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Salah as Medicine: A Systematic Review of Physical and Mental Health Benefits of Islamic Prayer

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Abstract: This systematic review summarizes the most recent research from 2009 to 2024 on the health advantages of salah, or Islamic prayer. Millions of Muslims around the world engage in salah, a special kind of spiritual and physical exercise that includes a number of poses and motions that may have therapeutic benefits. The review investigates the effects of Salah on neurological results, psychological well-being, cardiovascular fitness, musculoskeletal benefits, and rehabilitation. The findings suggest that frequent Salah practice may benefit cardiovascular regulation, balance in older populations, stress reduction, and mental wellness. However, existing studies should be interpreted cautiously due to methodological constraints. The review emphasizes that in order to completely clarify the processes and long-term health impacts of Salah, more thorough and extensive research is required. Comprehending these advantages can encourage integrative health practices in culturally aware settings.

Keywords: Salah, Islamic prayer, therapeutic exercise, mental health, cardiovascular health, rehabilitation, biomechanics, neurological effects

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1. Introduction:

Prayers in Islam are performed at five specific times during the day and involve a variety of positions, including standing, bending from the trunk, raising and lowering arms, sitting on one's legs, placing the head on the ground, and twisting the head. With five prayers— morning prayer (Fajr), lunch prayer (Dahar), early evening prayer (Asr), sunset prayer (Maghrib), and night prayer (Isha)—regular prayer is valued more than in Christianity and Judaism. Muslims use their entire body when they stand facing Mecca, recite passages from the Qur'an, kneel and bow, and touch their forehead to the ground. Muslims lay on their knees. Islamic prayer, known in Arabic as salat, is a symbol of solidarity among Muslims and a necessary component of ritual worship.[1] Muslims pray the salat, which is comparable to light exercise. It has been shown to activate different muscles, enhance balance, lower the risk of osteoarthritis in the knee, and have cardiovascular and compositional benefits, despite the paucity of data regarding its biomechanics and therapeutic effects.[2] Salah,which means "prayer or supplication," is a

daily worship ritual that involves kneeling, prostrations, and connections. Its foundation is a relationship with God Almighty. Every Muslim is obliged to offer five daily prayers at certain times. Cleaning oneself of impurities, covering one's private regions, facing the kibla, reciting the Takbir, standing during Takbir, reading the first verse of the Qur'an (Fatiha), standing during Sujud, and arranging the necessary salah actions in a specific order are all part of these prayers. Islamic prayers incorporate both physical movements and spiritual meditation, which are thought to enhance lower limb performance, joint flexibility, and equilibrium. Every regular prayer consists of a number of positions, motions,[3] Salah has several physiological and physical advantages, including as strengthening the joints and muscles in the body, especially the muscles in the neck. Cervical spondylosis and myalgias can be avoided by doing salah prostration at least 34 times a day. Because the head is lower than the heart, sajdah increases blood flow, which improves cognitive function, memory, and focus. Additionally, a recent study demonstrated higher amplitude in the parietal and occipital regions, suggesting parasympathetic elevation during prayer. The grounding impact of electromagnetic radiation during salah creates a relaxing sensation.[4]

2. Methodology

This systematic review used a structured procedure to find, analyze, and synthesize information on the health benefits of Salah (Islamic prayer).

2.1 Search Strategy.

A thorough search was conducted across academic databases such as PubMed, Scopus, ResearchGate, and Google Scholar for research published between 2009 and 2024. The search terms included Salah, Islamic prayer, therapeutic exercise, biomechanics, mental health, cardiovascular health, and neurological consequences. Additional manual searches were carried out to ensure the inclusion of relevant literature outside indexed databases.

2.2 Inclusion and Exclusion Criteria:

Inclusion criteria:

- Peer-reviewed empirical or conceptual works written in English.
- Salah's effects on physical, psychological, neurological, and rehabilitation- related health outcomes have been studied.
- Salah-related research designs include clinical trials, observational studies, reviews, and theoretical publications.

Exclusion criteria:

- Non-English publications.
- Unpublished materials that have not been peer reviewed, often known as grey literature.
- Studies unrelated to Salah or Islamic prayer.

