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Research Article

Psychological and Social Factors that Influence Quality of Life in Aging People with and without Chronic Diseases

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Abstract

Objective: Quality of life is influenced by psychological and social factors. Our main objective is to better understand and characterize the impact of social and psychological characteristic in quality of life in aging population with and without diabetes and other chronic disease.

Method: The data was collected at the national level. The sample is composed of 1,330 people 62.2% of which were female, with ages ranging between 55 and 75 years old. 48.2% of the sample mention having a chronic condition, 34.4% of which had diabetes.

Three regression models were created in order to understand the quality of life in aging population with and without chronic illness in a biopsychosocial perspective.

Results: Results showed that quality of life in aging population is influenced by psychological factors (purpose of life and stress management skills) and by social factors (social support satisfaction and relationships with supervisor at work). Having a chronic disease, such as diabetes, can also influence quality of life.

Conclusions: Our study allowed us to conclude that quality of life is influenced by physical health, psychological health and social health. The psychological factors presented a more systematic and strong influence in quality of life in population with and without chronic disease.

Purpose

The positive and healthy psychosocial development is influenced by individual and ecological factors [1,2]. The biopsychosocial model is a broader and integrative approach to human behavior and disease. This model provides a conceptual frame work for dealing with disparate information and serves as a reminder that human behavior is influenced by biological, psychological and social factors. This model is the exact application of World Health Organization (WHO) definition of health [3]. Now there is general acceptance that psychological, behavioral and social factors interact with pathological process in the development and evolution of physical disorders and that these factors substantially influence consultation and compliance with treatment.

The biological system is related to anatomical, structural and molecular subtract of disease and the effects on the patient's biological functioning. Psychological system deals with effects of emotions and personal characteristics, such as motivation, self-regulation, purpose of life and personality on the experience of and the reaction to illness. Social system exams the cultural, environmental, family and peer group influences on the expression and experience of illness. This model shows health as being determinate and influenced by biological, psychological and social factors and shows illness has been a consequence of the interplay of these factors [4,5].

The biopsychosocial approach is able to extend health care beyond the patient to include the family and community and emphasizeson one hand, the prevention of illness and promotion of health, and on other hand, the treatment of disease. Behavioral and emotional aspects should be taken into consideration when treatment decisions are made. This approach is related to stress management, self-regulation, emotions, person's attitudes, beliefs, values and behaviors [5].

Psychological intervention can be integrated into routine usual care to assist people to make the recommended lifestyle changes. This intervention should include assessment and a personalized program in which realistic, manageable goals for lifestyle change and overcoming barriers are negotiated using brief motivational interviewing. It was observed that health psychology interventions are effective in the prevention and treatment of lifestyle-related chronic diseases [6,7].

Social support plays an important role in disease management. The direct social support is associated with long-term health among middle-aged and older adults with diabetes. Interventions that specifically target improving specific aspects of diabetes social support may be more effective in improving long-term health than less targeted efforts [8].

For example, diabetes and other related diseases are chronic conditions which, if left untreated, can cause serious health and economic consequences. The biological model has been successful in describing the disease and identifying treatments. However, while the effectiveness of disease treatment has been proven in a number of studies, adherence to treatment is extremely low. The biopsychological model may contribute to the understanding and to the increase in treatment adherence in chronic diseases. Adherence is influenced by behavioral factors, it is important that patients and caregivers recognize relevant psychological and sociological factors [9-13].

Quality of life and health status

The Quality of Life (QoL) is a multidimensional construct that involves physical, psychological and social dimensions. In the study developed by Gaspar and Torres health variables were analyzed (participants were asked about whether they have diseases that affect the day-to-day, medication and health perception), personal variables were also measured, namely, purpose of life, spirituality and cognitive style and finally were evaluated social variables, such as social support and psychosocial work factors. The socio-demographic information related to age, gender, region of the country, family status, and employment status among others was also measured and studied. Through the study results can be concluded that participants who had a better quality of life were the ones presented (a) factors related to more positive health; (b) psychological factors, a sense of more positive life and spirituality especially related to more positive optimism; (c) greater satisfaction with social support; and (d) mostly had higher education, were married, lived in own home, had no chronic disease and were retired with professional activity. Those relationships were conditioned by individual factors, such as age, gender, health status and employment status.

