



The Role of Social Support in Adherence to Treatment Regimens: Experiences of Patients with Chronic Diseases

Hakimeh Vahedparast¹, Eesa Mohammadi^{2,*}, Fazlollah Ahmadi² and Akram Farhadi¹

¹Department of Nursing, School of Nursing and Midwifery, Bushehr University of Medical Sciences, Bushehr, Iran

²Department of Nursing, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran

*Corresponding author: Eesa Mohammadi, Professor, Department of Nursing, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran. Tel: +98-2182883585, E-mail: mohamade@modares.ac.ir

Received 2017 September 10; Accepted 2017 November 01.

Abstract

Background: One of the main issues regarding the management of chronic diseases is patients' non-adherence to treatment regimens. An important factor affecting treatment adherence is social support. This qualitative study was aimed at exploring the role of perceived social support in adherence to treatment regimens among patients with chronic diseases.

Methods: A qualitative study was carried out on 34 patients with chronic diseases, who were purposively recruited from the targeted cities of Bushehr and Tehran, Iran. In-depth non-structured interviews were conducted for the process of data collection from June 2014 to November 2015. Data were constantly and simultaneously analyzed as they were being collected, using the content analysis approach.

Results: The data collected in this study yielded four themes that included: having the wholehearted support of a spouse, living with supportive family members and significant others, obtaining information, and confiding in physicians. These themes showed the dimensions and the types of patients' perceived social support.

Conclusions: The study's findings imply that the most important and common sources of perceived social support among Iranian patients with chronic illness are their spouses, relatives, and friends. According to the results, the participants realized that social support could help them in adhering to their treatments and coping with their illness. Identifying types of perceived social support allows health professionals, especially nurses, to use such information for developing and implementing evidence-based care plans and organizing support systems in order to enhance patients' adherence to treatments.

Keywords: Adherence, Chronic Diseases, Social Support, Treatment Regimens

1. Background

The success of chronic disease treatments greatly depends on patients' adherence to treatment regimens (1). According to the world health organization (WHO), socioeconomic factors, is one of the most determining factors affecting treatment adherence. An important attribute of socioeconomic factors is social support (2). Access to adequate social support can improve treatment outcomes among patients with chronic conditions (3).

Social support is a broad term, which encompasses the two constructs of perceived support and received support (4). Perceived social support refers to individuals' perceptions of the level and quality of available social support; therefore, it is considered as more important than received social support (5). However, all interpersonal relationships of an individual are not considered as social support, unless one perceives them as a significant and avail-

able source for fulfilling one's needs (6).

Previous studies have shown that perceived social support significantly contributes to patients' physical and psychological well-being and their treatment (7-9). However, some other studies have shown that certain supportive behaviors do not contribute to patients' well-being, and instead can also damage it in some ways (10, 11).

Numerous studies have been conducted in the area of social support in societies that differ in terms of cultural and social backgrounds from the society of Iran. Cultural diversities in expectations and norms regarding the coordination of relationships can affect social support (12). Previous studies have also reported that the type of support received by individuals greatly depends on the immediate context. For instance, Grewal (2010) reported that South Asian patients had lower levels of tangible and informational/emotional support, as compared with Caucasian patients (13). Consequently, the priority and type of sup-

port system are different in different cultures (14). In other words, perceived social support can be affected by culture, race, and ethnicity (15). Accordingly, given the differences between the Iranian healthcare system and healthcare systems of other countries and considering the lack of advocacy campaigns and systematic home care programs in Iran, the findings of previous studies regarding patients' perceived social support cannot be easily generalized to the Iranian context.

Qualitative studies can provide detailed information about the intended phenomena, as these studies explore individuals' subjective perceptions, focus on dynamic aspects of human experiences, attempt to assess phenomena in their real situations, and from people's perspectives, who have personally been involved (16). Review of the literature shows that no study has yet been conducted in Iran on the perspective of patients with chronic diseases on perceived social support; yet, knowing their views can greatly contribute in designing appropriate interventions to improve their support, quantitatively.

The aim of the present study was to investigate the role of perceived social support in adherence to treatment regimens among patients with chronic diseases.

2. Methods

2.1. Design

This study aimed at identifying and exploring various sources of social support that improve adherence to treatment regimens, which are perceived by patients with chronic illness. To this end, a qualitative, descriptive design was employed based on content analysis. The reason for implementing a qualitative approach was that patients' perceptions of social support are based on their first-hand daily experiences. In such situations, qualitative studies can elicit in-depth and rich information from the participants (17).

