The Effect of Religion, Self-Care, and Coping Mechanisms on Quality of Life in Diabetes Mellitus Patients

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Abstract

Background: Uncontrolled diabetes is at a high risk for complications. This chronic complication can cause a decrease in the quality of life of DM patients. There are several factors that affect the quality of life of people with diabetes. Religiosity, self-care, and coping mechanisms together affect the quality of life. Religiosity is very important for patients to have as a foundation for maintaining quality of life. Self-care is a basic effort to control and prevent complications arising from DM. Coping mechanisms are problem-solving efforts and defense mechanisms used to protect themselves from DM problems.

Purpose: This study aims to determine the effect of religiosity, self-care, and coping mechanisms on the quality of life of DM sufferers.

Methods: This study uses a quantitative research design and a cross-sectional approach involving 130 respondents, using a total sampling technique. Data was collected using various questionnaires, including a Centrality Religiosity Scale (CRS) questionnaire, Summary of Diabetes Self-Care Activity (SDSCA), Coping Orientation to Problem Experienced (COPE), and Diabetes Quality of Life (DQOL). Inclusion criteria were patients with type 2 diabetes mellitus with blood glucose levels > 200 mg/dl and patients with type 2 diabetes who had diabetes > 1 year or more. Path Analysis is used to analyze data.

Results: The religiosity of patients with type 2 diabetes has a mean of 49.47, a mean of 42.59 for self-care, a mean of 85.29 for coping mechanisms, and a mean of 42.56 for quality of life. There is an effect of religiosity (p = 0.000), coping mechanisms (p = 0.001), and self-care (p = 0.000) on the quality of life.

Conclusion: Religiosity, coping mechanisms, and self-care affect the quality of life of people with Type 2 DM. Efforts that can be made by the hospital to increase health promotion related to improving the quality of life of people with diabetes mellitus.

Keywords: coping mechanisms; diabetes mellitus; quality of life; religiosity; self-care.

Introduction

Diabetes Mellitus (DM) is one of the health problems that has caught the world’s attention, especially in modern society (Teli, 2017). Approximately 537 million adults (20–79 years) are living with diabetes. The total number of people living with diabetes is projected to rise to 643 million by 2030 and 783 million by 2045 (International Diabetes Federation (IDF), 2021). The prevalence of DM in Indonesia based on doctor’s diagnosis in the population aged 15 years from the 2018 Riskesdas increased to 2%. In West Java Province, Sukabumi City ranks the 7th highest with the prevalence of DM based on doctor’s diagnosis in the population of all ages by regency or city, which is 1.54% (Riskesdas, 2018). The American Diabetes Association
(ADA) states that DM is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action or both (Setyorini & Wulandari, 2017). The risk of complications increases with the duration of hyperglycemia. This chronic complication can cause high morbidity and mortality in DM patients. The risk of complications of DM that continue in the end will have an impact on the quality of life of DM patients (Teli, 2017).

Quality of life is defined as a state of health, physical function, perceived health status, subjective health, perception of health, symptoms, satisfaction of needs, individual cognition, functional disability, psychiatric disorders, significant well-being (Resmiya & Misbach, 2019). Several factors that affect the quality of life of people with diabetes. Among these factors, religiosity, self-care, and coping mechanisms are closely related to the quality of life of DM patients (Hartati et al., 2019; Megawaty, 2016; Siahaan et al., 2020).

According to Glock and Stark, religiosity is a religious activity that is identified into five dimensions of religiosity, namely: having a religious belief or ideology, practicing religion/worship (religious practice), having a religious experience, knowing one’s religion (religious experience), religious knowledge), and being able to practice their worship practices (religious consequential) (Megawaty, 2016). Religion plays an important role in human health and well-being. Religiosity can be a coping mechanism and an important contributing factor to the patient’s recovery process. The meaning of life and religiosity are very important for patients because they play a very important role as a foundation in maintaining their quality of life (Najjini & Sudayashi, 2017). This is evidenced by Megawaty’s research (2016) and supported by Zakiyah’s research (2017), which states that there is a relationship between religiosity and quality of life (Megawaty, 2016; Najjini & Sudayashi, 2017; Zakiyah, 2017).

Another factor that affects the quality of life of people with diabetes is self-care. Self-care, according to Dorothea Orem, is a human need for self-care and conditions whose management is carried out continuously to maintain health and life, as well as heal from disease and overcome complications caused by it (Hartati et al., 2019). Good self-care activities will achieve accurate monitoring of glucose levels so that the risk of complications can be minimized (Bachri, 2016). Self-care is one of the important factors that can affect the quality of life of people with DM. This is in line with research conducted by Hartati et al. (2019) and Wani et al. (2019), which states that self-care can affect the improvement of quality of life (Hartati et al., 2019; Wani et al., 2019).

