Int J Cardiovasc Sci. 2021; 34(5Supl.1):95-104

ORIGINAL ARTICLE

Spirituality, Religiosity and Quality of Life of Hypertensive and Diabetic Patients in a Referral Hospital in Pernambuco

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Abstract

Background: Religiosity is a system of worship and doctrine that is shared by a group, and spirituality is the individual search for the meaning of life. The relationship between spirituality/religiosity (S/R) and health has a long history, and a positive correlation between spirituality and chronic diseases has been described in scientific literature, showing a decrease in morbidity and mortality in general.

Objective: To evaluate the association between S/R and the quality of life of patients with diabetes and/or systemic arterial hypertension.

Method: An observational, analytical, cross-sectional, quantitative study was conducted with a sample consisting of 40 patients treated at the hypertension and diabetes outpatient clinic of a medical center in Recife. The collection used three assessment instruments (SSRS, Duke-DUREL scale, and WHOQOL-BREF). Data from the questionnaires were analyzed using descriptive (frequency and percentage) and inferential statistics (chi-square test and F test) using the R software, version 3.4.3. The level of significance in all analyses was 5%. The study was approved by CEP/IMIP, according to report no. 2.890.126.

Result: All four domains of the quality-of-life scale (WHOQOL-BREF) showed a positive relationship when correlated with the religiosity scale (DUREL), with statistical significance in the relationship between organizational religiosity and the environmental domain. When correlated with the spirituality scale (SSRS), WHOQOL-BREF also showed a positive relationship, except in the physical domain.

Conclusion: A positive relationship between quality of life and S/R was shown, thus confirming its importance for patients with diabetes and SAH.

Keywords: Spirituality; Quality of Life; Hypertension; Diabetes Mellitus

Introduction

The relationship between spirituality/religiosity (S/R) and health has been longstanding,[1-4] with studies investigating the mechanisms by which faith leads to favorable clinical outcomes and how physicians should address this issue in medical practice.[5] Thus, it is necessary to differentiate the concepts of spirituality and religiosity in order to integrate them into clinical practices. Religiosity is a system of worship and doctrine that is shared by a group,[2,6,7] and it may be organizational (participation in a church or temple) or non-organizational (praying, reading books, watching religious programs).[1] Spirituality, on the other hand, is defined as the individual search for the meaning of life and its relationship with the transcendent, which may or may not include religious activity.[1,2,8,9]

The relationship of S/R with quality of life has been well studied,[10-12] and, although it is difficult to define, the World Health Organization (WHO) has standardized the concept of quality of life as "an individual's perception of their position in life in the context of the culture and

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DOI: https://doi.org/10.36660/ijcs.20200218

Manuscript received July 11, 2020; revised manuscript November 13, 2020; accepted April 26, 2021.

value system in which they lives and in relation to their goals, expectations, standards, and concerns".[13]

Today, it is known that there are physiological alterations in religious and spiritualized individuals, such as a reduction in the concentration of the adrenocorticotrophic hormone (ACTH) and cortisol, as well as an increase in gamma-aminobutyric acid (GABA), serotonin, and dopamine, which culminates in a more harmonious physiological response to stress. Consequently, there is a release of antalgic substances in these individuals, with an improvement in pain symptoms and a decrease in systolic blood pressure, as well as in heart and respiratory rates.[8,14,15]

Therefore, several benefits from S/R can be seen, such as the positive relationship with physical weakness, heart disease, immune function, neuroendocrine function, and cancer, with decreased overall mortality,[16] lower hospitalization rates, better disease prognosis, and increased adherence to the proposed treatment.[17,18]

From this context, it is noted that there is an influence from S/R on the lives of patients with chronic diseases. Thus, knowing that Diabetes Mellitus (DM) and Systemic Arterial Hypertension (SAH) are prevalent chronic diseases in Brazil,19 the present study aimed to evaluate the association between S/R and the quality of life of patients with diabetes and/or SAH.

