The role of social support networks in public health and health service utilization among the elderly

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Abstract

the one of most important source of health is Social Support and Networks, but often ignored. We therefore undertook at this study to investigate the relationship of supportive social networks and the health status of the elderly and their Use of health services. This correlation cross-sectional study was conducted on 356 elderlies selected using multistage clustersampling method from among 4777 over-sixty people in Bijar city. The data were analyzed in SPSS by independent samples t-test and Pearson correlation test. The results showed the relationship between social support ,network and using health services. A direct significant relationship was observed between social networks and social support, with a more significant relationship between strong ties and social support. furthermore, social support had a direct significant relationship with dimensions of general health in the elderly and emotional support had a stronger effect on the psychological dimension. Having several support resources was related with health, where marital relationship and spouse's support had a stronger effect on health. Social support had an indirect significant relationship with using health services. Social networks entail social support, which in turn enhances health and reduces healthcare costs. Marriage, family's and relatives' support are the most important dimensions of establishing a strong tie and emotional social support for the elderly. Interventions can utilize these units to improve elderly's health and reduce their dependence on official healthcare services. Therefore, it is recommended that natural social support networks be developed in these units.

Keywords: Public Health, Social support, Social network, Health services, Aged

Introduction

Over three fourths of the elderly suffer a kind of chronic disease [1] that imposes heavy costson the healthcare systems. Today, healthcare and treatment costs of the elderly are 6 times as that of youths and 3 times as that of middle aged people in developed countries [2]. Iran also experiences a similar situation [3].

Social networks that refer to one's surrounding people with possible supports can provide social supports as a variety of assistants over the network [4,5] and act as a comprehensive process in elderly's health [4]. A huge volume of previous experimental studies also have emphasized on this point since 1979. This studies examined the effect of social networks on health status and concluded that these networks correlated closely with health and mortality in all cases [6-13]. also proved the correlation between social networks and

certain types of diseases and risks [14-16] and mental health services [17 & 18]. The basis of this assumption was a section of Berkman et al.'s cascade model [5] in which elements of the model were dynamically interconnected, and social networks contributed to the health status and its outcomes through supplying supportive sources [5]. Such a developing literature defining the course of health/disease progression through social networks has resulted in changes in the policies of health systems, promotion of supportive networks, and emphasis on social interventions instead of pharmacotherapy [19]. However, few experimental studies have been performed in this regard, and practicallynothing has been done in Iran so far due to the short history of the subject and the failure to pay attention to it. This study was conducted to examine the correlation of social support networks with health and utilization of health services in a group of Iranian elderly. Most studies concerning the relationship between social network or social support and health and service utilization focus on clients illnesses. However, this study examined all variables separately, but with a dynamic interconnection in a random group of elderly who were at home and all had an equal chance to enter the study instead of using other data collection methods, such as going to medical centers and pharmacies, that is, nonrandom methods.

Method
In this study conducted through social surveys, 356 people out of 4777 with 60 or more years of age in Bijar, Iran were selected using cluster sampling with proportional stratification technique. Complying with ethical considerations self-reported interviews were performed with the subjects through home visits. The study tool was an inventory whose content and face validities were determined with the help of some experts, and its reliability coefficient Cronbach's alpha was measured for social networks (0.731), health services (0.683), social support (0.680), and public health (0.880). Moreover, the split-half

was obtained for the social support (split-half correlation of 0.744 and alpha coefficients of 0.837 and 0.757). According to the inventory, the social network was assessed at two levels of strong and weak tie taking into account the social network index [5,6]. The proximity and frequency of contact and intimacy was measured to assess the strong tie, and the size of the network and group memberships was examined while assessing the weak tie. The size of the network was measured regarding number of children, relatives, and friends calling or visiting the elderly, number of group memberships, and whether or not the subject had a spouse. The frequency of contacts was measured regarding the frequency of phone calls and visits with children, relatives, and friends in the past month. The intimacy was assessed on the basis of number of intimate contacts with each of the above fields, and the proximity was measured according to the distance between the elderly's home and that of the above fields [9]. In this respect, four sources of contact were considered as sources of social networks as follows: ties with children, relatives, and friends with whom the elderlywere in contact, the frequency of phone calls and visits with them in the past month, intimacy with them, and proximity to them; the membership in religious or other social groups that were measured according to the number of official and unofficial groups and community memberships, and the marital relationship determined based on whether or not the subject had a spouse.

The social support was measured using an 8-item scale [5,14] at three dimensions of emotional, instrumental, and informational-appraisal, for each field of the network. The information obtained in this regard were as follows: lack of support (determined with the option "no one"), the amount of received support (through selecting each network field), frequency of supportive sources (through mentioning one or more fields of the network), and the elderly's independence of receiving support (through expressing that they were needless of receiving support).

The health was assessed using the 28-item Goldberg's general health questionnaire (GHQ-28). The utilization of health services was measured using a 5-item scale [inspired by 17 & 18] about using health services as outpatient visits in medical centers (using primary services), hospitalization (using secondary services), intensity of use (permanent or occasional use of medicines), and sequence of use (the years of the elderly's dependency to medicines).