2.2. Participants

Patients with the most common types of chronic diseases in Iran were recruited in 2011. According to the non-contagious disease management center of the Iranian ministry of health and Medical education, the most common types of chronic diseases in the country in the year 2011 included diabetes mellitus, hypertension, and coronary artery diseases (18). Patients were purposively recruited from different hospital wards and clinics as well as private offices of cardiologists, endocrinologists, and internal medicine specialists located in Bushehr and Tehran, Iran. In total, 34 patients (including 16 females and 18 males) were interviewed as the participants, ranging in

Table 1. Participants' Demographic and Clinical Characteristics (N = 34)

Variables	No. (%)
Gender	
Female	16 (47.06)
Male	18 (52.4)
Occupation	
Employed	13 (38.23)
Housewife	10 (29.42)
Retired	11 (32.35)
Educational level	
Illiterate	3 (8.83)
Primary	4 (11.76)
Below diploma	10 (29.42)
Diploma	5 (14.7)
Collage degree	12 (35.29)
Marital status	
Married	23 (67.63)
Widowed	10 (29.42)
Divorced	1 (2.94)
Duration of suffering from chronic disease, Range, y, %	
< 5	32.35
5 - 10	38.23
10 - 15	7.64
> 15	11.78
History of re-hospitalization	
Yes	16 (47.06)
No	18 (52.4)
Medical diagnosis	
Diabetes mellitus	13 (38.23)
Myocardial infarction	5 (14.7)
Coronary artery diseases	11 (32.35)
Hypertension	5 (14.7)

age from 33 to 88 years old. On average, the duration of chronic diseases among the study participants was eight/one (years/month).

Inclusion criteria consisted of presence of cardiovascular disease, diabetes mellitus, and/or hypertension, receiving medical treatments for a minimum of six months, having the ability to speak Farsi, and being completely conscious. Exclusion criteria, however, included regrets after being interviewed, and being in the acute or recovery stage of illness. The demographic data are shown in Table 1.

2.3. Data Collection

The data were collected within the period of 15 months (June 2014 to November 2015). In-depth, non-structured, face-to-face interviews were used for the process of data collection. Each interview was analyzed prior to conducting the next interview. Interviews were conducted in a quiet room. The time and place for interviews were determined based on patients' preferences. The duration of interviews ranged from 23 to 87 minutes with a mean of 56 minutes.

Each interview was initiated by asking the following broad open-ended question, 'What activities do you perform in order to manage your disease?' and based on the responses provided by the participants, the researchers attempted to gather more detailed data and focus on perceived social support through asking the search questions (such as what do you mean by this? can you explain more about this?). The findings of each interview were used as a guide for the subsequent one. Sampling was done until data saturation was reached and no new data was obtained from the participants.

2.4. Analysis

The data were analyzed based on the five-step conventional content analysis, as recommended by Granheim and Lundman (19). All interviews were recorded by an MP3 recorder device with the participants' consent. The interviews were listened to several times and transcribed verbatim after a period of 24 hours. The completed transcripts were then analyzed for emergent themes. In other words, the processes of data collection and analysis were performed simultaneously. In the first step, the data analysis was initiated by reading all the data several times to achieve immersion and obtain a sense of wholeness of the participants' experiences. In the second step, the text was broken to meaning units, including words, sentences, or paragraphs, and significant aspects related to the participants' experiences were highlighted. In the third step, these meaning units were condensed and labeled with codes. In the next step, the codes were sorted and classified into subcategories and categories based on similarities and linkage of different codes. In the final stage, the underlying meaning and content were extracted from the data, and the main themes emerged. Each interview was independently coded by the primary analyst (the first author), and then the two other researchers (the second and third authors). The MAXQDA 10 software was employed for data management.

2.5. Rigor and Trustworthiness

The four criteria of credibility, dependability, confirmability, and transferability were used for ensuring the trust-

worthiness of the study findings. As a clinical nurse, the first author had long experience of providing care to patients with chronic diseases and hence, the criterion of prolonged engagement with the study subject matter was fulfilled. This research neither had pre-assumed conceptual framework for the study nor did use available definitions and theories in the area of social support. The member-checking technique was also used for ensuring the accuracy of the findings. In other words, the interview transcripts and related findings were returned to the participants and they were asked to confirm the congruence between the findings and their experiences. Moreover, the interview transcripts as well as the generated codes, categories, and themes were controlled and confirmed by two experienced qualitative researchers. Sampling was done with maximum variation (Table 1). In addition to comparing the study findings with the findings of previous studies for the purpose of establishing transferability, the researchers presented the findings to three patients with chronic conditions, who had not participated in the study. They confirmed that the findings fitted their experiences.

2.6. Ethical Considerations

This study was approved by the institutional review board and the ethics committee of the Medical faculty of Tarbiat Modares University (52/183), Tehran, Iran. Complete explanations about the aim and methods of the study were provided to the participants and their verbal and written consents for participation were obtained. They were ensured that their personal information would be managed confidentially. Moreover, they were entitled with the absolute right of voluntarily withdrawing from the study.

3. Results

Thirty-four participants took part in this study, of whom 16 (47.06%) were females and 18 (52.94%) were males. The participants' mean age was 54.03 years old and mean disease duration was 7/97 years. Overall, twenty-three (67.64%) were married, 11 (32.35%) widowed, and one (2.94%) was divorced. The participants' demographics are summarized in Table 1.

The study data yielded 383 primary codes, twelve categories, and four themes. The four themes of the study were having the wholehearted support of a spouse, living with supportive family members and significant others, obtaining information, and confiding in physicians. These themes are explained below. These themes are presented in Table 2.