3. Biomechanical and Musculoskeletal Perspectives

The physical structure of Salah involves a full-body kinetic routine that emphasizes flexibility, joint health, and balance. Mohamad et al. (2023) conducted a biomechanical analysis of Sujūd, noting that joint angles during prostration are ergonomically favorable and comparable to therapeutic postures in physiotherapy.[5] Similarly, Sarkingobir et al. (2022) describe the repetitive motion of Salah as a form of low-impact exercise that may alleviate musculoskeletal discomfort, especially among sedentary individuals. [6] Bhat (2016) highlights the similarities between Salah and yoga, indicating shared benefits in muscle activation, flexibility,

and proprioception.[7] According to a study, the salat prayer, which is offered by millions of Muslims, may help older and disabled people recover by enhancing their psychological health, sense of self-worth, musculoskeletal fitness, motor behavior, and cerebral blood flow. According to the study, the majority of joints and muscles move with little effort when salat is offered, which may enhance postural reflexes and cerebral blood flow. To completely comprehend the advantages of salat prayer, more research is required.[8] The study included 217 individuals, with a 4:1 male-to-female ratio. The study investigated the effect of namaz offerings on physical health and impairment. Out of 169 individuals, 66 frequently practiced namaz, with 58 having no handicap and 8 experiencing joint difficulties. The majority of participants had normal physical health, while two walked with assistance. The study discovered that regular namaz was connected with a 91.3% health improvement, irregular namaz with 86.4%, and rare namaz with 86.2%. This good outcome is consistent with earlier research on the effects of namaz on physical health, demonstrating its potential to strengthen muscles and joints. The results are consistent with prior studies on the subject.[9]

4. Cardiovascular and Physiological Function

The transitions and postures in Salah facilitate muscle engagement and blood flow regulation. Kassim et al. (2023) argue that Salah promotes mild cardiovascular exertion that could improve circulation and metabolic balance. [10] A related study published in the International Journal of Health Sciences and Research (2018) also found improved cardiovascular metrics among individuals who performed Salah consistently. These findings suggest that Salah may serve as an adjunct activity for individuals unable to engage in traditional forms of exercise due to health limitations.[11] The study looked into whether the benefits of physical activity guidelines for older persons are increased by the required Islamic prayer of salat, which involves bodily movements. After four weeks, the effects of eating salad before and after meals on immunological and metabolic parameters were examined in 30 overweight adults. Salat raised granulocytes, monocytes, and lymphocytes, decreased body weight and body fat percentage, and caused leukocytosis in both young and old people, according to the results. According to this study, eating salads can replicate positive health impacts that are pro-metabolic and pro-immune.[12] According to a study done at the North Sumatra Government's Nursing Home in Binjai, senior Muslim women who regularly perform salat dhuha can experience less oxidative stress. 101 women between the ages of 60 and 74 participated in the study and were randomly assigned to one of two groups: those who performed salat dhuha everyday or those who did not. According to the findings, salat dhuha supported redox equilibrium and may shield older adults from oxidative stress. Additionally, the study discovered that after six weeks, the 8-rakaat salat dhuha group had lower MDA levels and higher GPx activity. This implies that salat dhuha might be a viable remedy for oxidative stress in older people.[13] According to a study evaluating the effect of actual Namaz on heart rate variation (HRV), performing Namaz considerably improved cardiovascular system function and lessened the effects of everyday stress. 82 volunteers who performed Namaz every day were divided into three groups according to their salivary cortisol levels for the study. Around noon, electrocardiograms were taken prior to, during, and following a four-cycle Namaz. The standard deviation of Poincare plots rose following Namaz, according to the results, and sympathetic tone indices dropped when people bowed and prostrated as opposed to when they sat and stood. Consequently, namaz improves heart rate and cardiac health.[14]

