



# Examining the Predictive Effect of Life Expectancy on Quality of Life and Mental Suffering Among Patients with Hemophilia

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## Abstract

**Background and Objectives:** Hemophilia is a chronic bleeding disorder that creates numerous difficulties in various aspects of patients' lives. This study aimed at examining the predictive effect of life expectancy on quality of life and mental suffering among patients with hemophilia.

**Methods:** In this descriptive-correlational study, using the convenience sampling method, 70 patients were selected among all patients with hemophilia referred to Afzalipour hospital of Kerman and the Zahedan hemophilia society, in 2016. The variables were assessed using the life expectancy questionnaire (Hallajian, 2010), quality of life inventory (Ware and Sherbourne, 1992), and perception of suffering scale (Schulz et al., 2010). The data were analyzed using the Pearson's correlation coefficient and simple regression analysis.

**Results:** The results indicated that the triple dimensions of mental suffering were significantly and negatively correlated with life expectancy. Additionally, among all the dimensions of quality of life, vitality and fatigue, emotional health, and social functioning were significantly and positively related to life expectancy. The results of the regression analysis revealed that life expectancy was able to predict emotional health, social functioning, and vitality and fatigue. In addition, life expectancy was able to significantly and negatively predict the triple dimensions of mental suffering.

**Conclusions:** According to the obtained results, it could be inferred that life expectancy significantly influences mental suffering and quality of life among patients with hemophilia and it can be applied as a method for decreasing these patients' mental suffering and promoting their quality of life.

**Keywords:** Life Expectancy, Quality of Life, Hemophilia

## 1. Background

Although advances in science and technology used in the treatment of various diseases have dramatically decreased the mortality rate of infectious diseases, the prevalence of chronic diseases has increased in the recent years (1). The duration of chronic diseases and their treatment courses, the duration of hospitalization, increased health-care costs, and psychological and social issues associated with these diseases are among factors affecting patients with chronic diseases (2). Hemophilia is a chronic disease, which forces a person to change his/her role from a normal person with a normal trend of life to a patient, who constantly and permanently deals with the disease (3). Due to the complex nature of this disease, patients with hemophilia have to deal with a variety of issues, which decrease their quality of life (4).

Studies have shown that pain is one of the most important concerns of patients with hemophilia that is directly associated with joint damage (5). The pain caused by joint injuries adversely affects patients' functioning and leads to various disabilities (5). Another concern of patients with hemophilia is that the deformation of joints can result in changes in the appearance of the organ. As a result of such difficulties, these patients are likely to experience increased levels of mental suffering and decreased levels of quality of life (6).

On the other hand, life expectancy is another factor that effects psychological status of patients with hemophilia. Denizli reviewed studies carried out on life expectancy and concluded that high levels of life expectancy were positively correlated with physical and psychological health (7). Life expectancy is a set of conditions that includes having valuable personal goals and perceiving the

ability to generate strategies in pursuing these goals (8). Having low levels of life expectancy makes people involved with stressful events, against which they are defenseless (9). In contrast, it seems that high levels of life expectancy may aid patients in dealing with their issues properly and may increase their quality of life.

Nowadays, quality of life is regarded as a new concept associated with general health and is a measure of health assessed by an individual himself/herself (10). When treating chronic diseases, in addition to controlling symptoms, improving the level of quality of life is of significant importance. The incidence of several complications, including constant pain, immobility, frequent absences from school/work, low self-esteem, and the like, affects patients' quality of life (11-13).

Additionally, studies conducted on patients with chronic diseases specified the suffering experienced by the turmoil in their daily life (14). Suffering is a sense, an excitement, and a natural perception, which in the long-term, is associated with psychological and health problems that can be realized both physically and mentally (15). Suffering is a subjective phenomenon that affects a person and his/her family and health team. Reducing a patient's level of suffering is the main goal of any healthcare team (11).

Since to the best of the author's knowledge very few studies have been conducted to examine these variables among patients with hemophilia, thus investigating life expectancy, quality of life, and mental suffering among these patients and identifying various impacts of this disease on different physical and mental aspects of their lives can be a great aid to specialists to choose proper methods of treatment for these patients. Moreover, assessing these patients' life expectancy, quality of life, and mental suffering can aid in finding proper solutions to problems associated with various types of treatments and to recognize complications of the disease.