Finally, the data were analyzed in SPSS software using Pearson's correlation and independent samples t-test.

Results

The subjects aged 60-100 years with mean age of 70 years. The frequency distribution of respondents in age groups of 60-69, 70-79, and 80+ years was 48.6%, 33.1%, and 18.3%, respectively. Of the respondents, 40.2% and 59.8% were males and females, respectively, and 64.9% and 35.1% were married and single, respectively. It is noteworthy that among the singles, the majority were female, as the percentage of single women (28.9%) was several times as that of single men (6.1%). In general, the descriptive results on the general health status of the studied elderly were not favorable. The general health status of a considerable percentage of the elderly was normal (42.7%), worse than normal (27.8%), or much worse than normal (8.4%), and only 18.3% of them had the general health status higher than normal. The interview on the effect of health service utilization compared to that of the supportive network on the elderly's feeling of well-being revealed that 14.6% of the elderly found the physician visits and taking medicines effective in their health recovery, while, 85.4% of them emphasized on the higher effectiveness of supportive ties. In this regard, 56.2%, 81.2%, 69.9%, and 48.9% of respondents, respectively related the effectiveness to their spouse, children, relatives, and friends. (Tables 1-3). As shown in the table, strong and even weak networks of social ties supplied varieties of social supports for the elderly (P=0.001). These kinds of supports were mainly

Table 1 *Results of Pearson's correlation test examining the correlation between the social network and social support, for dimensions of each variable*

		Social support	Emotional support	Instrumental support	Informational-appraisal support
Social network index	Correlation coefficient	0.265**	0.093	0.285**	0.214**
	Significance level	0.001	0.239	0.000	0.006
Weak ties index	Correlation coefficient	0.198**	0.128	0.165**	0.143**
	Significance level	0.000	0.016	0.002	0.007
Strong ties index	Correlation coefficient	0.313**	0.155**	0.328	0.230**
	Significance level	0.000	0.049	0.000	0.003

**Correlations are significant at 0.01 (two-tailed)
* Correlations are significant at 0.05 (two-tailed)

provided by strong ties (P=0.000).

Table 2 indicates that the subjects reported less social support, especially the emotional support, enjoyed less general health (P=0.000), especially the mental health (P=0.000).

According to table 3, the higher the level of social support, the lower the elderly's utilization of health services (P=0.000). The decreasing effect the emotional support was more evident than that of other dimensions of support.

Discussion

The present study was conducted to examine the correlation between social support networks and utilization of health services in

Table 2 *Results of Pearson correlation test examining the correlation between the social support and general health, for dimensions of each variable*

		General health	Physical health	Mental health	Social health
Social support	Correlation coefficient	0.357**	0.201**	0.378**	0.265**
	Significance level	0.000	0.000	0.000	0.000
Emotional support	Correlation coefficient	0.277**	0.124*	0.310**	0.154**
	Significance level	0.000	0.019	0.000	0.004
Instrumental support	Correlation coefficient	0.275**	0.198**	0.290**	0.127*
	Significance level	0.000	0.000	0.000	0.017
Informational-appraisal support	Correlation coefficient	0.241**	0.124*	0.233**	0.215**
	Significance level	0.000	0.020	0.000	0.000
Number of supportive sources	Correlation coefficient	0.303**	0.129*	0.326**	0.193**
	Significance level	0.000	0.020	0.000	0.000

Table 3 *Results of Pearson's correlation test examining the correlation between the social support and utilization of health services, for dimensions of each variable*

		Use of health services	Intensity of using medicines	Sequence of using medicines	Outpatient visits	Hospitalization
Social support	Correlation coefficient	-0.244**	-0.184**	-0.186**	-0.247**	-0.144**
	Significance level	0.000	0.001	0.001	0.000	0.007
Emotional support	Correlation coefficient	-0.207**	-0.158**	-0.171**	-0.174**	-0.091
	Significance level	0.000	0.003	0.001	0.001	0.088
Instrumental support	Correlation coefficient	-0.141**	-0.161**	-0.094	-0.174**	-0.120*
	Significance level	0.009	0.002	0.079	0.001	0.025
Informational-appraisal support	Correlation coefficient	-0.195**	0.079	-0.152**	-0.211**	-0.120*
	Significance level	0.000	0.140	0.000	0.000	0.024

a group of Iranian elderly.

