

Awareness and practice regarding yoga among high school students in selected institutes of the Kathmandu District

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ABSTRACT

Background: Yoga's influence on the well-being and performance of youth has garnered increasing attention due to its numerous benefits, such as stress reduction, enhanced concentration, and improved physical fitness. However, research on the awareness and practice of yoga among youth in Nepal remains limited. Therefore, this study aims to examine the level of awareness and involvement in yoga practice among high school students in Nepal.

Methods: A descriptive, cross-sectional study design is followed to examine the awareness and practice of yoga among high school students' participants N = 226, in selected institutions in Kathmandu District. The study focused on two institutions: One institutes is situated in Bashundhara, Kathmandu, and another in Kamaladi, Kathmandu. Stratified sampling method is used. Researchers utilized self-administered tools. These tools were self-designed in consultation with experts, underwent pilot testing, and underwent reliability and validity testing. Additionally, descriptive and Chi-square tests were administered.

Results: The study revealed that 49.8% of participants had a poor level of awareness about yoga. Additionally, the majority of respondents (90.5%) reported not having a habit of practicing yoga.

Conclusion: The current study found a poor level of knowledge about yoga, with only a few participants engaged in practicing it. These findings suggest a gap between knowledge and practice. However, evidence suggests that regular yoga practice supports the enhancement of mental well-being and performance. Therefore, researchers strongly recommend that academic leadership, parents, and teachers introduce such packages in schools and implement interventions, such as life skills education, to promote and maintain sustainable habits.

Keywords: academic achievement, yoga benefits, mental well-being, school students, stress reduction

INTRODUCTION

It is an ancient mind and body practice with origins in Indian philosophy (Gothe et al., 2019). It combines physical postures, rhythmic breathing, and meditative exercises to offer practitioners a unique holistic mind-body experience (Gothe et al., 2019). Yoga has gained significant worldwide recognition for its potential benefits in enhancing both well-being and performance (Watts et al., 2018). While numerous studies have examined its effects on adults (Conboy et al., 2013; Hagen et al., 2023; Hegde et al., 2011; Thapa et al., 2023b; Watts et al., 2018; Woodyard, 2011). There remains a gap in understanding the experience of yoga among youth. Recognizing the importance of promoting holistic health practices from an early age and investigating the prevalence and engagement of adolescents with yoga is important. Many studies have demonstrated the positive impact of yoga on stress reduction, emotional regulation, and cognitive performance among teenagers (Gothe et al., 2019; Watts et al., 2018; Woodyard, 2011). Additional research supports these findings, about interventions incorporating yoga in school settings have demonstrated improvements in self-esteem, resilience, and overall psychological wellness (Cartwright et al., 2020; Watts et al., 2018). However, despite these promising findings, there is limited research on the awareness and practices in yoga in Nepal (Shrestha et al., 2022; Surendran et al., 2020). Understanding their knowledge and practice with yoga is vital for designing tailored interventions and educational initiatives. Additionally, exploring potential barriers to yoga engagement in this demographic can inform strategies to encourage its adoption and integration within school-based wellness programs. The study seeks to address this gap by investigating the desire for and practice of yoga among high school students, with the aim of examining its prevalence, perceptions, and implications for practices. Investigating the healing benefits of yoga and its potential to enhance overall quality of life is becoming increasingly important. As mind-body fitness programs, like yoga, gain popularity, it is essential for healthcare professionals to stay informed about the essence of yoga and the substantial evidence supporting its various therapeutic effects,

(Woodyard, 2011). Yoga encompasses a holistic discipline that integrates physical, mental, and spiritual elements. Engaging in regular yoga practice over an extended period can significantly enhance the physical well-being of practitioners. This includes improvements in lung function, cardiovascular fitness, endurance, and overall flexibility (Gohel et al., 2021). Flexibility plays a crucial role in overall fitness. Engaging in regular yoga practice enhances both flexibility and balance, resulting in notable improvements in physical performance and overall well-being (Bruce & Lovejoy, 1949).

Literature Review

In today's digital age, children's elevated expectations and extensive use of technology can induce stress and hinder attention (Marzo et al., 2024; Shrestha et al., 2023). While beneficial for communication and learning, excessive screen time poses risks. This article proposes yoga as a remedy to alleviate stress and enhance overall well-being and mental health (Davari et al., 2016). Adolescence is crucial for development, but exposure to adversity can impact mental health. With 1 in 7 adolescents experiencing mental health issues globally, recognizing and addressing their needs is imperative for their well-being (WHO, 2020). Yoga, an ancient practice originating from India, has gained global recognition for its numerous benefits, such as physical and mental well-being (Chu et al., 2016; Wang & Szabo, 2020). While its popularity among adults is well-established, its prevalence among high school students is a topic of growing interest (Conboy et al., 2013). In developed countries like the United States, Canada, and European nations, yoga has become increasingly popular among adolescents (Cartwright et al., 2020; Vergeer et al., 2017; Woodyard, 2011). Research by Butzer et al. (2015) conducted a study on 95 high school students, exploring the impact of a 12-week school-based yoga intervention on grade point average (GPA) results showed that while both groups exhibited a decline in GPA, the yoga group showed a smaller decline, suggesting transient academic benefits. Similarly, a study by Wang and Szabo (2020) highlighted that yoga was recommended for therapy in clinical and nonclinical settings. Its positive effects, alongside cognitive behavior therapy, suggest promising stress management techniques with physiological benefits. However, barriers and facilitators to participation include intrapersonal, interpersonal, organizational, and environmental factors (Hegde et al., 2018; Vergeer et al., 2017). Thus, many studies have suggested that yoga engagement has a positive impact on academic performance and well-being (Surendran et al., 2020; Woodyard, 2011). While some schools have integrated yoga into physical education curricula (Khunti et al., 2023), others have yet to incorporate it systematically, particularly in Nepal (Shrestha et al., 2022). Researchers suggest the need for a comprehensive yoga education program in schools to enhance awareness and participation among adolescents (Martin et al., 2024; Serwacki & Cook-Cottone, 2012). In Asian countries like Nepal, where yoga has deep cultural roots, its integration into educational settings has garnered attention. Studies conducted in India by Kasture et al. (2024) highlighted that yoga practice is cost-effective, has a positive impact on muscle function, and may also provide benefits beyond physical health. Studies by Shrestha et al. (2022) highlighted the positive impact of yoga on students, enhancing stress management, focus, and overall well-being. Practicing yoga fosters personal growth, aiding in stress relief and mental clarity. This practice includes gentle stretching of muscles and the connective tissues surrounding bones and joints, which contributes to increased flexibility. Our research demonstrated a marked enhancement in flexibility measurements. Comparable findings were reported in a quasi-experimental study conducted by Iftekher et al. (2017), which showed that yoga training positively impacted the balance and flexibility of shooting athletes. The study on the assessment of the therapeutic benefits of yoga, based on the findings of selected articles, reveals that it enhances overall quality of life and individual well-being. Additionally, yoga therapy triggers the activation of the parasympathetic nervous system and its associated anti-stress mechanisms (Bruce & Lovejoy, 1949). Yoga, which originated approximately 5,000 years ago, is a holistic practice encompassing physical, mental, and spiritual elements (Khanal & Khanal, 2021).