Coping mechanisms are efforts directed at managing stress, including problem solving and defense mechanisms used to protect oneself (Wulansari, 2017). Healthy coping strategies such as improved coping, impulse control exercises, and decision-making support are needed by DM clients so that the client’s health status and quality of life are in good condition (Rochmah et al., 2019). This is in accordance with the results of research by Asafitri et al. (2019) and Siahaan et al. (2020), which state that there is a relationship between coping mechanisms and quality of life (Asafitri et al., 2019; Siahaan et al., 2020).

The three variables in previous research studies were only associated with quality of life separately or partially. Whereas the three variables are interrelated and mutually supportive in influencing the quality of life of DM patients. Religiosity can affect the way of self-care and make the individual’s coping mechanisms better, so that it will improve the quality of life. At the same time, a good coping mechanism will lead to a better way of self-care, which will ultimately change the quality of life. The interaction of these three variables is very decisive in an effort to improve the quality of life of DM patients.

Sukabumi City is one of the level II regions in West Java Province that has 15 health centers. The top 3 health centers with the highest visits by DM patients were the Selabatu Health Center with 5,796 people, the Benteng Health Center with 4,618 people, and the Sukabumi Health Center with 1,585 people as of 2019. The working area of the Selabatu Public Health Center was in the first position for the largest number of DM case visits in 2019 (Dinkes Kota Sukabumi, 2019).

One of the programs to reduce the incidence of DM carried out at the Selabatu Health Center is homecare services by visiting healthy families for blood sugar measurements as well as cleaning gangrene wounds in DM patients and health education. Measuring the quality of life of DM patients is very important to monitor the progress of their condition. Likewise, the quality of life of DM patients in the study area has not been carried out so far. Research considering that the variables of religiosity, self-care, and coping mechanisms have a direct and indirect influence on the quality of life of people with diabetes is rarely done. The purpose of this research is to find out “The Effect of Religiosity, Self-care, and Coping Mechanisms on Quality of Life in Diabetes Mellitus Patients in Selabatu Village, Selabatu Health Center Work Area, Sukabumi City”.

Materials and Methods

Design
This study uses correlational research through a cross-sectional approach.

Sample and setting
The study was conducted in Selabatu Village, the Working Area of the Selabatu Health Center, Sukabumi City from January 2021 to August 2021. The research sample was 130 people with type 2 diabetes. This study used a total sampling technique. Inclusion criteria were typed 2 DM patients with current blood glucose levels 200 mg/dl and suffering...
Table 1. Characteristics of Respondents

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-25 Years</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>26-35 Years</td>
<td>10</td>
<td>7.7</td>
</tr>
<tr>
<td>36-45 Years</td>
<td>12</td>
<td>9.2</td>
</tr>
<tr>
<td>46-55 Years</td>
<td>47</td>
<td>36.2</td>
</tr>
<tr>
<td>56-65 Years</td>
<td>55</td>
<td>42.3</td>
</tr>
<tr>
<td>&gt;65 Years</td>
<td>4</td>
<td>3.1</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>48</td>
<td>36.9</td>
</tr>
<tr>
<td>Female</td>
<td>82</td>
<td>63.1</td>
</tr>
<tr>
<td>Last education</td>
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<td></td>
</tr>
<tr>
<td>No school</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>Primary school</td>
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<td>7.7</td>
</tr>
<tr>
<td>Junior high school</td>
<td>41</td>
<td>31.5</td>
</tr>
<tr>
<td>Senior High School</td>
<td>72</td>
<td>55.4</td>
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<tr>
<td>College</td>
<td>6</td>
<td>4.6</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>115</td>
<td>88.5</td>
</tr>
<tr>
<td>Not married yet</td>
<td>9</td>
<td>6.9</td>
</tr>
<tr>
<td>Divorce/Divorce Dead</td>
<td>6</td>
<td>4.6</td>
</tr>
<tr>
<td>Work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does not work</td>
<td>61</td>
<td>46.9</td>
</tr>
<tr>
<td>Work</td>
<td>69</td>
<td>53.1</td>
</tr>
<tr>
<td>Long Suffering DM</td>
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<tr>
<td>&lt;1 Years</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>&gt;1 Years</td>
<td>130</td>
<td>100</td>
</tr>
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</table>

Table 2. Univariate Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation (SD)</th>
<th>Max</th>
<th>Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Religiosity</td>
<td>49.47</td>
<td>9.053</td>
<td>69</td>
<td>28</td>
</tr>
<tr>
<td>Coping Mechanism</td>
<td>42.59</td>
<td>11.168</td>
<td>69</td>
<td>20</td>
</tr>
<tr>
<td>Self-care</td>
<td>85.29</td>
<td>9.528</td>
<td>106</td>
<td>70</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>42.56</td>
<td>6.925</td>
<td>55</td>
<td>27</td>
</tr>
</tbody>
</table>

