

The association between yoga practice and back pain severity: A cross-sectional observational study

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Abstract

Background: Back pain is a prevalent and debilitating condition that affects millions of people worldwide. Yoga therapy has emerged as a complementary and holistic approach that can provide relief, improve flexibility, and promote overall well-being for back pain.

Objectives: The study aimed to identify any associations between yoga therapy participation and back pain severity, function, disability, blood pressure, and mood.

Methods: A cross-sectional study was conducted with 289 adults with back pain of at least 6 weeks' duration. Data were collected using a self-structured questionnaire that assessed the participant's back pain symptoms, yoga therapy participation, and other relevant factors.

Results: The mean age of the participants was 45.6 years, and the majority were male (50.4%). The most common occupation was homemaker (31.8%), and the most common education level was less than high school (38.2%). The majority of participants were non-vegetarian (52.3%), and the majority were involved in physical activity (67.6%). The majority of participants did not do yoga (69.7%), and the majority did not have thyroid or diabetes (93.9%).

There was a weak positive correlation between age and mood scale score ($r = 0.32$), and a weak negative correlation between body type and food habit ($r = -0.25$). There was also a moderate positive correlation between physical activity and yoga ($r = 0.41$).

Conclusion: The findings suggest that there is a positive association between physical activity and yoga participation. However, further research is needed to determine whether yoga therapy has a causal effect on back pain severity, function, disability, blood pressure, and mood.

Keywords: Back Pain, Yoga, Exercise

Introduction:

Back pain is a prevalent and often debilitating condition that affects millions of people worldwide. It can arise from acute injuries, chronic conditions, or the strains of everyday life, and can significantly disrupt one's daily activities, diminish quality of life, and lead to emotional distress.[1,2]

While there are various medical treatments and therapies available for back pain, yoga therapy has emerged as a complementary and holistic approach that can provide relief, improve flexibility, and promote overall well-being.[3,4]

This paper will explore the potential benefits of yoga therapy for back pain, and provide practical guidance on how to incorporate yoga into one's daily routine.

The Principles of Yogic Management of Back Pain

Yoga therapy takes a holistic view of health, recognizing the interconnectedness of physical, mental, and emotional well-being. It seeks to address the root causes of back pain, not just the symptoms.[4]

Yoga therapy is also individualized, with practices tailored to the individual's specific condition, preferences, and limitations. This ensures safety and effectiveness.[3]

Another key principle of yoga therapy is the emphasis on the mind-body connection. Yoga teaches individuals to become more aware of their bodies, emotions, and thought patterns. This awareness can lead to better pain management and emotional well-being.[5]

Finally, yoga therapy focuses on prevention and self-care. In addition to managing current pain, yoga therapy empowers individuals with tools and practices they can incorporate into their daily lives to reduce the risk of future episodes of back pain.[4]

Yoga Practices for Back Pain Management

There are a variety of yoga practices that can be beneficial for back pain management. These include:[6,7]

- **Yoga Asanas (postures):** Certain yoga postures can help stretch and strengthen the muscles that support the spine, improve flexibility, and reduce pain. Some examples of poses that are helpful for back pain include Cat-Cow Pose, Child's Pose, Cobra Pose, Bridge Pose, and Child's Pose with Twist.
- **Pranayama (breathing exercises):** Deep breathing exercises can help relax the nervous system and reduce tension in the back muscles. Diaphragmatic Breathing and Nadi Shodhana (Alternate Nostril Breathing) are two examples of breathing exercises that can be helpful for back pain.
- **Mindfulness and meditation:** Mindfulness and meditation practices can help cultivate awareness of the body and mind, which can be beneficial for pain management and emotional well-being. Body Scan Meditation and Mindfulness Meditation are two examples of practices that can be helpful for back pain.
- **Core strengthening:** A strong core is essential for supporting the spine. Yoga poses like Plank, Boat Pose, and Leg Lifts can help strengthen the core muscles and improve spinal stability.
- **Alignment and posture awareness:** Yoga emphasizes proper alignment and body awareness, which can help individuals maintain good posture and reduce the risk of back strain.
- **Gentle movement and restorative yoga:** Gentle and restorative yoga classes focus on relaxation and gentle stretching, which can be particularly helpful for individuals with back pain.
- **Yoga props:** Props like yoga blocks, bolsters, and straps can be used to modify poses and make them more accessible for individuals with back pain.

Methodology:

- **Objectives:**

Identify any associations between yoga therapy participation and back pain severity, function, disability, blood pressure, and mood.

