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Effect of Prayer Practice on Physical Fitness and Mental Health of Adult Muslims: A Systematic Study

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ABSTRACT

Introduction: Prayer is a very important act of worship and a daily obligation for Muslims. In the last few decades, there have been many studies that discuss the benefits of prayer on human health both physically and mentally. Prayer can be categorised as a type of physical exercise as it involves planned and repetitive body movements. This study aims to determine the effect of prayer on physical fitness and mental health in adults. **Methods:** This study used a systematic review method, by reviewing Quartile Q1-Q3 articles that used quantitative research and were published in the last 10 years. Articles were searched in 4 databases (Google Scholar, Science Direct, Pubmed, Springer Open). Selected articles were then assessed for quality and synthesised narratively. **Results:** There were 7 articles that met the inclusion criteria, all articles showed a positive effect of prayer implementation on physiological conditions related to physical fitness and mental health. **Conclusion:** Prayer has a positive effect on physical fitness by improving haemodynamic, immune, metabolic and muscular flexibility and potentially preventing oxidative stress. In mental health, prayer has an effect on peace of mind that can balance hormones and reduce gene expression triggered by stressful conditions.

Keywords: *Prayer, Physical Fitness, Mental Health, Muslim, Adult*

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INTRODUCTION

Islam is the religion with the second largest population in the world. The total number of adherents of Islam was 1.8 billion in 2015 accounting for 24.1% of the world's population, and is expected to rise to 3 billion to become the largest religious group by 2060 (Lipka M, 2017). One of the most important acts of worship and a daily obligation for Muslims is prayer. Prayer is part of the five pillars of Islam, the five pillars of Islam are the two sentences of shhadat, establishing prayer, paying zakat, fasting in the month of Ramadan and hajj to the temple. Salat in language is defined as prayer and in terms is a set of certain words and actions that begin with takbiratul ihram and end with salam (Al-Jaziri, 2008).

In a day, a Muslim is commanded to perform fardhu (obligatory) prayers at five times including dawn (fajr), midday (zhuhur), afternoon (asr), sunset (maghrib) and evening (isha'). In addition, there are also sunnah (non-mandatory) prayers that accompany the obligatory prayers and also at certain times and conditions such as the sunnah rawatib prayer, dhuha and tahajjud prayers. According to Andirja, (2020) one of the things that shows the greatness of prayer is that prayer is an act of worship that Allah also enjoined on the previous Prophets and Messengers, besides that there are many arguments in the Qur'an and hadith that show its virtues, including:

Prayer will prevent a person from doing evil and disobedient deeds, as Allah Subhanahu wata'ala says:

وَأَقِمِ الصَّلَاةَ إِنَّ الصَّلَاةَ تَنْهَى عَنِ الْفَحْشَاءِ وَالْمُنْكَرِ

"Establish the prayer; indeed, it prevents from evil and forbidden deeds." (QS. Al-ankabut :45).

Prayer is the first obligation that will be judged on the Day of Judgement, as the Prophet (peace and blessings of Allaah be upon him) said in a hadith:

أَوَّلُ مَا يُحَاسَبُ بِهِ الْعَبْدُ يَوْمَ الْقِيَامَةِ الصَّلَاةُ ، فَإِنْ صَلَحَتْ صَلَحَ لَهُ سَائِرُ عَمَلِهِ، وَإِنْ فَسَدَتْ فَسَدَ سَائِرُ عَمَلِهِ

"The first thing that will be judged of a slave on the Day of Judgement is his prayer. If his prayer is good, all his deeds will be good. If his prayer is bad, then all his deeds will be bad" (HR Thabrani no. 1859).

Prayer is the soothing of the heart and the calming of the body and soul, the Prophet (peace and blessings of Allah be upon him) said:

وَجُعِلَتْ قُرَّةَ عَيْنِ فِيْ الصَّلَاةِ

"And make my heart calm in prayer" (HR Ahmad 1037) .

All Islamic teachings are built on the basis of bringing benefit and rejecting harm. Allah does not command a thing except that it is good, and Allah does not forbid a thing except that it is bad (As-sa'di, 2021). Over the past few decades, there have been many studies that discuss the benefits of prayer on human health. In much of the scientific literature, studies indicate that prayer has a positive influence on human health in both physical and mental terms (Newberg et al., 2015). Health has a very broad scope, which is a state of physical, mental and social perfection, not only free from disease or infirmity (WHO, 2013). So it can be concluded that there are two indicators of a healthy condition in a person, namely physical fitness and mental health.

