Prev Care Nurs Midwifery J (PCNM)
http://dx.doi.org/

PCNM. 2026;16(2):70-82
Open Access

Preventive Care in Nursing and Midwifery Journal

Original Article

Investigating the effect of yoga on self-efficacy: A systematic review and meta-analysis

Amir Jalali[1] / Pegah Heidarian[2] / Mohammadrasool Ghasemianrad[2] / Mostafa Taheri[3] / Reza PourmirzaKalhori[4] / Marzieh Magholi[5] / Mohsen Kazeminia[6]*

[1] Substance Abuse Prevention Research Center, Kermanshah University of Medical Sciences, Kermanshah, Iran.
[2] Student Research committee, Kermanshah University of Medical Science, Kermanshah, Iran.
[3] Zanjan Nursing and Midwifery School, Zanjan University of Medical Sciences, Zanjan, Iran.
[4]Department of Emergency Medicine, Paramedical School, Kermanshah University of Medical Sciences, Kermanshah, Iran.
[5]Clinical Research Development Center, Imam Khomeini and Mohammad Kermanshahi and Farabi Hospitals, Kermanshah University of Medical Sciences, Kermanshah, Iran.
[6]Student Research Committee, Kermanshah University of Medical Sciences, Kermanshah, Iran.

Received: 1 Nov. 2025 **Revised:** 10 Jan. 2026 **Accepted:** 26 Feb. 2026 **Published:** 27 Apr. 2026

Article Info

Keywords:
Yoga
Self-efficacy
Preventive Care
Systematic Review
Meta-analysis

Corresponding author:
Mohsen Kazeminia
Student Research Committee, Kermanshah University of Medical Sciences, Kermanshah, Iran.
Email:
mkazeminia69@gmail.com

How to Cite This Article:
Jalali A, Heidarian P, Ghasemianrad MR, Taheri M, PourmirzaKalhori R, Magholi M, Kazeminia M. Investigating the effect of yoga on self-efficacy: A systematic review and meta-analysis. Prev Care Nurs Midwifery J. 2026;16(2):70-82.

Abstract

Background: Self-efficacy is a key modifiable factor in preventive care, influencing health promotion and disease prevention behaviors.
Objective: This systematic review and meta-analysis evaluated yoga's effects on self-efficacy as a low-cost preventive intervention.
Methods: This study was conducted following the PRISMA guidelines through 26 February 2026. Relevant articles were gathered from databases such as MagIran, SID, PubMed, Embase, Web of Science, Scopus, and Google Scholar using specific keywords. Interventional original studies with full text that evaluated the effect of yoga on self-efficacy and reported sufficient data were included. Studies lacking a control group, full text, or sufficient data, as well as non-interventional or duplicate studies, were excluded. The methodological quality of the included studies was assessed using the JBI checklist for interventional studies. Heterogeneity was assessed via I^2, and publication bias via Egger's regression.
Results: From 1,273 records, 14 studies (n = 843) were included. Yoga significantly enhanced self-efficacy versus control (SMD = 1.175; 95% CI: 0.750–1.600; $P < 0.001$), with an increasing yearly effect ($P < 0.001$).
Conclusion: Yoga appears to improve self-efficacy. From a preventive care perspective, integrating yoga into routine health promotion programs offers a practical, non-pharmacological approach to strengthening self-efficacy.

Implications for Nursing and Midwifery Preventive Care

- Integrate yoga into family planning counseling to enhance self-efficacy and informed choice.
- Include yoga stress management in preventive education to improve service engagement.
- Yoga is a low-cost, non-drug tool to boost adherence and reproductive well-being.

Introduction

Self-efficacy refers to individuals' beliefs in their ability to perform actions that lead to specific outcomes [1]. It is a personal, situational, and culturally dependent concept that significantly influences behavior, predicts activity performance, and determines performance levels [2]. From a preventive care standpoint, self-efficacy is recognized as a key modifiable determinant that can influence engagement in health-promoting and disease-preventing behaviors. Self-efficacy affects the time individuals dedicate to tasks, their adaptability in various situations, and their resilience when facing challenges [3].

Individuals with high self-efficacy are better at overcoming problems and resolving issues due to their strong problem-solving skills and positive experiences [4]. In difficult situations, they focus on their abilities to tackle challenges and actively seek solutions instead of viewing the situation negatively [5]. This proactive approach is particularly valuable in preventive care, where early action and adherence to health recommendations can significantly reduce the risk of future illness. Self-efficacy impacts various factors, such as goal selection, decision-making, and mental health. It also creates a sense of ease when approaching challenging tasks and activities [6].

Therefore, interventions that enhance self-efficacy can serve as effective preventive strategies. Yoga is one recommended practice for enhancing self-efficacy [7]. It encompasses various forms, such as Asana (yoga postures that relax the pelvic region and promote calmness) and Pranayama (breathing techniques that calm the mind) [8]. Yoga also promotes soothing thoughts that reduce stress, improve the self-efficacy levels, and enhance emotional control [7]. It has proven effective in treating conditions like depression, sleep disorders [9], and anxiety [10] and can also play a role in preventing these conditions by strengthening psychological resilience. By reducing sympathetic activity and increasing parasympathetic activity, yoga alleviates stress, leading to better endocrine function and immune adaptation [11], all of which are relevant targets for primary and secondary prevention.

