



Relationship among Dimensions of Roy Adaptation Model, General Health and Satisfaction with Life in Patients with Parkinson Disease

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ABSTRACT

Parkinson disease (PD) is a chronic, progressive and debilitating disease. This study aimed to determine the relationship between the dimensions of Roy Adaptation Model (RAM) and General Health (GH) and Satisfaction with Life (SWL) in patients with Parkinson disease. This was a descriptive, analytic and cross-sectional study. The samples were selected from the patients with PD in 2016. The data was gathered by demographic, RAM, GH and SWL Scale questionnaires. The data was analyzed with SPSS software. In patients with PD, total adaptation score was 21.26 ± 3.24 . About the dimensions of adaptation, the scores of the physiologic mode, self-concept, role function and interdependence were 74.7 ± 9.33 , 32.37 ± 6.04 , 24.30 ± 5.00 and 20.93 ± 2.46 , respectively. There was significant relationship between education and physiologic mode ($P=0.048$) and also there were significant relationships between PD experience, employment and gender and total adaptation score ($P=0.002$, $P=0.007$, $P=0.006$, respectively). Mean and standard deviation of total general health score was 30.97 ± 5.03 and the means and standard deviations of its dimensions, including somatic symptoms, anxiety and insomnia, social dysfunction and depression were 10.26 ± 2.71 , 9.73 ± 2.77 , 5.13 ± 2.23 and 5.83 ± 1.91 , respectively. There were significant relationships between social dysfunction and physiologic mode and self-concept ($P=0.024$ and $P=0.012$, respectively). The mean and standard deviation of satisfaction with life score was 21.47 ± 3.57 . Satisfaction with life had no relationship with the dimensions of RAM and general health. RAM, GH and SWL make the development of high quality care planning possible by assessing the health status of patients with PD. This leads to engagement of the patients in self-care, better adaptation, improved quality of life and also helps the nurses to make medical decisions.

Key words: Roy Adaptation Model, general health, satisfaction with life, Parkinson

INTRODUCTION

Parkinson disease is the second most common neurological disorder which is characterized with a gradual increase in the motion disability, impaired balance and non-motor symptoms [1]. Decades of patients' lives are often allocated to Parkinson disease [2]. About 1.4 million people are living with this disease in the world [3]. Prevalence of Parkinson disease is two per thousand people in Iran, accordingly and given that the population of Iran was estimated 75149669 in 2011, about 150-160 thousand people are living with Parkinson disease in Iran [4].

Prevalence of Parkinson disease is increasing due to the expansion of elderly population [5]. This disease is very common among the elderly and its prevalence increases from 1% in people over 60 years to 4% in people over 80 years [6]. Individuals with Parkinson disease suffer from various symptoms [7]. Parkinson disease is a degenerative nervous disease causing movement problems and other uncomfortable symptoms [8]. Clinically, Parkinson disease is characterized by resting tremor, muscle rigidity, slowness and postural instability [9]. The majority of evidences are in favor of early intervention to reduce motor symptoms [10]. As the disease progresses, other symptoms such as non-motor symptoms and behavioral neurological symptoms may occur [9]. Non-motor symptoms include neurological problems such as anxiety, depression, paranoia, impulse control disorders, cognitive impairment as well as autonomic dysfunction, which may occur as gastrointestinal, urinary and sexual disorders [11]. Other non-motor symptoms are excessive sweating, orthostatic hypotension and sleep disorders [11]. Non-motor symptoms which are considered as a large part of PD symptoms usually appear very soon and these two groups of early motor and non-motor symptoms are more important for treatment and therapeutic goals [10]. Non-motor symptoms have negative impact on the quality of life in patients with PD and majority of them are undiagnosed and therefore, they are not treated [11].

On the other hand, these patients daily experience a variety of stressors related to the disease that reduce some their functional abilities [12]. Results of a study showed that the main concern of patients with PD is "fear of disability" [13]. This concern affects their physical, emotional, mental, and social aspects of their lives, fear of disability includes 4 classes of advanced physical disability, subjective mental changes, reduced social communication and changed self-concept [13]. Results of another study showed that patients with PD were faced with challenges in self-care [13].