Method

This is an observational, analytical, cross-sectional, quantitative study conducted from August 2018 to August 2019 in the hypertension and diabetes outpatient clinics of a medical center in Recife, Pernambuso, Brazil, whcih serves the Unified Health System (SUS, in Portuguese).

The convenience sample was non-probabilistic, consisting of 40 patients treated at the aforementioned health service, diagnosed with SAH and/or DM. Patients who concomitantly had other chronic noncommunicable diseases (NCDs) were excluded from the study.

Collection was performed by the researchers on pre-determined days of the week and, after explanation of the project and signing of the Informed Consent Form (ICF), epidemiological information was collected from the patients (gender, age, education, profession, family income, marital status, and religion). The patients also answered three standardized questionnaires to evaluate their quality of life, religiosity, and spirituality.

The instrument used to evaluate spirituality was the Spirituality Self Rating Scale (SSRS), a scale consisting of six items in Likert-scale format, ranging from 1 (strongly agree) to 5 (strongly disagree). Each item of the instrument was recoded so that the points could then be added, with the total sum ranging from 6 to 30.

Figure 1 - Religiosity dimensions

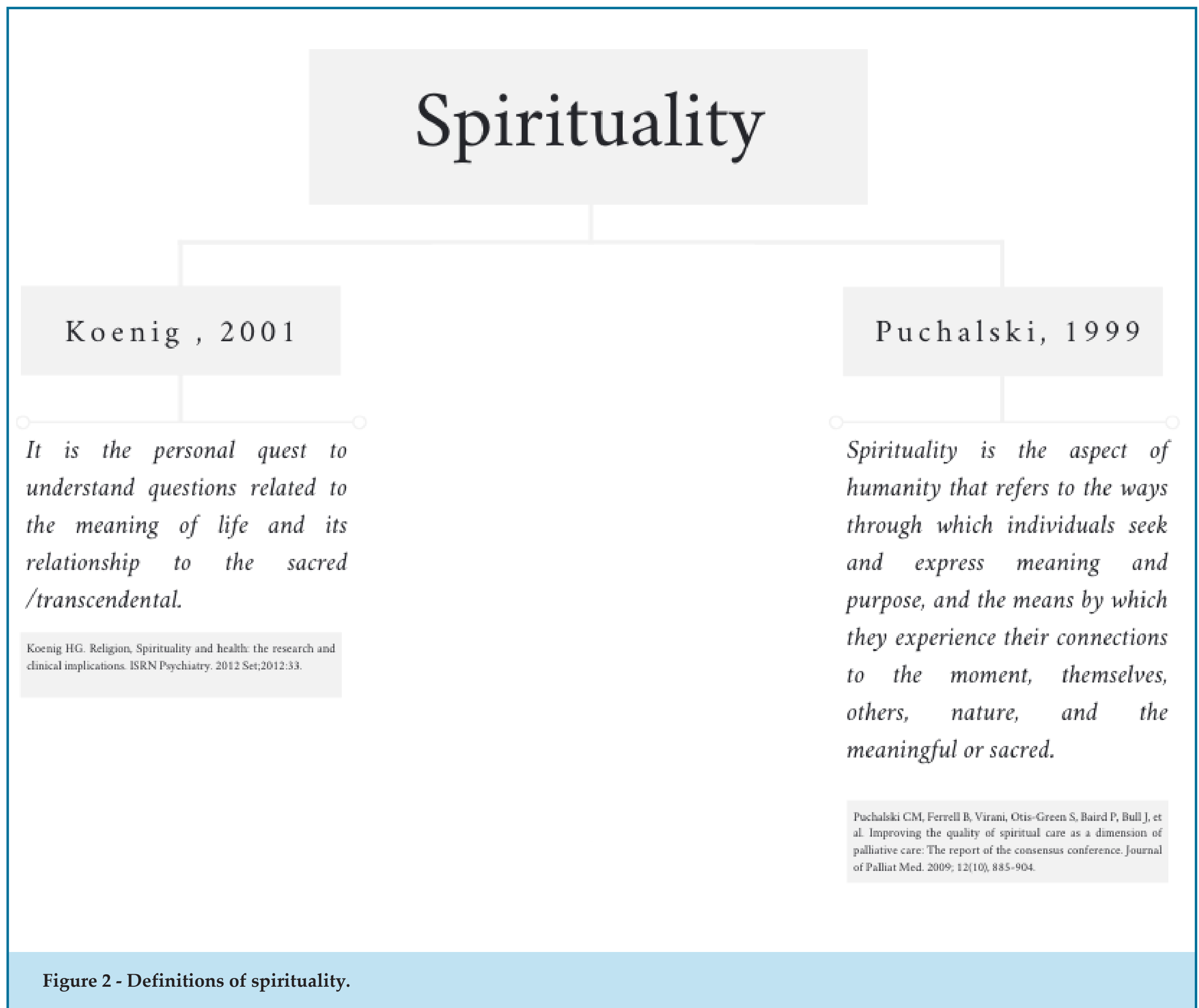

Figure 2 - Definitions of spirituality.

The total score therefore represents the patient's level of spiritual orientation.

The second parameter evaluated in this study was religiosity, in which the Duke-DUREL Scale was used. It has five questions that capture three religiosity dimensions related to health outcomes: organizational (OR), non-organizational (NOR), and intrinsic (IR) religiosity. The two first dimensions refer to the respondent's social support, while the latter relates to religious beliefs and experiences.

The third questionnaire applied was the World Health Organization Quality of Life (WHOQOL-BREF), an abbreviated WHO instrument consisting of 26 questions divided into physical, psychological, social-relation and environmental domains. In this instrument, the result is evaluated by the mean of each of the domains (1 to 5), and then converted to a scale of 0 to 100.[20]

Statistical analysis