Table 2. Meaning Unit, Condensed Meaning Unit, Sub-Themes, and Themes from Content Analysis About Patient's Perceptions of Social Support

Meaning Unit	Condensed Meaning Unit	Sub-Themes	Themes
My wife regularly checks between my toes. (P12)	Considering foot care	Paying careful attention to spouse	having the wholehearted support of a spouse
She encourages me to do exercise. She even prepares my sports shoes. (P4)	Satisfaction from wife's attendance to physical activity	Satisfaction with spouse's performance	
My husband knows how much diet is important for my health, so, he eats diet food according to my preferences. (P1)	Eating diet food by spouse	Understanding and helping spouse.	
I read drugs leaflets. I get useful information. (P3)	Gathering information from drug leaflets	Active information seeking	obtaining information from reliable sources
In our village, Behvarze comes to my home and tells me what to do. (P18)	Receiving information from Behvarz ^a	Inactive information acquisition	
My children pay attention to my diet. When I go to their homes, they cook low-fat foods and change their diet according to my preferences. (P9)	Preparing diet foods by children	Family support	Living with supportive family members and significant others
My children warn me against using unhealthy foods. When I have time to visit my nutritionist and I don't want to do so, they take time for me and take me there. (P16)	Warn and concern against using unhealthy foods	Children's concern over parents' health	
My relatives and friends know that I'm sick. Therefore, they do not cook high-salt or high-fat foods when I'm their guest. (P22)	Preparation diet foods at parties	Support provided by significant others	
My daughter doesn't tell me bad news. Sometimes they unplug the phone, it helps me recover. (P15)	Help to recover with not saying stressful news	Family members' attempt to maintain patient's calm	
The doctor doesn't make mistakes, because he is the most important member in treatment, so, I absolutely take his advice.	Doctor the most important reference in health care system	Accepting physicians	Confiding in physicians
I do not manipulate my medicines. I change my medicines based on the doctor's advice	Adherence to drug recommendations	Following physicians' orders	

Abbreviation: P, Participant.

^aBehvarz: Iranian rural health worker.

3.1. Having the Wholehearted Support of a Spouse

One of the main aspects of perceived social support was having the wholehearted support of a spouse. This category comprised of subcategories including paying careful attention to spouse, understanding and helping spouse, and satisfaction with spouse's performance. After becoming aware of their partners' diseases, the participants' spouses became sensitive and attentive to their partners' diseases and health status. Subsequently, the spouses strived to help their partners adhere to the recommended treatment regimens.

Wholehearted and informed support provided by the spouses brought the participants great satisfaction with their spouses' performance. The spouses' support influ-

enced coping with adherence to treatments.

As soon as my wife noticed that I have developed a heart attack, she personally and effectively managed everything, including my dietary regimen, our household, and our children. She is the director of our household. It is because of her that I could cope with my disease (48^{y/o} male).

In addition, the participants' spouses attempted to understand and adhere to the prescribed dietary restrictions, and also to support the participants by encouraging them to do physical activities.

She does her best to encourage me to do physical activities. She even makes my sports shoes ready (59^{y/o} male).

Another aspect of support provided by the spouses was their sensitivity to the participants' dietary regimens.

They cautiously and wisely prepared healthy foods. Sometimes they even cooked foods other than foods prepared for other family members in order to help the participants adhere to the prescribed dietary regimens. Accordingly, the participants were confident that they were closely adhering to their regimens.

Before developing this disease, I used to eat restaurant foods. But, since developing the disease, my wife does her best to prepare foods that are both healthy for me and acceptable to other family members. When she is going to cook fatty food for other family members, she cooks something special for me (55 % male).

The participating patients were quite sure that their spouses are always with them and support them, particularly when facing difficult situations or developing disease-related complications. Accordingly, they had a feeling of being supported by a kind supporter. Moreover, the participants' spouses even helped them in self-care and self-monitoring activities.

Now, my wife monitors my blood sugar daily or every other day. She is very supportive. Sometimes when my blood sugar falls, she gives me some sugar solved in water or a spoonful of honey. She is now more skillful than me (44 % male).

Some of the spouses (especially females) strived to adhere to the prescribed regimens so strictly that caused the patients to feel some sort of dissatisfaction and uneasiness.

My wife treats everything very seriously. I ask her not to be so harsh; however, she does not pay attention to me. She even prevents me from listening to news, claiming that it makes me stressed. She has totally forbidden eating red meat, albeit I have been allowed (by my physician) to eat it occasionally (59 % male).

The male participants received various aspects of support (diet, exercise, stress management, medication adherence, etc.) from their wives, while female's perceived support from their husband included concerns about their health and seeking health care.

He works for us. I do not expect him to help me in doing household work. When I go to the doctor for a visit, my husband comes with me because he is worried about my health.

(56 % female).