Awareness and Practice of Yoga

Different studies have highlighted that while there is a high level of awareness and acknowledgment of yoga's benefits for well-being and performance, the actual practice varies significantly depending on factors such as socio-economic status, gender, availability of resources, and cultural influences, among others (Martin et al., 2024; Vergeer et al., 2017; Watts et al., 2018). In this regard, a study by Cartwright et al. (2020) highlighted that, despite yoga's popularity and documented benefits for wellbeing and performance, its practice remains underexplored. Perceptions indicate positive effects on health conditions and behaviors, highlighting its potential as a holistic wellness tool, similarly, as a study conducted by Shrestha et al. (2022), the study revealed that 77.84% of the study population practiced yoga; however, only 14.20% persisted. Despite this, 96.59% acknowledged yoga's benefits. Another study by Hegde et al. (2018) revealed favorable perceptions of yoga's health benefits, with a majority having practiced. Additionally, a study by Surendran et al. (2020) found that students recognized yoga's importance and its benefits; however, practices varied. The study and evidence suggest that with advancements in technology and societal transformation, physical, psychological, and social issues can be prevented (Davari et al., 2016). With the availability of different tools, yoga is also considered vital to overcome challenges (Davari et al., 2016). However, many studies have emphasized the importance of promoting and recognizing yoga and its significance for everyone, including youth (Gothe et al., 2019; Khanal & Khanal, 2021; Watts et al., 2018). Nevertheless, constraints remain limited, prompting researchers to examine the level of awareness and practice of yoga and its association with demographic factors. Like other lands, Nepalese students also struggle with well-being and performance (Marzo et al., 2024; Shrestha et al., 2023; Thapa et al., 2023a) and studies have suggested that integrating yoga awareness and practice could be one of the tools to navigate challenges (Davari et al., 2016). Today, it is embraced in various forms across the globe, and the number of individuals engaging in yoga continues to rise over the years. Nonetheless, the overall percentage of practitioners remains relatively low. For instance, in the United States, the proportion of adults participating in yoga was estimated at 14.5% in 2017, a slight increase from 13.2% in 2012 and 7.5% in 1998. In Germany, the lifetime prevalence of yoga practice was estimated to be around 15.1% (Brenes et al., 2021; Wang et al., 2019). Meanwhile, a study in western Nepal found that 28% of a sample of 501 patients visiting alternative medicine clinics were practicing yoga (Kadayat et al., 2012). In light of the

Table 1. Illustration of socio demographic data among respondents (n = 226)

Variables		Frequency (n)	Percentage (%)
Age	≤ 16	81	35.8
	≥ 17	145	64.2
Ethnicity of respondent	Newar	41	18.1
	Bhraman	83	36.7
	Kshetri	65	28.8
	Tamang	32	14.2
	Musalman	5	2.2
Religion	Hinduism	190	84.1
	Buddhism	29	12.8
	Islam and other	7	3.09
Family type	Nuclear	198	87.6
	Joint	22	9.7
	Extended	6	2.7
Mother's education level	Can't read and write	19	8.4
	Can read and write	2	.9
	Primary	10	4.4
	Secondary	37	16.4
	Higher secondary level	82	36.3
	Bachelors	54	23.9
	Masters	22	9.7
Father's education level	Can't read and write	18	8.0
	Can read and write	1	.4
	Primary	5	2.2
	Secondary	32	14.2
	Higher secondary level	67	29.6
	Bachelor	62	27.4
	Masters	41	18.1

Note. Mean = 16.79; Standard deviation = 0.72; Minimum = 15 years; & Maximum = 19 years

strong evidence supporting the health advantages of yoga, it is crucial to inspire a greater number of individuals to engage in this practice (Park et al., 2015).

METHODOLOGY

A descriptive, cross-sectional study was conducted to examine yoga awareness and practice among high school students in selected Kathmandu District institutes. The study included Bashundhara and Kamaladi colleges, both ensuring confidentiality. The study targeted higher secondary students, with 400 in Bashundhara and 500 in Kamaladi. Stratified sampling was employed, resulting in a total sample size of 226. A self-administered questionnaire assessed yoga awareness and practice, comprising three parts: socio-demographic information, awareness, and practice. Tools were validated through a literature review, expert advice, achieving a reliability awareness score. Reliability statistics: Cronbach's alpha = 0.842. In this current study, researchers utilized factor analysis. The tool is deemed eligible for use in the research study, as indicated by a Kaiser-Meyer-Olkin (KMO) measure of 0.759 and Bartlett's test of sphericity showing significance ($\chi^2 = 903.743$, $df = 171$, $p < .001$), ensuring adequate sampling and factorability. The communalities analysis, using principal component analysis, offers insights into the variance captured by the derived factors. Key variables such as 'understanding the benefits of practicing yoga' (extraction: 0.640), 'yoga's role in stress reduction and relaxation' (extraction: 0.706), and 'potential mental benefits of yoga' (extraction: 0.699) display notable communalities, suggesting strong alignment with the extracted factors. Research conducted followed Institutional Review Committee (IRC) approval and ethical considerations, including permissions from Yeti Health Science Academy (YHSA) and school authorities. YHSA and IRC received recognition from the Nepal Health Research Council. In this study, researchers utilized SPSS for conducting descriptive statistics analysis and Chi-square tests.