Diabetes is one of the most common chronic disease and a global health problem. The number of people with diabetes and other chronic and behavioral diseases is increasing due to population growth, aging, urbanization and the increase of obesity, physical inactivity and other unhealthy behaviourshttp://www.idf.org/diabetesatlas/.

The most important demographic change to diabetes prevalence appears to be the increase in the proportion of people with more than 65 years old [14].

There has been an increase in the number of old people with diabetes, and older people have, in general, an increased rate of diabetes-related complications, and are much more likely to present comorbid conditions. These include physical disability, cognitive dysfunction, fall and fractures, depression, pressure ulcers, impaired vision and hearing and under-treated pain [15]. Diabetes with the natural aging process and other age-related conditions, contribute to poorer outcomes in older people with diabetes when compared to old people without diabetes, for instance, people with diabetes are 1.5 times more likely to develop dementia than those without diabetes. Several studies show a strong association between diabetes and depression, which can affect the people's ability to seek treatment and to care for themselves [16].

Complications related to diabetes are the major causes of mortality, disability and reduced quality of life. People with diabetes have a two-fold increased risk of death compared with people without diabetes. Cardiovascular disease is the leading cause of death in people with diabetes [17].

Diabetic and other chronic disease patients have a statistically significant lower HRQoL in several domains, such as physical health, psychological and social relationship [18-20].

The evaluation of the quality of life was regarded as positive in most of the measured dimensions. The social relationships have the biggest score in all the domains, which mean that it contributed the most to a good quality of life [21,22].

The results from the application of the WHOQOL-BREF suggest that the patients with type 2 diabetes have a low quality of life. Some factors that influence these results are the education levels, marital status and household income. Diabetic man have a better quality of life than diabetic women, and also, younger people have significantly higher quality of life, than older people [21,23]. Both physical and psychological domains are significantly lower for the diabetic group, and present stronger effects on the physical than the psychological domain. Another factor, the education level, shows that patients with lower education also have lower quality of life and are more affected by both physical and psychological domains, than those with higher education [21,24].

A growing awareness related to the importance of psychological and social influences on health and illness have led to the development of a biopsychosocial framework for research and intervention. This integrative model can serve as a basic framework for academic and clinical research in many areas, including assessment of patients' health-related quality of life (HRQoL), and can take into account the inseparable nature of physical, psychological and social factors.

Our main objective is to better understand and characterize the impact of social and psychological characteristic in quality of life in aging population with and without diabetes and other chronic disease.

Method

Participants

The sample consisted of 1,330 participants' with ages between 55 to 75 years old, which average age was about 60 years. With regard to gender, 62% were female and 38 % male. 48.2% of the sample mention having a chronic condition 34.4% of which had diabetes. Of the respondents, 47% maintained an occupation and 46 % were retired.

Related to educational level, 40.8% had until compulsory schooling (4 to 12 years) and 36.2% presented higher education.

Instruments

The instrument was composed by some socio demographic related questions and by questionnaires related to quality of life, social support, purpose of life and psychosocial factors at work.

Quality of life (WHOQOL-BREF)

The Instrument name is WHOQOL-BREF (World Health Organization Quality of Life - Brief), the authors and date of the original version is WHOQOL Group, 1994 (World Health Organization Quality of Life Group), in this study was used the Portuguese version [25]. It is a generic, multidimensional and

multicultural measure to assessment subjective quality of life and can be used in a wide range of psychological and physical disorders, as well as healthy individuals. It consists of 26 items and includes four domains of quality of life: Physical, Psychological, Social Affairs and Environment. Each of these domains consists of facets of quality of life that summarize the particular domain of quality of life to which they belong. This measure also allows the calculation of a global indicator, in particular facet of the overall quality of life.