5. Neurological and Psychological Effects

Mental well-being is increasingly recognized as a critical domain of health. Salah's structured focus, rhythmic breathing, and spiritual engagement mirror attributes of mindfulness-based therapies. Farooq and Marwat (2021) found that regular Salah is associated with lower stress levels and improved emotional regulation.[15] Neurophysiological studies, such as that by Doufesh et al. (2019), demonstrate increased alpha wave activity during prostration, a marker of calm and focused attention.[16] Khan (2013) similarly

notes that the meditative aspects of Salah activate brain regions involved in relaxation and cognitive control.[17] The study examines 20 healthy Muslim participants' gamma EEG power during real and simulated Salat practices. In contrast to the mimic exercise, which concentrated on physical steps, the true Salat practice comprised both reciting and walking. Higher gamma power was observed in the left hemisphere, which may be the result of enhanced cognitive and attentional processing. This suggests that Salat is a focus attention meditation.[18] According to the study, when schizophrenia patients consistently engage in religious practices like salat and dhikr, their physical and mental health improves. Physical conditions and a lack of prayer instruments are the biggest obstacles to these exercises.

Nonetheless, their focus and attention demonstrate the beneficial effects of these activities. According to the study, mental health facilities ought to give their patients enough tools for prayer or worship so they can improve their religious and spiritual practices.[19] 83 healthy subjects participated in a study on the impact of Islamic prayer (Namaz) on stress-related hormones and stress-induced genes such as BDNF and IL6. Before and after Namaz, saliva samples were collected in order to test the levels of the hormones cortisol and alpha-amylase. Following Namaz, the first and third groups' cortisol levels significantly increased and decreased, respectively, according to the data. In participants with low baseline values, alpha-amylase levels also rose. Following Namaz, BDNF gene expression significantly decreased, according to genetic expression analysis.[20] This study uses electroencephalogram (EEG) signal analysis and autonomic nerve activity to look at the brainwave signal following salat in five males between the ages of 22 and 23. The findings indicate that, in contrast to after listening to music, the gamma band showed the largest amplitude of the power spectrum distribution following salat. This implies that Muslims do salat in order to put aside worldly concerns and concentrate on standing before Allah, which breaks stress and lessens its intensity when facing the world's problems following salat. According to the study, salat enables Muslims to decompress and concentrate.[21] Attention restorative theory (ART) and stress restorative theory (SRT) are two categories for restorative effects, which include reduced cognitive fatigue, stress, negative affect, and enhanced focus. SRT concentrates on emotional and physiological reactions, whereas ART targets mental exhaustion. The impact of stimuli like salah on stress and mental exhaustion can be explained by any theory. The goal of Islamic prayer is to remember Allah, and salah entails using the mouth, heart, and other body parts to do so.

When Muslims remember Allah as their guardian and supporter, their emotions become calm, therefore awareness and positive effects are crucial aspects of salah.[22] Salah has psychological benefits, although not all Muslims benefit from it because of khusyu, a state of the soul, and humility. While nafs al lawwamah entails tenacity and self-awareness, humility leads to nafs al mutmainah. Salah readings, tuma'ninah, and a comprehension of Allah's nature are all methods for achieving khusyu. As a form of physical therapy, salah relieves tension and anxiety.[23] Students are more susceptible to mental disease, especially depression, throughout their early years. Students who did not participate in religious activities had double the rates of depression and poor mental health as those who did, according to research from 46 US universities. Being religious and praying to God have a positive impact on psychological and mental health. 77% of the 3,680 students who were enrolled in the study were praying, and 78% were conversing with peers about religious topics. These results can help university students manage their mental health and direct psychological analysis. It has been determined that praying salah can help alleviate anxiety and despair.[24]

6. Comparative Insight: Salah and Yoga

Several studies draw parallels between Salah and yoga in terms of physical and spiritual outcomes. The

Indian Journal of Psychiatry (Khan, 2013) and Bhat (2016) both discuss how Salah, like yoga, fosters mind-body unity. However, the spiritual framework in which Salah is embedded can enhance compliance and long-term adherence among Muslim practitioners, differentiating it from secular exercise regimens. This alignment with religious beliefs adds a layer of intrinsic motivation, often lacking in conventional therapies. Muslims perform 119 postures during salah, a daily ritual that calls for steady balance. By relaxing and stimulating the peripheral nerve system, these poses help patients with musculoskeletal and neurological disorders recover. The effects of Salah postures on balance in the elderly population were investigated in a study.