The information obtained during the collection period was stored in a Microsoft Excel 2010 database. To summarize categorical variables, absolute and relative values were used. For quantitative variables, mean and standard deviation were applied. The statistical tests used were the chi-square test for categorical variable relationships and the F test for statistical comparison between quantitative variables. Pearson's correlation coefficient was used to evaluate the correlation between quantitative variables. The normality of quantitative variables was examined using the Shapiro-Wilk test. In all analyses, the significance level was 5%, and the R software, version 3.4.3, was used.

All ethical aspects were observed as provided for by Resolutions 466/12 and 510/16 by the National Health

Council. The research project was approved by the Ethics Committee for Research Involving Human Beings at IMIP, according to CAAE no. 94642518.1.0000.5201 and report no. 2.890.126.

Results

Forty patients were included in the study. Their mean age was 59.4 years (30 to 86 years), most of whom were females (60%). Most participants were married or had a common-law partner (55%), and had from one to three children on average (72.5%). A large number of participants were high-school graduates (35%), had housekeeping jobs (37.5%), and a monthly income of one minimum wage (47.5%). Regarding religion, most participants were evangelicals (45%) or Catholics (40%). (Table 1)

Regarding the evaluation of spirituality in this study, SSRS showed that 21 patients (52.5%) strongly agreed with the premise that it is important to spend time with private spiritual thoughts and meditations. As for making an effort to live life according to religious beliefs, most of them (52.5%) strongly agreed that they endeavor to do so. A total of 25 patients (62.5%) fully agreed that individual prayers or spiritual thoughts are just as important as those they would have during religious ceremonies or spiritual meetings. Moreover, 19 patients (47.5%) strongly agreed that they enjoy reading about their spirituality and/or religion, and it was also found that 25 patients (62.5%) strongly agreed with the premise that spirituality helps keep life more stable and balanced (Table 2).

Moreover, regarding the sum of points on the SSRS, the mean score of spiritual orientation was 24.75 (SD=5.24), in which 7 patients (17.5%) had the highest score and none had the lowest.