The objective of yoga is to regulate the mind and its impact on the central nervous system. Unlike other forms of exercise, yoga has a unique modulatory effect on the central nervous system, internal hormone secretion, physiological changes, neural signal regulation, and other related processes [12]. As a result, yoga can effectively complement conventional medical treatments for various physical and mental disorders [13]. Moreover, as a low-cost and accessible practice, yoga aligns well with the goals of preventive care, which emphasize population-wide, cost-effective interventions. It is a cost-effective and universally accessible practice that requires minimal resources, making it suitable for individuals of all ages and enhancing their physical and mental health [14].

Several preliminary studies have examined the impact of yoga on self-efficacy across diverse populations worldwide [15-17]. However, the potential of yoga as a preventive tool targeting self-efficacy has not yet been systematically evaluated. Given the varied outcomes of these studies, a systematic review and meta-analysis is essential to provide clear and consistent findings. Such research could serve as a comprehensive guide for policymakers and researchers interested in integrating preventive interventions into routine care.

Objectives

The present systematic review and meta-analysis aims to assess and synthesize the findings regarding the effects of yoga on self-efficacy within the context of preventive care.

Methods

This study used a systematic review and meta-analysis approach with no time limit until February 26, 2026. It followed the PRISMA 2020 protocol (http://www.prisma-statement.org/), encompassing the stages of identification, screening, eligibility, and inclusion [18].

Identification of Articles

To identify published articles relevant to the research objective, we searched Persian-language databases (SID: https://www.sid.ir and MagIran: https://www.magiran.com) as well as international databases, including PubMed, Embase, Scopus, and Web of Science (WoS). We conducted searches using keywords such as “Self-Efficacy” and “Yoga,” validated through MeSH for PubMed and Emtree for Embase, and combined these terms using *OR* and *AND* operators.

No time restrictions were applied to ensure the retrieval of all potentially relevant studies. To enhance the comprehensiveness of our search, we also utilized Google Scholar and manually reviewed the references of all related articles that met our inclusion criteria.

Search Strategy

For instance, the search strategy used for PubMed was structured as follows: ((Self Efficacy [MeSH Terms]) OR ("Self-Efficacy"[Title/Abstract])) AND ((Yoga [MeSH Terms]) OR (Yoga [Title/Abstract]) AND (English [Filter])).

Inclusion Criteria

- Original scientific research articles.
- Interventional studies.
- Full text available.
- Studies examining the impact of yoga on self-efficacy.
- Sufficient data (reporting Mean ± SD of self-efficacy scores before and after the intervention in both the intervention and control groups).

Exclusion Criteria

- Studies unrelated to the research objective.
- Cross-sectional studies, case reports, case series, conference proceedings, letters to the editor, qualitative studies, theses, systematic reviews, meta-analyses, and animal studies.
- Duplicate studies across databases (only one instance retained).
- Studies without full-text access.
- Absence of a control group.

Data Extraction

All retrieved articles from various databases were imported into EndNote X8 software, and duplicates were removed. Next, the titles and abstracts of the studies were carefully reviewed to exclude irrelevant ones. The full texts of the remaining articles were then thoroughly evaluated. Studies that did not meet the established inclusion and exclusion criteria were dismissed. During the selection process, reviewers were blinded to the authors, institutions, and journals of the articles. All selected articles were subsequently subjected to qualitative assessment for inclusion in the systematic review and meta-analysis.

Quality/ Risk of Bias Assessment Tools

The qualitative evaluation was performed using the Joanna Briggs Institute (JBI) checklist, a well-established tool for assessing the quality of interventional studies [19]. This checklist consists of 13 items that address key aspects, including randomization, allocation, baseline similarity of treatment groups, participant blinding, blinding of those implementing the intervention, and blinding of outcome assessors. It also evaluates whether treatments were similar across groups, except for the intervention itself, along with follow-up, participant analysis, outcomes, the reliability of the outcome measurement method, appropriate statistical analysis, and suitable trial design. For scoring, "Yes" was given if an item was addressed, "No" if it was not, and "NA" if it was not applicable. The scores ranged from 0 to 13, based on the number of "Yes" responses. For quasi-experimental studies, the 9-item JBI Critical Appraisal Checklist for Quasi-Experimental Studies was used for methodological quality assessment.

Data extraction

Data extraction from the final articles included in the systematic review and meta-analysis was conducted manually using a pre-prepared checklist. The checklist contained the following items: first author, year, study location, age, and sample size, mean ± SD of self-efficacy scores before and after the intervention for both the intervention and control groups, study type, target population, and diagnostic tools. To reduce publication bias and errors, all stages of identification, selection, quality assessment, and data extraction were carried out independently by two researchers, A.J. and M.K. In the event of a disagreement between the researchers,

the issue was discussed and resolved by reaching a consensus in the presence of a supervisor.