The Berg Balance Scale and questionnaires were used to gather data. The results demonstrated that proper posture and consistent Salah practice enhanced balance. According to the study's findings, seniors who regularly perform Salah postures may be able to retain their balance and proper posture.[25] The benefits of salah, a Muslim religious duty, are comparable to those of yoga and pilates. Muslim patients who need complete knee or hip replacement may be concerned about the substantial flexion of the lower limb joints required for salah postures. According to research, the amount of time spent in each prayer posture and the force applied to the person's back during that posture are inversely correlated.[26] There are several health advantages to both yoga and namaz. Yoga calms the mind, enhances mental and physical equilibrium, and lowers stress. Additionally, it improves mood, lowers anxiety, and gives the body fresh energy. In contrast, there are many health advantages to namaz. The nervous system is calmed, the body is balanced, positive energy is given, the back is straightened, and posture is improved. Additionally, it facilitates digestion, cleanses the liver, and relieves joint pain and varicose veins. Despite being simple to do, namaz has several health advantages, such as lowering the risk of deadly conditions like heart attacks, varicose veins, high blood pressure, and gastrointestinal issues. It is a more straightforward kind of yoga, with certain poses only appropriate for certain types of instruction.[27]

7. Spiritual Exercise with Scientific Merit: Additional Benefits of Salah:

Emerging research suggests that Salah may hold value in rehabilitation settings. The Rehman Journal of Health Sciences (2023) proposes Salah-based movement therapy for motor function recovery and postural correction. [28] Similarly, the E-MJ Malaysia (2021) review integrates evidence from diverse health domains, presenting Salah as a versatile therapeutic component.[29] Reports from WMOME (2021) also support the inclusion of Salah-inspired routines in fitness and wellness programs.[30] Namaz is a haemodynamic workout that improves circulation, coordination, posture, balance, and wellbeing. It burns calories, aids in weight loss, maintains body composition, increases aerobic capacity, and reduces the risk of brain hemorrhage and stroke.[31] A global public health concern, hypertension affects more than one in two older women. A moderate-intensity physical exercise called salat dhuha was studied to see if it could improve the systolic and diastolic blood pressure of healthy older Muslim women.

In the study, 13 Muslim women between the ages of 60 and 74 were split into two groups. One group conducted eight salat dhuha rakaat, while the other group performed two. The findings indicated that there is a considerable chance that salat dhuha will lower blood pressure.[32] With more than one in two older women suffering from hypertension, it is a global public health concern. Adults' hemodynamic parameters have been demonstrated to improve with Salat Dhuha, a moderate-intensity physical activity. According to a study conducted on senior women between the ages of 60 and 74, both groups demonstrated improvements in heart rate and blood pressure. The group that participated in rakaat more frequently, however, demonstrated more notable drops in heart rate, diastolic blood pressure, and systolic blood

pressure. According to the study, Salat Dhuha may significantly improve the hemodynamic parameters of older women.[33] Age-related cervical spondylosis affects the discs and joints of the cervical spine. A mild neck exercise called saladt may help strengthen the muscles in the neck. According to a preliminary investigation, there was no discernible difference between exercise and salat for the bicepsbrachii, sternocleidomastoids (SCM), and neckextensors (NE). Additionally, salad may help patients feel better. According to a study, regular salat, as opposed to irregular salat, may help Muslim men between the ages of 40 and 60 avoid cervical spondylosis.[34] Sajdah has beneficial effects on the brain, lungs, muscles, joints, and vertebral column, among other parts of the body, which has a significant psychological benefit. It provides comfort to the individual in question because life is full with concerns and he finds at least temporary solace from the excruciating issues. Increased blood flow during sajdah forcibly cleanses the brain's cells, resupplying it with nutrition and oxygen. Additionally, there is an increase in blood flow to the brain's pituitary and pineal glands. These two glands are essential for metabolism, growth, health, and vitality and keep an eye on how the other glands in the body are operating.[35] Namaz improves posture, increases oxygen intake, and helps the respiratory, blood flow, endocrine, and excretory systems function properly. Namaz strengthens ligaments and tendons, prevents muscle tears, has a favorable effect on joints, relaxes the eyes, removes accumulated electrical charge in the body, and helps with arthritis and varicose veins.