3.2. Living with Supportive Family Members and Significant Others

Another attribute of the participants' perceived social support was living with supportive family and relatives. This main theme included categories, such as children's concern over parents' health, family support, support provided by significant others, and family members' attempt to maintain patient's calm. According to the participants,

children have a pivotal role in helping their parents adhere to treatment and dietary regimens. When their parents develop a disease, children attempt to provide them with psychological support and help them adhere to their regimens. In addition to children, the participants' relatives and peers also tried to facilitate the participants' adherence to treatment and dietary regimens by providing them with a supportive, comfortable, stress-free environment.

Children also supported their participant's parents by recalling disease risks and paying attention to diet and exercise, which had a positive impact on adherence to treatment regimens.

I didn't like sports. I just took my daughter to a gym and waited there to take her back home. My daughter said that she would stop doing sport if I didn't. Therefore, I enrolled at a gym and started doing a sport (42 % female).

The participants were satisfied and pleased with receiving support from their children. They attempted to follow their children's advice due to having confidence in them. They believed that their children were attempting to promote their lifestyle.

My daughter likes fast foods. Nonetheless, she doesn't eat fast foods and also prevents me from eating them (56 % female).

The participants stated that they were provided various types of perceived support by their children. Unmarried children provided greater help to their parents than married ones. Moreover, the daughters supported their parents in household chores and outdoors, while most support received from the participants' sons were related to outdoor work, such as buying medications, etc.

All my children love me. Those of my children, who are married, have greater problems and cannot devote time to me as my unmarried children can. In addition, my daughters usually help in household chores and outdoors, but my sons help me to go to the doctor and buy medicine or anything related to my illness (68 % female).

Besides close relatives, significant others also strived to support the patients by introducing qualified physicians to them, accepting and valuing their dietary restrictions, alleviating their stress, and highlighting the importance of following healthcare professionals' advice.

My relatives and friends know that I have this problem. Therefore, they try not to cook high-salt or high-fat foods when I'm their guest (48 % male).

However, the participants realized that received family support decreased over time. They expressed that their family members became tired and annoyed of helping them to remain in adherence with treatment regimens.

I understand that it's hard for my children to eat diet food, and it's also difficult for my wife to prepare two kinds

of food. So, I do not expect to receive any further help from them (63 y/o male).

3.3. Obtaining Information

The third theme of the study was obtaining information. The two main attributes of this theme were active information seeking and inactive information acquisition. The participants' experiences showed that obtaining information from reliable sources was an important source of support for them, particularly at the early phases of their disease. After receiving the definite diagnosis of their problems, the study participants started to gather information concerning their diseases, preventive strategies, self-care activities, medication use, side effects of medications, and complementary therapies. They gathered necessary information from credible sources, such as physicians, nurses, other healthcare professionals, friends, media, health centers, and clinics.

During medical visits, I ask all my questions from my doctor. For instance, I ask him questions about developing health problems after taking certain medications or about what I can eat and what I should avoid eating. Sometimes, my wife asks the doctor those questions that I forgot to ask (56 y/o male).

Another source of information for the participants was community-based rural primary healthcare workers, who are locally called 'Behvarz' in Iran. Villager participants had limited access to information resources and hence, referred to Behvarz workers to fulfill their educational needs.

Behvarz workers are very good (source of information). Physicians aren't readily accessible in our village. When you aren't sure what (food or medication) you need to take, you can refer to Behvarz workers, who are always accessible. They always provide me with useful information (69 y/o female).

Health centers and clinics, such as cardiac rehabilitation clinics or diabetes mellitus care centers were other sources, which provided information to the participants (in the form of educational pamphlets and booklets or verbal educations), particularly during the early phases of their diseases.

The sources of my information are books provided by the Iranian diabetes society. I referred to the Society several times. They gave us books on nutrition, which contained information about factors behind developing diabetes and strategies for managing it (44 y/o male).

Participants with diabetes reported that the diabetic education program in diabetes clinics is only held in the morning so they are not able to attend. Limitation to accessing reliable sources causes poor adherence.

I'm a worker and need my job; I work in the morning, the diabetic clinic is only open in the morning. If I have a

question, no one ever responds to my telephone calls (58 y/o male).

3.4. Confiding in Physicians

The final main source of perceived social support available to the participants was having confidence in their physicians, which included the two dimensions of accepting physicians and following physicians' orders. The participating patients highlighted that they confided in their physicians and viewed them as the central authorities in healthcare systems. It is noteworthy that the participating patients' confidence in physicians rooted in their childhood. As they confided in their physicians, the participants received educational support from them and followed their orders and advice. Following physicians' orders was associated with closer adherence to treatments, better perceived outcomes, and higher satisfaction with physicians' performance. Sometimes, they searched for and referred to more qualified physicians and sought medical advice from them. While they found new physicians' advice as congruent with their own physician, they gained greater confidence in their own physicians.

When my doctor said that treatment regimens were not effective and I needed to inject insulin, I referred to several other doctors. They also confirmed insulin injection. Therefore, I found that my first doctor was right (because) all physicians study same courses. Then, I gained greater confidence in my physician and obeyed all his orders (58 y/o male).