Internal consistency, measured by Cronbach's alpha shows acceptable values, whether analyzing the four domains (0.90) or each individual domain [ranging from 0.86 (Spirituality) and 0.95 (Psychological).

Psychosocial factors of labour (COPSOQ)

The instrument that measured psychosocial factors at work (COPSOQ II) was developed and validated by [26] in collaboration with the Danish National Institute of Occupational Health in Copenhagen. The main objective is to evaluate the psychosocial factors at work. The internal consistency (Cronbach's alpha) sub scales of COPSOQ is between 0.60 and 0.90 (with the exception of 2 subscales).

The COPSOQ II follows a multidimensional concept and is intended to cover the general needs involved in the scope of the concept of "stress at work". It is based on demand model and control, trying to explain the psychosocial risk factors at work as a result of high job demands and low social support. The short version includes the psychosocial dimensions with epidemiological evidence related to health. All versions evaluate exposure indicators (psychosocial risks) and indicators of its effect (health, satisfaction and stress). All items of the three versions are assessed on a Likert scale of 5 points: 1 - never / hardly ever; 2- Rarely; 3- Sometimes; 4 - Often; 5- Always; or 1 - Nothing / almost nothing; 2. A little; 3- Moderately; 4-Very; 5 - Extremely.

In the present study, when this instrument was applied to participants who were retired, they were asked to report to the time they had a professional activity.

Satisfaction scale with social support (Ribeiro - ESSS)

The instrument name is Satisfaction Scale with Social Support (ESSS) was developed and validated by [27]. The ESSS was built to measure satisfaction with the existing social support. The internal consistency (Cronbach's alpha) of the total scale is 0.85. This instrument consists of 15 sentences of self-completion as a set of statements. The subject indicates the degree to which you agree / disagree with the statement, in a Likert scale with 5 positions: "strongly agree", "agree mostly", "neither agree nor disagree", "disagree mostly" and "strongly disagree".

The ESSS can extract four dimensions or factors: Satisfaction with Friends / Acquaintances (SA); Intimacy (IN); Satisfaction with Family (SF) and Social Activities (AS). The scale also allows to obtain a global score (ESSS), representing the highest marks to a perception of greater satisfaction with social support.

Purpose of Life (PIL) - Part A (or Purpose of Life Test - Pil-Test)

The instrument related to life goals (PIL) was developed and validated by [28] and reviewed by [29], constituting the Pil-R version. The instrument assesses the construct sense of life in their ranks: the degree of existential emptiness and the level of achievement of meaning in life. The internal consistency (Cronbach's alpha) of the test is 0.88.In keeping with the Portuguese population of advanced adulthood. This instrument consists of a Likert scale composed of 20 items, which aims to fundamentally assess the level of existential emptiness and willing to live sense in an evaluation 7-point scale: 1 - strongly disagree; 2 - Disagree largely; 3 - Somewhat disagree; 4 - Neither Agree Nor Disagree: 5 - Somewhat agree; 6 - I agree for the most part; 7 - Totally agree. Items in this scale include the following aspects: purpose in life, satisfaction with life, freedom, fear of death, suicidal ideation and if life is worth.

Procedure

Initially the Psychosocial Factors of Work (COPSOQ) suffered a process of translation and back translation involving two Portuguese researchers and bilingual researcher (Portuguese / English).

All demographic issues and assessment tools had been integrated in the form of a battery; this battery was tested in a group of 20 people between 55 and 75 with different socio-economic and cultural characteristics in order to assess suitability.

The final version included some changes in demographics, in order of presentation of the instruments and was removed the scale of violence in the work from the work Psychosocial Factors scale (COPSOQ).

