

RESEARCH ARTICLE

Sholat Dhuha May Reduce The Risk of Knee Osteoarthritis in The Elderly: Preliminary Research

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Abstract: Osteoarthritis is one of the most common degenerative diseases that attack the joints and cause deformity in the elderly. The purpose of this study was to investigate the link between dhuha prayer and the risk of knee osteoarthritis (kOA). Methods: cross-sectional and purposive sampling, with inclusion criteria including Muslim women cured in the Government Binjai Senior Care, age greater than or equal to 60 years, communicative, signing informed consent, and providing complete answers to the WOMAC questionnaire to assess kOA risk. The interview form was used to count the number of rak'ahs of dhuha prayer that are usually performed every day. SPSS was used to analyze the data, and the Spearman Rank test was used. The research criteria were met by 30 of 101 prospective respondents. The respondents ages range from 60 to 85 years old, 68% are at risk of mild kOA, and there is a link between the number of rak'ahs of dhuha prayer and a lower risk of kOA. Conclusion: The more rak'ahs of dhuha prayer that are performed on a daily basis, the lower the risk of KOA.

Keywords: Body mass index, duha prayer, elderly, WOMAC, women

INTRODUCTION

Osteoarthritis (OA) is a common chronic disease that causes joint disability in the elderly, but few studies have been published.¹ A meta-analysis study published in 2020 was only able to record the prevalence of OA in the age group 40 years and older, which was 23%.¹ Meanwhile, a meta-analysis of the prevalence of OA in the elderly female

population published in 2019 only used data from 2005 to 2015.² OA is a joint disease that causes disability in joints, particularly the knee joints in elderly women.³

OA prevalence can be increased by a variety of risk factors, including female gender, elderly age group, low education level, poor economic status, and living in rural areas. This is based on research conducted in China.³ Another study found that the prevalence of OA in women

increases with age.¹ However, an Indonesian study found that gender differences in OA severity do not exist.⁴ Being overweight, on the other hand, is a significant risk factor for OA.⁵ Elderly or elderly women are reported to have OA of the knee (kOA) more frequently and with increasing severity than men.⁶ kOA is one of the most common types of OA in women around the world. This COA disease affects approximately 7% of the world's elderly women, and its prevalence increases with age.⁷

The Western Ontario and McMaster University Osteoarthritis Index (WOMAC) can be used to assess the severity of kOA. This index has high validity and reliability and is frequently used in research.⁸ However, there has been very little research on COA using WOMEC in elderly women in Indonesia. Indeed, the results of the WOMEC measurement are very useful, according to the American College of Rheumatology; the higher the value obtained, the more severe the patient's functional limitations, while a low value indicates better functional improvement.⁹

To treat kOA, both pharmacotherapy and non-pharmacotherapy approaches have been developed. The non-pharmacotherapeutic approach is still evolving today, thanks to weight loss and exercise.¹⁰ To the practice of ritual worship or mind-body medicine.^{11,12}

Duha prayer is one of the most important prayers in Islam and has a variety of health benefits. 13 Duha prayer is a sunnat prayer that takes place at a specific time, usually in the morning until late in the day. 14 Routine Duha prayer has been shown to provide a physiological response in the form of hemodynamic improvement.¹⁵⁻²⁰ Prayer activities improve physical fitness,²¹⁻²³ affect brain

activity,²⁴⁻²⁵ improve cognitive function,²⁶ and improve musculoskeletal function.^{22,27}

Body medicine, particularly from Islam, has never been studied as a non-therapeutic therapy for COA, particularly in the group of elderly women living in nursing homes. The purpose of this study is to see if the dhuha prayer program practiced by Muslim women living in the Binjai Elderly Panti has any effect on knee osteoarthritis (OA).