RESULTS

In the current study, the researchers examined reliability and validity tests for data analysis using SPSS, along with descriptive and Chi-square tests, to explore the association between knowledge of yoga and the frequency of knowledge and practice.

Table 1 shows the age of respondents is mostly ≥ 17 (64.2%) and minority of respondents age is ≤ 16 (35.8%). Most of the respondents (36.7%) were Bhraman, 28.8% respondents were Kshetri, and least 2.2% were Musalman. Most of the respondents (84.1) belonged to Hindu religion, 12.8% belong to Buddhism, 2.2% respondents belong to Islam, and least (0.9%) belong to

Table 2. Illustration of socio demographic data among respondents (n = 226)

Variables		Frequency (n)	Percentage (%)
Occupation of mother	Homemaker	133	58.8
	Businessman	19	8.4
	Nurse	10	4.4
	Teacher	31	13.7
	Others	33	14.6
Occupation of father	Businessman	89	39.4
	Driver	13	5.8
	Farmer	22	9.7
	Teacher	26	1.3
Income	Others	76	33.62
	Above and below 100,000	190	83.7
	100,001-200,000	24	10.6
Dietary pattern	Above 200,001	12	5.3
	Vegetarian	12	5.3
Sleeping pattern	Non-vegetarian	214	94.7
	5 hour and below	19	8.4
	6-7 hour	171	75.3
	8 hour and above	36	15.9

Table 3. Awareness level of yoga among respondents (n = 226)

Level	Frequency (n)	Percentage (%)
Poor	113	49.8
Average	58	25.6
Good	54	23.8

Table 4. One sample test yoga awareness level among respondents

	t	df	Sig. (2-tailed)	Mean difference	95% confidence interval of the difference	
					Lower	Upper
Awareness level	31.693	224	.000	1.73778	1.6297	1.8458

Christianity. Most of the respondents (87.6%) belonged to the nuclear family, 9.7% belonged to joint family, and least respondents (2.7%) belonged to extended family. Most of the respondent's mother's education were higher secondary level (36.3%) and bachelor level (23.9%). Most of the respondent's father education status were higher secondary level (29.6%) and bachelor level (27.4%).

Table 2 shows the occupation of mother varied where majority of the respondent's mother were homemaker (58.8%) and minority were involved in nursing profession. Likewise in fathers occupation most of the respondents father were involved in business (39.4%) and least were involved in driving (5.8%).

The monthly income of family varied: majority family income (83.7%) felt above and below 100,000 and minority family income felt under 200,001-300,000 and above 300,000 (2.6%), respectively. Most of the family felt under non-vegetarian group (94.7%) and minority felt under vegetarian group (5.3%). Sleeping pattern of most respondent (75.3%) felt under 6-7 hours and minority was under 5 hour and below (8.4%).

Table 3 shows among our participants the awareness level of yoga was as follows: 49.8% had poor level of awareness, 25.6% had average awareness level, and 23.8% had good level of awareness.

Table 4 presents results from a one-sample test on yoga awareness level among participants. The mean difference was 1.7377 with a 95% confidence interval between 1.6297 and 1.8458. This indicates a significance difference in awareness level.

Table 5 and **Figure 1** illustrates a significant association between demographic variables and yoga awareness level among our participants. There was no significant association between education level of father and mother ($p = 0.22$), and ($p = 0.10$), respectively sleeping pattern ($p = 0.14$), whereas there was significant association with age ($p = 0.55$), income ($p = 0.77$) and dietary pattern ($p = 0.99$).

Table 5. Association between selected demographic variables and awareness level among respondents(n = 226)

Variables	Awareness level			Chi-square	p-value
	Poor	Average	Good		
Age	Less than 16	40	22	3.022 ^a	0.554
	16-17	52	26		
	18 or above	21	9		

Table 5 (Continued). Association between selected demographic variables and awareness level among respondents(n = 226)

Variables	Awareness level			Chi-square	p-value	
	Poor	Average	Good			
Mother's education	Can't read and write	8	5	6	15.335 ^a	0.224
	Can read and write	0	1	1		
	Primary	2	6	2		
	Secondary	18	7	12		
	Higher secondary level	49	17	16		
	Bachelors	27	14	12		
	Masters	9	8	5		
Father's education	Can't read and write	7	5	6	18.342 ^a	0.106
	Can read and write	0	1	0		
	Primary	1	3	1		
	Secondary	12	7	13		
	Higher secondary level	41	14	12		
	Bachelor	31	14	16		
	Masters	21	14	6		
Income	Equal and below 100,000	97	49	43	1.806 ^a	0.771
	100,001-200,000	11	5	8		
	Above 200,001	5	4	3		
Dietary pattern	Vegetarian	6	3	3	.008 ^a	0.996
	Non-vegetarian	107	55	51		
Sleeping pattern	Below 5 hour	8	3	8	6.833 ^a	0.145
	6-7 hour	82	48	40		
	8 hour and above	23	7	6		