## 2. Objectives

This study aimed at determining the predictive effect of life expectancy on quality of life and mental suffering of patients with hemophilia.

## 3. Methods

### 3.1. Research Environment and Participants

The method of the current study was descriptive-correlational following an ex-post facto design. The statistical population of the current study included all patients with hemophilia that had referred to Afzalipour hospital

of Kerman and the Zahedan hemophilia society to be visited by a doctor or to infuse clotting factors, in 2016. Given the dispersion of the patients with hemophilia in Sistan and Baluchestan province, to select the sample, the convenience sampling method was applied. In this regard, 70 patients referred to Afzalipour hospital of Kerman and the Zahedan hemophilia society was selected as the sample.

In order to collect the required data, the main objectives of conducting the current study were explained to the patients. After ensuring them that the data would remain confidential, the patients, who were eager to take part in the current study, were asked individually to complete the questionnaires. The questionnaires were read to illiterate patients and the selected responses by these patients were marked. All the patients that participated in this study expressed their informed consent to participate in the study.

The inclusion criterion of this study was undergoing hemodialysis, 2 or 3 times a week lasting for 3 to 4 hours and the exclusion criteria were dealing with any other diseases and/or any psychological disorders, which prevented the patients from taking part in the study. None of the patients were excluded from the study.

### 3.2. Questionnaires

In the current study, 3 questionnaires on life expectancy, quality of life, and mental suffering were applied to collect the required data.

#### 3.2.1. The Life Expectancy Questionnaire

The Hallajian life expectancy questionnaire (15) was applied to examine the patients' life expectancy. This questionnaire included 33 items and was designed based on a Likert-type scale (always, sometimes, and never). The minimum score was 0 and the maximum score was 99. Higher scores represented higher levels of life expectancy. The Cronbach's alpha coefficient was used to assess the internal consistency of this questionnaire. The Cronbach's alpha coefficients obtained for the total sample, female subjects, and male subjects were, respectively, 0.94, 0.89, and 0.92. In the current study, the result of the Cronbach's alpha coefficient used to examine this questionnaire's internal consistency was 0.75.

To evaluate the validity of this scale, after 4 to 6 weeks, the test-retest method was conducted on 95 female subjects and 91 male subjects, who took part in the first stage of the current study. In the retest stage, the means and standard deviations of the total sample, female subjects, and male subjects were respectively  $\bar{x} = 35.24$  ( $SD = 19.26$ ),  $\bar{x} = 31.39$  ( $SD = 15.8$ ), and  $\bar{x} = 30.16$  ( $SD = 19.22$ ). The correlation coefficients of the subjects' scores obtained in the test and retest were respectively 0.79, 0.82, and 0.80 for the

total sample, female subjects, and male subjects. By calculating the percentile ranks of the scores of the subjects ( $N=450$ ) and comparing the scores of the male and female subjects using the t-test, it was revealed that the female subjects' scores were significantly higher than that of the male subjects. The cut-off point of the life expectancy questionnaire was 49.5. This means that scores smaller than 49.5 indicated low levels of life expectancy, scores in the range of 49.5 to 65 demonstrated moderate levels of life expectancy, and scores in the range of 65 to 99 showed high levels of life expectancy.

### 3.2.2. The Quality of Life Inventory

The 36-item quality of life inventory, developed by Ware and Sherbourne (16) in the USA, was applied to evaluate the patients' quality of life. The inventory includes 36 items that assess 8 different domains of health, i.e. general health (5 items), physical functioning (10 items), role limitations due to physical issues (4 items), role limitations due to emotional issues (3 items), physical pain (2 items), emotional functioning (2 items), vitality and fatigue (4 items), and mental health (5 items). The lowest score was 0 and the highest score was 100. The score on each domain was calculated by considering the scores of the items related to that domain. Item number 2 was not considered in any of the domains and it was only considered in the overall score. The reliability and validity of this inventory were confirmed in Iran (ranging from 0.7 to 0.9) (16, 17). In the current study, the alpha coefficient was 0.82.