Also, other major issues such as financial support, maintaining individual roles, receiving support in the process of recognition and experience of admission are the mental images of individuals from physical symptoms which must be paid attention by professionals in health care group [14]. Therefore, patients' unique experiences of changed movement patterns should be considered in the development of adaptation strategies [7]. Literature review indicates the need for continued support to patients with PD and their relatives at different stages of disease [14]. It is definitely clear that timely treatment can slow progression of the disease [10]. Reduced symptoms and thereby reduced disease progression is a very good result for improving the quality of patients' lives [10]. On the other hand, Parkinson disease is diagnosed and treated when it has already reached a relatively advanced stage and motor symptoms have occurred and nerve damage is clearly evident [10]. Life expectancy of patients is not affected by drug treatment and these patients have the same lifetime as others' [3]. So people often suffer from the serious effects of the disease for decades [3]. Despite new treatment ways of PD, now, there are no reviews for healing or stop of the course of the disease [14]. For this reason and prediction of increased number of people with PD, not only medical care, but, also nursing care of these patients, are of high importance in the future [14] and it is recommended to perform clinical studies in this regard [10]. Also, using cost-effective and community-based service delivery models to reduce disability and dependence and to enter into long-term care and to improve the quality of patients' lives is in need of studies [8].

Roy Adaptation Model [RAM] is a nursing model introduced by Roy. According to this model, the individuals are biological, psychological and social organisms and communicate with their environment and use adaptation mechanisms to communicate in order to maintain the balance. According to this model, human being and his interaction with the environment can be analyzed in a study and recognition of nursing process [15]. Since in RAM, the issue of adaptation has been addressed in terms of physical and psychological dimensions widely and in-depth [16], one of the effective care methods used for adaptation of patients with PD with physical, mental and social needs is RAM-based nursing care. According to Roy, nurse's role is to promote the health in all life processes in order to achieve higher levels of being well. For this, the purpose of a major part of nursing measures is to promote adaptation responses in each of the four dimensions of adaptation. But four dimensions of Roy Adaptation, including "physiologic mode", "self-concept", "role function" and "interdependence", and their relationships with general health and satisfaction with life have been paid less attention. Since patients with PD are exposed to many tensions and physical, mental and social problems and also, PD changes personal and family life, reduces general health and satisfaction with life, which is one of the mental aspects of quality of life, and generally reduces the quality of life, and in addition, most of these patients do not have the ability to adapt to the problems and tensions and they become in disharmony. RAM can be used to assess the patients in terms of various dimensions and to analyze the relationships between each of them and general health and satisfaction with life which is of the predictors of physical and mental health and represents the quality of life, inner well-being and individual's attitude

towards life as a whole. So, present research was conducted with the aim of determining the relationships between the dimensions of RAM and GH and SWF in patients with PD.

MATERIALS AND METHODS

This study is descriptive, analytical and cross-sectional. The population included all patient with PD admitted to neurologist in Semnan Town in 2016. Inclusion criteria were the diagnosis of PD (according to patient's medical record), living with PD for at least six months and informed consent for participation in the study. Exclusion criteria were experiencing stressors during last 6 months and death. The tools of data collection are demographic information questionnaire, Roy's Adaptation Model (RAM) Questionnaire, General Health Questionnaire and Satisfaction with Life Scale. Data was analyzed using SPSS software and descriptive and inferential statistical methods such as ANOVA test and Pearson's correlation coefficient.