Table 3. Direct Effect, Indirect Effect and Total Effect of Independent Variables on Quality of Life of DM Patients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Direct Effect</th>
<th>P-Value</th>
<th>Indirect Effect</th>
<th>Total Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Religiosity</td>
<td>0.342</td>
<td>0.000</td>
<td>(0.571X0.255)+(0.251X0.350)+(0.571X0.302X0.350) = 0.292</td>
<td>0.634</td>
</tr>
<tr>
<td>Coping Mechanism</td>
<td>0.255</td>
<td>0.001</td>
<td>(0.302X0.350) = 0.105</td>
<td>0.361</td>
</tr>
<tr>
<td>Self-care</td>
<td>0.350</td>
<td>0.000</td>
<td>(0.302X0.350) = 0.105</td>
<td>0.350</td>
</tr>
</tbody>
</table>
Instruments
The instrument for measuring the independent variables, which include religiosity, is the Centrality Religiosity Scale (CRS) instrument with construct validity with a value of 0.83 (Huber & Huber, 2012). The Self-care Questionnaire refers to the Summary of Diabetes Self-Care Activity (SDSCA) instrument conducted by Hanif, 2012 with an r-value of 0.534-0.607 (valid if r count > r table 0.444). The coping mechanism instrument refers to the Coping Orientation to Problem Experienced (COPE) instrument, with a validity test result of 0.694 (Fijianto et al., 2021). As well as the dependent variable, namely the quality of life in DM patients using the Diabetes Quality of Life (DQOL) instrument, which has been tested for the validity of the instrument by Burroughs et al., 2004, in the domains predicting behavioral self-care and satisfaction with diabetes control with a value of r = 0.254-0.360 and r = 0.562-0.580 (valid if r count > r table).

Data collection
Respondents filled out the questionnaire voluntarily, not through coercion and anonymity. All respondents have given informed consent. Respondents who are willing are allowed to continue filling out the questionnaire, and for respondents who do not want to continue, there is no element of coercion. The online questionnaire consists of questionnaires on respondent characteristics, religiosity, self-care, coping mechanisms, and quality of life. SPSS 16 software was used to analyze all of the data.

Data analysis
Data analysis was performed using univariate calculations, including frequency distribution, bivariate analysis, and multivariate analysis, using a path analysis test with a 95% confidence level.

Ethical consideration
This research has obtained the appropriate ethical license, received by the Health Research Ethics Committee with the number III/0356/KEPK/S1/KEP/PPNI/JABAR/II/2022. The management of research ethics is carried out by evaluating research proposals and designs that have been made in accordance with the ethical principles of health research. The ethical study was conducted at the PPNI West Java College of Nursing and analyzed by reviewers who already have expertise in the field of research.

Results
The number of patients involved as many as 130 people, showing the characteristics of the respondents (Table 1) that, in general, respondents aged 56-65 years are 55 people (42.3%), 82 people are female (82%), 72 people have a high school education (55.4%), 115 people are married (88.5%), 69 people work (53.1%), and 130 people have diabetes > 1 year (100%).

Based on the results of univariate analysis (Table 2), the mean value for the religiosity variable is 49.47, the mean value for the coping mechanism variable is 42.59, the mean value for the self-care variable is 85.29, and the mean value for the quality of life variable is 42.56.

Discussion
Religiosity, coping mechanisms, and self-care are variables that directly affect the quality of life. Quality of life is defined as a state of health, physical function, perceived health status, subjective health, perception of health, symptoms, satisfaction of needs, individual cognition, functional

Figure 1. Model Path Analysis of Quality of Life for DM Patients
self-care. Good religiosity allows individuals to find a better life orientation, find answers to important existential questions, strengthen beliefs about the meaning of life, increase one’s quality of existence (life satisfaction), and increase self-esteem and/or self-efficacy (Baral et al., 2019; Bradshaw & Kent, 2018; Zarzycka & Puchalska-Wasyl, 2020; Zarzycka & Zietek, 2019). Religiosity gives a sense of happiness to the individual. A good level of religiosity can take positive religious re-evaluation actions, seek spiritual support, attend religious meetings, and carry out religious practices well. In this way, individuals spend their free time positively, namely by getting closer to God and interacting with the surrounding environment. The effect of these actions is a greater sense of security, gaining peace of mind, and finding meaning in experiencing difficulties (Thomas & Barbato, 2020). Participation in religious activities can provide benefits in life, such as being healthier and happier (Aulia & Adriani, 2020). The religiosity factor has a positive influence on the quality of life (Rahmah, 2018; Megawaty, 2016; Khikmah, 2019).

