

**Assessment of unhealthy days among Iranian reproductive age women in 2012**Lida Jarahi<sup>1</sup>, Maliheh Ziaee<sup>2</sup>

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**Abstract**

**Background:** Unhealthy days are defined as the number of days during the past 30 days that a woman has not had a feeling of wellbeing. Wellbeing includes the woman's judgments about the level of satisfaction and quality in her life. Assessment of a woman's perception of unhealthy days can be used to help her determine the extent of the burdens associated with mental and physical feelings that things are not going well in her life, job and relationship. This study was conducted to measure unhealthy days and the general health status in Iranian women of reproductive age based on their own perceptions.

**Methods:** The participants of this study were women of reproductive age who were referred to health centers in Mashhad, Iran, in 2012. With the stratified random sampling method, 220 women were included in the study. The health-related quality of life-4 (HRQOL-4) questionnaire was used to assess the women's self-perceived unhealthy days. The data that were collected were analyzed by Kruskal-Wallis, chi-squared, Pearson correlation, and logistic linear regression tests with SPSS 11.5.

**Results:** The mean age of the participants was 32.6 years, and the median number of the self-perceived unhealthy days was 7.1 days (per month). In the domains of physical, mental, and disability unhealthy days, the data indicated 2 days, 2.1 days, and 0.1 day in a month, respectively. Also, nearly half of the participants reported that their general health status was poor to fair. The Kruskal-Wallis test showed that there was a significant difference between unhealthy days in the different age groups ( $p=0.01$ ) as well as for the physical ( $p=0.02$ ) and mental domains ( $p=0.4$ ). The results of the regression analysis showed that the number of physical unhealthy days increased with age, number of children, and education. The number of mental unhealthy days increased with age, and the number of disability days increased as the age at which they were married decreased ( $p<0.05$ ). A significant inverse relationship was observed between physical unhealthy days and education, with the number of physical unhealthy days decreasing as the years of education increased ( $r=-0.19$ ,  $p=0.005$ ).

**Conclusion:** Women with less education who were older than 40, who married at an early age, and had more children reported more unhealthy days. These results emphasize the importance of preventive and educational health interventions in these vulnerable groups based on their physical and mental needs.

**Keywords:** Unhealthy days, Physical, Mental, Dysfunction, Women, Reproductive age

**1. Introduction**

Basing the assessment of health on the absence of disease or no malfunctioning body parts can provide significantly misleading results. A new definition of health is required that describes the complete physical, mental, and social wellbeing of the woman (1). Actually, 'good health' is based on an individual's judgment of experiencing a good quality of life, healthful life conditions, personal welfare, and participating in society. Such perceptions can be a

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valid index for estimating the quality of life and wellbeing of the population (2). The human concept of illness, being unhealthy, and personal wellbeing affects the person's quality of life, her concerns about health, her ability to work, and her ability to adapt to various circumstances (2, 3). Results from longitudinal and experimental studies have indicated that self-perceived health and wellbeing are associated with healthy behaviors, social communication, and productivity (3).

In 'Healthy People' in 2000 and 2010, the World Health Organization (WHO) declared that improving the quality of life should be a main target for the population's health. Measurement of health is difficult, but it is an appropriate tool for comparing the health status of various people. The determinants of health-related quality of life (HRQOL) include various aspects that contribute to the quality of life (4). HRQOL is a multi-dimensional concept that includes social, psychological, and physical health (5). HRQOL increasingly is being used as an outcome in clinical trials and effectiveness research on the quality of healthcare (6). Those who take the HRQOL questionnaire are asked to describe their health status and the number of unhealthy days in the last 30 days (4).

Since HRQOL measures how the patient perceives the results of care, it is a useful supplement for measures of the traditional actions of biological or physiological health (6). Assessment of the population's judgment about their health status by HRQOL can be important in determining the burden of preventable diseases and disabilities, and it can provide valuable new insights about mental and physical risk factors. Analysis of data from the health assessment may identify subgroups of the population that have a relatively poor feelings about their health status, making it possible to undertake interventions in order to improve their situation and avoid more serious consequences (1, 6). Information obtained from unhealthy assessment studies can be used to direct health policies, the allocation of resources based on unmet needs, and to conduct strategic planning for community interventions. The health status of women during their reproductive years is very important based its potential effect on their vulnerability and on childbearing. The purpose of this study was to assess the unhealthy days in Iranian women of reproductive age who were referred to health centers in Mashhad, Iran.

## **2. Materials and methods**

The study population of this cross sectional study was women of reproductive age in Mashhad, Iran, in 2012. We used stratified random sampling, and the sample size was determined to be 220 women based on our pilot study for estimating the mean of unhealthy days in 30 women. To determine this sample size, we used a formula for estimating the population mean by using the standard error. The participants were recruited from women who had been referred to the Mashhad Health Center in 2012, and the stratified random sampling method was used to choose the participants. The strata were the four main health center branches in Mashhad, and two health centers were selected from the list of health centers in each strata in a simple random manner. Married women of reproductive age lived in Mashhad and consented to participate in the study were included until the sample size requirement was met. To achieve the aim of this study, i.e., to evaluate the general health status of healthy women, the exclusion criteria were that the women could not be current patients in the medical system, could not have a chronic or acute illness, and could not be pregnant.