### 3.2.3. The Perception of Suffering Scale

This scale, which was developed by Schulz et al. (18), was employed to assess the patients' mental suffering. This scale measures 3 dimensions of suffering, i.e. physical, psychological, and existential-spiritual. The dimension of physical suffering includes 9 items and 2 parts. In each item related to the first part, participants were asked to indicate how much they had experienced the mentioned symptoms in the last 7 days and in each item related to the second part, participants were asked to demonstrate how much each mentioned symptom was upsetting and stressful. Participants could determine their answers using a 4-point Likert-type scale ranging from never (0) to always (3). The lowest score was 0 and the highest score was 27. The dimension of psychological suffering included 15 items. In the items related to psychological suffering, participants were asked to show how often they experienced the listed excitements in the last 7 days. Participants could determine their answers using a 4-point Likert-type scale ranging from never (0) to always (3). The lowest score was 0 and the highest score was 45. Existential-spiritual suffering was evaluated by 9 items. Participants were asked to

indicate to what extent the statements related to their feelings in the last 7 days and they could select their answers using a 5-point Likert-type scale ranging from never (0) to very much (4). The lowest score was 0 and the highest score was 27. The reliability of this scale was confirmed by Schulz et al. in 3 groups of African-American (physical 0.63, psychological 0.9, and existential-spiritual 0.86), white (physical 0.43, psychological 0.87, and existential-spiritual 0.84), and Spanish people (physical 0.6, psychological 0.85, and existential-spiritual 0.83) (19). In the current study, its alpha coefficient was obtained as 0.82.

### 3.3. Ethical Considerations

To observe the ethical considerations, the main objectives of the present study were explained to the participants. After ensuring the participants that the data would maintain confidentially and that they could withdraw from the study whenever they wanted, the questionnaires were distributed among the participants, who were eager to take part in this study. All the participants expressed their informed consent to take part in this study. Moreover, whenever a question seemed vague, some additional explanations were provided. These explanations were provided to avoid any kind of ambiguity and/or bias.

### 3.4. Statistical Analyses

The normality of the obtained data was initially evaluated using the Kolmogorov-Smirnov test. Afterwards, the type of test was determined. Since the levels of significance of all variables under study were greater than 0.05, the assumption of normality of the variables under study was confirmed. In this regard, parametric tests, including the Pearson correlation coefficient and the simple regression analysis, were applied to test the variables. In addition to these parametric tests, descriptive statistics (mean, percentage, and standard deviation) were used to analyze the obtained data. All the statistical analyses were carried out via SPSS.

## 4. Results

Demographic information of the subjects is presented in Table 1. In the current study, 70 patients with hemophilia in the age range of 18 to 58 years old were studied. In terms of age, the age range of 26 to 36 years had the highest frequency and 54.3% of the subjects were in this age range. Overall, 80% of the subjects were male and 20% were female. Moreover, 65.7% of the subjects were married and 34.3% were single.

The descriptive indicators of mental suffering, life expectancy, and quality of life are presented in Table 2.

**Table 1.** The Demographic Information of the Study Subjects

Variable	Frequency	Percent
<b>Age, y</b>		
18 - 25	17	24.3
26 - 36	38	54.3
37 - 47	13	18.6
48 - 58	2	2.8
<b>Gender</b>		
Female	14	20
Male	56	80
<b>Marital status</b>		
Single	24	34.3
Married	46	65.7

As shown in Table 2, the male patients' mental suffering, life expectancy, and quality of life means were respectively 63.64, 72.053, and 98.53, and the female patients' mental suffering, life expectancy, and quality of life means were, respectively, 66.50, 66.64, and 92.42. Using the Pearson correlation coefficient, the relationships of the predictor variable (life expectancy) with the criterion variables (mental suffering and quality of life) were examined.

The results of the Pearson correlation coefficient indicated that mental suffering was significantly and negatively related to life expectancy among patients with hemophilia ( $r = -0.447$ ,  $P < 0.01$ ). This means that a higher life expectancy is associated with less mental suffering. Moreover, the results showed that quality of life was not significantly related to life expectancy among patients with hemophilia ( $r = -0.152$ ,  $P > 0.01$ ). Additionally, the results demonstrated that among the dimensions of quality of life, physical functioning ( $r = -0.154$ ,  $P > 0.01$ ), limitation ( $r = 0.051$ ,  $P > 0.01$ ), emotional limitation ( $r = 0.220$ ,  $P > 0.01$ ), pain ( $r = -0.209$ ,  $P > 0.01$ ), and general health ( $r = 0.015$ ,  $P > 0.01$ ) were not significantly related to life expectancy. However, vitality and fatigue ( $r = -0.357$ ,  $P < 0.01$ ), emotional health ( $r = 0.733$ ,  $P < 0.01$ ), and emotional functioning ( $r = -0.251$ ,  $P < 0.05$ ) were significantly and positively related to life expectancy. The results indicated that the triple dimensions of mental suffering, i.e. psychological ( $r = -0.361$ ,  $P < 0.01$ ), physical ( $r = -0.385$ ,  $P < 0.01$ ), and existential-spiritual ( $r = -0.287$ ,  $P < 0.05$ ), were significantly and negatively correlated with life expectancy.