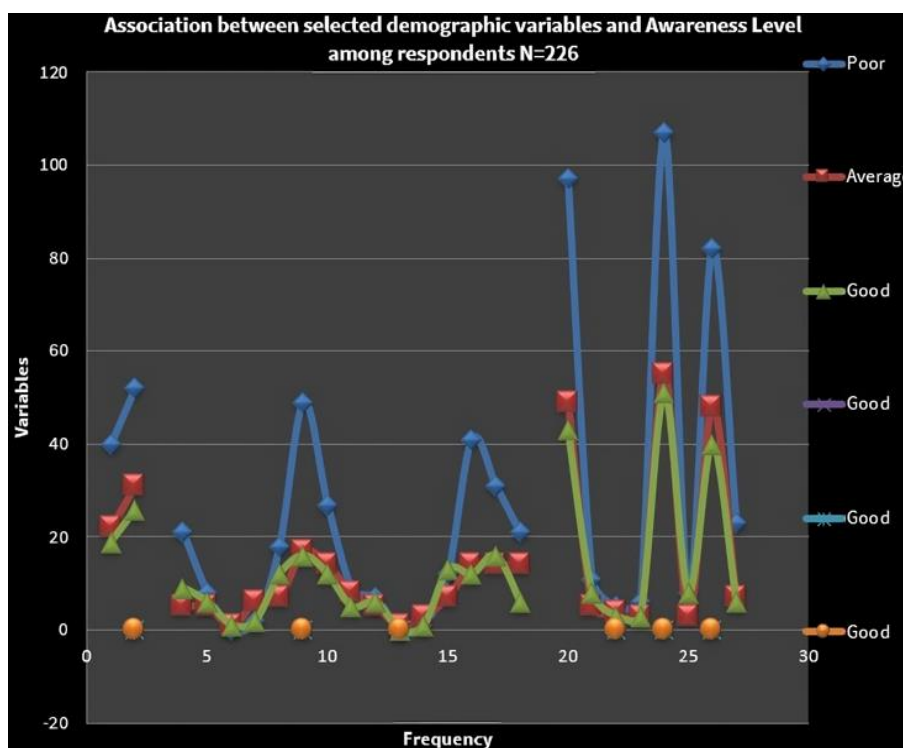
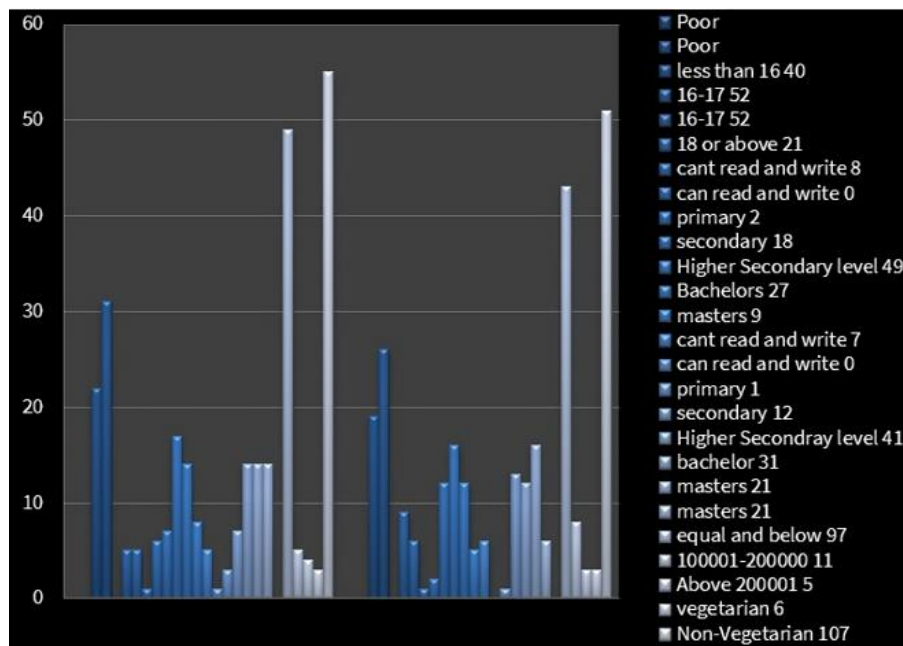


Figure 1. Association between selected demographic variables and awareness level among respondents (Source: Authors' own elaboration)

Table 6 and **Figure 2** shows that the majority of respondents (90.5%) had no habit of practicing yoga and least 9.3% practiced yoga. The majority of respondents (61.9%) practiced other form of, and minority of respondents (14.3%) practiced vinyasa yoga, 33.3% respondents got motivated by self and doctors, respectively. The majority of respondents (66.7%) consulted a therapist about yoga and least 33.3% didn't consulted a therapist about yoga. 81.0% practice yoga individually whereas least 19.0% practice yoga in group. Most respondents (61.9%) didn't practice yoga regularly and 38.1% practice yoga regular.

Table 6. Illustration of yoga practice among respondents

Variables		Frequency (n)	Percentage (%)
Yoga habit (n = 226)	No	205	90.7
	Yes	21	9.3
Forms of yoga (n = 21)	Hatha yoga	5	23.8
	Vinyasa yoga	3	14.3
	Others	13	61.9
Purpose of practicing yoga (n = 21)	Fitness	8	38.1
	Good for body	2	9.5
	Good for mind	11	52.4
Motivating for yoga (n = 21)	Self	7	33.3
	TV/media	3	14.3
	Family members	7	33.3
	Doctor	3	14.3
Consulted a therapist for yoga (n = 21)	Dissatisfaction with body image	1	4.8
	Yes	7	33.3
Yoga practice (n = 21)	No	14	66.7
	Individual	17	81.0
Practice regularly (n = 21)	Group	4	19.0
	Yes	8	38.1
	No	13	61.9

**Figure 2.** Illustration of yoga practice among respondents (variables frequency, percentage) (Source: Authors' own elaboration)

DISCUSSION

The research discussion section elucidates the findings of a descriptive cross-sectional study conducted to evaluate awareness and practice regarding yoga among high school students in selected institutes of Kathmandu District. In this study, 226 participants were involved, and descriptive analysis was employed to present frequencies, percentages, and levels of awareness. The study also utilized the chi-square test to explore the association between selected demographics and yoga awareness levels. The findings indicate a diverse distribution of awareness levels among the participants. Nearly half of the respondents (49.8%) exhibited a poor level of awareness regarding yoga, suggesting a significant limited in exposure to or acceptance of yoga practice within this subgroup. On the other hand, 25.65% demonstrated an average level of awareness, indicating a moderate understanding of yoga concepts. Notably, 23.8% of the participants showcased a good level of awareness towards yoga, indicating a substantial understanding and potentially regular engagement with yoga-related knowledge and practice. These findings highlight the varying degrees of awareness within the studied population. The discussion draws comparisons with other studies to provide valuable context. For instance, findings from undergraduate medical students at Shri Sathya Sai Medical College and Research Institute and students at K M Shah Dental College and Hospital, Suman Deep Vidyapeeth in Gujarat, showcase similar trends in yoga practice. Moreover, references to studies by Shrestha et al. (2022), Saha (2021), Hegde et al. (2011), Gothe et al.

