carty et al., 2004). While the concept of primary health care as a mechanism for bringing “health for all” remains sound, there is scant uniformity in its implementation. Many primary health care programs in low-income countries employ community health workers trained to deliver basic cost-effective preventative services to the rural poor. Funding for these programs, however, are largely inadequate with insufficient training and equipment resulting in what the World Health Organization (2000) considers a “primitive” opposed to a “primary” service. Many of these lower level services are poorly utilized. As a result they are considered partial failures (Petersen & Swartz, 2002).

Quality, efficacy, efficiency, accessibility and viability of health care services depend primarily on the performance of those who deliver them. Only well trained and skilled health professionals can provide high-quality primary health care (Mohammad-Alizadeh et al., 2009).

Undoubtedly, health in Iran has improved far beyond where it was 40 years ago. However, the system also has its limitations. While primary health care is very effective in reducing mortality from infectious diseases, it is far less effective in addressing the chronic conditions recently seen in Iran (Sheikhattari & Kamangar, 2010). Iran’s primary health care network currently faces new challenges (Sadrizadeh, 2004; Shakiba, Haghdost, & Majdzadeh, 2008).

According to the 2011 census, Iran has a population of over 70 million people of which about 29% reside in rural areas (Cheragahi, 2012; Ghaderi & Henderson, 2012). Following the victory of the
Islamic Revolution, the government focused more on rural areas and established the Iranian primary health care system to improve access to health care for the disadvantaged with the intent to reduce the gap between health outcomes in urban and rural areas (Sadrizadeh, 2004). The primary health care system in rural Iran comprises a network of health houses and rural health centers (Sadrizadeh, 2001). Most often, the health house is the only health facility accessible to the rural population and considered to be the most basic unit of the Iranian primary health care network (Iqbal, 2006).

Health houses are staffed by male and female health personnel called "Behvarz". Behvarz are local residents that have either a primary or secondary education plus 2 years of training (Sadrizadeh, 2001). These community health workers play a pivotal role in Iran's primary health care network (Shadpour, 2000) by conducting the following tasks: maternal and child care, family planning, case finding and follow up, limited symptomatic treatment, environmental and occupational health, school health, oral health, health education, and nutrition promotion. Rural health centers are staffed by a physician, health technicians and nurse aides, but rarely nurses. The staff at rural health centers, in addition to preventative care, provide curative care and receive referrals from the health houses (Sadrizadeh).

Recognition of the role of nurses in primary health care is increasing both nationally and internationally, and presumed essential to achieving improved population health outcomes and enabling better access to primary health care services (Carty et al., 2004). The nursing profession has a unique opportunity to conduct research that will contribute to the development of knowledge and ultimately improve the quality of health and health care of individuals in rural communities (Cox, Mahone, & Merwin, 2008). However, most Iranian nurses work in hospital settings and their role in the Iranian health system is limited to acute care. In 2008, approximately 90,000 nurses were employed in Iran's health care system. At that time, there were over 20,000 unemployed nurses in search of public employment in large urban areas. Despite the number of unemployed nurses, the lack of adequate and appropriate provision of health care in rural and remote areas is of national concern. Most health care workers employed in rural and remote areas are nurse auxiliaries, rather than nurses who hold baccalaureate degrees (Farsi, Dehghan-Nayeri, Negarandeh, & Broomand, 2010).

Worldwide, several studies explored the challenges of rural health care. According to Strasser (2003), despite the huge differences between developing and developed countries, all countries have faced difficulties and challenges. Bushy (2006) reviewed the challenges and opportunities associated with rural nursing practice and reasons for choosing rural nursing practice. She proposed that the complexity of the issue mandated multidimensional strategies and partnering by educators, researchers, rural communities and policy makers to ensure a competent nursing workforce that met the health care needs of rural residents. Kenny and Duckett (2003) conducted a qualitative descriptive study that examined the issues affecting the ability of the rural health institution to provide quality health care. In their study, the need to maintain an appropriately educated rural nursing workforce emerged as one of the major issues that impacted rural service delivery.