However, some other patients had experienced physicians' inattentiveness during hospitalization and hence, were dissatisfied with them. These patients highlighted that due to fatigue and heavy workload, attending physicians did not allocate adequate time to their patients and did not educate them and hence, caused them considerable confusion and distress.

When the attending physician comes to visit me, he just writes something in my medical records and says something to nurses. If I call him, he does not pay attention to me and just says that, 'I will answer your questions later; I'm very busy now'. However, the time 'later' never comes (62 y/o female).

4. Discussion

The findings of the study indicated that for closer adherence to regimens, the participants attempted to gather information. Moreover, the participants' spouses and marital partners had attempted to support them in adhering to recommended regimens. Besides spouses, the participants had also received psychological and functional

support from their family members and significant others, who strived to create a comfortable environment for them. The performance and the practice of the participants' physicians were also supportive and confidence-building. Khosravizadeh Tabasi et al. (2014) (20), Vaccaro et al. (2014) (21), and Miller and Dimatteo (2013) (8) also reported family members and peers as two main sources of support, which can enhance patients' adherence to treatments.

In two review studies, Barth et al. (2010) and Scheurer et al. (2012) divided social support to functional and structural constructs (5, 22). The current findings covered all these constructs and sub-constructs, except for financial support and social networks. This finding can be attributed to limited support provided by Iranian insurance providers. This is in line with the findings of other studies conducted in Iran (23, 24). Financial cost of treatment, especially in patients with inadequate health insurance or low income, can have a negative impact on adherence, especially medical adherence and impose a burden on patients in remaining adherent to their treatment regimens, therefore, increase non adherence (25). Moreover, lack of social associations and foundations for supporting patients with chronic diseases might also have contributed to this finding.

The current participants' strongest perceived social support was related to their spouses' wholehearted support. This type of support was of paramount importance to the participants. Previous studies also showed that patients considered their marital partners as the most important source of support to them (11, 23, 26, 27). Spouses are uniquely positioned in their partners' medical regimens. They are frequently involved with their chronically ill partners, often by promoting greater treatment adherence (23). Spouses attempt to enhance their partners' adherence to treatments by controlling their unhealthy behaviors and supporting their healthy behaviors (26). Understanding patients' illness experiences plays a key role in helping them deal with their chronic illness, which can be facilitating and enhance nursing supportive intervention programs to accommodate with their diseases (28).

They feel greater responsibility for their partners' treatment adherence, which can place an extra burden on them (23). Burden of care is related to adverse spousal outcomes in the context of managing chronic diseases (23), which also influences quality of care and intervention development.

It is noteworthy to mention that the degree of support provided by spouses is different to the extent that some spouses even provide extravagant support. Spouses' extravagant support is harmful and associated with lower self-efficacy, lower perceived control over the underlying

disease, and greater risk for experiencing anxiety and depression (27). This finding is consistent with the findings of another study conducted in Iran (28). However, the current research found no difference between males and females regarding perceived social support. The reason behind this finding could be explained by the unique structure of Iranian families. In the Iranian culture, there exists strong and sincere relationships among family members and individuals' needs are mainly satisfied within families (29). Accordingly, both males and females feel committed to fulfill their marital partners' and other family members' needs. Therefore, this information will enable health care providers to use social support as an opportunity to improve care plans and strengthen patients' perceived support in order to improve patient adherence.

The current research also found that another source of support available to the participating patients was living with their supportive family members and significant others. In other words, the participants' family members and significant others, particularly their children, were sensitive to the participants' health and supported them in adhering to prescribed regimens through reminding them of the consequences of their diseases. Such practice of family members and significant others brought the participants great satisfaction. Rosland et al. (2010) also found that after marital partners, the most important sources of support for patients was their children, siblings, other family members, and friends (11). Other studies also confirmed this finding (7, 23). Family members, especially spouses, play an important role in supporting the patients with chronic illnesses in their treatment regimen. Patient education (education on diet and medication, etc.) should be patient/family-centered. Nurses pay attention to patients' education about treatment regimen and their education should be focused on patient/family habits, behaviors, and values. Thus, nurses can facilitate greater durability of adherence.

However, in the long run, the support process for patients with chronic disease to remain adherent to their treatment regimens can impose a burden on family members, and consequently, may lead to severe stress situations within a family (10, 11). This issue not only places a great burden and stress on caregivers, yet, actually worsens patients' conditions as well.

In Iran, when diagnosed with chronic disease, patients receive high levels of family support. Therefore, support decreases over time, and chronic patients and their families lose faith in the future (30). Therefore, families do not always play a supportive role in treatment adherence.

Obtaining information from reliable sources was another source of support for the participants, which had a positive effect on their treatment adherence. The effects

of information gathering were more positive particularly at the early phases of participants' diseases. After receiving the definite diagnosis of their diseases, the study participants started to gather their necessary information and clarified disease-related ambiguities through adopting active information seeking and inactive information acquisition strategies. Generally, patients need information and education about their problems in order to make wise and critical decisions, and cope with the complications of their diseases. Consequently, informational support helps them understand their diseases and problems, and facilitates decision-making and coping processes among them (31).