METHOD

This study lasted three months (August to October 2022), and it was conducted at the Panti Bina Lansia, which is owned by the Provincial Government of North Sumatra. This study was carried out in accordance with ethical approval number 776/KEP/USU/2020. This study was cross-sectional, with purposive sampling, and inclusion criteria included Muslim women, age greater than or equal to 60 years, communicative, signing informed consent, and providing complete answers to the WOMAC questionnaire. In this study, exclusion criteria included taking pain relievers such as acetaminophen, NSAIDs, or corticosteroids, as well as the elderly who engaged in regular exercise such as walking, jogging, or swimming.

WOMAC employs a 24-question instrument to assess pain, stiffness, and physical and social function limitations. There are 5 questions on the pain subscale, 2 questions on the stiffness subscale, and 17 questions on the physical-social function limitations subscale. Each value represents the patient's subjective condition, which is classified as mild, moderate, or severe. Each value represents the patient's subjective condition, which is classified as mild, moderate, or severe. The total score is calculated by taking the

value obtained from the sum of the values of the 24 questions, dividing it by 96, and multiplying it by 100%. The final scores are as follows: mild (0-40%), moderate (40%-70%), and severe (70%-100%).⁸

A total of 101 prospective respondents were chosen for the study, with 30 of them meeting the research criteria. The interview method is used to collect data. The WOMAC questionnaire was used to assess each respondent's COA risk level. SPSS was used to analyze the data, and the Spearman Rank test was used.

RESULT

Table 1. Demographic Characteristics of Respondents by Age

Year	Age		Nutritional status		
	f	thin	Normal	Fat	Obese
60-65	7 (23)	0(0)	2(6.6)	0(0)	4(13.)
66-70	12(40)	1(3,3)	4(13.3)	4(13)	3(10)
71-75	7(23)	1(3,3)	3(10)	1(3.3)	3(10)
76-80	3(10)	0(0)	2(6.6)	1(3.3)	0(0)
81-85	1(3.3)	0(0)	1(3.3)	0(0)	0(0)
Total	30(10)	2(6.6)	12(40)	6(20)	10(33.3)

Based on the characteristics of the respondents' ages, it can be seen that the age range of 66-70 is the largest, while the majority of respondents with normal weight are followed by obese respondents, namely 10 (33.3%).

The following diagram depicts the frequency distribution of WOMAC scores:

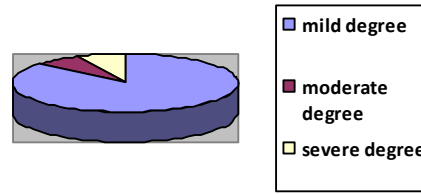
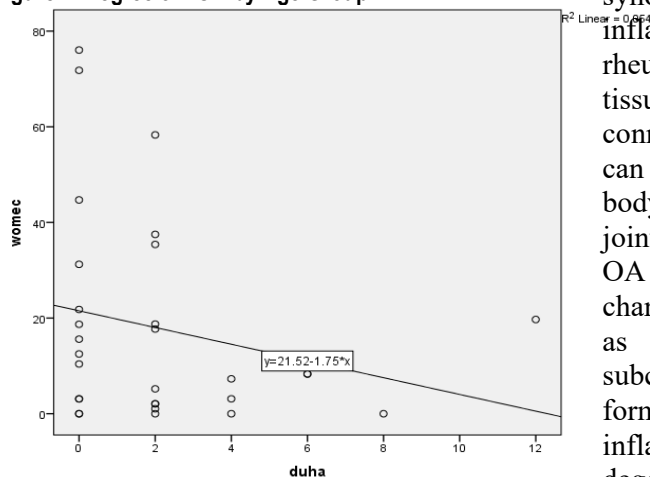


Figure 1. Distribution of the degree of risk of kOA based on the WOMAC . index

According to the diagram above, the most common risk factor for COA is mild (86%). As for the moderate degree of 7%, as well as the severe degree of 7%.

Based on age, the 60-65 years old group had only a mild degree of COA, while the 66-70 year old group had 11 people with a mild degree of risk and 1 person with a severe degree of risk. There are degrees of risk of mild, moderate, and severe COA in the age group 76-80 years, with the same number of 1 person. There is only one person in the age group 81-85 years who has a low risk of COA.