Demographic information questionnaire included the information on age, gender, job, marital status, education and history of PD. In this study, RAM form was used. According to it, the patients were examined in terms of four dimensions of physiologic mode, self-concept, role function and interdependence. Each of dimensions has subclasses. "Physiologic mode" dimension with 9 subclasses (circulation and oxygenation, nutrition, excretion, rest and activity, protection, senses, water and electrolytes, neurologic status, endocrine glands status) has 25 questions based on 5-point Likert scale (totally 25 to 125 points), "self-concept" dimension with 5 subclasses (physical self, personal self, ideal self, moral self, spiritual self) has 10 questions based on 5-point Likert scale (totally 10 to 50 points), "role function" dimension with 3 subclasses (primary role, secondary role and tertiary role) has 8 questions based on 5-point Likert scale (totally 10 to 50 points), "interdependence" dimension with 2 subclasses (other important persons, supportive system) has 6 questions based on 5-point Likert scale (totally 6 to 30 points). The questions were asked patients during the interview, then, the patients were scored based on RAM. This form was extracted from authoritative scientific references and its contents were approved and its reliability was examined in different studies by test-retest method and its Cronbach's alpha was estimated 0.79 (16, 17).

General health is defined as a level of individuals' perception of their physical and mental performances in their lifestyles (18). In this study, GH means a score that the patients got from 28-question general health questionnaire. This test consists of 4 subtests; each of them has 7 questions. The questions of each subtest were provided in a row so that the questions 1-7 are related to "somatic symptom" subtest, the questions 8-14 are related to "anxiety and insomnia" subtest, the questions 15-21 are related to "social dysfunction" subtest and the questions 22-28 are related to "depression" subtest. This questionnaire is scored based on Likert scale: 0 for "never", 1 for "the usual", 2 for "more than usual" and 3 for "far more than usual". Total score is calculated after adding the scores that the scores 0-27, 28-55 and 56-84 are considered as "optimum health", "fairly good health" and "poor health", respectively (19). The results of the coefficients of 43 validation studies on different versions of the questionnaire in different countries showed that reliability of 28-question questionnaire for the scales of anxiety, depression, social function and somatic symptoms are 0.78, 0.82, 0.85 and 0.76, respectively and its concurrent validity with Beck Anxiety Inventory and Zong Depression Test was reported 0.74 and 0.69, respectively (20).

Satisfaction with life is a review process in which people assess the quality of their lives based on their unique criteria. Satisfaction with life is not a stable and objective trait and it also susceptible to reposition and it is considered based on the perceptions and perspectives of individuals (21). In this study, SWL is a score that the individual got from SWLS. It has 5 questions based on 7-point Likert scale from "strongly agree" to "strongly disagree". Its score range is from 5 to 35 and higher scores represent the high level of satisfaction with life. Its internal consistency and test-retest reliability were reported 0.85 and 0.77, respectively. Concurrent validity of this scale was examined by its correlation with The World Health Organization Quality of Life-BREF questionnaire (WHOQOL-BREF) and there are significant correlations between SWLS and four dimensions of quality of life questionnaire (mental health, physical health, social relationships and environment) which are 0.64, 0.49, 0.56 and 0.46, respectively (22).

Ethical Consideration

Research was approved by the Ethics Committee of the Semnan University of Medical Sciences. This study was registered as No. 95/273974–September 13th, 2016, and received approval number IR.SEMUMS.REC.1395.124. We also explained the aims of research to all the participants, assured them about data confidentiality and obtained written informed consent from the patients.

RESULTS

In this study, 30 patients (19 men and 11 women) were examined. The youngest and oldest patients were 55 and 86 years old (mean: 73.9 years). The least and the most PD history was 1 year and 15 years (mean: 4.2 years). %46.7 of patients was illiterate and %40 of them had primary education. 19 patients (%63.3) were married and 11 of them (%36.7%) were single (Table1).

Total score of RAM was 21.26±3.24. About the dimensions of adaptation, the scores of physiologic mode, self-concept, role function and interdependence were 74.07±9.33, 32.37±6.04, 24.30±5.00 and 20.93±2.46, respectively. There is significant relationship between education and physiologic mode (P=0.048) and also there are significant relationships between PD experience, employment and gender and total adaptation score (P=0.002, P=0.007, P=0.006, respectively) (Table2).

