Original Article

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The Effect of Supplemental Health Insurance on Family Quality of Life

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ABSTRACT

BACKGROUND AND OBJECTIVE: The essence of insurance is compensating damages and replacing uncertainty with peace of mind; and insurance, as a way of dealing with risk, is a response to insecure and risky situations. This study was carried out to investigate the effect of supplemental health insurance on family quality of life.

METHODS: This cross-sectional study was carried out in 2014-2015 (Hijri year 1393) using 380 families of Babol city (Mazandaran Province, Iran) in two groups; those benefiting from supplemental health insurance and those without supplemental health insurance. Quality of life (QOL) was studied and compared between the two groups using WHOQOL-BREF questionnaire. The score range was between 24 and 120. Scores lower than 60 were considered as low quality of life and scores higher than 60 were considered as high quality of life.

FINDINGS: Mean quality of life score for the group with supplemental health insurance was 86.75±10.77 while it was 68.07±13.43 for the people without supplemental health insurance ($p<0.001$). Out of 254 families that experienced high quality of life, 242 individuals had supplemental health insurance, whereas out of 126 families that experienced low quality of life, 64 individuals did not have supplemental health insurance ($p<0.001$).

CONCLUSION: Results of the study demonstrated that having supplemental health insurance enhances the quality of life.

KEY WORDS: *Supplemental health insurance, Quality of life (QOL), Health index.*

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Introduction

The way of offering services is changing for service providers worldwide (1, 2); and insurance is a necessity and requirement for service recipients. As civilization progresses, the role of insurance in securing the future of individuals, society's comfort and peace, socioeconomic development and human welfare becomes more apparent because of the new risks and dangers that threaten people's life and peace (3). The essence of insurance is compensating damages and replacing uncertainty with peace of mind; and insurance, as a way of dealing with risk, is a response to insecure and risky situations (4).

Quality of life is a broad concept that proposes an assessment of individual's health and wellbeing, providing a general understanding of people's health and wellbeing (5). Health is a social purpose and the fundamental right of every human being (6) and all governments are obliged to provide public healthcare (7). Although much effort has been put into defining, measuring and differentiating concepts of health and quality of life, these concepts are still erroneously used interchangeably in studies of health and quality of life (8). Quality of life is an important index and its measurement is crucial for health studies (9). In 1993, World Health Organization (WHO) defined quality of life as an individual's perception of his/her living condition according to cultural norms and values of their community and their goals, standards and concerns (8).

Inequality in distribution of income and wealth leads to ever-increasing poverty. Since the dawn of the 20th century, most economists around the world have focused on increasing the economic growth rate; but in the second half of the century, especially since 1970s, growing income gap between the rich and the poor and increase in public awareness have created more emphasis on quality of life and development of health insurances can decrease income inequality (10). Supplemental health insurance plays a key role in health and economic dimensions of an individual's life and enhances the quality of life and social roles of individuals (11). Bittoni et al. have indicated in their study that the absence of supplemental health insurance limits access to healthcare, thus decreasing efficiency in people's health. This can damage and depress the quality of life of an individual and his/her family (12). Penson et al. have also found that the psychological effects of disease and its costs as well as the existing socioeconomic problems in families without supplemental health insurance play a key role in low quality of life (13).

Considering the fact that supplemental health insurances divide the costs of disease between a large numbers of people by distributing the probability of damage among insured individuals and bring peace of mind to all insured individuals while increasing social welfare (14), this study was carried out to investigate the effect of supplemental health insurance on quality of life among families of Babol city in 2014-2015 (Hijri year 1393).

Methods

This cross-sectional study was carried out using 380 families of Babol city with simple random sampling technique and based on Krejcie and Morgan's table. The standard WHOQOL-BREF questionnaire was given to families under study after making arrangements with administrators of insurance companies and gathering information about families of Babol city.

Samples were divided into two groups of odd and even based on having or lacking supplemental health insurance. Information about these two groups was gathered using standard WHOQOL-BREF questionnaire containing 26 items (including 24 specific questions and 2 general questions) while validity and reliability of the questionnaire has been confirmed in the study of Nejat et al. (15).

Adequate explanation has been given to the head of household and his/her consent has been gotten. WHOQOL-BREF questionnaire includes four major domains: physical health, psychological health, social relationships and environment health. To determine a raw item score, items were rated on a 5-point scale: very high score (5), high score (4), medium score (3), low score (2) and very low score (1). Scores ranged

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from 24 to 120. Scores lower than 60 were considered as low quality of life and scores higher than 60 were considered as high quality of life. The data were entered into IBM SPSS v22 and were analyzed using Mann-Whitney U test and logistic regression method while $p \leq 0.05$ was considered significant.

Results

Mean age of 380 heads of household in the range of 22-72 is 39.56±9.44 (table 1).