According to the plotsscatter, there is a decrease in the degree of risk of kOA with the dhuha prayer. The greater the number of rak'ahs for the dhuha prayer, the lower the risk of COA in older Muslim women.

Figure 2. Degree of kOA by Age Group**Figure 3. The relationship between the number of rak'ahs of the dhuha prayer and the degree of kOA**

DISCUSSION

The elderly age group in this study has been adjusted to criteria based on the literature, namely above 60 years, but when looking at the groupings, it can be seen that the majority of age groups are between the ages of 60 and 75 years, with a small percentage above 13%. Because kOA increases with age, this may have an effect on the degree of kOA.²⁸

Because the prevalence of symptomatic COA tends to rise with age and obesity, particularly in women, OA is the most common disease and one of the leading causes of disability and paralysis in developed countries and around the world. According to 2017 data, the prevalence of knee OA in the United States is around 33.6% (12.4 million) patients, with women having a higher prevalence of 42.1% and men having a lower prevalence of 31.2%.²⁸

A joint is a bond that connects two or more bones that are joined on the outside by a connective tissue wrapping, and on the inside by a cavity known as the

synovial space. In general, OA is a joint inflammation that refers to over 100 rheumatic diseases that affect the joints, tissues surrounding the joints, and other connective tissues. This joint inflammation can occur in any synovial joint of the body, but it is most common in the knee joint, which is predisposed to OA.⁴ Knee OA (kOA) is a degenerative joint disease characterized by pathological changes such as articular cartilage destruction, subchondral bone thickening, osteophyte formation, joint space narrowing, synovial inflammation, ligament and meniscus degeneration, and joint capsule hypertrophy.²⁸

Salat is derived from the Arabic word ad-Du'a, which means prayer. Meanwhile, the meaning of prayer in language is worship to Allah with specific conditions, pillars, and readings, beginning with takbir and ending with greetings. Prayer is divided into two categories: obligatory prayers and circumcision prayers. Prayer has numerous benefits, including contraction-stretching exercises, ligament and tendon strengthening, muscle tearing prevention, positive effects on joints, and improved human posture. In one rakaat prayer, there are seven postures: intention / takbir, standing, bowing, i'tidal, prostration, tahiyat beginning / end, and greetings. The more prayer cycles you do, the more frequently you will perform the above posture.¹³

The more you move, the less likely you are to develop OA.¹³ Prayer is one of the routine movement activities that every Muslim engages in, which causes the muscles to contract gently and stretch the joints, lowering the possibility of joint inflammation in humans. The dhuha sunnah prayer is performed during dhuha and includes the same movements as the fard prayer, such as takbir, qiyam, bowing,

prostration, and tasyahhud.¹⁴ Because the elderly (aged 60 and up) suffer from OA the majority of the time, prayer may be a physical activity that is suitable for preventing OA for the elderly.

The preliminary findings of this study show that light exercise activities based on mind-body medicine, such as prayer, can reduce the degree of risk of kOA using the WOMAC measuring instrument. Nonetheless, more research is needed to determine the magnitude of the effect of dhuha prayer on the risk of COA occurrence using a larger number of samples and a cohort study design.

According to many studies, moderate physical activity is a significant physical activity that can reduce the degree of OA.²⁹ However, a meta-analysis found that low-intensity physical activity based on mind-body medicine, such as Yoga and Taichi, can reduce OA pain.³⁰ This study's findings about the role of dhuha prayer in the risk of COA and the possibility of reducing COA symptoms are strengthened. According to this study, the more rak'ahs performed, the lower the risk of kOA in the elderly. Although dhuha prayers are recommended to be performed with an unlimited number of rak'ahs, the most dhuha prayers performed in this study were 12 rakaats, according to a hadith of the prophet Muhammad sallallahu 'alayhi wa sallam. As a result, more research with a larger sample is required, with more homogeneous sample characteristics, and the type of experimental research involving controls is still required.

CONCLUSION

Duha prayer has the advantage of lowering the risk of kOA.

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