Data were collected by a trained interviewer using the HRQOL-4 questionnaire for measuring the unhealthy days in participants. Respondents to the HRQOL questionnaire described their health status using poor-to-excellent ratings; also, they described the number of days in the last 30 days that they felt that their physical or mental health was not good, with unhealthy days (or disability days) being defined as the days that they were not able to perform their usual activities (1). The validity of the questionnaire was assessed based on expert opinion (three community medicine specialists), and its reliability was determined by Chronbach's alpha, that was determined to be greater than 0.75 for each of the domains and for the total. Unhealthy days were measured based on the physical, mental and dysfunctional domains, and the total of unhealthy days was calculated by adding the unhealthy days reported in the three domains over a 30-day period. Each woman's general health status was measured by asking this question: "Would you say that your general health status is excellent, very good, good, fair, or poor?" Each woman's recent physical health status was measured by asking this question: "Thinking about your physical health status, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?" Then, the same question was posed in reference to mental health, including stress, depression, and emotional problems. The number of disability days was assessed by asking this question: "During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities such as caring for yourself, working, and engaging in recreational activities?"

The protocol of this study was approved by the Ethics Committee of the Mashhad Community Medicine Department. The participants had to provide a signed, informed consent statement before they were allowed to participate. The data that were collected were entered into SPSS11.5 statistical software (SPSS Inc., Chicago, Illinois, United States of America), and they were analyzed by the Kruskal-Wallis test, the chi-squared test, the coefficient of correlation, and linear regression. The significance level was considered to be less than 0.05.

### 3. Results

The mean age ( $\pm$ SD) of the participants in this study was  $32.6\pm 10.2$  years, and the mean age of marriage was 19.2 3.4 years. Fifty-three percent of participants were in the age group of 20-30. The median number of children among the participants was 1.9 with an interquartile range of 1-3. Among the participants, 25 women (11.4%) self-reported that their general health status was excellent, whereas 40 women (18.3%), 77 women (35.2%), 62 women (31.1%), and 15 women (8.2%) reported their health status was very good, good, fair, and poor, respectively. The median number of unhealthy days in a month reported in the physical domain and the mental domain were 7.1 and 2.1 days, respectively. Table 1 shows the total unhealthy days reported based on the participants' characteristics. More physically and mentally unhealthy days were reported in the age group above 40, and the Kruskal-Wallis test showed that there was a significant difference between unhealthy days in the different age groups ( $p=0.01$ ), as well as for the physical domain ( $p=0.02$ ) and the mental domain ( $p=0.4$ ), but this difference was not significant in disability ( $p=0.29$ ).

**Table 1.** Distribution of unhealthy days based on the characteristics of the participants

Characteristic	Classification	n (%)	Unhealthy days in a month (Median)	Inter-quartile range (days)
Age group	<20 years	31 (14.2)	6.5	0-21
	20-30 years	116 (53)	5.1	0-14.7
	30-40 years	18 (8.2)	7	0-20
	>40 years	54 (24.7)	13	4-30
Job	Student	12 (5.47)	11	4-26
	Housewife	184 (84)	7	0-20
	Employed	20 (9.13)	13	0-26
	Retired	3 (1.36)	7	3-30
Education	Below high school diploma	101 (46.11)	7	0-26
	High school diploma	74 (33.78)	5	0-17
	University	44 (20.09)	10	2-23

The relationship between the different domains of unhealthy days with age, education, age of marriage, number of children, and general health status was assessed by calculating the Pearson correlation coefficients (Table 2). Physical and mental unhealthy days had significant relationships with age, so that the number of unhealthy days increased as the age increased, but there was not a statistically significant relationship between disability and age in the women of reproductive age. Also a significant relationship was observed between physical unhealthy days and the level of the women's education, so that physical unhealthy days decreased as the years of education increased ( $r=-0.19$ ,  $p=0.005$ ), but there was no significant correlation between their jobs and unhealthy days. There was a significant relationship between the age of marriage and physical unhealthy and disability days in that the latter decreased as the age at marriage increased, and there was a significant relationship between mental unhealthy days and the age of marriage. There was a significant relationship between the number of children and physical unhealthy days, with the number of physical unhealthy days increasing as the number of children increased. There was a direct, positive, statistically-significant relationship between the overall state of health based on the women's own views of their physical and mental unhealthy days and their disability in the three domains.

For predicting physically unhealthy days, after entering the variables in the linear regression model using the Backward method, the women's ages and their ages when they were married were statistically significant ( $p=0.001$ ) in the mental domain of unhealthy days, and only age was significant predictive variable ( $p=0.003$ ). For disability days, age, age of marriage and number of children were statistically significant ( $p=0.03$ ). Table 3 shows the regression coefficients of unhealthy days and physical, mental, and dysfunction domains with the demographic characteristics of the participants.