Synthesis Methods

The main parameter evaluated in this study was the impact of yoga on self-efficacy.

To synthesize the results of various studies, we calculated the mean ± standard deviation of self-efficacy scores before and after the intervention for both the intervention and control groups.

We assessed heterogeneity among the studies using the I^2 index, where a value below 50% indicated "low heterogeneity" and a value above 50% indicated "high heterogeneity."

Due to the significant heterogeneity among the included studies ($I^2 > 50\%$), we employed a random-effects model.

This model effectively accommodates variations across studies, yielding more generalizable results under high heterogeneity compared to a fixed-effects model [20].

A sensitivity analysis was performed to identify the sources of heterogeneity.

To evaluate publication bias, we utilized Egger's regression intercept, which is particularly effective for detecting publication bias in meta-analyses containing 10 to 75 studies [21].

Additionally, Meta-regression analysis was conducted to explore the impact of study-level variables (sample size, year of publication, mean participant age, and JBI quality score) on the pooled standardized mean difference (SMD).

Statistical analysis was conducted using Comprehensive Meta-Analysis Software (Version 2), with a significance threshold set at $P < 0.05$.

Result

Summary of Article Inclusion in the Meta-Analysis

Through the database search strategies, a total of 1,273 studies were identified.

After removing 556 duplicate and overlapping articles, 717 studies remained.

In addition, 635 articles were excluded after the title and abstract screening due to irrelevance to the research topic. Out of the remaining 82 studies, 68 were excluded based on full-text evaluation for not meeting the inclusion criteria.

Thus, 14 articles meeting the inclusion criteria were included in the meta-analysis.

The PRISMA 2020 flow diagram illustrates these steps (Figure 1).

General specifications of the studies

The total sample size across all studies included in the analysis comprised 423 participants in the intervention group and 420 participants in the control group. The oldest study dated back to 2006, while the most recent study was from 2024.

The highest number of studies were conducted in the USA, with five articles. The diagnostic tool for self-efficacy in most studies (11 articles) was Self-Efficacy Questionnaire (SEQ).

The quality assessment scores of the studies, JBI checklist (13 items, total score: 13). The specifications and data of the studies meeting the inclusion criteria are provided in Table 1.

Meta-Analysis of the Standardized mean Difference before and after the Intervention between the Intervention and Control Groups

The results of the present meta-analysis indicate a high level of heterogeneity among the studies ($I^2 = 86.62$).

Therefore, a random-effects model was employed to synthesize the studies and derive the final results.

The pooled analysis revealed a statistically significant increase in self-efficacy scores in the intervention group by SMD 1.175 (95% CI: 0.750-1.600) compared to the control group, which was statistically significant ($P < 0.001$). The forest plot (Figure 2) illustrates the combined estimate of all studies and the standardized mean difference for each study.

The 95% confidence intervals are represented by the horizontal lines of each square (Figure 2). Based on Egger's regression intercept, there was no evidence of publication bias at the 0.1 level ($P = 0.238$) (Figure 3).

Sensitivity analysis demonstrated that removing any of the studies did not result in a significant change in the final outcome (Figure 4).