As regards the DUREL Scale, with respect to OR, it was found that 30% of the interviewees attended religious institutions more than once a week, and the same percentage attended them once a week. When evaluating NOR, it was identified that 50% of the patients dedicated themselves to individual religious activities daily and 32.5% of the interviewees performed them more than once a day. Regarding the questions on IR, most of them stated that it was completely true that they felt the presence of God or the Holy Spirit in their lives (77.5%), that their religious beliefs support their entire way of life (75%), and that they tried very hard to live their religion in all aspects of their lives (52.5%). Moreover, when adding the three questions together to obtain the

Table 1 – Sociodemographic characteristics

Variables	N	%
Sex		
Female	24	60
Male	16	40
Marital Status		
Single	9	22.5
Married/Common-law Partner	22	55
Divorced	5	12.5
Widowed	4	10
Education		
Illiterate	1	2.5
Incomplete Elementary School	13	32.5
Complete Elementary School	6	15
Complete High School	14	35
Higher Education	6	15
Occupation		
Housekeeper	15	37.5
Retired	11	27.5
Unemployed	4	10
Others	10	25
Income		
Less than 1 minimum wage	8	20
1 minimum wage	19	47.5
2-5 minimum wages	13	32.5
>5 minimum wages	0	0
Religion		
Evangelical/Protestant	18	45
Catholic	16	40
No religion	3	7.5
Others	3	7.5

Table 2 – Application of the Spirituality Self Rating Scale (SSRS)

Question: It is important for me to spend time with private spiritual thoughts and meditation.	N (40)	N (%)
1. Strongly agree	21	52.50
2. Agree	13	32.50
3. Partly agree	2	5
4. Disagree	2	5
5. Fully disagree	2	5
Question: I try very hard to live my life according to my religious beliefs.	**N (40)**	**N (%)**
1. Strongly agree	21	52.50
2. Agree	10	25
3. Partly agree	4	10
4. Disagree	2	5
5. Fully disagree	3	7.50
Question: The prayers or spiritual thoughts that I have when I am alone are just as important to me as those that I would have during religious ceremonies or spiritual meetings.	**N (40)**	**N (%)**
1. Strongly agree	25	62.50
2. Agree	7	17.50
3. Partly agree	2	5
4. Disagree	4	10
5. Fully disagree	2	5
Question: I like to read about my spirituality and/or my religion.	**N (40)**	**N (%)**
1. Strongly agree	19	47.50
2. Agree	8	20
3. Partly agree	6	15
4. Disagree	3	7.50
5. Fully disagree	4	10
Question: Spirituality helps keep my life stable and balanced, just as my citizenship, friends, and society do.	**N (40)**	**N (%)**
1. Strongly agree	25	62.50
2. Agree	9	.22,50
3. Partly agree	4	10
4. Disagree	0	0
5. Fully disagree	2	5
Question: My whole life is based on my spirituality.	**N (40)**	**N (%)**
1. Strongly agree	21	52.50
2. Agree	6	15
3. Partly agree	6	15
4. Disagree	4	10
5. Fully disagree	3	7.50

Table 3 – Application of the Duke-DUREL Scale

Question: How often do you go to a church, temple, or other religious meeting?	N (40)	N (%)
1. More often than once a week	12	30
2. Once a week	12	30
3. Two to three times a month	6	15
4. A few times a year	4	10
5. Once a year or less	1	2.5
6. Never	5	12.5
Question: How often do you dedicate your time to individual religious activities, such as praying, meditating, and reading the Bible or other religious texts?	**N (40)**	**N (%)**
1. More often than once a day	13	32.5
2. Every day	20	50
3. Two to three times a month	2	5
4. Once a week	4	10
5. A few times a month	0	0
6. Rarely or never	1	2.5
Question: In my life, I feel the presence of God (or the Holy Spirit).	**N (40)**	**N (%)**
1. Absolutely true for me	31	77.5
2. It is generally true	5	12.5
3. I am not sure	3	7.5
4. It is not generally true	0	0
5. It is not true	1	2.5
Question: My whole way of living is really based on my religious beliefs.	**N (40)**	**N (%)**
1. Absolutely true for me	30	75
2. It is generally true	4	10
3. I am not sure	3	7.5
4. It is not generally true	1	2.5
5. It is not true	2	5
Question: I try very hard to live my religion in all aspects of life.	**N (40)**	**N (%)**
1. Absolutely true for me	21	52.5
2. It is generally true	11	27.5
3. I am not sure	4	10
4. It is not generally true	1	2.5
5. It is not true	3	7.5

total intrinsic religiosity (TIR) score, which can range from 3 to 15, respondents scored a mean of 13.25 points (SD=2.67) (Table 3).