Table1. Baseline characteristics of overall sample

Demographic Characteristic	Frequency	N	%
Sex	Male	19	63.3
	Female	11	36.7
Age, years	≤75	17	56.7
	>75	13	43.3
History of PD, years	≤3	18	60
	>3	12	40
Education	Educated	16	53.3
	Illiterate	14	46.7
Occupation	Non-occupied	16	53.3
	Occupied	14	46.7
Marital status	Married	19	63.3
	Single	11	36.7

Table2. Mean ± SD of RAM dimensions scores and demographic characteristics

Demographic	Age, years			History of PD, years			Education			Occupation			Sex		
	≤ 75	> 75	P-value	≤ 3	> 3	P-value	Illiterate	Educated	P-value	Non-occupied	Occupied	P-value	Male	Female	P-value
Physiologic	74.94± 7.36	72.92± 11.65	0.567	74.00± 8.55	74.17± 10.80	0.963	70.50± 9.01	77.19± 8.70	0.048	75.00± 10.36	73.00± 8.25	0.567	74.68± 10.28	73.00± 7.77	0.642
Self-concept	31.41± 5.92	33.62± 6.19	0.331	34.06± 5.55	29.83± 6.07	0.059	31.86± 5.11	32.81± 6.89	0.673	33.19± 6.09	31.43± 6.07	0.436	32.95± 6.13	31.36± 6.03	0.499
Role Function	24.59± 4.38	23.92± 5.88	0.725	24.78± 5.08	23.58± 5.01	0.531	23.07± 2.49	25.38± 6.35	0.214	25.31± 5.80	23.14± 3.78	0.243	25.32± 5.86	22.55± 2.29	0.147
Interdependence	20.94± 2.24	20.92± 2.81	0.985	20.94± 2.57	20.92± 2.39	0.976	20.64± 1.86	21.19± 2.92	0.555	21.19± 2.73	20.64± 2.17	0.555	21.11± 2.84	20.64± 1.69	0.624
Total	20.88± 4.09	22.23± 2.74	0.315	23.00± 2.47	19.17± 3.83	0.002	19.86± 3.52	22.88± 3.07	0.018	23.06± 3.08	19.64± 3.29	0.007	22.79± 3.06	19.18± 3.34	0.006

Statistical test: One-way ANOVA

Table3. Mean ± SD of GHQ dimensions scores and demographic characteristics

Demographic GHQ Dimensions	Age, years			History of PD, years			Education			Occupation			Sex		
	≤ 75	> 75	P-value	≤ 3	> 3	P-value	Illiterate	Educated	P-value	Non-Occupied	Occupied	P-value	Male	Female	P-value
Somatic symptoms	11.00±3.00	9.30±2.01	0.091	10.05±2.97	10.58±2.35	0.611	10.28±2.58	10.25±2.90	0.972	10.25±3.10	10.28±2.30	0.972	10.10±2.66	10.54±2.91	0.676
Anxiety & Insomnia	9.17±2.50	10.46±3.04	0.215	9.55±3.03	10.00±2.44	0.675	9.42±2.73	10.00±2.87	0.583	9.81±2.94	9.64±2.67	0.871	9.63±2.69	9.90±3.04	0.797
Social dysfunction	5.29±1.89	4.92±2.69	0.661	5.11±2.49	5.16±1.89	0.948	5.78±2.08	4.56±2.27	0.138	5.00±2.03	5.28±2.52	0.734	5.00±1.97	5.36±2.73	0.676
Depression	6.23±2.04	5.30±1.65	0.193	5.55±2.12	6.25±1.54	0.339	5.35±1.69	6.25±2.04	0.208	6.12±1.92	5.50±1.91	0.381	6.00±2.18	5.54±1.36	0.540
Total	31.70±5.09	30.00±4.98	0.367	30.27±5.64	32.00±3.95	0.368	30.85±4.95	31.06±5.25	0.914	31.18±5.89	30.71±4.04	0.802	30.73±4.77	31.36±5.67	0.749

Statistical test: One-way ANOVA

Mean and standard deviation of total general health score was 30.97±5.03 and the means and standard deviations of its dimensions, including somatic symptoms, anxiety and insomnia, social dysfunction and depression were 10.26±2.71, 9.73±2.77, 5.13±2.23 and 5.83±1.91, respectively. None of demographic characteristics have significant relationships with the dimension of general health (Table3).