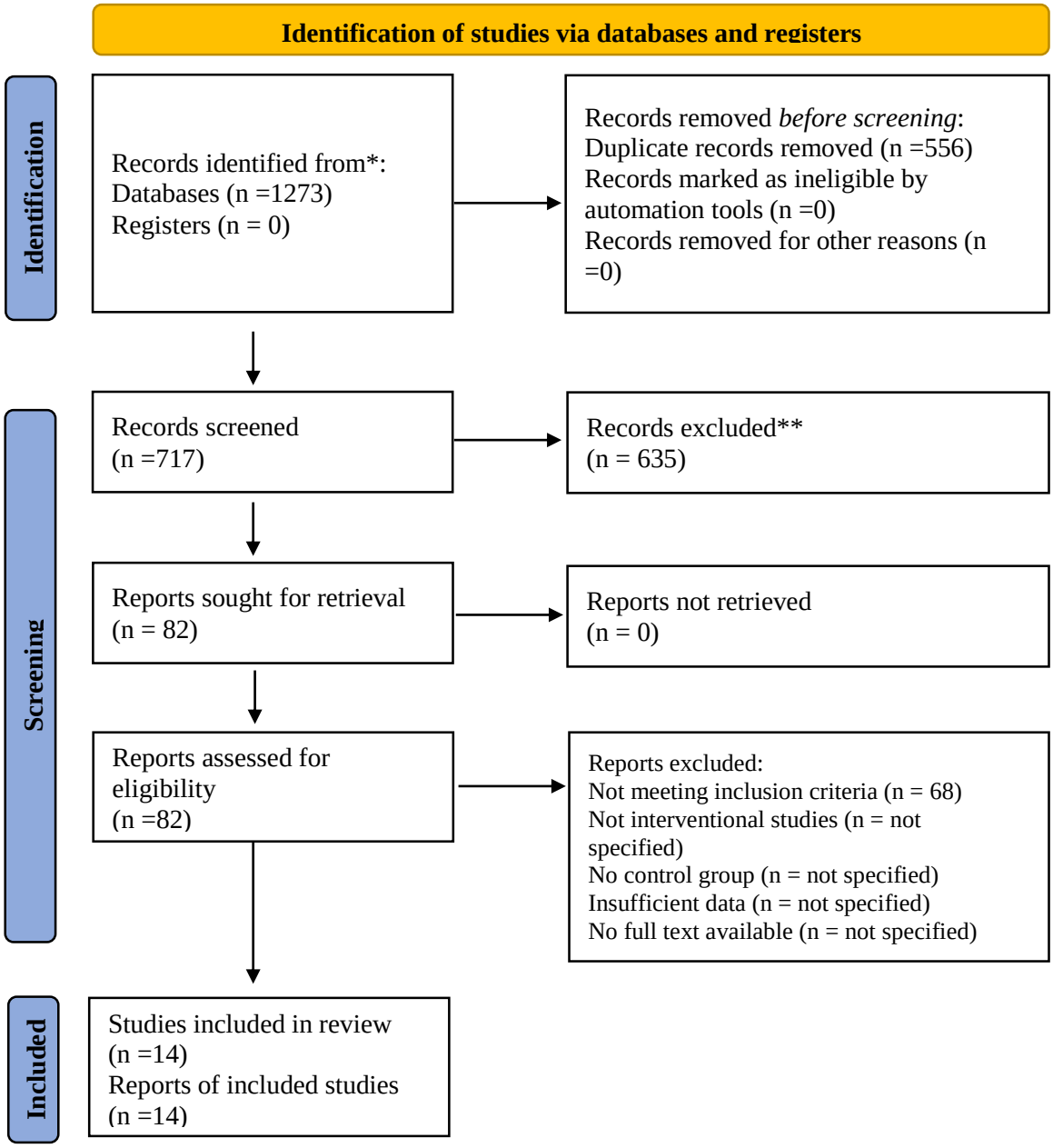

Figure 1. PRISMA 2020 flow diagram for article selection

Meta-Regression

Meta-regression was conducted to assess the association between potential study-level factors (year of publication [Figure 5], sample size [Figure 6], mean age [Figure 7], and JBI quality assessment score [Figure 8]) and the pooled standardized mean difference (SMD).

The results indicated that as the publication year increased, the effect of the intervention significantly increased ($P < 0.05$) (Figure 5).

However, the relationships between sample size, patient age, and the JBI checklist quality assessment score with the intervention effect were not statistically significant ($P > 0.05$) (Figures 6–8).

Table 1. Specifications of studies entered the meta-analysis

Study	Country	Population	Intervention	Design	Instrument	Quality Score	Sample Size (I/C)	Age (Mean ± SD)	Baseline Mean ± SD (I/C)	Post-intervention Mean ± SD (I/C)
Kwasky & Serowoky, 2018 [17]	USA	Adolescents (11–14 years)	Yoga, twice weekly for 8 weeks	Quasi-experimental	SEQ-C	11	15/15	12.27 ± 1.47	30.30 ± 5.81 / 31.40 ± 4.55	29.10 ± 5.93 / 28.50 ± 4.28
Hewett, 2018 [7]	Australia	Sedentary adults	Bikram yoga, 16 weeks	RCT	General Self-Efficacy	13	34/29	37.2 ± 10.8	30.4 ± 4.6 / 32.3 ± 4.2	29.3 ± 4.6 / 29.5 ± 4.4
Janalipour, 2018 [15]	Iran	Women with multiple sclerosis	Yoga, twice weekly for 8 weeks	RCT	MSSS	12	15/15	NR	34.67 ± 6.98 / 49.53 ± 6.75	43.80 ± 12.01 / 47.20 ± 8.05
Das, 2016 [22]	India	School children	Yoga for 10 days	Quasi-experimental	SEQ	10	100/100	13.7 ± 0.8	30.46 ± 6.15 / 29.71 ± 5.11	30.10 ± 6.44 / 25.51 ± 7.12
Martin, 2015 [23]	USA	Women with PTSD	Yoga, twice weekly for 8 weeks	RCT	BREQ-2	10	18/18	44.37 ± 12.37	25.60 ± 15.27 / 34.64 ± 27.15	25.44 ± 20.60 / 20.94 ± 24.98
Koyuncu & Bülbül, 2021 [16]	Turkey	Third-trimester pregnant women	Yoga, 2 days/week for 4 weeks	Quasi-experimental	SEQ	11	45/45	NR	161.22 ± 7.16 / 180.33 ± 12.37	169.99 ± 7.90 / 170.91 ± 8.33
Sun, 2010 [24]	Taiwan	Pregnant women	Prenatal yoga, 12–14 weeks, 3×/week	Quasi-experimental	SEQ	11	43/45	28.27 ± 3.1	38.28 ± 8.99 / 43.62 ± 9.25	37.60 ± 8.64 / 35.46 ± 8.53
Paranjape, 2022 [25]	USA	Adults	Yoga, 2 days/week for 4 weeks	Quasi-experimental	SEQ	10	15/15	NR	25.32 ± 3.22 / 28.10 ± 5.13	24.98 ± 2.91 / 25.63 ± 3.63
Khojasteh, 2019 [26]	Iran	Primiparous women	12–15 yoga sessions	Quasi-experimental	SEQ	10	30/30	24.1 ± 2.8	92.75 ± 16.33 / 124.45 ± 13.26	99.62 ± 21.74 / 78.43 ± 24.70
Stapp, 2024 [27]	USA	School children	Yoga, 2 days/week for 4 weeks	RCT	SEQ	10	15/15	NR	3.5 ± 0.7 / 3.6 ± 0.5	2.2 ± 0.8 / 1.7 ± 0.7
Franzblau, 2006 [28]	USA	Battered women	Two 45-min sessions on consecutive days	Quasi-experimental	SEQ	10	10/10	NR	1.50 ± 0.70 / 1.20 ± 1.61	1.60 ± 0.51 / 2.04 ± 0.20
Martinez, 2021 [29]	Spain	Adults	Yoga, 2 days/week for 4 weeks	RCT	SEQ	11	23/23	45.98 ± 8.78	30.74 ± 3.66 / 17.87 ± 4.34	33.26 ± 3.65 / 16.09 ± 3.68
Dal, 2021 [30]	Turkey	Pregnant women	NR	Semi-experimental	SEQ	10	25/25	30.1 ± 6.87	60.86 ± 1.12 / 39.49 ± 1.74	51.58 ± 1.50 / 34.30 ± 1.10
Samavati, 2022 [31]	Iran	Primiparous women	Three sessions/week for 2 weeks	RCT	SEQ	12	35/35	23.06 ± 3.80	50.13 ± 6.04 / 57.66 ± 6.04	47.11 ± 5.31 / 43.05 ± 5.06