In measuring the quality of life (WHOQOL-BREF), the highest mean score obtained was in the psychological domain (61.67), followed by the physical (51.16), environmental (49.37), and social (46.25) domains.

When relating the sociodemographic variables to the DUREL Scale, it was observed that women showed a higher level of non-organizational religiosity when compared to men, and the mean scores were 5.375 and 4.375, respectively (p=0.003).

When comparing the WHOQOL-BREF and DUREL Scales, it was found that all quality-of-life domains showed a positive relationship with the religiosity dimensions; however, only the relationship between OR and the environmental domain had a significant value (p=0.0391). A positive relationship was also found when SSRS and WHOQOL-BREF were correlated, except for the physical domain. Nevertheless, no values were statistically significant. When comparing the DUREL Scale and SSRS, a positive correlation was also obtained between SSRS and NOR (p=0.0001), as well as between SSRS and IR (p=0.0005).

Discussion

Regarding the sociodemographic profile, the participants' mean age was 59.4 years, which is in agreement with the literature, where the highest prevalence of SAH and diabetes occurs after 40 years of age,[21,22] especially in the age group from 50 to 59 years.[23]

It was also found that 45% of the participants reported being evangelicals and 40% Catholics, thus corroborating the data from the 2010 Census, which showed these two religions as the most prevalent in Brazil (78.4%).[24] Regarding work activity, housekeeping was predominant (37.5%), and most participants' monthly income was limited to one minimum wage (47.5). This may suggest a lower socioeconomic status of participants, which is compatible with the profile of SUS users.[25,26]

In this study, the spiritual dimension was evaluated by SSRS, and it was found that 21 patients (52.5%) fully agreed that it was important to spend time with private spiritual thoughts or meditation. In the literature, this importance is evidenced by the knowledge that individual spiritual practices can help to focus hope, and that prayer can be understood as one of the main strategies for coping with illness, with relief from suffering.[27]

Furthermore, it was observed that 21 patients strongly agreed that they endeavor to live their lives according to their religious beliefs. This can be justified from studies on patients with chronic illnesses, which revealed that spiritual beliefs give meaning to participants' lives, representing utmost importance for most of them.[27,28]

It was found that beliefs about spirituality were positive when the overall SSRS scores were evaluated, since the spiritual orientation score obtained in the sample showed a mean of 24.75 (SD=5.24). This value is considered high when compared to that obtained in the Brazilian validation study for the scale.[29,30] The data obtained are in agreement with the literature, which showed mean SSRS scores among hypertensive patients, adherent and non-adherent to treatment, of 25.0 and 24.5, respectively.[31]

The religious dimension, in turn, was analyzed by the Duke-DUREL Scale. In this study, it was found that 56.5% of the elderly included in the study attended a church, temple. or other religious meetings more often than once a week or only once a week. Regarding individuals under the age of 60, it was observed that this figure is 64.7%. This is in agreement with the results found in the literature, which suggest that, with age progression, the elderly tend to decrease their participation in formal religious meetings because they face physical limitations resulting from the consequences of chronic diseases and age itself.[32]

On the other hand, to compensate for not attending regular religious meetings, the elderly spend more time on individual activities.[33] In the present study, it was observed that 73.9% dedicate their time to such activities as prayers, meditation, and reading the Bible or other religious texts, which is in agreement with other studies, suggesting that the importance of religion in these people's lives cannot be estimated by how much one attends a religious institution, but by the meaning attributed to individual practices.[32]

Knowing that IR is related to the personal meaning attributed to religion,[34] this study observed that 77.5% of the interviewees feel the presence of God in their lives, 75% act according to their beliefs, and 52.5% strive to live their religion in all aspects of life. These data are in agreement with those from a study on religiosity in renal transplant patients,[35] which showed that the majority of participants reported high levels of intrinsic religiosity.