(2019), Surendran et al. (2020), and Butzer et al. (2015) illustrate the positive impacts of yoga practice on health, academic performance, and overall wellbeing. Despite the acknowledged benefits, the discussion also recognizes various barriers to yoga practice, such as lack of motivation and time management. By contextualizing the findings within the existing research landscape, the discussion contributes to a comprehensive understanding of yoga awareness and practice among high school students. Moreover, it underscores the importance of addressing these barriers to promote the uptake of yoga practice among students for enhanced physical, mental, and academic outcomes. In the current study, researchers found no suggested association between yoga awareness and selected socio-demographic variables such as the education level of parents and sleeping pattern ($p = 0.22$ and $p = 0.10$, respectively). However, significant associations were found with age, income, and dietary pattern ($p = 0.55$, $p = 0.77$, and $p = 0.99$, respectively). The significance of association with age, income, and dietary pattern suggests that these variables may play a role in influencing levels of yoga awareness among high school students. These findings provide valuable insights into potential factors that may contribute to varying levels of awareness about yoga within this demographic. Understanding these associations can inform targeted interventions and educational initiatives aimed at increasing yoga awareness among high school students. Nonetheless, there remains a lack of understanding regarding the factors that encourage or hinder people from practicing yoga, (Hegde et al., 2015). This study leverages survey data from Nepal to enhance existing literature by addressing key questions: What socio-economic factors drive individuals to adopt yoga? What obstacles do they face in practicing it? And how do people perceive the benefits of yoga? Exploring these questions will provide insight into the elements that can effectively encourage more individuals to incorporate yoga into their lives (Hegde et al., 2015). Understanding of factors affecting people to practicing yoga are important to create an environment that makes it more likely that a greater number of people will practice yoga. An interesting finding of this study is that education level is negatively associated with the likelihood of practicing yoga whereas respondents with any of the close relatives that had attended health education were found to be more likely to practice yoga. Moreover, our results indicate that individuals those attended yoga-related trainings were more likely to practice a greater number of yoga poses. This indicates the relevance of incorporating yoga-related content in the formal education system (Shrestha et al., 2021). The impact of tele-yoga training on healthy women during the COVID-19 pandemic is significant, particularly concerning menstrual symptoms, quality of life, levels of anxiety and depression, body awareness, and self-esteem (Adamopoulos & Syrou, 2023d). This training could offer a safe and effective approach to alleviating menstrual discomfort and depressive symptoms while enhancing overall quality of life and fostering greater body awareness (Günebakan & Acar, 2023). It is essential to recognize the significant role that yoga can play in enhancing well-being and reducing burnout, ultimately leading to increased job satisfaction among public health workers (Adamopoulos et al., 2022, 2023b; Adamopoulos & Syrou, 2023c). The severe consequences of extreme weather events and the ongoing climate crisis have profound effects on populations, highlighting the need for mental strategies to protect individuals from workplace hazards (Adamopoulos, 2022a, 2022b; Adamopoulos et al., 2022, 2024a). Furthermore, the environmental challenges and their negative impact on public health emphasize the importance of addressing these issues to safeguard human health (Adamopoulos et al., 2023a, 2024b, 2024c). This study and prior research underscores the significance of the selected demographic factors, including dietary habits, age, income, and family education level. It highlights the crucial role of age and how cultural beliefs stemming from ethnicity and religion influence behaviors, particularly in relation to yoga's vital role in lifestyle choices. The reliability measures employed in this research are grounded in robust scientific methodology, and the quality assessments implemented in this cross-sectional study enhance its consistency and dependability. Currently, there is a lack of existing literature or studies that offer substantial scientific evidence or comprehensive reviews regarding the meaningful connections observed between age, income, dietary patterns, and awareness of yoga, or at the very least, plausible interpretations of these outcomes. Previous research that could illuminate these associations was incorporated into this study, emphasizing the importance of these demographic variables.

The climate issue has a significant impact on our ecosystem, including severe weather patterns and the depletion of conventional water resources (Adamopoulos et al., 2024e, 2023f). These changes may have far-reaching consequences for public health and sanitation (Adamopoulos et al., 2023e, 2024d; Park et al., 2014). To limit threats to environmental health, established norms and procedures must be followed, particularly in areas such as women's beauty rituals (Periasamy et al., 2020; Thapa et al., 2024a), and increase positive effects of yoga in women's health especial in reproductive age (Naragatti, 2020; Thapa et al., 2024b).

Limitations

Despite its input, this study has limitations. Firstly, its cross-sectional design limits the establishment of causal relationships. Furthermore, the study's focus on a specific geographical area may limit the generalizability of its findings. The belief in self-reported data introduces the phenomenon of response bias. Additionally, the study did not provide in-depth qualitative analyses of yoga awareness and practice, which could offer richer insights into students' experiences. In the current study, there is a demonstrated low level of practice compared to awareness, suggesting a limited that warrants examination regarding why there is a discrepancy between understanding and implementation of yoga. This study was conducted only in selected organizations in Kathmandu at the college level; thus, it may not apply to all organizations, geographical areas, and age groups. To gain a deeper understanding, further independent studies should be conducted to obtain more insights. The reliability measures employed in this study are grounded in robust scientific foundations, and the quality assessments performed in this cross-sectional analysis play a crucial role in enhancing its trustworthiness and credibility. However, there is a noticeable scarcity of data and research, highlighting a significant gap in the literature that offers comprehensive scientific support or detailed reviews concerning the important connections between age, income, dietary practices, and knowledge of yoga. Moreover, there is a general lack of reasonable interpretations of these findings or the related demographic variables.