A study of relationships between the dimensions of RAM and the dimensions of GH showed that just there are significant relationships between social dysfunction and physiologic mode and self-concept (P=0.024 and P=0.012, respectively) (Table4).

The mean and standard deviation of satisfaction with life score was 21.47±3.57. Satisfaction with life had no relationship with the dimensions of RAM and general health.

Table4. Relationships between different dimensions of Roy adaptation model and general health

RAM Dimensions GHQ Dimensions	Physiologic		Self-concept		Role-function		Interdependence		Total	
	r	p	r	p	r	p	r	p	r	p
Somatic symptoms	-0.03	0.854	0.03	0.872	-0.12	0.502	-0.16	0.382	-0.14	0.432
Anxiety & Insomnia	-0.11	0.542	0.04	0.817	-0.24	0.199	-0.00	0.971	-0.08	0.655
Social dysfunction	0.41	0.024	-0.45	0.012	-0.29	0.120	-0.09	0.601	0.09	0.614
Depression	0.34	0.061	0.17	0.365	0.13	0.493	0.00	0.999	-0.19	0.308
Total	-0.07	0.685	-0.08	0.670	-0.25	0.170	-0.17	0.360	-0.19	0.297

Statistical test: Spearman's rho correlation coefficients

r: correlation coefficients

P: p-value

DISCUSSION

The results of this study showed that total score of RAM was 21.26±3.24. This disease affect the quality of patients' lives, patients with PD try more to adapt with the disease, adaption with disease is different in different people [23]. Their most common adaptation strategy is to adjust their emotions [23].

The results showed that about the dimensions of RAM, the score of physiologic mode was 74.07 ± 9.33 . The experience of the patient with PD is made clear with "trapped body" and "daily life with continuous speed reduction" [7]. Physiologic mode in patients with PD is associated with motor and non-motor symptoms [3]. Changes in motor symptoms often represent the experience of predominant symptoms of disease which affect the daily lives of patients and their relatives [7].

The results showed that about the dimensions of RAM, the score of self-concept was 32.37 ± 6.04 . Given the motor and non-motor symptoms, self-concept has been not explained in these patients' lives adequately [24]. But there is a significant and negative correlation between sense of coherence and emotional distress [$P < 0.008$, -0.37] [25]. A strong positive sense of coherence influences the mental-social health but it doesn't influence physical health [25].

The results of this study showed that about the dimensions of RAM, the score of role function was 24.30 ± 5.00 . PD destroys the valuable roles of individual, the symptoms of the disease can provide new ways to develop new and challenging roles [26]. This progressive neurological disease often leads to individual's disability in job role function [27]. Murdock et al. [2015] wrote that patients with PD describe their experience of employment with four physical, psychological, social and spiritual subclasses. Experience of employment was important and valuable to them in their daily lives [27]. Business disruption causes suffering and despair. Employment significantly improves the quality of life of the patients with PD [27].

The results of this study showed that about the dimensions of RAM, the score of interdependence was 20.93 ± 2.46 . The results of another study showed that Tremor, lack of physical and mental energy and dependence on others are the most stressful symptoms in the patients with PD [23]. Relatives usually support them and do many tasks of them [7]. Although caregivers know their duties to provide physical, social and emotional cares [28], this is accompanied by distress and discomfort and this feeling is experienced continuously [7]. While adaptation strategy for the patients with PD in their daily care has been developed [7], but financial implications for the provision of care has been addressed and access to facilities is associated with many difficulties [28]. Diagnosis causes much emotional pressure on patients and their caregivers while they don't feel that they are accompanied with a group of health professionals in a care of patients [28]. Career life, family life, personal relationship, physician-patient relationship and nurse-patient relationship as well as being a member of society are considered as the specific challenges of these patients [14]. So it is very important to support the patients and their caregivers [7].

