RELIGIOUS COPING, MEDICATION ADHERENCE AND QUALITY OF LIFE FOR DIABETES MELLITUS PATIENTS

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ABSTRACT
Introduction: Diabetes mellitus is a major public health issue particularly in the elderly. Religion may affect the Quality of Life in such patients, mediated by factors such as religious coping and medication adherence. This study aimed to investigate the impact of religious coping and medication adherence on quality of life.

Method: Diabetes mellitus is a major public health issue particularly in the elderly. Religion may affect the Quality of Life in such patients, mediated by factors such as religious coping and medication adherence. This study aimed to investigate the impact of religious coping and medication adherence on quality of life.

Result: There is a significant relationship between Religious Coping and adherence to treatment in Diabetes Mellitus patients with a value of $r = 0.266$ ($p = 0.00$) and quality of life ($r = 0.216; p = 0.00$).

Conclusion: Religious coping has an important influence and relationship on treatment adherence to diabetes mellitus sufferers and can provide motivation for sufferers in carrying out medication.

Keywords
diabetes; medication adherence; quality of life; religious coping

INTRODUCTION
Diabetes Mellitus is a chronic disease characterized by blood sugar levels that exceed normal limits and a disruption in carbohydrate, fat and protein metabolism caused by a lack of the hormone insulin. The number of people with diabetes mellitus in the world reached 422 million people, in 2015 the prevalence of diabetes mellitus was 415 million. Indonesia ranks seventh in the world in 2015 with a total of 10 million sufferers. Based on the results of Basic Health Research in 2016, diabetes mellitus has increased by 6.9% from 2013. The prevalence of diabetes mellitus in Indonesia is projected to increase threefold in 2030 (Jayaningrum, 2016).

There are several irreversible complications associated with diabetes mellitus, such as nephropathy, retinopathy, atherosclerosis, and diabetic foot which can all negatively impact health-related quality of life (HRQoL) and increase the risk of premature death in these patients (Hawthorne, 2012). In addition, there are several studies reporting that HRQoL among diabetic patients is significantly lower than that of the general population (Golicki et al., 2015; Landman et al., 2010). However, good adherence to medication can prevent patients with diabetes mellitus from complications and increase their HRQoL (Alfian et al., 2016). Treatment adherence has been recognized as the most influential factor in disease management in diabetic patients (Chew, 2015). Half of the diabetic patients did not take the drug as prescribed and a large number of patients changed the drug dose without a doctor’s guidance (Saleh et al., 2014). This problem may occur among the elderly especially in developing countries because many are illiterate with inadequate self-care knowledge or skills for chronic diseases, such as diabetes, or are affected by several comorbid
physical and mental illnesses that may affect their ability to manage their health.

Previous studies have examined the contribution of religiosity, religious coping, and spiritual belief to disease management in diabetic patients (Casarez et al., 2010; Rivera-Hernandez, 2016). The relationship between this concept and diabetes management, coping abilities, well-being, emotional stress, HRQoL, and glycemic control has been investigated, and an overall positive correlation has been found (Jafari et al., 2014; Newlin et al., 2010; Watkins et al., 2013). People who have religious/spiritual beliefs have better adaptations for their illness and medication adherence (Watkins et al., 2013). There is limited literature on religious coping, medication adherence and quality of life for diabetic patients in Bali and the relationship between these factors cannot be explained. Therefore, this study is intended to investigate the relationship between religious coping, medication adherence and quality of life.

METHOD
This study used a cross-sectional design with simple random sampling. This research was conducted at Kubutambahan 1 Community Health Center. This study involved 154 patients with diabetes mellitus. The variables in this study were respondent characteristics, religious coping, medication adherence and quality of life. Respondent characteristics such as gender, occupation and education were recorded using a questionnaire. The religious coping questionnaire consists of 19 questions related to five indicators of religiosity, namely belief, religious practice, experience, knowledge, and consequences. This questionnaire consists of 10 favorable questions and 9 unfavorable questions. Score on favorable questions given a score of 4 (Strongly Agree); score 3 (Agree); score 2 (Disagree); and score 1 (Strongly Disagree), while for unfavorable questions score 1 (Strongly Agree); score 2 (Agree); score 3 (Disagree); and a score of 4 (Strongly Disagree). The minimum value of religiosity is 19 and the maximum value is 76 (α = 0.839). The medication adherence questionnaire used the Diabetes Activities Questionnaire (TDAQ). Quality of life using the WHOQOL-BREF instrument is a summary of the World Health Organization Quality of Life (WHOQOL), and consists of 26 question items. The WHOQOL-BREF contains aspects of quality of life, including physical, psychological, and psychological dimensions. dimensions of social relations and dimensions of the environment. The analysis used in this research is Spearman rho. This research has been declared ethical by the Health Research Ethics Commission of STIKes Buleleng No: 023 / EC-KEPK-SB / III / 2020.