There are a few studies pertaining to the challenges of rural health care in Iran. According to Manenti (2011), despite ongoing changes in the Iranian society, the public health system has not evolved according to the population’s needs. In addition, the role of nurses is weak in the Iranian health system. The number of nurses is not adequate to cover the demand. In addition, the role of nurses is frequently outdated and seen as a support for physicians, rather than a specific public health role. In one study, Sadrizadeh (2004) mentions challenges in the health care system that include poor intra-sectoral and inter-sectoral coordination, provider and client dissatisfaction, limited resources and centralized decision making. According to a study by Malekafzali (2008), additional challenges to the health care system are the lack of attention to primary health care in medical education, mismatch between the data collection system and new technology, lack of evidence-based decision making, lack of organized community participation in decision making, weak international relations and international communication. Most challenges relate to the structure of the health care system and originate from a quantitative approach to health care issues. Few studies have qualitatively researched the challenges of rural health care in Iran. In a qualitative study by Javanparast et al. (2011) that examined the contribution of community health workers to the implementation of comprehensive primary health care in Iran, the researchers highlighted some obstacles to the functions of community health workers in Iran. The most serious problems concerned support services, supervision and workload.

A complete understanding of the health care challenges stemming from cultural and social complexities is not possible by the quantitative approach. Caring is a social phenomenon, thus caring and qualitative research both depend on knowledge of the social context (Holloway & Wheeler, 2002). Qualitative research has the capability to generate findings that explore the influence of social context on health (Harvey, 2010). It is well suited for understanding phenomena within their context and can generate a wealth of information about health care challenges (Bradley, Curry, & Devers, 2007).

Therefore there is an essential need for a study that uses the qualitative approach to provide an in-depth understanding of the challenges of the rural health care process in Iran. This study aims to explore the challenges of the health care process in the Iranian rural society.

**Methods**

**Participants**

Participants in this study consisted of 21 health care providers as follows: 13 community health workers (Behvarz), 2 family physicians, 2 midwives, and 4 rural nurses (Table 1).

These participants delivered health care according to a hierarchical referral system for rural residents. In Iran, rural health care is provided through a referral system where the first level of services is rendered by Behvarz in health houses; the second level of care is rendered by the rural health centers. In this system health care providers work under the supervision of a family physician. In cases that need specialized services, patients are referred to hospitals and polyclinics, which comprise the third and fourth levels of services that are in major cities. We selected participants based on the

**Table 1** Demographic Characteristics of Participants

<table>
<thead>
<tr>
<th>Profession</th>
<th>Level of education</th>
<th>Workplace</th>
<th>Referral system level</th>
<th>Sex (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community health worker (Behvarz)</td>
<td>Secondary school diploma</td>
<td>Rural health house</td>
<td>First</td>
<td>Male (4) Female (9)</td>
</tr>
<tr>
<td>Family physician</td>
<td>General practitioner</td>
<td>Rural health centers</td>
<td>Second</td>
<td>Male (2)</td>
</tr>
<tr>
<td>Midwife</td>
<td>Associate degree</td>
<td>Rural health centers</td>
<td>Second</td>
<td>Female (2)</td>
</tr>
<tr>
<td>Nurse</td>
<td>Bachelors degree</td>
<td>Rural health centers</td>
<td>Second</td>
<td>Male (2) Female (2)</td>
</tr>
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following criteria: (a) experience as rural health caregiver and (b) willingness to share their experiences. This research predominantly used purposeful sampling, then continued with theoretical sampling according to the categories that emerged. The main participants in this study were community health workers (Behvarz) who have a key role in the Iranian primary health care system. The other participants included personnel involved in rural health care in order to better clarify rural health care challenges.