The results showed that there is a significant relationship between PD history and total score of RAM [$P = 0.002$] so that there was greater adaptation in patients with PD history less than 3 years. PD is a chronic, progressive and debilitating disease [9]. Disability in patients with PD is not due to progressive disorder in balance, walking and tasks related to the move, but also, it is related to some non-motor symptoms affecting autonomic, nervous and mental system and sensory function [5]. Additionally, non-motor symptoms of the disease, including mental, cognitive, autonomic disorders and gastrointestinal dysfunction have major impact on the quality of patients' lives and their disability [29].

The results of this study showed that in the patients with PD, there was a significant relationship between education and total score of RAM [$P = 0.018$] so that higher education led to patients' better adaptation with disease. The results showed that people, who had more than 9 years education, are at the greater risk of PD, also with the increase in education, the probability of the disease increases and higher education can improve adaptation with the disease [30].

The results showed that in patients with PD, there is a significant relationship between employment and total score of RAM [$P = 0.007$] so that unemployed patients had greater adaptation with the disease. The results also showed that the jobs such as construction workers, miners and oil refinery workers, production workers, the worker who work with heavy metal and engineers are at the lower risk of PD, while physicians are at the higher risk of it [30]. Since the job causes stress, stress reduce the adaptation with disease, perhaps for this reason, patients who were not employed, had less stress and better adaptation with the disease.

The results showed that in the patients with PD, there is a significant relationship between gender and total score of RAM [$P = 0.006$], men had better adaptation with the disease. The results of the study by Liu et al. [2015] showed that the women with PD experienced greater anxiety compared to men with PD [31], it seems that increased anxiety

in women can cause problems in adaptation with the disease. Also, Kumagai et al. [2014] wrote that gender differences in PD can be due to estrogen [32].

The results showed that the score of GH was 30.97 ± 5.03 and also, there were no relationship between the dimensions of GH and demographic characteristics. Health assessment by individual has a mediating effect on functional and health status related to quality of life [33]. In patient with PD, physical and mental health is weaker. Also, the results emphasized on the effects of stressors related to the disease and experience of chronicity of the disease on patients' general health [23].

The results of this study showed that about the general health, the dimension of somatic symptoms was 10.26 ± 2.71 . Somatic symptoms in patients with PD are motor restlessness and tremor disorders which are the symptoms of involvement of the basal ganglia [34]. Also, the peripheral nervous system disorders may cause orthostatic hypotension, constipation, pain and sensory disorders in them [34].

The results of this study showed that about the general health, the dimension of anxiety and insomnia was 9.73 ± 2.77 . Depression, anxiety, and sleep disorders are the symptoms of brainstem involvement [34]. Mental health criteria, such as depression, anxiety and stress, are more effective than physical factors and have a wider influence on the quality of life [35]. Functional imaging studies showed inverse relationship between dopaminergic density in caudate and putamen basal ganglia and anxiety in patient with PD [36], while no significant relationship was observed between dopaminergic density of thalamus and anxiety [36]. Also, sleep and cognitive disorders are the most common problems of patients with PD [37].