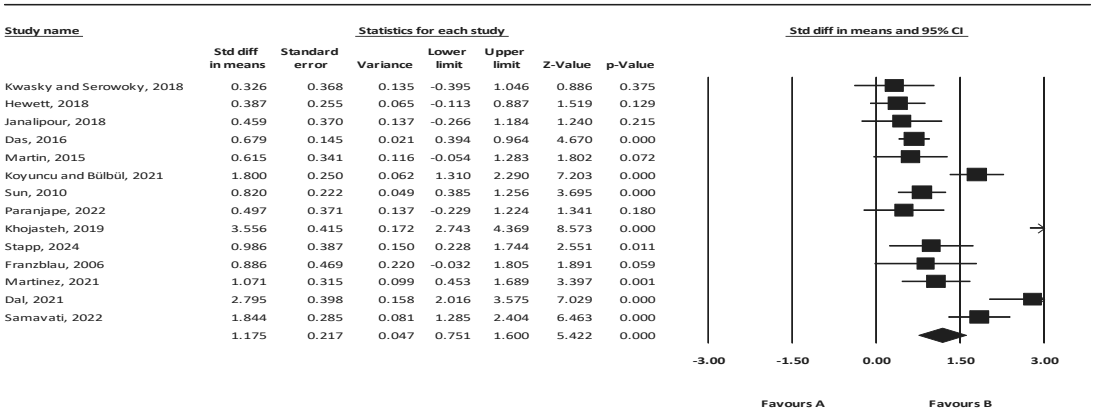

Figure 2. Forest plot of studies in the meta-analysis before and after intervention for control and intervention groups

Figure 3. Funnel plot of studies in the meta-analysis before and after intervention for control and intervention groups

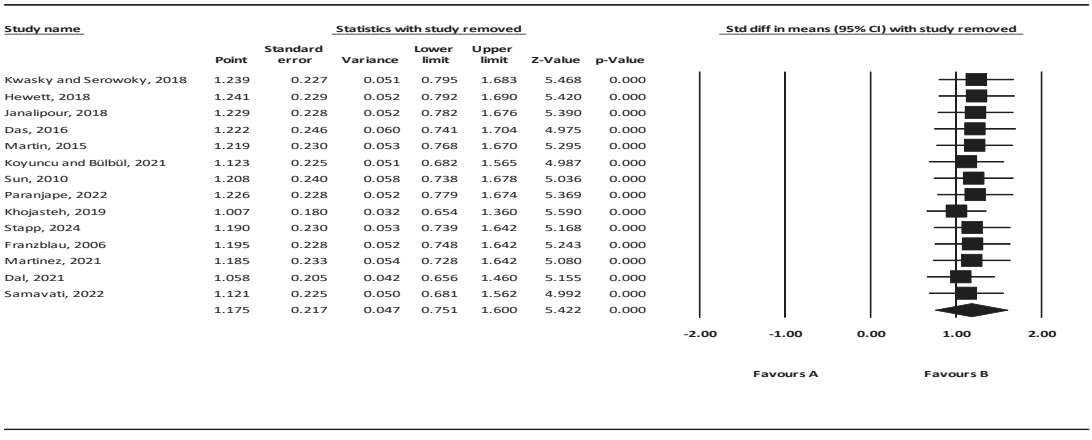

Figure 4. Sensitivity analysis plot before and after the intervention for the control and intervention groups based on the random-effects model