**Ethical considerations**

Kerman University Research Ethics Committee approved this study prior to its commencement (Reference No. BC/91/137). Researchers conducted interviews in conjunction with the Arsenjan health network. We explained the purpose of the research to each participant and all participants signed informed consent forms to allow recording of the interview. The recordings were kept anonymous.

**Data collection**

We used semi-structured interviews to collect data during a period of 4 months. The duration of the interviews were between 30 and 90 minutes ($M = 60$ minutes), depending on the participant’s tolerance and interest in explaining their experiences. The interview guide was initially developed with the help of one expert supervisor. Participants spoke about their experiences with the health care process in rural society. Samples of leading questions used for interviews were: "What are your experiences with the health care process in rural areas?" and "What difficulties have you faced during your health care activities?" As needed, we modified the questions based on points and topics raised during the interviews. The interviews were tape recorded, transcribed verbatim and analyzed consecutively by the authors.

**Data analysis**

We used the qualitative content analysis method for data analysis. A qualitative content analysis approach is a method that may be used with either qualitative or quantitative data and is commonly used in nursing studies. Qualitative content analysis facilitates contextual meaning in text through the development of emergent themes derived from textual data. Qualitative content analysis may be derived through manifest content, whereby concepts are derived from the interpretation and judgement of participants’ responses. Content analysis can be used to develop an understanding of the meaning of communication and to identify critical processes and includes open coding, the creation of categories, and abstraction (Elo & Kyng, 2008; Graneheim & Lundman, 2004; Priest, Roberts, & Woods, 2002). At first, all interviews were transcribed into texts, then read several times to identify the initial codes. During this process of open coding, the researcher allowed the data to be examined word by word and line by line, such that the codes could be freely generated, often reflecting the words of the respondents themselves. Next, we placed codes with similar meanings in the same categories and then arranged these categories under higher order headings. The aim of placing the data into groups was to reduce the number of categories by collapsing similar categories into broader higher order ones.

**Credibility**

Member and peer checks, in addition to an external audit and prolonged engagement established the credibility of both the data collection and analysis. All participants checked the findings for accuracy of the interpretations. Two co-investigators performed their peer checks. In addition, two persons not related to this research conducted a thorough review of the study and reported their opinions about the accuracy of the data for one third of the interviews. The prolonged engagement with the data and participants also helped to gain a better understanding of the field of research. Researchers selected participants from different professional and working backgrounds in order to ensure maximum sampling variation.

**Results**

There was one main category, challenges of the health care process, and four subcategories that emerged as new challenges: (a) change in characteristics of the rural society; (b) increase in complexity of the health care process; (c) decrease in workforce efficiency; and (d) decrease in propensity of care (Table 2).

**Change in characteristics of rural society**

According to the data, the characteristics of the rural society is changing. These changes are noted in different dimensions of life style, disease pattern and people’s expectations.

The data show that the disease pattern is changing in rural society. Recently, there is an increase in chronic diseases such as diabetes, hypertension, and psychiatric illnesses, all of which are related to changes in life style. According to one participant, “In the first year, the rate of hypertension was very low but now its rate has increased. People used to be active but now they are overweight.” Another participant stated: “Living conditions in villages has changed. People previously ate more healthy foods but nowadays, unfortunately young people prefer to eat fast foods.”

There is a change in expectations seen in people from rural areas, showing a rising trend. According to one participant: “People have many expectations from us. For example, they expect us to solve all their problems. They say if you can’t give us medications, then why should we come to the health house?”

<table>
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<tr>
<th>Table 2</th>
<th><em>New Challenges in Health Care Process in Iran’s Rural Society</em></th>
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</thead>
<tbody>
<tr>
<td><strong>Change in characteristics of rural society</strong></td>
<td><strong>Increase in complexity of the health care process</strong></td>
</tr>
<tr>
<td>Change in life style and disease patterns</td>
<td>Increase in No. &amp; diversity of tasks</td>
</tr>
<tr>
<td>Change in people’s expectations</td>
<td>Increase in under-served population</td>
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Increase in complexity of the health care process

The data shows that the process of care in rural society is complicated due to an increase in the number and diversity of health care providers' responsibilities and increase in under-coverage of the population.