Changes in healthcare delivery to chronically-ill patients, such as the introduction of community-based care, along with medical advances, have shifted care delivery from hospitals to patients' own homes. Accordingly, patients now receive a great deal of care services at their homes and from their own family members, most of whom have limited health-related information, if any (31). Previous studies have also shown that despite having limited health information (32, 33), family members are involved in performing complex clinical procedures and even making independent critical decisions (31). However, the current findings showed that both the participants and their close family members and relatives attempted to gather credible information for enhancing treatment adherence.

One of the main sources for obtaining health-related information was community-based rural health assistants or Behvarz workers. Behvarz workers provide primary health care services in rural health houses (34). The current findings as well as the findings reported by Farzadfar et al. (2012) showed that Behvarz workers can strongly support patients with cardiovascular disease, diabetes mellitus, and hypertension (35). Therefore, attention to educating Behvarz workers is one useful approach to provide this support to patients residing in remote areas and villages in Iran.

The participants had confided in treating physicians due to their support, which was mainly informational. The outcome of confiding in physicians and receiving support from them was greater adherence to treatment. Asgari et al. (2011) also reported on the positive effects of physicians' informational support on treatment adherence (23). Patients' confidence in physicians, who are considered as the central healthcare authorities, is among the most significant factors contributing to treatment adherence, particularly among patients with chronic diseases (36). On the other hand, patients with unsupportive physicians are reluctant to adhere to and continue the prescribed treatments (37). The results showed that some of the participants experienced their physicians' inattentiveness during hospitalization, which caused them considerable con-

fusion and distress.

4.1. Limitations

This study had some limitations. The researchers tried to include different patients with chronic disease in this study, yet did not explore experiences of unmarried adults; their perceived social support might have been different from that of married adults. Moreover, based on the nature of qualitative studies, the participants were purposively selected; thus, this survey does not represent the population.

Some of the interview sessions with the participants were conducted in their homes while their families were present, and hence, the participants may have given socially desirable responses under the influence of their families; and it is possible that not all aspects of the phenomenon were completely identified.

4.2. Conclusion

The most important and common sources of perceived social support among patients with chronic diseases in Iran are their spouses, relatives, and friends. Moreover, in a developing country like Iran, the type of support and the patients' perceptions of support are different from other countries, in that patients neither receive instrumental social support (for instance, from institutions and insurance providers) nor have the support of social networks. Consequently, their perceived social support is mainly traditional and informal. Given the high costs of managing chronic diseases, cost-free and easily-accessible informal social support, which is provided by family members, relatives, and friends, is of paramount importance to patients with these diseases. The current researchers recommend replicating this study in other patient populations, including chronically-ill children, adolescents, and unmarried adults.

Footnote

Financial Disclosure: The authors report no conflicts of interest in this work.

References

1. Nemes MI, Helena ET, Caraciolo JM, Basso CR. Assessing patient adherence to chronic diseases treatment: differentiating between epidemiological and clinical approaches. *Cad Saude Publica*. 2009;25 Suppl 3:S392-400. doi: [10.1590/S0102-311X2009001500005](https://doi.org/10.1590/S0102-311X2009001500005). [PubMed: 20027387].
2. Kalogianni A. Factors affect in patient adherence to medication regimen. *Health Sci J*. 2011;5(3):157-8.