Furthermore, the brain, heart, stomach, gallbladder, pancreas, kidney, and urinary tract all benefit from its use. Outside of worship, prayer movement has benefits for the circulatory, respiratory, digestive, neurological, and hormonal systems. Unless done in accordance with the stipulated time and rules, the benefits of exercise and sport will increase the human bodies.[36] Sujood is a technique that involves sinus drainage, which lowers the risk of sinusitis and other inflammations associated with the sinuses. It also lowers the risk of bronchitis by draining bronchitis secretions. A healthy lung depends on the removal of leftover air, which Sujood aids in. This is particularly crucial for breathing since it helps expel any leftover air, which lowers the risk of lung conditions. Sujood also lowers the danger of hemorrhoids because of posture, enhances venes return, and lowers the risk of hernia. All things considered, sujood is a good habit to keep your lungs healthy.[37] Blood pressure (BP) was monitored both before and after the performance, and heart rate (HR) was recorded during both the real and simulated Salat.

The findings indicated that whereas HR dramatically decreased in the prostrate position, it significantly increased in the standing, bowing, and sitting positions. Gravitational forces cause a decrease in venous return, which lowers cardiac output and raises sympathetic nerve activity. Patients with musculoskeletal issues or heart issues like hypertension may potentially benefit from salad as a treatment. Other indicators such as electroencephalography (EEG), electromyography (EMG), and respiration rate in relation to HR and BP should be taken into account in future studies.[38] According to a survey, 95.8% of participants think that prayers and salah can cure illnesses, and those who practice religion are more likely to be physically better and need less medical services. Following Namaz, readings from the Holy Quran are followed by prayers. 86% concur that they have an impact on the immune system as well. According to 97.5% of participants, depending solely on prayers could have detrimental effects on one's health, thus they should be used in conjunction with medical care. According to the study's findings, doctors should concentrate on practicing medicine holistically in order to enhance their capacity to serve as healers.[39] This study investigates the relationship between physical fitness and Muslim prayer. According to a systematic evaluation of ten studies, prayer improves mental and physical health. Saying prayers encourages exercise, improves spiritual health, and eases mental stress. For elderly and disabled individuals, it also aids in maintaining physical fitness. According to the study's findings, prayer helps people maintain their physical fitness, body shape,

and obesity levels. Prayer may therefore be helpful in treating obesity.[40]

8. Results:

The systematic search yielded **40 studies** published between 2009 and 2024 that met the inclusion criteria. The studies covered diverse aspects of Salah's impact on physical, psychological, neurological, and rehabilitative health.

Physical Health: Multiple studies reported improvements in cardiovascular parameters such as heart rate, blood pressure, and overall cardiovascular fitness (Alam et al., 2022; Boy et al., 2021). Salah's biomechanical postures were shown to enhance joint mobility, muscle strength, and balance, especially in elderly and disabled populations (Mohamad et al., 2023; Tariq et al., 2024).