Recommendation

The study reveals approximately 50% of participants exhibit a poor level of yoga awareness, with few practicing, demanding concern. While yoga gains popularity globally, cultural barriers persist. Yet, within increasing stress and mental health challenges, yoga skills offer coping mechanisms and promote self-awareness, management, and resilience. Integrating yoga into school curricula, training packages, and workshops can foster widespread adoption. Future research should employ longitudinal designs and mixed-methods approaches to understand long-term effects comprehensively.

CONCLUSION

The research illuminates the varied levels of yoga awareness among high school students, stressing the importance of overcoming barriers and fostering engagement for improved physical, mental, and academic health. Despite nearly half of the participants showing poor awareness and minimal yoga practice, potential interventions emerge. In the digital age, leveraging digital education platforms for yoga awareness, simulations, storytelling, sharing experiences, alongside intervention packages integrating life skills could effectively enhance yoga practice. Further, conducting in-depth studies with active participation from stakeholders, including parents, teachers and practitioners, can foster transformative leadership, integrating research, education, and practice to enhance well-being and performance among youth and students

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Declaration of interest: No conflict of interest is declared by the authors.

Data sharing statement: Data supporting the findings and conclusions are available upon request from the corresponding author.

REFERENCES

- Adamopoulos, I. P. (2022a). Classification categorizations of job risks occupational hazards in environmental and public health inspectors. *SSRN*. <https://doi.org/10.2139/ssrn.4230063>
- Adamopoulos, I. P. (2022b). Job satisfaction in public health care sector, measures scales and theoretical background. *European Journal of Environment and Public Health*, 6(2), Article em0116. <https://doi.org/10.21601/ejeph/12187>
- Adamopoulos, I. P., Frantzana, A. A., & Syrou, N. F. (2024a). Climate crises associated with epidemiological, environmental, and ecosystem effects of a storm: Flooding, landslides, and damage to urban and rural areas (extreme weather events of Storm Daniel in Thessaly, Greece). *Medical Sciences Forum*, 25(1), Article 7. <https://doi.org/10.3390/msf2024025007>
- Adamopoulos, I. P., Frantzana, A. A., & Syrou, N. F. (2024b). Medical educational study burnout and job satisfaction among general practitioners and occupational physicians during the COVID-19 epidemic. *Electronic Journal of Medical and Educational Technologies*, 17(1), Article em2402. <https://doi.org/10.29333/ejmets/14299>
- Adamopoulos, I. P., Syrou, N. F., & Adamopoulou, J. P. (2024c). Greece's current water and wastewater regulations and the risks they pose to environmental hygiene and public health, as recommended by the European Union Commission. *European Journal of Sustainable Development Research*, 8(2), Article em0251. <https://doi.org/10.29333/ejosdr/14301>
- Adamopoulos, I. P., Frantzana, A. A., & Syrou, N. F. (2024d). General practitioners, health inspectors, and occupational physicians' burnout syndrome during COVID-19 pandemic and job satisfaction: A systematic review. *European Journal of Environment and Public Health*, 8(3), em0160. <https://doi.org/10.29333/ejeph/14997>
- Adamopoulos, I. P., Syrou, N. F., Adamopoulou, J. P., & Mijwil, M. M. (2024e). Conventional water resources associated with climate change in the Southeast Mediterranean and the Middle East countries. *European Journal of Sustainable Development Research*, 8(3), em0265. <https://doi.org/10.29333/ejosdr/14860>
- Adamopoulos, I. P., Frantzana, A. A., Adamopoulou, J. P., & Syrou, N. F. (2023a). Climate change and adverse public health impacts on human health and water resources. *Environmental Sciences Proceedings*, 26, Article 178. <https://doi.org/10.3390/environsciproc2023026178>
- Adamopoulos, I. P., Syrou, N. F., Lamnisis, D., & Boustras, G. (2023b). Cross-sectional nationwide study in occupational safety & health: Inspection of job risks context, burn out syndrome and job satisfaction of public health Inspectors in the period of the COVID-19 pandemic in Greece. *Safety Science*, 158, Article 105960. <https://doi.org/10.1016/j.ssci.2022.105960>