The results of this study showed that about the general health, the dimension of depression was 5.83 ± 1.91 . The results of the study by Kadastik-Eerme et al. [2015] showed that the main predictors of quality of life were depression and the dimensions of motor and non-motor symptoms in daily life [37]. Neurological symptoms are the most common non-motor symptoms in the patients with PD. These symptoms have negative impact on daily activities of living and cognitive abilities [38]. Prevalence of non-motor symptoms in PD is 99.6% [37]. There is a significant relationship between depression and experience of motor and non-motor symptoms in daily living as an important and independent factors and low quality of life in patients with PD [37]. The results of another study showed that non-motor symptoms have negative and direct impact on quality of life and perceived health of life in patients with PD [24]. Depression, anxiety and apathy are common mood disorders in patients with PD but their pathophysiology is unclear [36]. The results of studies have raised the increased neural activity in areas of the forebrain and in depressed patients; they have raised the reduced functional connectivity between the forebrain- limbic networks [36]. The studies showed positive and inverse relationship between apathy and metabolism or the activities in the striatum, amygdala, the area of forebrain, temporal and parietal [36]. Also, in caring the patients with PD, it must be increasingly emphasized on the recognition and treatment of non-motor symptoms [34]. The high prevalence of major depression in PD has a negative impact on health-related quality of life and a low response rate to conventional drug therapy and requires new treatment [39].

The results of this study showed that about the general health, the dimension of social dysfunction was 5.13 ± 2.23 . PD affects social interactions through disorder in social relationship. Social relationship disrupted through factors, including advanced physical disabilities, mood disorders, reduced social activities and personal privacy [40]. Perceived lack of social support, dealing with subterfuge and coping with anticipated health disorder show that in order to identify the subjects with PD disease, designing interventions for people with reduced social function seems to be important [12].

The results of this study showed that there is a significant relationship between social dysfunction, of general health dimensions, and physiologic mode, one of the dimensions of RAM [$P=0.024$]. Adaptation strategies are varied but in physiologic mode, all patients try to keep mobility [7]. On the other hand, incontinence of urine and feces causes severe disorders for them [3]. Early diagnosis of motor and non-motor symptoms of the disease will provide the possibility of improved control of symptoms through early treatment strategy and these patients likely need less care [41]. Also, since the patients gradually lose their independence [8] due to the increased extensive incidence of neurological forms of PD, early treatment leads to improved quality of life, independence of social function, reduced care burden and reduced costs [41].

The results of this study showed that there is a significant relationship between social dysfunction and self-concept [$P=0.012$]. Care of patient with PD includes a variety of negative consequences that challenge the individual's ability for self-concept and self-care role [42]. Successful life includes the ability to return to his usual state of health, self-concept with stable status quo and health reset [43]. The aspect of positive psychological adaptation perception includes positive mindset, determination and acceptance of new challenges and family support [43].

The results of this study showed that the score of SWL was 21.47 ± 3.57 . There are no significant relationships between SWL and demographic characteristics, dimensions of RAM and general health. The results of another study showed that despite encountering problems, there is a high level of success in living with PD as much as 75% [43]. To maintain the normal life and to have physical abilities, are major concerns of the patients with PD [43]. According to the study by Kadastik-Eerme *et al.* [2015], there are no significant relationships between social and demographic variables [age, gender, urban/rural life, marital status, living alone and or with others, education] and quality of life [37].

PD is a complex disorder that severely affects the patient's quality of life. Health-related quality of life has important impact on the health status in terms of physical, mental and social aspects [44]. Also, since the disease impose significant economic burden on the healthcare system [41] and direct medical expenses of PD are significant and influenced by the level of disability and social communication disorder [40]. Social relationships are disturbed by factors complexity associated with management of this disease [5], the patients with PD have doubled direct medical expenses compared to those who are not infected with PD. Disability and complications related to treatment often increase after developing the disease [1], so, supporting self-care is very important for the patients with PD [43]. This would be of utmost important for health care professionals to identify what is considered as a normal life of the patient with PD, to support the patients to develop a positive mindset and accept new challenges and also to determine the individual's conditions and to access to any support from the families [43].

The limitation of this study was a small sample size. Also, socio-cultural conditions of the patients with PD can limit the generalizability of the research data. It is recommended to study on the effects of adaptation strategies on quality of life of the patients with PD to provide a better plan to them.

CONCLUSION

The results of this study provided valuable information for planning and practical interventions for patients with PD. RAM, GH and SWL can make the development of high quality care planning possible by assessing the patients' health. This leads to engagement of the patients in self-care, better adaptation, improved quality of life and also helps the nurses to make medical decisions.

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