3. Ahrari S, Moshki M, Bahrami M. The Relationship Between Social Support and Adherence of Dietary and Fluids Restrictions among Hemodialysis Patients in Iran. *J Caring Sci.* 2014;3(1):11-9. doi: [10.5681/jcs.2014.002](https://doi.org/10.5681/jcs.2014.002). [PubMed: 25276744]. [PubMed Central: PMC4134167].
4. Haber MG, Cohen JL, Lucas T, Baltes BB. The relationship between self-reported received and perceived social support: a meta-analytic review. *Am J Community Psychol.* 2007;39(1-2):133-44. doi: [10.1007/s10464-007-9100-9](https://doi.org/10.1007/s10464-007-9100-9). [PubMed: 17308966].
5. Verheijden MW, Bakx JC, van Weel C, Koelen MA, van Staveren WA. Role of social support in lifestyle-focused weight management interventions. *Eur J Clin Nutr.* 2005;59 Suppl 1:S179-86. doi: [10.1038/sj.ejcn.1602194](https://doi.org/10.1038/sj.ejcn.1602194). [PubMed: 16052189].
6. Bruwer B, Emsley R, Kidd M, Lochner C, Seedat S. Psychometric properties of the Multidimensional Scale of Perceived Social Support in youth. *Compr Psychiatry.* 2008;49(2):195-201. doi: [10.1016/j.comppsych.2007.09.002](https://doi.org/10.1016/j.comppsych.2007.09.002). [PubMed: 18243894].
7. Aghakhani N, Sharifi F, Molazem Z, Habibzadeh H. [A qualitative study of hemodialysis patients' experience of perceived personal social support]. *J Urmia Nurs Midwifery Fac.* 2014;12:409-29. Persian.
8. Miller TA, Dimateo MR. Importance of family/social support and impact on adherence to diabetic therapy. *Diabetes Metab Syndr Obes.* 2013;6:421-6. doi: [10.2147/DMSO.S36368](https://doi.org/10.2147/DMSO.S36368). [PubMed: 24232691]. [PubMed Central: PMC3825688].
9. Gallant MP. The influence of social support on chronic illness self-management: a review and directions for research. *Health Educ Behav.* 2003;30(2):170-95. doi: [10.1177/1090198102251030](https://doi.org/10.1177/1090198102251030). [PubMed: 12693522].
10. Pourghane P, Hosseini M, Mohammadi F, Ahmadi F, Tabari R. Living within limits: Unpleasant experiences from the perspective of patients after cardiac surgery, a content analysis study. *Jouneshapur J Chronic Dis Care.* 2014;3(3):1-9. doi: [10.17795/jjcdc-21704](https://doi.org/10.17795/jjcdc-21704).
11. Rosland AM, Heisler M, Choi HJ, Silveira MJ, Piette JD. Family influences on self-management among functionally independent adults with diabetes or heart failure: do family members hinder as much as they help? *Chronic Illn.* 2010;6(1):22-33. doi: [10.1177/1742395309354608](https://doi.org/10.1177/1742395309354608). [PubMed: 20308348]. [PubMed Central: PMC3712767].
12. Kim HS, Sherman DK, Taylor SE. Culture and social support. *Am Psychol.* 2008;63(6):518-26. doi: [10.1037/0003-066X](https://doi.org/10.1037/0003-066X). [PubMed: 18793039].
13. Grewal K, Stewart DE, Grace SL. Differences in social support and illness perceptions among South Asian and Caucasian patients with coronary artery disease. *Heart Lung.* 2010;39(3):180-7. doi: [10.1016/j.hrtlng.2009.06.016](https://doi.org/10.1016/j.hrtlng.2009.06.016). [PubMed: 20457337].
14. Bobakova D, Dankulincova Veselska Z, Babinska I, Klein D, Madarasova Geckova A, Cislakova L, et al. Differences between Roma and non-Roma in how social support from family and friends helps to overcome health care accessibility problems. *Int J Equity Health.* 2015;14:37. doi: [10.1186/s12939-015-0165-z](https://doi.org/10.1186/s12939-015-0165-z). [PubMed: 25890164]. [PubMed Central: PMC4404245].
15. Strom JL, Egede LE. The impact of social support on outcomes in adult patients with type 2 diabetes: a systematic review. *Curr Diab Rep.* 2012;12(6):769-81. doi: [10.1007/s11892-012-0317-0](https://doi.org/10.1007/s11892-012-0317-0). [PubMed: 22949135]. [PubMed Central: PMC3490012].
16. Lindner H, Menzies D, Kelly J, Taylor S, Shearer M. Coaching for behaviour change in chronic disease: A review of the literature and the implications for coaching as a self-management intervention. *Aust J Prim Health.* 2003;9(3):177-85. doi: [10.1071/py03044](https://doi.org/10.1071/py03044).
17. Carr LT. The strengths and weaknesses of quantitative and qualitative research: what method for nursing? *J Adv Nurs.* 1994;20(4):716-21. doi: [10.1046/j.1365-2648.1994.20040716.x](https://doi.org/10.1046/j.1365-2648.1994.20040716.x). [PubMed: 7822608].
18. Samavat T, Hojatzadeh A. *Programs of prevention and control cardiovascular diseases.* Iranian Ministry of Health and Medical Education; 2012. Available from: <http://phc.umsu.ac.ir/uploads/pishgiri-htn.pdf>.
19. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today.* 2004;24(2):105-12. doi: [10.1016/j.nedt.2003.10.001](https://doi.org/10.1016/j.nedt.2003.10.001). [PubMed: 14769454].