Coping mechanisms are factors that directly affect the quality of life because coping strategies help people with DM control their emotions or thoughts to reduce the stressors they face both physically and psychologically, socially and spiritually (Dewi et al., 2019; Kridayanti & Hutasoit, 2019). This results in a good quality of life. Coping mechanisms overcome the problems experienced and psychosocial functions, and the patient feels confident that he can treat various DM diseases. The patient can determine or take positive attitudes and actions to support the treatment process (Chow et al., 2021; Dewi et al., 2021; Nauck et al., 2019).

DM sufferers will experience physical and psychological changes. The psychological changes experienced will usually cause stress due to the situation, so that it has an impact on the quality of life they have (Apriyan & Kridawati, 2019; Dewi et al., 2021). Whereas a good quality of life needs to be maintained so as not to cause metabolic disorders, both from hormonal stress and resulting in complications. Quality of life is one of the main goals in the treatment of DM patients. Good coping strategies are essential to produce a good quality of life and also so that individuals take positive action (Asafitri et al., 2019; Nomiko, 2020). In research Nurhikmah, et al., 2018, Patricia et al., 2021 and Asafitri et al., 2019 there is a significant relationship between coping mechanisms and quality of life.

Self-care is one of the factors that directly affect the quality of life. For DM sufferers themselves, self-care has become a program that needs to be done and is their own responsibility. With controlled self-care, it will minimize the occurrence of complications that can arise and DM sufferers can carry out daily activities properly (Hartati et al., 2019). The ability of individuals to carry out self-care effectively has been shown to be able to significantly minimize mortality and morbidity and has been shown to affect the quality of life of patients and affect their productivity (Prasetyani et al., 2018). Self-care is an action taken by individuals who are in a threatening condition that is useful in controlling, maintaining, and even improving their health and welfare status. Self-care affects the clinical status, health status, and quality of life of individuals with DM. The clinical status includes glucose, blood pressure, and cholesterol levels, and the health status includes minimizing the occurrence of complications. The more effective the individual’s self-care is, the lower the HbA1c and fasting blood glucose levels. In addition, when HbA1c is on target, it tends to shorten the length of stay of individuals in hospitals and improve the quality of life of diabetics (Ramadhani, 2019; Rissanti, 2021). Self-care is proven to have a significant effect on the quality of life (Chaidir et al., 2017; Hartati et al., 2019; Rissanti, 2021).

The findings indicate that religiosity has an indirect effect on life quality via the variables of coping mechanisms and self-care. On the one hand, religiosity expression (establishing transcendent personal relationships, demonstrating belief in God, sensing assistance from a Higher Power, and continuing development in the spiritual realm) is associated with human well-being (a high sense of life’s quality and health), because religiosity acts as a protective factor against destructive behavior, encouraging individuals to exercise self-control, optimism, and confidence (Niewiadomska et al., 2021; Santos et al., 2017; Zarzycka et al., 2020). Religiosity can affect coping mechanisms in the form of changes in individual behavior in dealing with stress or in a state of decline (Krnawati et al., 2021). Spirituality is a multidimensional aspect that includes cognition, feelings, and behavior in the relationship between the individual and the Creator. A high level of understanding of aspects of religion and spirituality will benefit the individual in adapting to stressors so that they have better coping skills (Koemiawan et al., 2018).

The results showed that coping mechanisms affect the quality of life through self-care variables. Components of self-care management behavior, one of which is managing stress. One of the components of self-care management behavior can be shown by the adaptive coping mechanism shown by the individual (Salami et al., 2021). Several types of adaptive coping mechanisms can be in the form of problem-focused coping or emotion-focused coping. Self-care is certainly related to the behavior of the individual. One of the behaviors that arise can be influenced by the strategies and coping mechanisms that they use in dealing with existing stressors. Li & Show in their research explain that individuals who use one type of effective coping mechanism, such as problem-focused coping, will
change people’s relationships and the environment by modifying or eliminating them through behavior when facing stressors (Yuliana et al., 2019).

The development of coping mechanisms can enable individuals to have a positive outlook and be able to decide on various choices of action. One of them is the choice of taking action to improve self-care abilities. Individuals tend to realize that self-care is a positive action that needs to be taken to get a good quality of life. In addition, effective coping mechanisms carried out by individuals can provide strength to individuals to always be patient, steadfast, take lessons from the problems faced, and be optimistic in achieving the targeted goals (Kurniati & Alfaqih, 2020).

Conclusion
This study shows that there are direct and indirect effects of religiosity on the quality of life. There are direct and indirect effects of coping mechanisms on the quality of life, and there is a direct influence of self-care on the quality of life.

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References


Setiyorini, E., & Wulandari, N. A. (2017). Analisis Hubungan Lama Menderita Diabetes Mellitus Dengan Kualitas Hidup Penderita Diabetes...
Original Article

Mellitus. Seminar Nasional Dan Gelar Produk, 4(2), 75–82. https://doi.org/10.32831/jik.v4i2.84


Dewi, R., et al. (2022)