To examine the role of life expectancy in predicting quality of life among the patients with hemophilia, the regression analysis was used, the results of which are presented in Table 4. Based on the obtained results, life expectancy was not able to significantly predict quality of

**Table 2.** The Descriptive Indicators of the Research Variables<sup>a</sup>

Variable	Mean	SD
<b>Male patients</b>		
Mental suffering	63.64	10.90
Life expectancy	72.053	7.023
Quality of life	98.53	8.990
Psychological dimension of mental suffering	26.91	6.65
Physical dimension of mental suffering	13.89	3.183
Existential-spiritual dimension of suffering	22.83	4.46
Physical dimension of quality of life	20.41	5.38
Limitation	5.62	1.25
Emotional limitation	4.37	1.13
Vitality and fatigue	15.67	2.47
Emotional health	11.69	1.85
Social functioning	6.14	0.88
Pain	6.07	1.75
General health	13.64	5.82
<b>Female patients</b>		
Mental suffering	66.50	11.77
Life expectancy	66.64	9.68
Quality of life	92.42	8.41
Psychological dimension of mental suffering	14.57	5.36
Physical dimension of mental suffering	23.92	4.44
Existential-spiritual dimension of suffering	66.64	4.98
Physical dimension of quality of life	21.57	5.35
Limitation	6.500	1.22
Emotional limitation	4.42	1.08
Vitality and fatigue	14.14	2.90
Emotional health	10.64	2.49
Social functioning	5.57	1.089
Pain	5.35	2.97
General health	12.500	2.47

<sup>a</sup>No. of male patients = 56 and No. of female patients = 14.

life ( $P > 0.05$ ). The results of the data analysis indicated that life expectancy was only able to predict vitality and fatigue ( $P < 0.05$ ), social functioning ( $P < 0.05$ ), and emotional health ( $P < 0.05$ ). The value of the F-test ( $F = 9.903$ ) conducted to examine the effect of life expectancy on vitality and fatigue was significant at the 95% confidence level. The results presented in this Table showed that 12.7% of the variance in vitality and fatigue could be determined by life expectancy. The regression coefficient of vitality and fatigue with life expectancy ( $\beta = 0.357$ ) revealed that

life expectancy was able to predict vitality and fatigue significantly and positively. Furthermore, the value of the F-test ( $F = 4.581$ ), conducted to examine the effect of life expectancy on social functioning, was significant at the 95% confidence level. The results presented in this Table indicated that 6.3% of the variance in social functioning can be determined by life expectancy. The regression coefficient of social functioning with life expectancy ( $\beta = 0.251$ ) revealed that life expectancy was able to predict social functioning significantly and positively. Moreover, the value of the F-test ( $F = 79.155$ ) conducted to examine the effect of life expectancy on emotional health was significant at the 95% confidence level. The results presented in this Table revealed that 53.8% of the variance in emotional health can be determined by life expectancy. The regression coefficient of emotional health with life expectancy ( $\beta = 0.733$ ) proved that life expectancy was able to significantly and positively predict emotional health. However, the results demonstrated that life expectancy was not able to predict the other dimensions of quality of life.

To investigate the role of life expectancy in predicting mental suffering among the patients with hemophilia, regression analysis was used, the results of which are presented in Table 5. Based on the obtained results, life expectancy was able to predict mental suffering ( $P > 0.05$ ). The value of the F-test ( $F = 17.006$ ) conducted to examine the effect of life expectancy on mental suffering was significant at the 95% confidence level. The results presented in this Table indicated that 20% of the variance in mental suffering can be determined by life expectancy. The regression coefficient of mental suffering with life expectancy ( $\beta = -0.447$ ) revealed that life expectancy was able to predict mental suffering significantly and negatively.