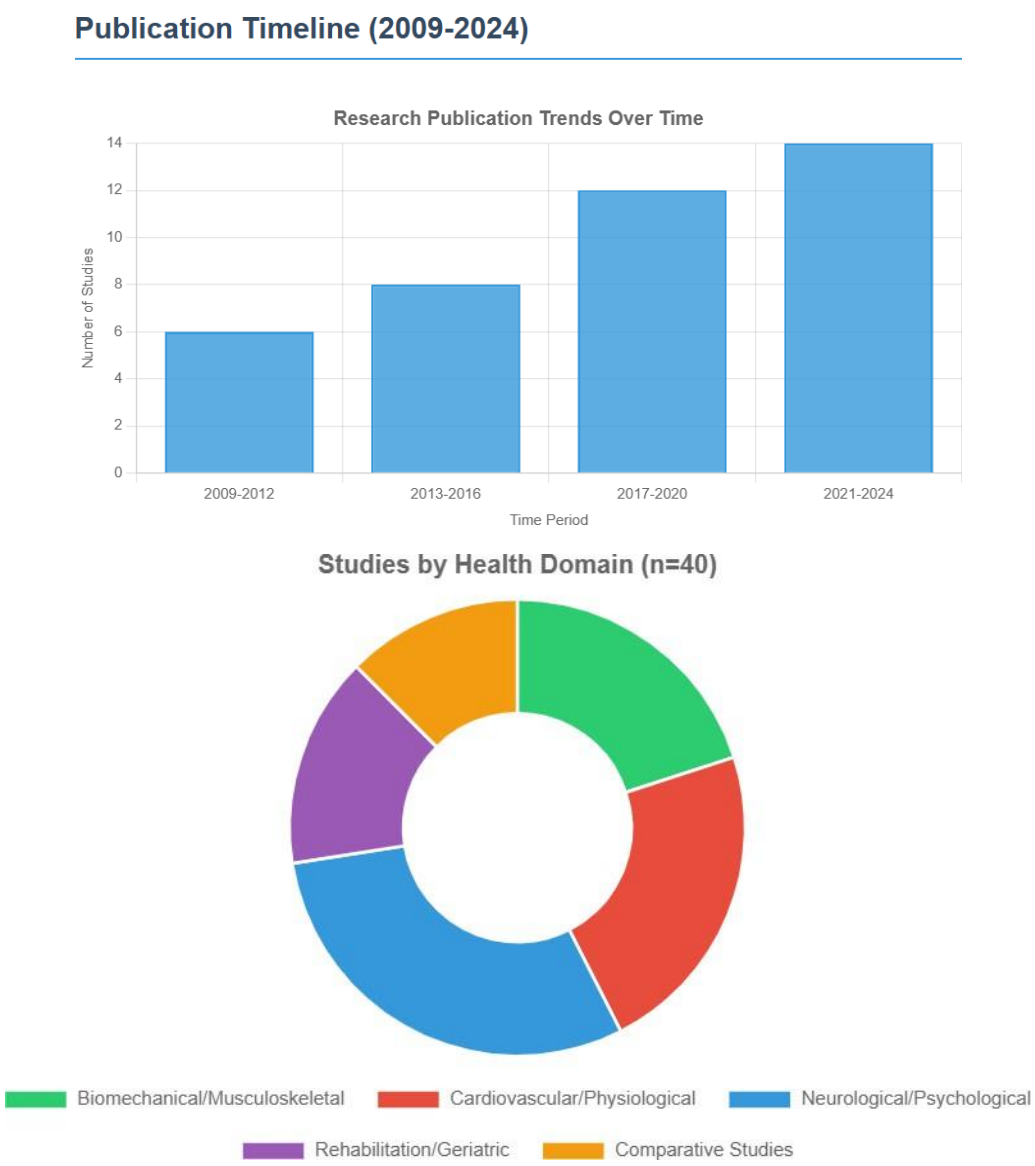
Mental Health: Evidence indicated reductions in anxiety, depression, and stress levels linked to the meditative and focused nature of Salah (Behdar & Sheikh, 2024; Farooq & Marwat, 2021). Psychological benefits were further supported by studies showing increased alpha brain activity during prayer movements (Doufesh et al., 2019).

Neurological Effects: Several studies revealed positive changes in brainwave patterns and improved cognitive function associated with Salah (Doufesh et al., 2016; Shaverdi et al., 2024).

Rehabilitation: Salah was identified as a feasible low-impact therapeutic exercise, aiding rehabilitation in geriatric and disabled patients (Reza et al., 2002; Rehman, 2023).

Despite promising findings, the studies showed considerable heterogeneity in design, sample size, and outcome measures, limiting the generalizability of results.