Physical fitness is an adaptive state that can be defined as a set of attributes that people have or achieve relating to the ability to perform physical activities (Nwimo & Orji, 2015). According to Palar et al., (2015) the components of health-related fitness, namely: 1) Cardiopulmonary endurance, which is the ability of the heart, lung and blood vessel systems to work optimally when carrying out daily activities for a long time without experiencing significant fatigue; 2) Muscle strength is the ability of a muscle or group of muscles to perform work such as moving limbs when running, walking, and lifting. This muscle strength is influenced by regular and systematically planned training factors; 3) Flexibility or flexibility, which is the maximum area of motion in the joints, without being influenced by a force or pressure; 4) Body composition, which is the ratio of the amount of fat contained in the body to a person's body weight.

Mental health is the state of well-being of an individual who is aware of his or her own abilities, can cope with normal life pressures, can work productively and is able to contribute to his or her community (WHO, 2013). Mental health disorders are conditions where an individual has difficulty in adjusting to the conditions around him. The inability to solve a problem that causes excessive stress makes the individual's mental health more vulnerable and eventually declared to be affected by a mental health disorder (Putri et al., 2015).

Many findings suggest that physical activity is good for the body. Regular physical activity has been shown to help prevent and manage non-communicable diseases such as heart disease, stroke, diabetes and some cancers, as well as help prevent hypertension and maintain a healthy weight (WHO, 2022). Evidence also suggests that physical activity is an antidote to mental health problems such as depression. Furthermore, physical activity can have a positive impact on other facets of mental health, such as mood, stress, cognitive function and self-esteem (Åvitsland et al., 2020).

Prayer can be categorised as a type of physical exercise as it involves planned and repetitive body movements (Torlak & Ata, 2022) The activity of prayer is comparable to performing light and moderate physical exercise. Prayer begins with takbir, which is the movement of raising the hands to face height, and ends with turning the head to both shoulders, first right and then left. Most joints and muscles are stimulated and exercised during the activity of prayer (Osama et al., 2019).

METHODS

This study used a systematic review method. A systematic review is a type of literature review that attempts to gather all empirical evidence that fits predetermined eligibility criteria to answer a specific research question (Higgins et al., 2019). This study aims to answer the question of how prayer practice affects the physical fitness and mental health of Muslim adults. Search keywords were developed using the PICO approach, namely P : Population (adult Muslim individuals over 18 years old), I : Intervention (prayer), C : Comparison (control group) and O :

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Outcome (Physical fitness and mental health condition).

Article searches were conducted through several sites namely Google Scholar, Science Direct, Pubmed and Springer Open by entering the keywords prayer, physical fitness, mental health, Muslim prayer, physical fitness and mental health. The search utilised Boolean operators (OR and AND). The inclusion criteria of this study were: 1) Quantitative research in the form of cilinical trials, randomised controlled trials (RCT), experimental or observational 2) Articles with Q1-Q3 quartile; 2) Adult research subjects above 18 years; 4) Articles published in the last 10 years, namely in the range of 2013-2023; 5) Articles can be accessed full text, not paid and in English or Indonesian. The exclusion criteria included all studies outside the inclusion criteria.

The source search and selection process followed the PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analysis) guidelines and referred to the previously established inclusion and exclusion criteria. A quality assessment or critical appraisal was then conducted on the selected articles using QATQS (Quality Assessment Tools for Quantitive Studies).

RESULTS

There were total of 29,663 search results that fulfilled the keywords. Search results that do not meet the criteria are eliminated by automatic tools on the search page, after which all data is entered into the mendeley application and duplicate data is deleted so that 1302 search results remain. Furthermore, title and abstract screening were carried out, from the screening results obtained 41 suitable articles. Then the article was searched again to download the full text. There were 34 open access articles whose files could be downloaded full text, after that all the articles were assessed for eligibility based on the predetermined inclusion criteria and 7 articles were obtained that met the inclusion criteria.

Furthermore, a critical appraisal was carried out on the selected articles using QATQS (Quality Assessment Tools for Quantitive Studies). In QATQS there are 7 assessment components, namely: 1) Selection Bias, 2) Study Design, 3) Confounders, 4) Blinding, 5) Data Collection Method, 6) Withdrawals and Dropouts. There are 3 rating scales namely 1 = strong, 2 = moderate and 3 = weak. From the assessment carried out, the Global rating (overall assessment) was obtained, namely 2 articles with weak ratings, 2 articles with moderate ratings and 3 articles with strong ratings.