The analysis of the obtained data confirmed that life expectancy can predict all the dimensions of mental suffering ( $P < 0.05$ ). Furthermore, the value of the F-test ( $F = 10.221$ ), conducted to examine the effect of life expectancy on the psychological dimension of mental suffering, was significant at the 95% confidence level. The results presented in this Table showed that 13.1% of the variance in the psychological dimension of mental suffering could be determined by life expectancy. The regression coefficient of the psychological dimension of mental suffering with life expectancy ( $\beta = -0.361$ ) revealed that life expectancy was able to significantly and negatively predict the psychological dimension of mental suffering.

The value of the F-test ( $F = 11.810$ ), carried out to investigate the effect of life expectancy on the physical dimension of mental suffering, was significant at the 95% confidence level. The results presented in this Table indicated that 14.8% of the variance in the physical dimension of mental suffering could be determined by life expectancy. The re-

gression coefficient of the physical dimension of mental suffering with life expectancy ( $\beta = -0.385$ ) revealed that life expectancy was able to predict the physical dimension of mental suffering significantly and negatively.

Moreover, the value of the F-test ( $F = 6.096$ ) conducted to determine the effect of life expectancy on the existential-spiritual dimension of mental suffering, was significant at the 95% confidence level. The results presented in this Table demonstrated that 8.2% of the variance in the existential-spiritual dimension of mental suffering could be determined by life expectancy. The regression coefficient of the existential-spiritual dimension of mental suffering with life expectancy ( $\beta = -0.287$ ) revealed that life expectancy was able to significantly and negatively predict the existential-spiritual dimension of mental suffering.

## 5. Discussion and Conclusion

Since to the best of the author's knowledge very few studies have been carried out to examine the predictive effect of life expectancy on quality of life and mental suffering among patients with hemophilia, this study aimed at determining the predictive effect of life expectancy on quality of life and mental suffering among these patients. According to the obtained results, it can be inferred that life expectancy influenced the levels of mental suffering and quality of life among the patients with hemophilia. Therefore, life expectancy can be applied as a method for decreasing these patients' mental suffering and promoting their quality of life. Although, to the author's knowledge, no studies were conducted to directly examine the relationship between the effects of life expectancy on increasing the level of quality of life and decreasing the level of mental suffering among patients with hemophilia, the results obtained from the current study are in line with the results of Izadi et al. (2) and Denizli (7), which indicated that increasing life expectancy was effective in reducing mental suffering. Moreover, the results of a study conducted by Pirasteh Motlagh et al. (20), which indicated that an increase in life expectancy aided HIV patients to suffer less from mental suffering, are consistent with the results obtained from the current study. Additionally, the results of the present study are in line with the results of a study carried out by Askari (21), which demonstrated that enhancing life expectancy was effective in reducing mental suffering and enhancing the quality of life among patients with multiple sclerosis. Moreover, in another study conducted by Baljani, Kazemi, Amanpour, and Tizfahm (22), the results showed that life expectancy and quality of life among cancer patients were not significantly correlated. This finding is consistent with the results of the present study.



**Table 3.** The Correlation Matrix of the Research Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>Mental suffering</b>	1													
<b>Life expectancy</b>	-0.143**	1												
<b>Quality of life</b>	-0.447**	0.152	1											
<b>Psychological dimension of mental suffering</b>	0.841**	-0.055	-0.361	1										
<b>Physical dimension of mental suffering</b>	0.742**	-0.058**	-0.385**	0.482**	1									
<b>Existential-spiritual dimension of suffering</b>	0.685**	-0.225	-0.287*	0.273*	0.368**	1								
<b>Physical dimension of quality of life</b>	0.272*	0.322**	-0.154	0.240*	0.107	0.242*	1							
<b>Limitation</b>	0.047	-0.042	0.051	0.017**	-0.103	0.167	0.132	1						
<b>Emotional limitation</b>	-0.037	0.074	0.220	-0.076	-0.078**	0.075	-0.006	0.425**	1					
<b>Vitality and fatigue</b>	-0.279*	0.402**	0.375**	-0.111	-0.173	-0.391**	-0.234	-0.128	0.084	1				
<b>Emotional health</b>	-0.324**	0.210	0.733**	-0.269*	-0.297*	-0.185	-0.038	0.098	0.021	0.176	1			
<b>Social functioning</b>	-0.161**	0.168	0.251*	-0.175	0.022*	-0.161	-0.212	-0.256*	-0.065	0.346*	0.196	1		
<b>Pain</b>	-0.006	0.253*	-0.209	-0.005	0.242*	-0.161	-0.304*	-0.393*	-0.177	-0.016	-0.256*	0.083	1	
<b>General health</b>	-0.232	-0.576**	0.015	-0.229	0.125	-0.147	-0.102	-0.043	-0.051	0.054	0.095	0.075	0.084	1