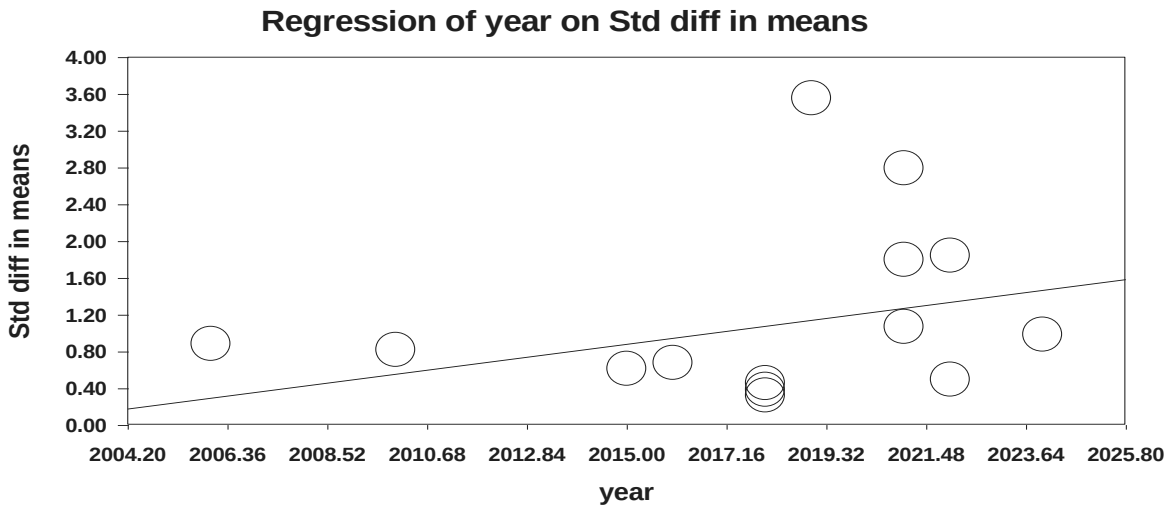

Figure 5. Meta-regression of the relationship between the year of study and standardized mean difference before and after intervention for control and intervention groups

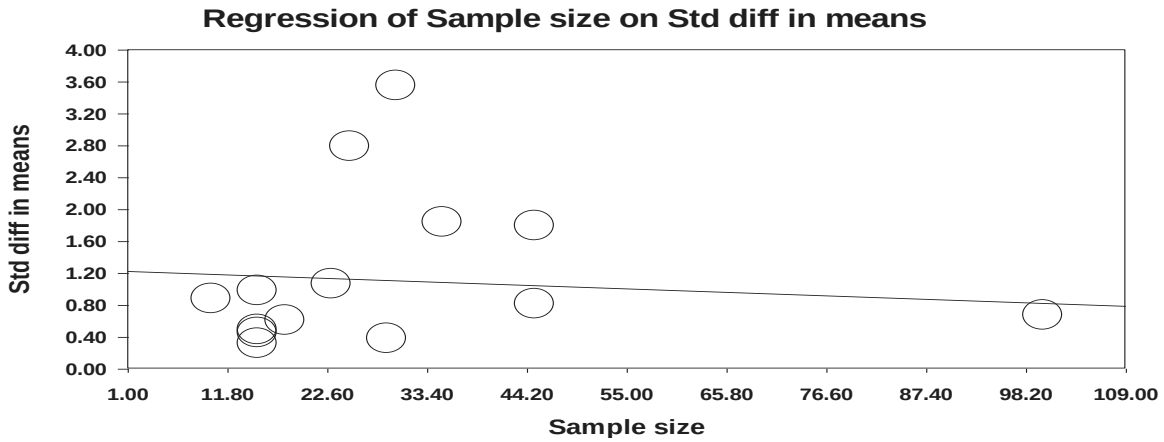

Figure 6. Meta-regression of the relationship between the sample size of study and standardized mean difference before and after intervention for control and intervention groups