Were contacted several organizations, such as unions, businesses, municipalities, day care centres, senior universities, NGOs working with people within the age range of the study, and others to collaborate on data collection. Data collection was carried out with the institutions that agreed to cooperate and with people who agreed to complete the questionnaire. The questionnaire was self-completion, anonymous and confidential.

Results

Statistical differences were found between participants with and without diabetes and other chronic diseases. Participants with chronic diseases present less healthy indicators than the participants without chronic diseases. Participants with chronic diseases present low values in quality of life, social support satisfaction, purpose of life and stress management at work (Table 1).

Regression models were developed, in order to better understand the impact of having chronic diseases in quality of life in aging population and the meditative effect of psychological and social factors in quality of life in aging people with chronic diseases. These models (Table 2) used quality of life as a dependent variable.

Were built three models using the demographic variables, the psychological and social variables, and were achieved robust models. The Regression Model 1 in table 2 included gender, age and health condition and an adequate model was achieved [F=42,276 (3,785); p<.001] and the explained variance (Adjusted R squared) was 14%. In regression model 2, besides demographic and health condition variables were included social variables, such as, social support and relations with supervisors at work and an adequate model was achieved [F=46,123 (5,783); p<.001] and the explained variance (Adjusted R squared) was 23%.

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Table 1: ANOVA - Quality of Life, Chronic Diseases Status, Psychological and Social Characteristics.

People with Chronic Disease (CD)					
Dimensions	Participants without CD		Participants with CD		F
	M	SD	M	SD	
Quality of Life	3.9	0.55	3.3	0.77	210.74***
Social Factors					
Social Support	3.57	0.54	3.39	0.61	28.16***
Relation with supervisors at work	3.58	0.77	3.51	0.78	(n.s.)
Psychological factors					
Purpose of Life	5.3	0.66	4.97	0.82	47.05***
Stress management at work	3.3	0.69	2.88	0.73	94.42***

***p <.001; **p <. 01

Table 2: Impact of demographic, psychological and social characteristics in quality of life in people with and without chronic diseases - Regression models - dependent variable quality of life.

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	**(Constant)**	4.65	0.19		24.783
	Age	-0.01	0.03	-0.07 (n.s.)	-2.112
	Gender	0.06	0.05	0.04 (n.s.)	1.308
	chronic diseases	-0.49	0.05	-0.35***	-10.49
2	**(Constant)**	3.27	0.23		14.264
	Age	-0.01	0.03	-0.08**	-2.49
	Gender	0.04	0.04	0.03 (n.s.)	0.853
	chronic diseases	-0.43	0.05	-0.31***	-9.593
	Social Support	0.3	0.04	0.26***	7.803
	Relation with supervisors at work	0.09	0.03	0.10***	3.051
3	**(Constant)**	2.05	0.24		8.457
	Age	-0.03	0.03	-0.04 (n.s.)	-1.289
	Gender	-0.03	0.04	-0.03 (n.s.)	-.845
	chronic diseases	-0.32	0.04	-0.23***	-7.706
	Social Support	0.06	0.04	0.05 (n.s.)	1.515
	Relation with supervisors at work	0.03	0.03	0.04 (n.s.)	1.179
	Purpose of Life	0.23	0.03	0.25***	6.98
	Stress management at work	0.26	0.03	0.28***	8.321

Dependent variable Quality of Life.

***p <.001; ** p<.01;* p < .05

Finally, in regression model 3, besides demographic and health condition variables, and social variables were included psychological variables, such as, purpose of life and stress management at work. Model3e resulted in an adequate model [F=63,023 (7,781); p<.001] and the explained variance (Adjusted R squared) was 36%.

Discussion and Conclusions

Our results show that quality of life is influenced by psychological and social factors and health conditions should be understanding in a biopsychosocial perspective. This perspective includes the biological aspects that can effects the patient's biological functioning, includes the psychological system related to emotions and personal and includes also the social system associated to cultural, environmental and family/friends influences on the expression and experience of illness. This model shows health has been determinate and influenced by biological, psychological and social factors and, shows also, that illness is a consequence of the interplay of these factors [4,5].