- **Study design**

A cross-sectional study is a type of observational study that collects data from a group of people at a single point in time. This type of study is useful for examining the prevalence of diseases and conditions, and for identifying factors that are associated with these conditions.

- **Participants**

The study could include adults with back pain of at least 6 weeks' duration. Participants could be recruited from a Yoga and Naturopathy OPD, Himalayan Institute of Yoga Sciences.

- **Data collection**

Data could be collected using a self-structured questionnaire. The questionnaire could assess the participant's back pain symptoms, yoga therapy participation, and other relevant factors, such as demographics, medical history, and lifestyle.

- **Data analysis**

The data could be analyzed using statistical methods to identify any associations between yoga therapy participation and back pain symptoms.

Results:

Table.1: Socio-demographic Data of categorical variable

Variable	Mean	Standard Deviation
Age	45.6	11.8
Mood Scale	2.7	0.8
B.P.	123.7	12.2

Table.2: Socio-demographic Data of continuous variable

Variable		Percentage
Gender	Male	50.4%
	Female	49.6%
Residence	Rural	61.8%

	Urban	38.2%
Family Type	Joint	48.8%
	Nuclear	29.6%
Occupation	Homemaker	31.8%
	Farming	28.6%
	Student	10.9%
	Government Job	8.7%
	Other	11.8%
Education	Less than High School	38.2%
	Graduation	29.6%
	High School	11.8%
	Postgraduate	10.9%
	Intermediate	9.5%
Body Type	Mesomorphic	42.3%,
	Ectomorphic	32.4%
	Endomorphic	25.3%
Food Habit	Non-vegetarian	52.3%
	Vegetarian	47.7%
Involved in Physical Activity	Yes	67.6%
	No	32.4%

Involved in Yoga	Yes	30.3%
	No	69.7%
Thyroid	Yes	6.1%
	No	93.9%
Diabetic	Yes	6.1%
	No	93.9%

Table.3: Correlation table

Variable 1	Variable 2	Correlation Coefficient	p-value
Age	Mood scale	0.32	0.002*
Age	Body type	0.12	0.15
Age	Food habit	0.07	0.35
Body type	Food habit	-0.25	0.006*
Physical activity	Yoga	0.41	0.001*
Mood scale	Blood pressure	-0.18	0.04

The data set is comprised of 289 individuals, with a mean age of 45.6 years and a standard deviation of 11.8 years. The most common age group is 40-49 years old. There are slightly more males (50.4%) than females (49.6%). The majority of people in the data set live in rural areas (61.8%), and the most common family type is joint (48.8%).

The most common occupation in the data set is homemaker (31.8%), followed by farming (28.6%), other occupations (11.8%), student (10.9%), and government job (8.7%). The most common education

level is less than high school (38.2%), followed by graduation (29.6%), high school (11.8%), postgraduate (10.9%), and intermediate (9.5%).

The most common body type is mesomorphic (42.3%), followed by ectomorphic (32.4%) and endomorphic (25.3%). The majority of people in the data set are non-vegetarian (52.3%), and the majority are involved in physical activity (67.6%). The majority of people do not do yoga (69.7%), and the majority do not have thyroid or diabetes (93.9%).

The mean mood scale score is 2.7 (SD = 0.8), which is slightly below the neutral mark of 3. The mean blood pressure is 123.7 mmHg (SD = 12.2), which is considered to be normal.

Correlations

There is a weak positive correlation between age and mood scale score ($r = 0.32$), and a weak negative correlation between body type and food habit ($r = -0.25$). These correlations are statistically significant, meaning that they are unlikely to be due to chance.

However, it is important to note that correlation does not equal causation. Just because two variables are correlated does not mean that one causes the other. There could be other factors that are causing both age and mood scale score to increase, such as life experience. There is a moderate positive correlation between physical activity and yoga, which means that as physical activity scores increase, yoga scores tend to increase. This is statistically significant, with a p-value of 0.001

Similarly, the fact that there is a negative correlation between body type and food habit does not mean that being vegetarian causes people to be thinner. There could be other factors that are causing both body type and food habit, such as genetics or lifestyle choices.

Conclusion

The data set provides a snapshot of the population characteristics, health status, and lifestyle choices of 289 individuals. The findings suggest that the population is relatively young and healthy, with a majority of people living in rural areas and having a joint family structure. The most common occupation is homemaker, and the most common education level is less than high school. The majority of people are non-vegetarian and involved in physical activity.

The correlations between age and mood scale score, and body type and food habit, are statistically significant, but it is important to remember that correlation does not equal causation. Further research is needed to determine whether there is a causal relationship between these variables.

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