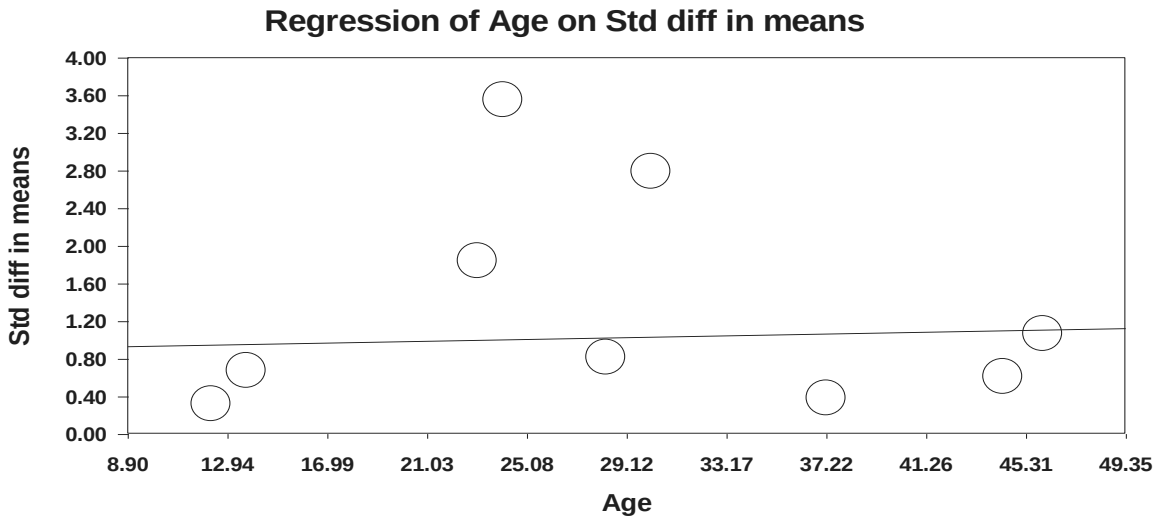

Figure 7. Meta-regression of the relationship between the mean age and standardized mean difference before and after intervention for control and intervention groups

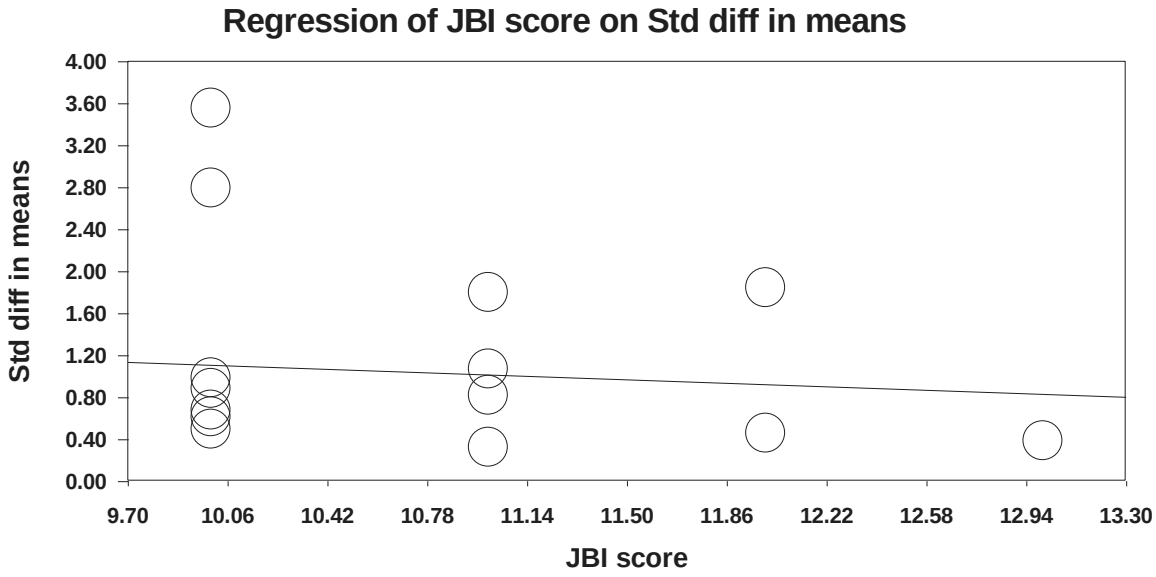

Figure 8. Meta-regression of the relationship between the JBI checklist quality assessment and standardized mean difference before and after intervention for control and intervention groups

Discussion

The effects of yoga on self-efficacy were examined through a systematic review and meta-analysis. The findings, based on a synthesis of 14 relevant studies, revealed a significant increase in self-efficacy among participants in the intervention group compared to those in the control group, highlighting the positive impact of yoga on self-efficacy. From a preventive care perspective, this improvement in self-efficacy is clinically important, as higher self-efficacy is associated with better adherence to health-promoting behaviors and reduced risk of various health conditions.

Yoga includes not only physical exercises but also breathing techniques, mental relaxation, and focus practices [32]. This combination can enhance both physical and mental health by fostering a strong connection between the mind and body [33, 34]. Numerous studies have shown that yoga can improve psychological conditions such as symptoms of depression, anxiety, and sleep disorders [33]. Beyond alleviating these symptoms, yoga also boosts psychological factors like mindfulness, resilience, and self-efficacy [35]. These psychological improvements are directly relevant to preventive care, as they can reduce the likelihood of developing stress-related and lifestyle-mediated diseases. Some research has specifically confirmed its positive effects on self-efficacy [16, 27].