Figure 1. Article search process in Prism *Flow Diagram* 2020

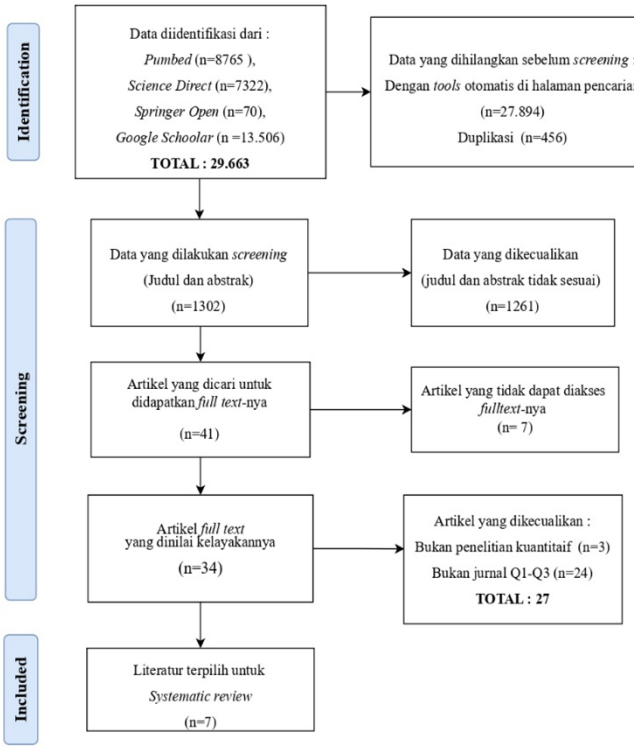

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Table 1. Article Quality Assessment with QATQS

Author, Year	Selection Bias	Study Design	Confounders	Blinding	Data Collection Method	Withdrawals & Dropout	Global Rating
Doufesh et al, 2013	*W*	*M*	*M*	*W*	*S*	*S*	*W*
Yusni et al, 2023	*W*	*S*	*M*	*W*	*S*	*S*	*W*
Alam et al, 2022	*W*	*M*	*M*	*M*	*S*	*S*	*M*
Sobhani et al, 2022	*W*	*M*	*M*	*M*	*S*	*S*	*M*
Boy et al, 2023	*M*	*S*	*M*	*S*	*S*	*S*	*S*
Boy et al, 2021	*M*	*S*	*M*	*S*	*S*	*S*	*S*
Bezuglov et al, 2020	*M*	*M*	*M*	*S*	*S*	*S*	*S*

Description:
W: weak, M: moderate, S: strong

Table 2. Summary of selected articles

No.	Article Title, Author, Year	Destination	Methods	Results
1.	Assessment of Heart Rates and Blood Pressure in Different Prayer Positions, Doufesh *et al*, 2013	Report the effect of prayer on *heart rate* (HR) and *blood pressure* (BP) while performing and imitating the Salat actions: standing, bowing, prostrating and sitting.	Experimental study with 30 male subjects aged 20-30 years. HR and BP were measured using an *electrocardiograph* attached to the subject's chest. Two experimental sessions were conducted, the first subject was asked to pray 2 rak'ahs, the second session the subject to imitate the prayer movements.	The findings showed that there was a significant difference in subjects' HR between performing and mimicking the prayer. The standing position produced the highest HR and prostration in prayer produced the lowest. Lower HR may have potential benefits for one's health. Both systolic and diastolic blood pressure decreased significantly after performing the actual prayer compared to simply imitating the prayer movements.
2.	Exploring the Influence of a Single Bout of Tahajjud Prayer on Acute Blood Pressure	Analyse the effect of performing one tahajjud prayer on systolic and diastolic blood pressure in young men with *normotensive* blood pressure.	Experimental study with male research subjects aged 18-25 years The study was divided into 2 groups, a control group (n = 12) who did not perform *tahajjud* prayerand a trial group (n = 12) who regularly	*Tahajjud* prayer, regardless of its regularity, may result in a non-significant reduction in SBP (*syststolic blood pressure*) and DBP (*diastolic blood pressure*). These results suggest that Tahajjud may have a potential role in