Another comment by most participants is the increase in workload over time with a concurrent increase in the numbers of tasks. A participant said: “I'm tired because every day there is a new responsibility. When I began my work I had nine tasks to do, but now I have twenty.” According to one participant: “The number of our tasks has increased, previously we performed maternal and child care, vaccinations, environmental and school health, but now we should do many tasks.”

On the other hand, there is an increase in the rural population that needs medical care. According to one participant: “Every day, the population that needs care is increasing. Previously, only children under 6 should have had care but now children under 8 must have care.” Another participant said: “Formerly a smaller population needed care but now the population that needs care is growing. For example, in the past only 40 women needed family planning but now 300 women need family planning in this village.”

Decrease in workforce efficiency

Another challenge, according to the findings, is the decrease in workforce efficiency in response to the community's demands. This decrease is a result of workforce overload and the low capability of health care workers to meet the needs of the people.

Our findings indicate that community health workers are overworked. A participant said: “I have a high workload. I have to work constantly in order to keep up with my responsibilities. Even at home, my mind is preoccupied with work. According to one participant: “My work is too much if I do not finish my work today, I can't do it tomorrow. Work is combined and I have no chance to catch up.”

According to the data, community health workers do not have adequate capability for their work, in terms of both skills and knowledge. According to one participant, “My knowledge is limited to a few booklets and leaflets that I repeatly explain to people. I feel I have nothing new to tell them.” According to another participant, “Very often, I can't do anything for them. For example a patient comes here with hypertension and I can't do anything for him.”

Decrease in propensity of care

The data show a decrease in tendency to seek health care. This includes decreases in people's propensity for referral to health houses and their participation in educational programs. In one participant's opinion: “Other people aren't very wishful. They don't come to the health house. We should encourage them to come by convincing them. However, they are reluctant to come.” According to another participant: “Every time I want to teach them, they may complain. I invite them, but they don't come. I invite 30 people to come but maybe only 5 come.”

This is possibly related to previous issues of low capability of community health workers and people's expectations, most particularly their expectations for receiving medications. One participant has stated: “When there is no drug and I cannot do anything for them it is natural that they do not like to come here.”

Discussion

The findings of this study show that the process of health care in rural Iranian society is changing. According to these findings, community health workers in rural Iran have encountered new challenges. One challenge is the change in characteristics of the rural society due to changes in life style, disease pattern and people's expectations. This result is consistent with results from a study by Sadrzadeh (2004) which reports that the Iranian society is experiencing changes in all aspects of social life due to socioeconomic changes, demographic transitions, changes in life style and nutritional habits. The health pattern in Iran has changed significantly during recent years. Most communicable diseases are controlled. However, as a result of reduced mortality, increased life expectancy and an increasing elderly population, noncommunicable diseases are currently the main causes of mortality.

With regard to the increase in people's expectations from community health workers and the health care system, a World Health Report (2008) states that people have rising expectations regarding health care. People expect health authorities to do more to protect their rights to health care. The desire for better care is more intense now than 30 years ago. Therefore, there are more expectations from today's health authorities. Health care systems do not provide an adequate response to the peoples' needs and are driven by goals that are disconnected with peoples' expectations. This change in expectations along with the increase in people's demands on the system is a cause for the drive to reform health care systems in these areas.

The findings of this study indicate an increase in the complexity of the health care process in Iran's rural society. This result is consistent with a study by Macleod, Brown, and Leipert (1998). The study reports that nurses in small rural areas face increasingly complex care situations which mandate that they acquire increased levels of special knowledge for a wider variety of conditions and situations. The complexity of the health care process in rural Iran relates to increases in under-coverage of the population along with increases in the number and variety of tasks required from community health workers. This result agrees with a study by Mohammad-Alizadeh et al. (2009) which states that one major issue concerns providers, wherein they feel responsible for too many different tasks.