20. Khosravizade Tabasi H, Madarshahian F, Khoshnati Nikoo M, Hassanabadi M, Mahmoudirad G. Impact of family support improvement behaviors on anti diabetic medication adherence and cognition in type 2 diabetic patients. *J Diabetes Metab Disord.* 2014;13(1):113. doi: [10.1186/s40200-014-0113-2](https://doi.org/10.1186/s40200-014-0113-2). [PubMed: 25436202]. [PubMed Central: PMC4247652].
21. Vaccaro JA, Exebio JC, Zarini GG, Huffman FG. The role of family/friend social support in diabetes self-management for minorities with type 2 diabetes. *J Nutr Health.* 2014;2:1-9. doi: [10.12691/jnh-2-1](https://doi.org/10.12691/jnh-2-1).
22. Barth J, Schneider S, von Kanel R. Lack of social support in the etiology and the prognosis of coronary heart disease: a systematic review and meta-analysis. *Psychosom Med.* 2010;72(3):229-38. doi: [10.1097/PSY.0b013e3181d01611](https://doi.org/10.1097/PSY.0b013e3181d01611). [PubMed: 20223926].
23. Asgari MR, Mohammadi E, Fallahi Khoshknab M, Tamadon MR. The perception of chronic renal failure patients from advocacy resources in adjustment with hemodialysis: A qualitative study Iranian. *J Crit Care Nurs.* 2011;3:133-42.
24. Taleghani F, Parsa-Yekta Z, Nikbakht Nasrabadi A. [Coping with breast cancer in newly diagnosed women: A qualitative study]. *Iran J Psychiatry Clin Psychol.* 2006;12:282-8. Persian.
25. Ganiyu AB, Mabuza LH, Malete NH, Govender I, Ogunbanjo GA. Non-adherence to diet and exercise recommendations amongst patients with type 2 diabetes mellitus attending Extension II Clinic in Botswana. *Afr J Prim Health Care Fam Med.* 2013;5(1):1-6. doi: [10.4102/phcfm.v5i1.457](https://doi.org/10.4102/phcfm.v5i1.457).
26. August KJ, Rook KS, Franks MM, Parris Stephens MA. Spouses' involvement in their partners' diabetes management: associations with spouse stress and perceived marital quality. *J Fam Psychol.* 2013;27(5):712-21. doi: [10.1037/a0034181](https://doi.org/10.1037/a0034181). [PubMed: 24040902].
27. Frohlich DO. The social support model for people with chronic health conditions: A proposal for future research. *Soc Theory Health.* 2014;12(2):218-34. doi: [10.1057/sth.2014.3](https://doi.org/10.1057/sth.2014.3).
28. Najafi Ghezeljeh T, Yadavar Nikravesh M, Emami A. Coronary heart disease patients' transitioning to a normal life: perspectives and stages identified through a grounded theory approach. *J Clin Nurs.* 2014;23(3-4):571-85. doi: [10.1111/jocn.12272](https://doi.org/10.1111/jocn.12272). [PubMed: 24175915].
29. Izadia A, Reyhan-Ebrahimib HR, Zilaie F. Husband-wife's expectation of opposite-sex spouse and the construction of gender identity. *Int J Innov Interdiscip Res.* 2012;2:101-6.
30. Bahrami M, Etemadifar S, Shahriari M, Farsani AK. Caregiver burden among Iranian heart failure family caregivers: A descriptive, exploratory, qualitative study. *Iran J Nurs Midwifery Res.* 2014;19(1):56-63. doi: [10.22037/ijnm.2014.24554961](https://doi.org/10.22037/ijnm.2014.24554961). [PubMed Central: PMC3917186].
31. Spence A, Hasson F, Waldron M, Kernohan G, McLaughlin D, Cochrane B, et al. Active carers: living with chronic obstructive pulmonary disease. *Int J Palliat Nurs.* 2008;14(8):368-72. doi: [10.12968/ijpn.2008.14.8.30771](https://doi.org/10.12968/ijpn.2008.14.8.30771). [PubMed: 19023952].
32. Aranda SK, Hayman-White K. Home caregivers of the person with advanced cancer: an Australian perspective. *Cancer Nurs.* 2001;24(4):300-7. doi: [10.1097/00002820-200108000-00011](https://doi.org/10.1097/00002820-200108000-00011). [PubMed: 11502039].
33. Thomas C, Morris SM, Harman JC. Companions through cancer: the care given by informal carers in cancer contexts. *Soc Sci Med.* 2002;54(4):529-44. doi: [10.1016/S0277-9536\(01\)00048-X](https://doi.org/10.1016/S0277-9536(01)00048-X). [PubMed: 11848273].
34. Javanparast S, Baum F, Labonte R, Sanders D. Community health workers' perspectives on their contribution to rural health and well-being in Iran. *Am J Public Health.* 2011;101(12):2287-92. doi: [10.2105/AJPH.2011.300355](https://doi.org/10.2105/AJPH.2011.300355). [PubMed: 22021303]. [PubMed Central: PMC3222427].
35. Farzadfar F, Murray CJ, Gakidou E, Bossert T, Namdaritabar H, Alikhani S, et al. Effectiveness of diabetes and hypertension management by rural primary health-care workers (Behvarz workers) in Iran: a nationally representative observational study. *Lancet.*

2012;379(9810):47-54. doi: [10.1016/S0140-6736\(11\)61349-4](https://doi.org/10.1016/S0140-6736(11)61349-4). [PubMed: [22169105](https://pubmed.ncbi.nlm.nih.gov/22169105/)].

36. Safran DG, Neuman P, Schoen C, Montgomery JE, Li W, Wilson IB, et al. Prescription drug coverage and seniors: how well are states closing the gap? *Health Aff (Millwood)*. 2002;Suppl Web Exclusives:W253-68.

[PubMed: [12703581](https://pubmed.ncbi.nlm.nih.gov/12703581/)].

37. Doosti-Irani M, Abazari P, Babaei S, Shahgholian N. [Facilitators of adherence to Self-management in type 2 diabetic patients: A phenomenological study]. *Iran J Endocrinol Metab*. 2009;11:257-65. Persian.