The results showed that social networks in which the elderly had a membership were the major social support suppliers. This result conforms to that of the studies performed by Avlund et al. (1998) in Denmark [8], Zunzunegui (2004) [9], Hwang et al. (2009) in Canada [13], Okabayashi et al. (2004) in Japan [10], and White et al. (2009) in the United States [12]. Furthermore, indexes of strong ties were stronger supporters than weak ties, and this result was also reported in the classic study performed by Berkman and Syme (1979) [6] and Zunzunegui et al.'s

study (2004) [9]. The other hypothesis was about the effectiveness of social supports in the general health. The more the elderly were supported by the network's members, the better their general health improved, and the more the dimensions of the emotional support, the higher their mental health. This result agrees with that of Berkman et al.'s study about the effect of emotional support on patients' recovery [14] and that of the studies conducted by Venkatraman et al. (1995) [20], Okabayashi et al. (2004) [10], Wang et al. (2006) [11], and White et al. (2009) [12] about the effect social and emotional support on patients' health status. The frequency of social supporters also had the same effect on the general health and mental health of the elderly. Moreover, most of the elderly, except a few who found the use of medical services effective in their feeling of well-being, found the supportive ties more effective. In this regard, Wang et al. (2006) also pointed out that only 24% of patients preferred to stay at the hospital for medical care, and over 76% of them preferred the home care [11]. Therefore, it is better to care for the elderly who have a family within the family or in the vicinity of the family. To do so, investment and governmental approvals, developing conditions and arrangements of home care, andcommunicating (as social workers do) with families having sick elderly seem necessary.

Based on the results of this study, the most important source of contact, out of the four contact sources, for supplying higher levels of social and emotional support was the patients' spouse that conforms to that of the cross-cultural study of Venkatraman et al. (1995) in the United States and India [20], Okabayashi et al.'s study (2004) in Japan [10], and Wang et al.'s study (2006) in Taiwan [11]. Furthermore, the independent samples t-test in the present study revealed that the social and emotional support in the elderly with spouse was significantly higher than that in the single elderly (P=0.000). This result agrees with that of Okabayashi et al.'s study (2004) [10]. However, the support received from children in the elderly with spouse was not significantly

different from that in the single elderly. This result indicates that the studied elderly were deprived of the most important supportive source after losing their spouse, as the supportive source had not been transmitted to the other source. Whereas, the elderly in Japan were less affected by the widowhood after losing their spouse because they lived with their children and enjoyed a rather larger social network and, subsequently, the higher support [10]. Although numerous studies revealed the significance of the relationship of the elderly with the spouse than with children [4,6,10,11,20], the relative importance of these supportive sources considerably varied in different parts of the world. The supportive presence of children in increased health and decreased symptoms of disease was proved in Japan [10], poor ethnic minorities in Latin America, andFrench speaking communities in Canada [9], while, this was not proved in the present study in Iran, in North America [9], and Venkatraman et al.'s study (1995) in North America [20]. Moreover, this study showed that the emotional support received from the spouse had the strongest correlation with the general health of the elderly (P=0.000) and actually was the major source of health. Based on the results of this study and similar studies, remarriage after widowhood could be effective in health promotion of the single elderly through supplying new supportive sources. In this respect, social-culture engineering should be run in order to eliminate negative views about marriage of the widowed elderly, especially widows.

Another main hypothesis of this study was to examine the correlation between receiving social supports and using health services. According to the results, receiving higher social support, especially the emotional support, reduced the amount of used health services. Consequently, the samples enjoying higher general health in all physical, social, and particularly mental dimensions normally used fewer health services. These results were confirmed by previous studies that revealed that the low level of support received from

social networks led to frequent admissions in the hospital [18]. In Kang et al.'s study (2007), gaining high scores for the index of network among Medicaid beneficiaries was accompanied with higher frequency of admission in local hospitals and lower frequency of admission and outpatients visits in public hospitals [17]. In Maulik et al.' study (2009) also contacting the members of the network and higher levels of support correlated with higher use of general physician services and lower use of psychiatric specialized services [18]. The present study did not show any similar results about outpatient services or admission despite the remarkable effectiveness of the social support in reducing the utilization of health services. In general, the results warned that weakening the general health, especially mental health, in a group of Iranian elderly influenced by social support networks could impose high medical costs to the health system.

The strong point of this study was that the data were collected through interviewing with a random group of elderly who were at home and all had an equal chance to enter the study instead of using other data collection methods, such as going to medical centers and pharmacies, that is, nonrandom methods. However, the major limitation of this study was that a number of elderly who had a very low health status could not participate in interviews, and consequently were excluded from the study.

Conclusion
The obtained results generally reminded the social and health planners of the effectiveness of social support networks on improvement of general health, especially mental health, which imposed high costs. As the supportive approach emphasizes on disease prevention, development of comprehensive programs of social interventions seems necessary for expansion of the natural networks of supportive ties and establishment of artificial networks for the elderly. The most important social strategy of this study is the emphasis on the investment on the family and relatives who are the closest entities to the elderly and the main field of establishing strong social ties. This necessitates the elderly's living with their family through governmental policies and laws. To develop the supportive networks and promote advantages of these networks, network interventions can be run through the following ways: direct instruction and promotion that are provided by educational norm-developing organizations and can inform the students and workers having elderly in their family or neighborhood through reviewing the educational materials and holding workshops; extensive media activities inspired by cultural-religious elements can be performed through media productions for different strata at national and local levels simultaneously, and interventions designed by the family physician for evaluating and reproducing social network of the elderly.

Contributions
Study design: ZB, SHH
Data collection and analysis: SHH
Manuscript preparation: SHH

Conflict of interest
"The authors declare that they have no competing interests".

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