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No.	Article Title, Author, Year	Destination	Methods	Results
	Response in Normotensive Young Adult Males with Varied Regularity of Tahajjud Practice, Yusni *et al, 2023*		practised *tahajjud* prayer for more than six weeks. Blood pressure measurements were taken before and after *tahajjud* prayer.	improving cardiovascular health, further research is needed to examine the long-term effects and underlying mechanisms of tahajjud on blood pressure regulation.
3.	Improvement in cardio-metabolic health and immune signatures in old individuals using daily chores (Salat) as an intervention: A randomised crossover study in a little-studied population, Alam *et al, 2023*	Investigating whether prayer provides benefits equivalent to physical activity on immune and metabolic parameters.	Observational study with *Randomised Crossover* method. A total of 30 overweight adults (mean (SD) age 53.5 (8.7) years) participated in the study. Over a period of 4 weeks, the effects of prayer before/after meals (*Pre-MS/Post-MS*) on selected immunological and metabolic parameters in serum samples were compared. The study also compared the effects of the *Pre-MS/Post-MS* regimen in young and old subjects to observe age-related effects.	Most baseline metabolic parameters and immune cell counts were normal. *Post-MS* resulted in a significant decrease in body weight and percent body fat (%BF). Overall, *Post-MS* resulted in a clear leukocytosis with significant increases in granulocytes, monocytes and lymphocytes When analysing the lymphocyte compartment, clear numerical increases were noted for T, B and NK cells. The number of *CD8+* T cells showed a statistically significant increase. Similarly, *Post-MS* induced leukocytosis in both young and old individuals, whereas the increase in granulocytes, monocytes, and lymphocytes was statistically significant only in older subjects.
4.	Islamic prayer changes stress-related hormones and genes, Sobhani *et al, 2022*	Investigating the effects of Salat on stress-related hormones and stress-induced gene expression such as IL6 and *brain neurotrophic factor* (BDNF)	Experimental study with 83 adult participants, 47 males aged 44±14 years and 36 females aged 34±9 years. Saliva samples were taken before and after prayer to measure cortisol and alpha-amylase hormone	The results showed that cortisol significantly increased in the first group and significantly decreased in the third group after prayer. In addition, an increase in alpha-amylase also occurred in subjects with low alpha-amylase levels. In the

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No.	Article Title, Author, Year	Destination	Methods	Results
			levels. In addition, to evaluate BDNF and IL6 gene expression, 11 specimens were randomly selected. Based on the initial sampling, participants were classified into three groups: cortisol levels lower than 5, between 5-15, and above 15 ng/ml.	genetic expression examination, there was a significant decrease in BDNF gene expression after prayer. In addition, the changes in cortisol and alpha-amylase hormones after prayer associated with baseline levels changed to near the optimal range after prayer.
5.	Dhuha prayer effect on oxidative stress in elderly women: A randomised controlled trial, Boy *et al*, 2023	Evaluate the acute physiological effects of dhuha prayer on *Glutathione Peroxidase* (GPx) activity as an antioxidant and *Malondialdehyd* e (MDA) as an oxidant in a healthy elderly Muslim population who perform dhuha prayer regularly.	*Randomised Controlled Trial* (RCT) study with subjects of elderly women (60-74 years old) who live in the Nursing Home owned by the Government of North Sumatra in Binjai and routinely perform *dhuha* prayer for 2 rakats every day. Several physical, clinical, and blood tests were conducted before and after the intervention. 101 elderly Muslim women in the nursing home were selected, 26 met the study criteria and were included in the study. The volunteers were randomised into 2 groups using a paper lottery, namely the "2 rakaat dhuha prayer" (n = 13) and "8 rakaat dhuha prayer" (n = 13) groups. All volunteers performed dhuha prayer at least 5 days per week for 6 weeks.	A total of 24 elderly women completed the study, and one volunteer from each group withdrew. The characteristics of participants from both groups were homogeneous. The results of t-independent analysis showed that MDA concentrations in both groups at *pre* and *post-test* were not significantly different ($p>0.05$). Mann Whitney analysis showed that GPx in both groups at *pre* and *post-test* were not significantly different ($p>0.05$). The paired sample t-test analysis on MDA concentration before and after the 8 rakaat prayer group showed a significant difference in MDA levels ($p < 0.05$). The 8 rakaat *dhuha* prayer group showed that GPx activity increased by 8.9% and MDA levels decreased by 48.35% after 6 weeks.
6.	Dhuha Prayer Improves Haemodynamics	Assess the effects of 2 and 8 rak'ahs of Dhuha prayer in improving systolic and diastolic	Study with *Randomised Controlled Trial* (RCT) method on elderly female subjects in Nursing Homes	Both groups showed benefits of Dhuha Prayer in improving haemodynamic parameters (systolic and diastolic blood