**Table 4.** The Results of the Regression Analysis Conducted to Predict Quality of Life and its Dimensions via Life Expectancy

Criterion Variables	F	P Value	R	R <sup>2</sup>	$\beta$	T
<b>General health</b>	0.015	0.903	0.015	0.000	0.015	0.122
<b>Pain</b>	3.094	0.083	0.209	0.044	-0.209	-1.759
<b>Social functioning</b>	4.581	0.036	0.251	0.063	0.251	2.140
<b>Emotional health</b>	79.155	0.000	0.733	0.538	0.733	8.897
<b>Vitality and fatigue</b>	9.903	0.002	0.357	0.127	0.357	3.147
<b>Emotional limitation</b>	3.467	0.067	0.220	0.049	0.220	1.862
<b>Limitation</b>	0.176	0.676	0.051	0.003	0.051	0.420
<b>Physical functioning</b>	1.654	0.203	-0.154	0.024	-0.154	-1.286
<b>Quality of life</b>	1.617	0.208	0.152	0.023	0.152	1.272

**Table 5.** The Results of the Regression Analysis Conducted to Predict Mental Suffering and its Dimensions via Life Expectancy

Criterion Variables	F	P Value	R	R <sup>2</sup>	B	T
<b>Mental suffering</b>	17.006	0.000	0.447	0.200	-0.447	-4.124
<b>Psychological dimension</b>	10.221	0.002	0.361	0.131	-0.361	-3.197
<b>Physical dimension</b>	11.810	0.001	0.385	0.148	-0.385	-3.437
<b>Existential-spiritual dimension</b>	6.096	0.016	0.287	0.082	-0.287	-2.469

Patients with hemophilia need help to effectively deal with this chronic disease. These people need to find hope and meaning in their lives. This goal will only be achieved

when all the issues related to this disease are determined. Through studying life expectancy among these patients and identifying various impacts of this disease on differ-

ent physical and mental aspects of these patients' lives, proper methods of treatment can be chosen. Like many other chronic diseases, maximizing the life expectancy of patients with hemophilia is the primary goal of different types of treatments. In fact, when treating patients with hemophilia, the main purpose of the healthcare team should be to maximize hope, physical, psychological, and occupational abilities, performance, and quality of life and to minimize the risk of becoming involved with negative psychological issues. Moreover, examining the role of life expectancy in predicting various psychological issues should be taken into consideration. Having the obtained results in mind, people's inability can be studied, the quality of provided care can be examined, the advantages and disadvantages of various types of treatments can be compared, and people at risk of psychological and social problems can be screened and treated. Recognizing life expectancy aids professionals to organize their activities in a way that they pave the way for promoting the general health and quality of life among patients with hemophilia. In this regard, it seems that evaluating life expectancy and quality of life among patients and identifying common psychological effects play key roles in preventing these psychological issues and providing prompt treatments.

### 5.1. Limitations

The limited number of patients referred to Afzalipour hospital of Kerman and the Zahedan hemophilia society for infusing clotting factors prolonged the process of collecting the data. Moreover, these patients' poor physical conditions created problems in answering the questions, which were mainly solved by reading the questions to them. Since the sample of the current study only included a limited number of patients with hemophilia, caution should be exercised in generalizing the obtained results.

### 5.2. Theoretical and Practical Recommendations

Conducting similar studies to assess the methods of enhancing quality of life among patients with hemophilia is highly recommended. In addition, the researchers are suggested to carry out studies on broad samples with the aim of examining the methods of promoting these patients' quality of life.

Holding group life expectancy training for patients with hemophilia by cultural, educational, and health authorities aimed at enhancing these patients' psychosocial health and reducing their suffering is highly recommended. Moreover, developing and implementing effective interventions, including teaching the methods of rehabilitation and finding a job, which aid these patients en-

hance their quality of life, teaching the methods of providing psychological support to these patients' families and people, who take care of them aimed at increasing these patients' positive affect, and holding group counseling sessions for these patients and involving them in cultural and sport activities aimed at promoting their positive affection should be taken into consideration.

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