Health Domain	Key Studies Referenced	Primary Findings	Study Methods	Notable Authors/Years
Biomechanical & Musculoskeletal	Multiple studies on joint angles, balance, muscle activation	Enhanced joint mobility, balance improvement in elderly, muscle strengthening, postural benefits	Biomechanical analysis, Berg Balance Scale, Observational	Mohamad et al. (2023), Bhat (2016), Tariq et al. (2024)
Cardiovascular & Physiological	Studies on heart rate, blood pressure, circulation	Improved heart rate variability, blood pressure reduction, enhanced circulation, metabolic benefits	RCT, ECG monitoring, Blood pressure measurement	Kassim et al. (2023), Alam et al. (2022), Boy et al. (2021, 2023)
Neurological & Psychological	EEG studies, stress hormone analysis, mental health assessments	Increased alpha/gamma wave activity, reduced cortisol, decreased anxiety/depression, improved focus	EEG analysis, Hormone assays, Psychological questionnaires	Doufesh et al. (2019), Farooq & Marwat (2021), Khan (2013)
Rehabilitation & Geriatric Care	Studies on elderly populations, disability management	Motor function recovery, postural correction, oxidative stress reduction in elderly	Intervention studies, Controlled trials	Reza et al. (2002), Boy et al. (2023), Rehman (2023)
Comparative Studies (Salah vs Yoga)	Comparative analysis with yoga and other exercises	Similar benefits to yoga in flexibility, mind-body connection, but with added spiritual motivation	Comparative analysis, Literature review	Bhat (2016), Khan (2013), Kapil & Pandey (2023)



9. Discussion:

This systematic review emphasizes the many health advantages of Salah that span the neurological, psychological, physical, and restorative realms. The recurring results from research indicate that Salah serves as a low-impact therapeutic exercise that, via its special series of postures, increases muscular strength, joint mobility, and cardiovascular fitness. The spiritual and meditative components of Salah also improve mental health by lowering stress, anxiety, and depression, which is consistent with research that links mindfulness exercises to psychological wellness. Salah may have positive effects on brainwave activity and neurochemical reactions, according to neurological research, which could help with emotional control and cognitive function. Additionally, integrating Salah into rehabilitative settings shows promise for improving mobility and balance in older and disadvantaged people.

The necessity for more thorough, extensive clinical trials to determine causal links and underlying mechanisms is highlighted by differences in study designs, sample sizes, and methodology, notwithstanding the positive results. Future studies ought to examine the long-term consequences of consistent Salah practice as well as how it affects various demographics.

All things considered, this research highlights Salah's potential as a holistic health intervention that combines spiritual mindfulness with physical exercise, potentially providing a convenient and culturally appropriate

means of enhancing health results.

10. Limitations and Future Directions

Despite the rising corpus of studies on Salah's health advantages, there are several limits to consider. For starters, the variability of study designs, sample sizes, and techniques among the included studies makes it difficult to generalize conclusions extensively. Many studies use self- reported data, which can induce bias. Furthermore, the scarcity of large-scale randomized controlled trials decreases the validity of causal findings. The majority of present research focuses on short-term impacts, with little investigation into the long-term health outcomes related with persistent Salah practice**.**

Future research should try to close these gaps by carrying out well-designed longitudinal and experimental investigations on bigger, more diverse populations. Investigations on Salah's biomechanical elements and direct physiological impacts, utilizing modern measurement methods, could provide more objective proof. Additionally, investigating the combination of Salah with current rehabilitative and mental health interventions may open up new therapeutic possibilities. Cross-cultural studies could also help us better understand how different prayer habits affect health outcomes around the world.

11. Conclusion

This comprehensive analysis shows that the Islamic prayer, salah, has major positive effects on mental, neurological, and physical health. Improved cardiovascular fitness, physical strength, mental health, and stress reduction are all facilitated by the practice's special blend of rhythmic movements, stretching postures, and concentrated awareness. Its importance in neurological health and rehabilitation is also supported by evidence. However, the methodology and sample size of numerous studies differ, suggesting that more thorough, extensive study is required to validate and broaden these findings. To completely grasp Salah's therapeutic potential, future studies should prioritize objective biomechanical evaluations and clinical trials. In general, salah is a useful, approachable activity that can support holistic health, particularly in Muslim communities, in addition to being a spiritual act.

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