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No.	Article Title, Author, Year	Destination	Methods	Results
	: A Randomised Controlled Study, Boy *et al*, 2021	blood pressure and heart rate in healthy elderly women.	(age 60-74 years) conducted for 6 weeks. Physical, clinical, and blood examinations were conducted prior to the study. Participants with a history of hypertension were excluded from the study. The participants were randomised into 2 groups, the "8 rakaat group" (n = 13) and the "2 rakaat group" (n = 13) of Dhuha prayer. At the beginning and end of the study period, blood pressure and heart rate were recorded. All data obtained were statistically analysed.	pressure and heart rate). However, the reduction in systolic blood pressure in the "2 rak'ah group" (2.16 mmHg) was smaller than that in the "8 rak'ah group" (5.50 mmHg), the reduction in diastolic blood pressure in the "2 rak'ah group" (0.75 mmHg) was smaller than that in the "8 rak'ah group" (2.41 mmHg) and the reduction in heart rate in the "2 rak'ah group" (2.08 bpm) was smaller than that in the "8 rak'ah group" (6.08 bpm). All differences were statistically significant ($p < 0.05$).
7.	The prevalence of non-contact muscle injuries of the lower limb in professional soccer players who perform Salah regularly: a retrospective cohort study, Bezuglov *et al*, 2020	Assess the prevalence of non-contact muscle injuries to the lower limbs, including hamstring injuries, in Russian professional football players who regularly pray.	Observational study with *retrospective cohort* method. Subjects were 68 professional male football players (excluding goalkeepers), 34 of whom were Muslims who regularly prayed (exposure group) and 34 randomly selected non-Muslim players (control group), were included in this study. Both groups were similar in terms of league, position on the pitch, age (27 ± 3.1 vs 28 ± 4.2 years), and body mass index (22 ± 1.2 vs 23 ± 0.92 kg/m2).	The incidence of hamstring injury was significantly lower in the exposed group (2 vs 14, $p = 0.0085$), a downward trend in the number of muscle injuries (both hamstring and not) was observed in the unexposed group (11 vs 27, $p = 0.0562$). Two players in the exposed group and 11 in the control group ($p = 0.0115$, OR 0.1307, 95% CI 0.0276 to 0.5698) sustained hamstring injuries, with no statistically significant difference in the occurrence of other injuries. The total number of training and match days missed due to hamstring and other muscle injuries was significantly lower in the exposed group (24 vs 213 days, $p = 0.0043$, and 200 vs 344 days, $p = 0.0066$).

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DISCUSSION

Of the 7 selected articles, the research was conducted in several countries, namely 3 studies in Indonesia, 1 study in Malaysia, 1 study in Pakistan, 1 study in Iran and 1 study in Russia. The selected articles examined the effect of prayer on physiological components related to physical fitness and mental health. The research subjects of all the articles are adult Muslims who are in the age range of 18-74 years, male and female.

The Effect of Prayer Practice on Physical Fitness

Doufesh et al (2013), Yusni et al. (Yusni et al., 2023) and Boy et al (Boy et al., 2021) conducted research on the effect of prayer on haemodynamic parameters, namely blood pressure and heart rate. Blood pressure is one of the physiological parameters that is important to consider in assessing a patient's health status. Blood pressure is the force of blood pushing against the walls of blood vessels as it flows through the body. This pressure is generated by the heart pumping blood throughout the body and by the resistance of the arteries to blood flow (Mahmood et al., 2010). Heart rate is an indicator of cardiac function and a parameter of cardiac performance. Heart rate is the heart's response to the demands of the body in various situations and positions (Reza et al., 2002).

Doufesh et al (2013) found that performing 2 rak'ah prayers had an effect on reducing heart rate and systolic and diastolic blood pressure in healthy men aged 20-30 years. The lowest heart rate reduction was found in the prostrate position in prayer. Yusni et al. (2022) examined the effect of performing one tahajjud prayer on the systolic and diastolic blood pressure of men aged 18-25 years with normal blood pressure (normotensive) with two groups, namely a group that regularly performs tahajjud as a test group and a group that rarely performs tahajjud as a control group. There was a significant reduction in systolic and diastolic blood pressure measured after tahajjud compared to before tahajjud but no significant difference in results between the trial and control groups.

Boy et al. (2021) examined the effect of dhuha prayer on haemodynamics in elderly women aged 60-74 years for 6 weeks. The results found a decrease in systolic blood pressure, diastolic blood pressure and heart rate in elderly women who regularly perform dhuha prayer. The greater reduction in blood pressure and heart rate was shown by the group who performed 8 rak'ahs of dhuha prayer compared to those who performed 2 rak'ahs of dhuha prayer.

Alam et al. (2022) conducted a study on the effects of prayer on immune and metabolic parameters. The subjects were 30 medically healthy overweight adult men aged 40-80 years. The study was conducted for 4 weeks with two intervention groups. The first group with pre-meal prayer intervention (Pre-MS) where the subjects were asked to eat lunch before performing dzuhur prayer and dinner before performing isha prayer. The second group with the after-meal prayer intervention (Post-MS) where subjects were asked to perform the Dhuhr and Isha prayers 5-10 minutes after eating. Blood tests and body mass index were taken at the clinic on days 1, 15 and 30 of the intervention. The results showed a significant effect on the improvement of immune and metabolic parameters.