Most of the participants reported good quality of life [30] obtained similar results in their study. Chronic health condition is associated with quality of life. Diabetic and other chronic disease patients have a statistically significant lower HRQoL in several domains, such as physical health, psychological and social relationship. On this perspective, social support satisfaction with family and friends is related to quality of life, and psychological factors, such as purpose of

life and stress management skills are also related to quality of life in aging population [18-21]. Age and gender do not presented relevant influence in quality of life, those results are different from the studies developed by Gaspar & Torres and Gholami [21,23].

A model to understand the factors that influence quality of life, that just included health condition and psychological variables showed to be a most robust model. The psychological variables present the strongest impact in quality of life [31,32,16]. Psychological intervention can be integrated into routine usual care to assist people to make the recommended lifestyle changes. Include psychological factors in interventions is effective in the prevention and treatment of lifestyle-related chronic diseases [33,7].

The resultant models reported in Table 2 presented a biopsychosocial perspective, and showed robust results to aging population in general and showed be a good model to understand quality of life in aging population with health chronic conditions, mostly diabetes and related diseases [18-20,22,34,35].

Achieved models showed that social and psychological characteristics present a stronger explicative value on aging population quality of life. Therefore, we conclude that especially psychological, but also social factors can be considered protective factors related to aging population with and without chronic health diseases. The prevention and intervention with aging population should include the promotion of social and psychological skills in aging population, family and the community.

Promoting good health and healthy behaviors at all ages contribute to prevent or delay the development of chronic disease. If the chronic disease already exit is important minimizing the consequences through early detection, quality care and psychosocial skills promotion. The intervention in health promotion in aging population should create physical and social environments that foster the health and participation of older people and is important changing personal and social attitudes to encourage the participation of older people [36].

Monitoring quality of life in aging population with and without chronic disease is particularly important, despite the variety of medical, social and psychosocial interventions they may have had. A psychologist, other social or health professionals who measure the quality of life can promote a better multidimensional welfare in these aging population in terms of family, community and other areas that reflect risk or protective factors in relation to their aging process.

The assessment of quality of life may be useful in screening and identifying individuals who are at risk of developing behavior or health complications, which is crucial for social programs, health promotion and prevention programs.

The relationship between quality of life, health status, psychological factors and social factors, and the protective impact that personal and social factors can have in aging population health, are important indicators and provide a strong argument for scientific research in quality of life in aging population using an biopsychosocial perspective by psychologists, other social/health professionals and community contexts who have to confront the challenge of providing services that are sensitive to cultural and individual differences [36,37].

The study presented some limitations, one of them is the representativeness, the participants are Portuguese and was used a convenience sample, so the results cannot be representative for aging population. Could be interesting study specific chronic diseases and comorbidity among diseases including mental health problems related to dementia, depression and anxiety.

Despite of study limitations, our conclusions and proposed models can be considered contributions to better understand and to promote a more effective intervention related to quality of live in aging population with and without chronic health situations, using a biopsychosocial approach and reinforce the relevance of psychological factors.

Practical implications

Our results suggest strongly that, the existence of chronic health conditions in aging population can impair their quality of live or at least increase their vulnerability, but the most important feature is that this situation is really impacted by the strength of personal and social factors that can have a buffering effect. The intervention consequences of this impact are huge and call for a change in the organization of support services, both, health and social services, for aging people with and without chronic health situations that must include a positive focus: the promotion of personal and social competences and the promotion of a social support network, including family and community.

Having chronic health conditions can be considered a risk factor related to quality of live in aging population. The impact of this risk or the health complications and psychological consequences can be reduced if aging people develop social and psychological skills to face the risk and improve positive aging opportunities.

Ethical approval: The study involved human so all procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and national research committee (Regional Administration of Portuguese Health Ministry) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent was obtained from all individual participants included in the study.

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