The findings of this study indicated that decreased workforce efficiency in response to demands of the community as a result of workforce overload and low capabilities was another challenge. The increased number and variety of tasks required from community health workers led to their feelings of work overload. This result coincided with the study of Javanparast et al. (2011) where community health workers mentioned high workload as a barrier to efficient performance and the increased workload was perceived as a threat to the quality of health services by the majority of informants. The work force's low capability was another challenge that related to increased number and variety of tasks and lack of adequate training amongst community health workers. This finding suggested that the training of community health workers was not in accordance with the needs of the community. This finding was in support of the study by Mohammad-Alizadeh et al. (2009) that showed one major issue according to health providers' opinions, which was the incompatibility of their tasks with their basic training, as workers felt unprepared and lacked competence. The study by Malekafzali (2008) noted that activities of community health workers previously were in accordance with the needs of the communities, but currently their activities have not met those needs. In addition, due to the improved literacy level in rural areas, the community no longer accepts community health workers with elementary school education.

Finally, the findings of this study indicated a decreased tendency in rural residents for seeking health care. This included decreases in people's propensity for referral to health houses and their...
participation in educational programs. Previous studies showed that the propensity of seeking health care to be influenced by sociodemographic, cultural and other factors (Yimer, Hansen, Yimaldu, & Bjune, 2009).

Rural people have a lower propensity for seeking health care and often delay seeking care until gravely ill or incapacitated (Winters & Lee, 2010). This lower tendency for seeking health care could be due to several reasons. Factors such as self-reliance and independence of the rural residents, lack of transportation, isolation and remote distances to travel, in addition to a lack of trust in specialists are often factors that affect the tendency for rural residents to seek regular health care and might cause a delay in seeking such care (Rass, 2008).

In this study the decrease in propensity of care might be related to these issues in addition to the low capability of community health workers and people’s expectations, most particularly their expectations for receiving medications. This result is compatible with a study by Lewis, Eskeland, and Valerez (2004) who has indicated that drug availability often appears to be a determining factor for choosing a facility. People are reluctant to go to facilities where there is a low probability of having adequate supplies of medications.

According to this study it appears that there is an inadequate balance between changes in the health care system and the capacity of rural health care providers to meet the community’s needs. In consideration of this issue and the inadequate capability for current health care providers to adapt to these changes, we suggest that decision makers utilize rural nurses and their potential in assisting with the change in rural area health care. This is a critical period in the history of nursing in Iran. Nurses must seize the opportunity to market their roles. It is necessary that nurses be embedded in health care services with the intent to improve public health. Hence, additional effort is needed to change policy-makers’ decisions on this issue (Farsi et al., 2010).

Limitations

Despite the mechanisms we applied to enhance the rigor of this study, the subjective nature of data collection and the small number of participants limited the generalization of the findings. However, the study offered some valuable insights regarding new challenges to the health care process. The findings of this study can be transferred to other rural settings.

Conclusion

The process of health care in Iran’s rural society is changing rapidly. These changes place new challenges on community health workers. Considering the changes in process of care, the health care system should respond to these new challenges by providing new health care models. This study shows that the efficiency of community health workers in response to demands of this changing community are decreasing. We propose therefore the employment of new health care providers such as nurses in a new health care system. Further studies are warranted; an action research study is recommended to attain this purpose.

The findings of this study could provide unique opportunities for nurses in various fields of education, research and management. In the nursing education field, this research could be used to justify the need for training and education of rural health care providers within the nursing curriculum. In the field of nursing management, the findings of this study could provide a unique opportunity for nursing managers to employ and establish nurses in rural health care areas. Finally, in the nursing research field, this research could lead to the development of new horizons in qualitative and quantitative nursing research with regard to rural health care and nursing.

Conflict of interest

The authors declare no conflict of interest.

Acknowledgments

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