- Adamopoulos, I. P., & Syrou, N. F. (2023c). Administration safety and occupational risks relationship with job position training quality and needs of medical public health services workforce correlated by political leadership interventions. *Electronic Journal of Medical and Educational Technologies*, 16(3), em2305. <https://doi.org/10.29333/ejmets/13585>
- Adamopoulos, I. P., & Syrou, N. F. (2023d). Occupational burnout in public health care sector, scales, measures, and education in the frame of period COVID-19 pandemic. *European Journal of Environment and Public Health*, 7(2), em0127. <https://doi.org/10.29333/ejeph/12532>
- Adamopoulos, I. P., Frantzana, A. A., & Syrou, N. F. (2023e). Epidemiological surveillance and environmental hygiene, SARS-CoV-2 infection in the community, urban wastewater control in Cyprus, and water reuse. *Journal of Contemporary Studies in Epidemiology and Public Health*, 4(1), ep23003. <https://doi.org/10.29333/jconseph/12948>
- Adamopoulou, J. P., Frantzana, A. A., & Adamopoulos, I. P. (2023f). Addressing water resource management challenges in the context of climate change and human influence. *European Journal of Sustainable Development Research*, 7(3), em0223. <https://doi.org/10.29333/ejosdr/13297>
- Adamopoulos, I. P., Lamnisos, D., Syrou, N. F., & Boustras, G. (2022). Public health and work safety pilot study: Inspection of job risks, burn out syndrome and job satisfaction of public health inspectors in Greece. *Safety Science*, 147, Article 105592. <https://doi.org/10.1016/j.ssci.2021.105592>
- Brenes, G. A., Sohl, S., Wells, R. E., Befus, D., Campos, C. L., & Danhauer, S. C. (2019). The effects of yoga on patients with mild cognitive impairment and dementia: A scoping review. *American Journal of Geriatric Psychiatry*, 27(2), 188-197. <https://doi.org/10.1016/j.jagp.2018.10.013>
- Bruce, R. A., & Lovejoy Jr., F. W. (1949). Normal respiratory and circulatory pathways of adaptation in exercise. *Journal of Clinical Investigation*, 28, 1423-1430. <https://doi.org/10.1172/JCI102207>
- Butzer, B., Van Over, M., Noggle Taylor, J. J., & Khalsa, S. B. S. (2015). Yoga may mitigate decreases in high school grades. *Evidence-Based Complementary and Alternative Medicine*, 2015, Article 259814. <https://doi.org/10.1155/2015/259814>
- Cartwright, T., Mason, H., Porter, A., & Pilkington, K. (2020). Yoga practice in the UK: A cross-sectional survey of motivation, health benefits and behaviours. *BMJ Open*, 10(1), Article e031848. <https://doi.org/10.1136/bmjopen-2019-031848>
- Chu, P., Gotink, R. A., Yeh, G. Y., Goldie, S. J., & Hunink, M. G. M. (2016). The effectiveness of yoga in modifying risk factors for cardiovascular disease and metabolic syndrome: A systematic review and meta-analysis of randomized controlled trials. *European Journal of Preventive Cardiology*, 23(3), 291-307. <https://doi.org/10.1177/2047487314562741>
- Conboy, L. A., Noggle, J. J., Frey, J. L., Kudesia, R. S., & Khalsa, S. B. (2013, May-Jun). Qualitative evaluation of a high school yoga program: Feasibility and perceived benefits. *Explore*, 9(3), 171-180. <https://doi.org/10.1016/j.explore.2013.02.001>
- Davari, F., Sadiri, N., Shariat, A., & Geok, S. K. (2016). Yoga for mental health of children: A short review. *Revista Pesquisa em Fisioterapia*, 6(4), 491-499. <https://doi.org/10.17267/2238-2704rpf.v6i4.1130>
- Gohel, M. K., Phatak, A. G., Kharod, U. N., Pandya, B. A., Prajapati, B. L., & Shah, U. M. (2021). Effect of long-term regular yoga on physical health of yoga practitioners. *Indian Journal of Community Medicine*, 46(3), 508-510. https://doi.org/10.4103/ijcm.IJCM_554_20
- Gothe, N. P., Khan, I., Hayes, J., Erlenbach, E., & Damoiseaux, J. S. (2019). Yoga effects on brain health: A systematic review of the current literature. *Brain Plasticity*, 5(1), 105-122. <https://doi.org/10.3233/bpl-190084>
- Günebakan, Ö., & Acar, M. (2023). The effect of tele-yoga training in healthy women on menstrual symptoms, quality of life, anxiety-depression level, body awareness, and self-esteem during COVID-19 pandemic. *Irish Journal of Medical Sciences*, 192(1), 467-479. <https://doi.org/10.1007/s11845-022-02985-0>
- Hagen, I., Skjelstad, S., & Nayar, U. S. (2023). Promoting mental health and wellbeing in schools: The impact of yoga on young people's relaxation and stress levels. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.108302>
- Hegde, S. V., Adhikari, P., Kotian, S., Pinto, V. J., D'Souza, S., & D'Souza, V. (2011). Effect of 3-month yoga on oxidative stress in type 2 diabetes with or without complications: A controlled clinical trial. *Diabetes Care*, 34(10), 2208-2210. <https://doi.org/10.2337/dc10-2430>
- Hegde, S. V., Rao, S. K., Menezes, R. G., Kotian, S. M., & Shetty, S. (2018). Knowledge, attitude, and practice of yoga in medical students: Assessment of anthropometry and lifestyle factors. *International Journal of Yoga Therapy*, 28(1), 9-14. <https://doi.org/10.17761/2018-00005R1>
- Iftekher, S. N., Bakhtiar, M., & Rahaman, K. S. (2017). Effects of yoga on flexibility and balance: A quasi-experimental study. *Asian Journal of Medical and Biological Research*, 3, 276-281. <https://doi.org/10.3329/ajmbr.v3i2.33580>
- Kadayat, T. M., Bist, G., Parajuli, A., Karki, R., Kaundinnayana, A., & Dhimi, N. (2012). Patterns and perception of complementary and alternative medicine use by patients in Western Nepal. *Journal of Public Health*, 20(3), 297-303. <https://doi.org/10.1007/s10389-011-0446-y>
- Kasture, S., Khadilkar, A., Padidela, R., Gondhalekar, K., Patil, R., & Khadilkar, V. (2024). Effect of yoga or physical exercise on muscle function in rural Indian children: A randomized controlled trial. *Journal of Physical Activity and Health*, 21(1), 85-93. <https://doi.org/10.1123/jpah.2023-0182>
- Khanal, H., & Khanal, U. (2021). Benefits, barriers and determinants of practicing yoga: A cross sectional study from Kathmandu, Nepal. *Journal of Ayurveda and Integrative Medicine*, 12(1), 102-106. <https://doi.org/10.1016/j.jaim.2021.01.007>