Regarding the evaluation of the quality of life, measured by the WHOQOL-BREF instrument, the psychological domain obtained the highest mean score

(61.67), followed by the physical domain (51.16) and the environmental domain (49.37). The social domain, however, obtained the lowest mean score (46.25), contributing in a less positive way to the sample's quality of life. Only the psychological and physical domains expressed values above 50, showing positive perceptions about one's quality of life. The obtained result is partially in agreement with that of a study performed on diabetic and hypertensive patients followed by a family health team, which showed positivity in all quality-of-life domains and had the social realm as the domain with the highest mean score (71.38).[36]

Following the same trend, in another study conducted on hypertensive and diabetic patients, the evaluation of the social aspect contributed with the highest mean (69.33), although the psychological domain expressed an approximate mean score value (69.11). The low score for the social domain in this study suggests the lack of support from family members and other people who live with the patients, since diseases require new habits of life that need to be respected and stimulated for their proper control.[37] The divergent results express the subjective character of one's quality of life, which depends on each individual's sociocultural level, age group, and personal aspirations.[38]

Limitations and Strengths

The limitations in this study were the small number of people interviewed, as well as the lack of privacy at the interview site, since it was not always possible to have an isolated room for the interviews. Another limitation was the need for cooperation from patients, since the study required too much time to apply three extensive questionnaires. However, this study is considered innovative for evaluating the association between S/R and the quality of life in patients with SAH and DM, highly prevalent diseases in the Brazilian population, besides serving as a reference source for other studies related to this topic.

Conclusion

All four domains of the quality-of-life scale showed a positive correlation with the religiosity scale, and a significant value was found in the relationship between organizational religiosity and the environmental domain. Furthermore, the correlation between spirituality and quality of life proved to be positive, except when the physical domain was evaluated. However, when analyzing the mean scores in the four quality-of-life domains, the results obtained were low in comparison to those reported in the literature, especially regarding the social aspect.

Thus, the findings in the present study confirm the importance of S/R in the quality of life of patients with chronic non-communicable diseases, especially diabetes and hypertension. However, it is essential to conduct new studies with larger samples to validate the findings described herein in order to provide a better understanding of these individuals' real quality of life.

Author contributions

Conception and design of the research: Brito GPL, Barbosa L, Jordán A, Velloso BAA, Barbosa ME, Bérgamo V, Barreto S. Acquisition of data: Brito GPL, Jordán A, Velloso BAA, Barbosa ME, Bérgamo V, Barreto S. Analysis and interpretation of the data: Brito GPL, Barbosa L, Jordán A, Velloso BAA, Barbosa ME, Bérgamo V, Barreto S. Statistical analysis: Brito GPL, Barbosa L, Jordán A, Velloso BAA, Barbosa ME, Bérgamo V, Barreto S. Writing of the manuscript: Brito GPL, Barbosa L, Jordán A, Velloso BAA, Barbosa ME, Bérgamo V, Barreto S. Critical revision of the manuscript for intellectual content: Brito GPL, Barbosa L, Jordán A, Velloso BAA, Barbosa ME, Bérgamo V.

Potential Conflict of Interest

No potential conflict of interest relevant to this article was reported.

Sources of Funding

There were no external funding sources for this study.

Study Association

This study is not associated with any thesis or dissertation work.

Ethics approval and consent to participate

This study was approved by the Ethics Committee of the IMIP under the protocol number 2.890.126. All the procedures in this study were in accordance with the 1975 Helsinki Declaration, updated in 2013. Informed consent was obtained from all participants included in the study.

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