The Post-MS group showed better effects than the Pre-MS. The Post-MS group produced a significant decrease in body weight and body fat percentage. Overall, the Post-MS group produced clear leucocytes with significant increases in granulocytes, monocytes and lymphocytes. When analysing the lymphocyte compartment, a clear numerical increase was noted for T, B, and NK cells. Although the number of CD8+ T cells showed a statistically significant increase after salat, the absolute increase was very limited. The mean CD4/CD8 ratio, an age-appropriate value, did not increase significantly. However, HDL cholesterol ($p = 0.0343$) and triglyceride ($p = 0.0001$) levels changed significantly. The effects were more pronounced in older subjects than in younger subjects.

Research conducted by Bezuglov et al. (2020) found that the prevalence of non-contact muscle injuries to the lower limbs, including hamstring injuries were lower in Russian professional football players who regularly prayed. Current literature shows activation of several muscle groups during different prayer postures including biceps brachii, triceps brachii, pectoralis major, scapular musculature, rectus femoris, biceps femoris, tibialis anterior and

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gastrocnemius (Osama et al., 2019). Prayer can be considered as a type of stretching exercise. The physical activity performed during prayer is a simple and mild exercise suitable for all ages and conditions. During prayer, gentle muscle contractions and relaxations are performed in harmony, resulting in muscle flexibility without excessive fatigue (Rabbi et al., 2018).

Boy et al, (2023) examined the acute effect of dhuha prayer on oxidative stress in elderly women (60-74 years), by examining Glutathione Peroxidase (GPx) activity as an antioxidant and Malondialdehyde (MDA) as an oxidant. Oxidative stress is a condition where there is an imbalance in the amount of oxidants (free radicals) with the amount of antioxidants in the body, causing successive damage starting from cells to higher levels. Oxidative stress can cause cellular damage and is the basis of pathogenesis for chronic disease processes such as cardiovascular, autoimmune, pulmonary, metabolic disorders and aging (Halliwell & Gutteridge, 2007).

Boy et al's study (2023) was conducted for 6 weeks with 26 volunteers who were divided into 2 groups, namely those who performed 2 rak'ahs of dhuha prayer and those who performed 8 rak'ahs of dhuha prayer. For biomarker examination, peripheral blood serum taken from the right arm of volunteers was collected before and after (week 0 and 6) using BD Vacutainer blood collection tubes and stored at 80 C. The results showed a decrease in GPx activity and an increase in MDA levels, with more significant results obtained by the group that performed 8 rak'ah dhuha prayers.

The Effect of Prayer Practice on Mental Health

Sobhani et al. (2022) examined the effect of prayer on stress-related hormones and stress-induced gene expression such as IL6 and brain neurotrophic factor (BDNF). Stress interferes with mental health and is a normal part of daily life, usually referred to as an unpleasant condition whose outcome is unclear to the individual. At the same time, it can be created through several internal and external causes (McEwen, 2017). When stress is perceived, the hypothalamic-pituitary-adrenal axis (HPA) with the release of cortisol is activated. In addition, the sympathetic adrenal medullary axis (SAM), whose markers include heart rate and variations in alpha-amylase hormone, activates stress-related behaviours. As a result, the person's consciousness is heightened, and energy levels, cardiovascular power and immunity are increased to provide an appropriate response to the stressor, after which the body returns to baseline conditions through homeostatic mechanisms mc (McEwen et al., 2015) .

The study by Sobhani et al. (2022) was conducted on 47 adult men and 36 women who had saliva samples taken before and after prayer to measure cortisol and alpha-amylase hormone levels. Based on the initial sampling, participants were classified into three groups: cortisol levels lower than 5, between 5-15, and above 15 ng/ml. The results showed that cortisol significantly increased in the first group and significantly decreased in the third group after prayer. In addition, an increase in alpha-amylase also occurred in subjects with low alpha-amylase levels. On examination of genetic expression, there was a significant decrease in the expression of the BDNF gene after prayer. This study indicates that prayer has an effect on peace of mind and body through modulating the stress response, even at the gene expression level.

CONCLUSION

From the articles reviewed, it can be concluded that prayer has a positive effect on physical fitness and mental health. In general, prayer has an effect on the improvement of haemodynamic parameters, namely a decrease in heart rate and blood pressure, with the lowest decrease in heart rate found in the prostrate position in prayer. The dzuhur prayer performed after lunch and the isha prayer performed after dinner were found to have a significant effect on weight loss and body fat percentage as well as on improving metabolic parameters and immune cells in the body. Prayer practice has also been shown to promote muscle flexibility as it involves movements that produce muscle contraction and relaxation similar to stretching exercises, thereby reducing the risk of muscle injury during strenuous activity or exercise.