RESULTS
Based on Table 1, it is found that the gender of the respondents in the study was male 30% and female 70%. Based on the education level 36% are not in school, 39% are Elementary school, 15% Junior high school, 7% senior high school and 3% higher education. 8% of respondents’ jobs are private employees, 8% are Government employees, 53% are Entrepreneur, 25% are farmers and 9% are unemployed. The respondents in this study were 78% women and 30% male patients. This study found that women had more diabetes mellitus. This happens because the majority of respondents in this study are female. Inadequate treatment due to cultural practices in Bali also causes female patients to experience uncontrolled diabetes. This finding is supported by Julaiha, 2019 which stated that the majority of female diabetes mellitus patients who did not adhere to treatment were 48.9% while male patients who were not adherent were 25.4%. Research (Wadja et al., 2019) found that

| Indicator            | n  | %  |
|----------------------|----|----|
| Gender               |    |    |
| Female               | 105| 70 |
| Male                 | 45 | 30 |
| Education            |    |    |
| No school            | 54 | 36 |
| Elementary school    | 58 | 39 |
| Junior high school   | 23 | 15 |
| Senior high school   | 11 |  7 |
| Higher education     |  4 |  3 |
| Occupation           |    |    |
| Private employees    | 12 |  8 |
| Government employees |  8 |  5 |
| Entrepreneur         |  7 | 53 |
| Farmer               |  3 | 25 |
| Unemployment         |  1 |  4 |
| Religious Coping     |    |    |
| Moderate             | 27 | 18 |
| High                 | 117| 78 |
| Very high            |  6 |  4 |
| Medication adherence |    |    |
| Less                 |  6 |  4 |
| Enough               |  8 | 12 |
| Good                 |126 | 84 |
| Quality of life      |    |    |
| Poor                 |  8 | 12 |
| Good                 |  8 | 55 |
| Very Good            | 49 | 33 |

| Variable           | Correlation coefficient | p     |
|--------------------|-------------------------|-------|
| Medication adherence| 0.266                   | 0.00  |
| Quality of life    | 0.216                   | 0.00  |

Table 1. Distribution of respondent characteristics, religious coping, medication adherence and quality of life

Table 2. Bivariate analysis of religious coping, treatment compliance and quality of life for patients with diabetes mellitus

DISCUSSION
This study found that women had more diabetes mellitus. This happens because the majority of respondents in this study are female. Inadequate treatment due to cultural practices in Bali also causes female patients to experience uncontrolled diabetes. This finding is supported by Julaiha, 2019 which stated that the majority of female diabetes mellitus patients who did not adhere to treatment were 48.9% while male patients who were not adherent were 25.4%. Research (Wadja et al., 2019) found that
women have a risk of developing diabetes mellitus 3 times greater than male respondents. In addition, in women, low muscle mass can reduce the use of glucose in the body, causing the amount of glucose in the circulation to remain high, which will lead to chronic impaired glucose tolerance. (Mauvais-Jarvis, 2015).

This study found 36% of respondents did not go to school and 39% of respondents had an elementary level of education. Respondents with secondary / tertiary education levels are mostly adherent to the recommended diet so that the more educated a person is, the more adhere to the recommended dietary behavior. Individuals with a high level of education have a better ability to receive the information provided and will indirectly increase their knowledge and motivation to behave in accordance with the recommendations given by health workers (Isnaeni et al., 2018).

Religious coping is the most important factor for diabetes mellitus patients because in the implementation of diabetes management it aims to improve self-management and reduce psychological impact, high religious will encourage adherence to treatment (Yulisari et al., 2018). Diabetic patients who have good religious faith will adhere to treatment well to achieve the desired goal, namely controlling sugar levels so that they can be minimized, religious has an important influence and relationship and provides motivation in carrying out treatment (Julaiha, 2019).

Religious coping can have a good impact on health, provide higher life satisfaction and reduce feelings of anxiety, this causes an increase in the quality of life in individuals. (Shamsalina et al., 2016). Diabetes patients who have a good quality of life must be maintained, because low quality of life and psychological problems can cause metabolic disorders, either directly or indirectly through complications. Good religious coping will get a good quality of life to achieve the desired goals (Zainuddin et al., 2015). This research cannot be generalized elsewhere, due to cultural and religious differences. The next researcher needs to add the respondent's age, place of residence and religion.

CONCLUSION

Religious coping has an important influence and relationship on treatment adherence to diabetes mellitus sufferers and can provide motivation for sufferers in carrying out medication. Good religious coping can increase medication adherence through positive self-care. Spiritually healthy diabetic patients are able to cope with illness and stress, so they tend to have a more positive outlook and good quality of life.

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