Table 1 Demographic information of households under study with basic health insurance in Babol, 1393

Variable	Frequency (%)
Age group (year)	
Younger than 30	70(18.4)
31-40	151(39.7)
41-50	114(30)
51-60	32(8.4)
Older than 61	13(3.4)
Gender	
Male	294(77.4)
Female	86(22.6)
Education level	
Illiterate	22(5.8)
Without high school diploma	47(12.4)
High school diploma	80(21.1)
Associate degree	52(13.7)
Bachelor of Science	130(34.2)
Master of Science and higher	49(12.9)
Job	
Self-employed	70(18.4)
Employee	156(18.4)
Worker	46(12.1)
Engineer	23(6.1)
Doctor	27(7.1)
Nurse	23(6.1)
Housewife	24(6.3)
Farmer	11(2.9)
Supplemental health insurance	
With	254(66.8)
Without	126(23.2)

In a comparison of various dimensions of quality of life, it was observed that the mean level of all dimensions of quality of life among individuals with supplemental health insurance was higher than individuals without supplemental health insurance ($p<0.001$)(table 2).

Table 2 comparison of various dimensions of quality of life among individuals with or without supplemental health insurance in Babol, 1393

Supplemental insurance Variants	With Mean±SD	Without Mean±SD
Physical health	21.73±3.83	17.52±4.06
Social relationships	10.62±1.69	8.59±1.91
Psychological health	20.8±2.73	15.6±3.87
Environment health	26.66±4.15	21.06±4.1

P<0.0001

Mean level of quality of life among individuals with supplemental health insurance and individuals without supplemental health insurance was 86.75±10.77 and 68.07±13.43, respectively, thus being significantly higher among individuals with supplemental health insurance ($p<0.0001$). Out of 254 families that experience high quality of life, 242 individuals have supplemental health insurance, whereas out of 126 families that experience low quality of life, 64 individuals do not have supplemental health insurance and this relationship has been statistically significant ($p<0.0001$) (table 3).

Using logistic regression (Forward Stepwise LR model) multi-variant analysis, it was specified that quality of life among individuals without supplemental health insurance was 87 times lower than individuals with supplemental health insurance ($p=0.01$) (table 4).

Table 3 level of quality of life based on insurance among families under study in Babol, 1393

Supplemental health insurance Level of quality of life	With N(%)	Without N(%)
High	242(79.6)	62(20.4)
Low	12(15.8)	64(84.2)

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Table 4 logistic regression (Forward Stepwise LR model) of families under study in Babol, 1393

Variable	Odds ratio (OR)	CI 95%	P-value
Age group (year)			
Younger than 30	1	1	
31-40	0.51	0.15-1.17	0.28
41-50	0.48	0.14-1.65	0.24
51-60	0.36	0.08-1.66	0.19
Older than 61	0.01	0.001-0.19	0.002
Education level			
Illiterate	1	1	
Without high school diploma	15.9	1.58-160.98	0.01
High school diploma	54.9	5.30-570.2	0.001
Associate degree	100.6	7.16-1412.3	0.0014
Bachelor of Science	198.3	13.15-2988.6	<0.0001
Master of Science and higher	-	-	0.99
Job			
Self-employed	1	1	
Employee	0.07	0.004-1.57	0.09
Worker	1.08	0.37-3.16	0.87
Engineer	-	-	0.99
Doctor	0.08	-	0.99
Nurse	0.01	0.001-0.44	0.01
Housewife	0.2	0.05-0.76	0.01
Farmer	7.6	0.95-61.3	0.06
Supplemental health insurance			
With	1	1	
Without	0.126	0.002-0.43	0.01

Discussion

In this study, enhancement of quality of life among families in Babol with supplemental health insurance was clearly observed. The study of Syme et al. has demonstrated that having insurance and good economic condition of families directly leads to decline in disease-induced mortality rate and increase in social welfare (16).

Adler et al. and Conlisk et al. have indicated that patients with various types of cancer without supplemental health insurance have poorer access to screening services, diagnosis and treatment and their life is highly affected by this issue, leading to a lower quality of life (17, 18). On the other hand, one should note that most diseases and malignancies depend on various factors such as demographic characteristics, social circumstances and patients' quality of life. Therefore, quality of life enhancement can be prophylactic by itself as well. This will be very important for doctors, researches and government planners (19). Imai et al. have found that using supplemental health insurance has profound effect on quality of life. Insurance is one way of offering facilities and services to families to help them when a problem, accident or disease occurs. Families can count on insurance as a reliable supporter and thus upgrade various dimensions of the quality of their life (20). Christine Lin et al. have found that families with supplemental health insurance have more peace and

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satisfaction that leads to quality of life enhancement (21). Development of new medical facilities and technologies in recent years has led to a significant increase in medical costs, causing serious financial problems for families. Supplemental health insurance can address family concerns in this regard and its extensive promotion can enhance the level of social welfare. Results of the present study indicate that every dimension of quality of life among families with supplemental health insurance is far higher than others. Therefore, considering the fact that supplemental health insurance enhances family quality of life, we can improve psychological confidence of service recipients by designing proper plans and increasing access to such services. Poor cooperation of some families in filling out the questionnaire forms and showing apathy while answering the questions were among the limitations of the present research which made us omit some samples and choose new ones.

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