**Table 2.** Relationship between unhealthy days and age, education, age at marriage, number of children, and general health status

Characteristic	Unhealthy days		Physical unhealthy days		Mental unhealthy days		Dysfunctional days	
	P value	R	P value	r	P value	r	P value	r
Age	0.002	0.21	0.04	0.13	0.005	0.18	0.69	0.03
Education	0.09	-0.11	0.005	-0.19	0.75	0.021	0.87	0.01
Age at marriage	0.01	-0.17	0.001	-0.22	0.28	0.07	0.01	-0.16
Number of Children	0.03	0.15	0.02	0.15	0.3	0.07	0.56	-0.04
Self-reported general health status	0.52	0.047	0.008	0.18	0.001	0.32	0.001	0.22

**Table 3.** Regression coefficients of unhealthy days and physical, mental, and dysfunction domains with demographic characteristics of participants

Type of days	Variable	B <sup>1</sup>	SE <sup>2</sup>	β <sup>3</sup>	Sig
Physical unhealthy days	Age	0.1	0.048	0.14	0/03
	Age at marriage	0/49	0.14	0.22	0.001
Mental unhealthy days	Age	0.19	0.06	0.18	0.003
Disability days	Age	0.14	0.05	0.26	0.009
	Age at marriage	-0.44	0.12	-0.26	<0.001
	Number of children	-1.2	0.41	-0.32	0.002

1: Constant 2: Standard error 3: Regression coefficient

#### 4. Discussion

In this study, 40% of the women with a mean age of 32.6 were reported that their general health status was poor to fair. The median value of unhealthy days among the participants was 7.1, but the value was about two days in the physical and mental domains. In a survey conducted by center of disease control (CDC), the respondents reported an average of 5.3 unhealthy days in the past month, which means that they deemed 17.7% of their days to be unhealthy (1). In that survey, a significant relationship was not observed between the women's physical and mental unhealthy days and their inability to do their jobs. Some studies have noted that employed women have better health status than housewives, because the workplace can provide an opportunity to increase self-esteem, confidence in decision-making, social support, and satisfaction with life among the women (7). In a study to assess the quality of life among women who are covered by Iran's welfare services and employed women using the WHOQOL-BREF questionnaire, both groups had a moderate quality of life, but the quality was better among the employed women than among those who were receiving welfare services (8). Another study compared health-related quality of life for employed women and housewives in Zahedan (Iran) using the SF-36 instrument, showed that employed women reported better quality of life in all domains, particularly in physical function domain (9).

In this study, physical and mental unhealthy days were significantly associated with age, with the number of unhealthy days increasing as age increased. A study in America based on the CDC-HRQOL measurement showed that the numbers of reported unhealthy days were different according to socioeconomic level and gender. Low-income people in the age range of 45 to 64 reported more physical and mental unhealthy days than people with higher incomes who were older, younger, and the same age group. Also, the number of physical unhealthy days was increased among people who were 65 and older (10).

In the present study, a significant negative relationship between the physical unhealthy days and education was observed, i.e., physical unhealthy days decreased as the years of education increased. In a cross-sectional study in Iran that compared quality of life of women and men working at SAPCO Company using the WHOQOL-BREF questionnaire, there was a significant relationship between quality of life of females and their employment status, but there was no significant relationship between the quality of life and age, education level, marriage status, and children (11). Another study in the USA showed that poor health days have increased in adults. Women, divorcees, unemployed people, people with annual incomes less than \$15,000 per year, and those with less than a high school education had worse scores on the HRQOL. There was a seasonal pattern of physical unhealthy days and overall unhealthy days (12). For predicting mortality, the health status that was assessed by the people themselves was

stronger than many objective variables of health (1). It also was shown that people with disability days significantly reported recent physical and mental unhealthy days (13).

One of the strengths of this study was its use of the HRQOL questionnaire to assess health, which was the first time this has been done in Iran. However, the limitations of this study were its sample size and its selection of participants from women who had been referred to health centers. Most of those surveyed were married and were housewives, and this reduced the possibility of making additional comparisons based on the job status and marital status. Selecting the participants from the community at large would have made it possible to assess a larger variety of job differences, incomes, and socioeconomic levels.

## 5. Conclusions

Perceived health is more than the absence of disease; it also is a resource for adapting people to their environments so they can live fruitful happy lives. In this study, we found that almost 50% of the reproductive age women reported their general health status to be poor to fair, even though the median of unhealthy days among the participants was 7.1. Women with less education who were over 40, married at an earlier age, and had more children reported more unhealthy days. The practical implications of this finding are that it can be used as a measure of the health of the general population of women in the country that is indicative of potential health demands. These results emphasize the importance of preventive and educational health interventions in these vulnerable groups based on their physical and mental needs. We suggest that similar research be conducted with a more diverse group of participants with a wider variety of sociodemographic characteristics.

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## Conflict of Interest:

There is no conflict of interest to be declared.

## Authors' contributions:

Both authors contributed to this project and article equally. Both authors read and approved the final manuscript.

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