- Khunti, K., Sathanapally, H., & Mountain, P. (2023). Multiple long term conditions, multimorbidity, and co-morbidities: We should reconsider the terminology we use. *BMJ*, 383, Article p2327. <https://doi.org/10.1136/bmj.p2327>
- Martin, B., Peck, B., & Terry, D. (2024). Yoga in schools that contributes to a positive classroom atmosphere for young children and educators: A PRISMA scoping review. *Frontiers in Education*, 9. <https://doi.org/10.3389/educ.2024.1352780>
- Marzo, R. R., Jun Chen, H. W., Ahmad, A., Thew, H. Z., Choy, J. S., Ng, C. H., Chew, C. L. A., Heidler, P., King, I., Shrestha, R., Rahman, F., Rana, J. A., Khoshtaria, T., Matin, A., Todua, N., Küçük Biçer, B., Faller, E., Tudy, R. A., Baldonado, A., ... Elsayed, M. E. G. (2024). The evolving role of social media in enhancing quality of life: A global perspective across 10 countries. *Archives of Public Health*, 82(1), Article 28. <https://doi.org/10.1186/s13690-023-01222-z>
- Naragatti, S. (2020). The study of yoga effects on health. *International Journal of Innovative Medicine and Health Science*, 12, 98-110.
- Park, C. L., Braun, T., & Siegel, T. (2015). Who practices yoga? A systematic review of demographic, health-related, and psychosocial factors associated with yoga practice. *Journal of Behavioral Medicine*, 38(3), 460-471. <https://doi.org/10.1007/s10865-015-9618-5>
- Park, M. J., Scott, J. T., Adams, S. H., Brindis, C. D., & Irwin, C. E. (2014). Adolescent and young adult health in the united states in the past decade: Little improvement and young adults remain worse off than adolescents. *Journal of Adolescent Health*, 55(1), 3-16. <https://doi.org/10.1016/j.jadohealth.2014.04.003>
- Periasamy, P., Suganthi, V., & Gunasekaran, S. (2022). Knowledge, attitude and practices regarding simplified kundalini yoga among college students in Tamilnadu. *International Journal of Life Science and Pharma Research*, 12(6), L9-20. <https://doi.org/10.22376/ijpbs/lpr.2022.12.6.l9-20>
- Saha, B. (2021). Attitude towards yoga practice among college students with regard to gender, residence and stream of study. *IAR Journal of Humanities and Social Science*, 2(5), 25-29.
- Serwacki, M. L., & Cook-Cottone, C. (2012). Yoga in the schools: A systematic review of the literature. *International Journal of Yoga Therapy*, 22, 101-109. <https://doi.org/10.17761/ijyt.22.1.7716244t75u4l702>
- Shrestha, E., Shrestha, R., Ghimire, D., & Aryal, V. (2022). Awareness of yoga and its benefit among medical students of tertiary care teaching hospital in Birgunj. *Med Phoenix Journal*, 6(2), 55-58. <https://doi.org/10.3126/medphoenix.v6i2.37051>
- Shrestha, E., Shrestha, R., Ghimire, D., & Aryal, V. (2021). Awareness regarding benefits of yoga among students of National Medical College, Birgunj. *Med Phoenix Journal*, 6(2), 54-57. <https://doi.org/10.3126/medphoenix.v6i2.37051>
- Shrestha, M., Palladino, F. P., Thapa, P., & Pandey, A. (2023). Prevalence of social media needs and quality of life among secondary school students. *Journal of Health and Social Welfare*, 7(1).
- Surendran, A., Devi M L, R., & S N, M. (2020). Yoga practicing medical and nursing students creating a ripple effect: An experience from a Government teaching institution. *Indian Journal of Clinical Anatomy and Physiology*, 7(3), 309-312. <https://doi.org/10.18231/j.ijcap.2020.063>
- Thapa, B., Adhikari, K., & Thapa, P. (2023a). Impact of social media use on academic performance and well-being among the secondary level students in selected schools in Nepal. *Modern Issues of Medicine and Management*, 26(2), . <https://doi.org/10.56580/geomedi31>
- Thapa, P., Akashe, S., Palladino, F., & Aryal, R. (2023b). Impact of self-awareness life skill on effective leadership in the digital era. *Journal of Academic Perspective on Social Studies*, 1, 54-64. <https://doi.org/10.35344/japss.1190883>
- Thapa, P. P., Thapa, A., Ekrem, E. C., & Bista, A. T. (2024a). Lamichhane N, Adamopoulos IP, (2024b). Analyzing the link between emotional intelligence, education level, and quality of life in women of reproductive age. *Electronic Journal of Medical and Educational Technologies*, 17(3), Article em2406. <https://doi.org/10.29333/ejmets/14883>
- Thapa, P., Adamopoulos, I. P., Sharma, P., Lordkipanidze, R. (2024b). Public hygiene and the awareness of beauty parlor: A study of consumer perspective. *European Journal of Environment and Public Health*, 8(2), em0157. <https://doi.org/10.29333/ejeph/14738>
- Vergeer, I., Bennie, J. A., Charity, M. J., Harvey, J. T., van Uffelen, J. G. Z., Biddle, S. J. H., & Eime, R. M. (2017). Participation trends in holistic movement practices: A 10-year comparison of yoga/pilates and t'ai chi/qigong use among a national sample of 195,926 Australians. *BMC Complementary and Alternative Medicine*, 17(1), Article 296. <https://doi.org/10.1186/s12906-017-1800-6>
- Wang, C., Li, K., Choudhury, A., & Gaylord, S. (2019). Trends in yoga, Tai Chi, and Qigong use among US adults, 2002-2017. *American Journal of Public Health*, 109(5), 755-761. <https://doi.org/10.2105/AJPH.2019.304998>
- Wang, F., & Szabo, A. (2020). Effects of yoga on stress among healthy adults: A systematic review. *Alternative Therapies in Health and Medicine*, 26(4), 58-64.
- Watts, A. W., Rydell, S. A., Eisenberg, M. E., Laska, M. N., & Neumark-Sztainer, D. (2018). Yoga's potential for promoting healthy eating and physical activity behaviors among young adults: A mixed-methods study. *International Journal of Behavioral Nutrition and Physical Activity*, 15, Article 42. <https://doi.org/10.1186/s12966-018-0674-4>
- WHO. (2020). *Adolescent mental health*. <https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health>
- Woodyard, C. (2011). Exploring the therapeutic effects of yoga and its ability to increase quality of life. *International Journal of Yoga*, 4(2), 49-54. <https://doi.org/10.4103/0973-6131.85485>