It was also found that regular dhuha prayer can improve redox homeostasis, which is the balance between oxidants and antioxidants in cells, potentially preventing oxidative stress that can trigger chronic diseases in the body. On the mental health front, prayer has a calming effect, balancing

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hormones and reducing gene expression triggered by stressful conditions.

It is hoped that further research can develop this research by looking for more literature sources, especially related to the effect of prayer on mental health so that better results can be obtained. For Muslims: 1) regardless of the benefits of prayer on health, basically prayer is an act of worship ordered by Allah so that the main intention in carrying it out must be ikhlash, that is, only hoping for the reward and pleasure of Allah alone; 2) a Muslim should try to learn and practice prayer procedures according to the guidance of the Prophet Muhammad Sallallahu 'alaihi wasallam and try to understand the meaning of prayer recitations so that he can perform prayer with khusyu'.

REFERENCES

Al-Jaziri, A. (2008). *Kitab al-Fiqh 'Ala Mazahib al-Arba'ah*. Dar al-Kutub al-'Ilmiyyah.

Alam, I., Ullah, R., Jan, A., Sehar, B., Khalil, A. A. K., Naqeeb, H., Ali, E. A., Wahab, Q. M. F., Safdar, M., Ali, A., Zaman, M. H., & Zeb, F. (2022). Improvement in cardio-metabolic health and immune signatures in old individuals using daily chores (Salat) as an intervention: A randomised crossover study in a little-studied population. *Frontiers in Public Health*, *10*, 1009055. https://doi.org/10.3389/fpubh.2022.1009055

Andirja, F. (2020). *Bekal Shalat Volume I A Complete Guide to the Attributes of the Prophet's Prayer*. Firanda Andirja Office.

As-sa'di, A. bin N. (2021). *Al-qowaid Al-fiqhiyyah (Manzhumah wa Sharhuha)*. Maktabah As-Syafi'iyyah.

Åvitsland, A., Leibinger, E., Haugen, T., Lerum, Ø., Solberg, R. B., Kolle, E., & Dyrstad, S. M. (2020). The association between physical fitness and mental health in Norwegian adolescents. *BMC Public Health*, *20*(1), 1-10. https://doi.org/10.1186/s12889-020-08936-7

Bezuglov, E., Talibov, O., Butovskiy, M., Lyubushkina, A., Khaitin, V., Lazarev, A., Achkasov, E., Waśkiewicz, Z., Rosemann, T., Nikolaidis, P. T., Knechtle, B., & Maffulli, N. (2020). The prevalence of non-contact muscle injuries of the lower limb in professional soccer players who perform Salah regularly: a retrospective cohort study. *Journal of Orthopaedic Surgery and Research*, *15*(1). https://doi.org/10.1186/S13018-020-01955-5

Boy, E., Lelo, A., & Sagiran. (2023). Dhuha prayer effect on oxidative stress in elderly women: A randomised controlled trial. *Saudi Journal of Biological Sciences*, *30*(4). https://doi.org/10.1016/J.SJBS.2023.103603

Boy, E., Lelo, A., Tarigan, A. P., Machrina, Y., Sembiring, R. J., Syafril, S., Sumartiningsih, S., North, U. S., Muhammadiyah, U., North, S., North, U. S., North, U. S., North, U. S., Kuala, U. S., North, U. S., North, U. S., North, U. S., & Semarang, U. N. (2021). *Dhuha Prayer Improves Blood Pressure: A Randomised Controlled Trial*. *11*.

Doufesh, H., Ibrahim, F., Ismail, N. A., & Wan Ahmad, W. A. (2013). Assessment of heart rates and blood pressure in different Salat positions. *Journal of Physical Therapy Science*, *25*(2), 211-214. https://doi.org/10.1589/jpts.25.211

Halliwell, B., & Gutteridge, J. M. (2007). *Cellular response to oxidative stress: adaptation, damage repair, senescence and death. In Free Radicals in Biology and Medicine*. Oxford: University Press.

Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (2019). Cochrane handbook for systematic reviews of interventions. *Cochrane Handbook for Systematic Reviews of Interventions*, 1-694. https://doi.org/10.1002/9781119536604

Lipka M, H. C. (2017). *Why Muslims are the world's fastest-growing religious group*. Pew Research Centre. https://www.pewresearch.org/short-reads/2017/04/06/why-muslims-are-the-worlds-fastest-growing-religious-group/

Mahmood, N. H., Jalaludin, S. N., Zakaria, N. A., & Ridzwan, W. M. F. W. M. (2010). Relationship study of heart rate and systolic

ISSN 2722 - 9610
E-ISSN 2722-9629

blood pressure for healthy peoples. *IFMBE Proceedings*, *31 IFMBE*, 1358-1361. https://doi.org/10.1007/978-3-642-14515-5_346

McEwen, B. S. (2017). Neurobiological and Systemic Effects of Chronic Stress. *Chronic Stress (Thousand Oaks, Calif.)*, *1*. https://doi.org/10.1177/2470547017692328

McEwen, B. S., Bowles, N. P., Gray, J. D., Hill, M. N., Hunter, R. G., Karatsoreos, I. N., & Nasca, C. (2015). Mechanisms of stress in the brain. *Nature Neuroscience*, *18*(10), 1353-1363. https://doi.org/10.1038/NN.4086

Newberg, A. B., Wintering, N. A., Yaden, D. B., Waldman, M. R., Reddin, J., & Alavi, A. (2015). A case series study of the neurophysiological effects of altered states of mind during intense Islamic prayer. *Journal of Physiology Paris*, *109*(4-6), 214-220. https://doi.org/10.1016/j.jphysparis.2015.08.001

Nwimo, I. O., & Orji, S. A. (2015). Physical Fitness among School Children: Review of Empirical Studies and Implications for Physical and Health Education. *Jotnal of Tourism, Hospitality and Sports*, *10*, 2312-5179. www.iiste.org

Osama, M., Malik, R. J., & Fiaz, S. (2019). Activation of the trunk muscles during Salat (Muslim Prayer). *JPMA. The Journal of the Pakistan Medical Association*, *69*(12), 1929. https://doi.org/10.5455/JPMA.33-1553667415

Palar, C. M., Wongkar, D., & Ticoalu, S. H. R. (2015). Benefits of Aerobic Exercise Training on Human Physical Fitness. *E-Biomedical Journal*, *3*(1). https://doi.org/10.35790/ebm.3.1.2015.7127

Putri, A. W., Wibhawa, B., & Gutama, A. S. (2015). Mental Health of Indonesian People (Knowledge, and Public Openness to Mental Health Disorders). *Proceedings of Research and Community Service*, *2*(2), 252-258. https://doi.org/10.24198/jppm.v2i2.13535

Rabbi, M. F., Ghazali, K. H., of Back, I. I. M.-J., & ...2018. (2018). Investigation of the EMG activity of erector spinae and trapezius muscles during Islamic prayer. *Content.Iospress.ComMF Rabbi, KH Ghazali, II Mohd, M Alqahtani, O Altwijri, NU AhamedJournal of Back and Musculoskeletal Rehabilitation, 2018-content.Iospress.Com.* https://content.iospress.com/articles/journal-of-back-and-musculoskeletal-rehabilitation/bmr170988

Reza, M. F., Urakami, Y., & Mano, Y. (2002). Evaluation of a new physical exercise taken from salat (prayer) as a short-duration and frequent physical activity in the rehabilitation of geriatric and disabled patients. *Annals of Saudi Medicine*, *22*(3-4), 177-180. https://doi.org/10.5144/0256-4947.2002.177

Sobhani, V., Manshadi Mokari, E., Aghajani, J., & Hatef, B. (2022). Islamic praying changes stress-related hormones and genes. *Journal of Medicine and Life*, *15*(4), 483-488. https://doi.org/10.25122/jml-2021-0167

Torlak, M. S., & Ata, B. (2022). Effect of Salat Activity on Knee Pain, Range of Motion and Muscle Strength After Total Knee Arthroplasty: A Single-Blinded Randomised Controlled Trial. *International Journal of Traditional and Complementary Medicine Research*, *3*(1), 25-31. https://doi.org/10.53811/ijtcmr.1054467

WHO. (2013). *Mental Health Action Plan 2013 - 2020*.

WHO. (2022). *Physical activity*. https://www.who.int/news-room/fact-sheets/detail/physical-activity

Yusni, Y., Yusuf, H., Islamic, M. Y.-, & undefined 2023. (2023). Exploring the Influence of a Single Bout of Tahajjud Prayer on Acute Blood Pressure Response in Normotensive Young Adult Males with Varied Regularity of Tahajjud. *Journal.Iaimnumetrolampung.Ac.Id*, *6*(2). https://doi.org/10.25217/0020236387400

ISSN 2722 - 9610
E-ISSN 2722-9629