The findings of the present meta-analysis are consistent with previous studies reporting the positive effects of yoga on self-efficacy. For example, Stapp (2024) found that yoga sessions significantly improved self-efficacy among school students [27], while another study among adolescents aged 11–16 years reported improvements in academic, emotional, and social self-efficacy following yoga interventions [22]. Similarly, Martinez et al. observed increased emotional self-efficacy among Spanish adults after yoga practice [29]. While these studies examined specific populations and domains of self-efficacy, the present meta-analysis synthesizes evidence across diverse groups and demonstrates an overall significant improvement in self-efficacy, supporting yoga as a broadly applicable and low-cost preventive strategy.

Other studies have focused on how yoga can enhance childbirth self-efficacy, showing positive outcomes for pregnant women [2, 16, 24]. Additionally, one study investigated the effects of yoga during pregnancy, demonstrating its significant role in improving breastfeeding self-efficacy among expectant mothers [30]. Thus, yoga exercises appear

to have a beneficial influence on self-efficacy among adults, students, and especially pregnant women. In the context of preventive care, improving self-efficacy during pregnancy can contribute to better maternal and neonatal health outcomes, representing a valuable secondary prevention opportunity.

Although yoga has been practiced for centuries, its therapeutic applications have only recently gained recognition. Research demonstrates that yoga can have positive effects not just for healthy individuals, but also for those in clinical populations [36]. For example, one study focused on the impact of yoga therapy on patients with multiple sclerosis (MS) and found that participants' self-efficacy scores significantly improved after attending yoga sessions, showcasing the positive effects of yoga on their sense of self-efficacy [15]. Additionally, Hewett et al. studied yoga interventions with a group of sedentary, stressed adults and reported a significant increase in self-efficacy scores among those who participated in yoga sessions compared to the control group [7]. These findings indicate that yoga can be integrated into preventive care programs for both general and high-risk populations. These findings reinforce and support the results of the current research.

However, the effects of yoga-based interventions on self-efficacy have not been consistently positive. For example, Kwasky and Serowoky found no significant improvement in the overall self-efficacy scores of children aged 11 to 14 years following yoga sessions, and the changes in these scores were not statistically significant [17]. Similarly, Martin et al. reported that yoga-based interventions did not significantly improve self-efficacy in women with post-traumatic stress disorder (PTSD) symptoms [23]. These inconsistencies highlight the need for standardized protocols and further research to identify for whom and under what conditions yoga can be most effective as a preventive intervention.

Self-efficacy is defined as an individual’s belief in their ability to achieve desired goals [37], and various personal factors, such as past experiences or personality traits, can influence an individual's self-efficacy. For instance, research has shown that factors including age, gender, educational level, and place of residence (urban vs. rural) are associated with self-care ability, which itself can be considered an indicator of self-efficacy [38, 39, 40]. On the other hand, external variables such as the degree of social interaction, cultural contexts, and complementary interventions like massage therapy may also affect self-efficacy [41]; for example, non-pharmacological methods such as foot reflexology massage, by reducing pain and fatigue in the early postoperative period, can enhance patients' sense of efficacy and control [42, 43, 44]. These factors can vary among participants across different studies, which may explain the differing effects of yoga interventions on self-efficacy. Furthermore, variations in the frequency and duration of sessions, participant skills, experience, readiness to engage in interventions, and the methods used to measure self-efficacy could also contribute to the lack of effect observed in some studies. Understanding these moderators is essential for designing effective preventive programs tailored to specific populations. The results indicated no significant relationship between age and the effects of yoga therapy, suggesting that these interventions could positively impact individuals across all age groups, aligning with findings from the study by Jalali et al [37]. This age-independence supports the feasibility of yoga as a universal preventive intervention across the lifespan. The meta-regression results also showed that as publication years increased, the effects of yoga therapy on self-efficacy significantly improved. This trend may be attributed to the growing body of knowledge about yoga, advancements in scientific research, and the use of more sophisticated techniques over time, resulting in a greater impact of yoga in recent years. This temporal improvement suggests that contemporary yoga protocols are becoming increasingly optimized for use in preventive care settings.

A notable strength of this study was the estimation of the pooled standardized mean difference between the intervention and control groups following the intervention. Despite conducting a thorough review of international databases, including PubMed, Embase, Scopus, and Web of Science (WoS), only 14 studies met the specified inclusion and exclusion

criteria. This highlights the need for further research in various regions. Future studies should specifically evaluate the long-term preventive effects of yoga on health outcomes mediated by self-efficacy. Other limitations of this research included the use of non-random sampling methods, varied implementation techniques, and limited access to full texts of some papers.

One of the main limitations of this study was the substantial heterogeneity among the included studies; therefore, a random-effects model was used to obtain a more conservative pooled estimate. Meta-regression analysis was performed to explore potential sources of heterogeneity, which partially explained the variability; however, the overall heterogeneity remained high. In addition, because of the limited number of eligible studies, subgroup analyses could not be conducted to further investigate potential moderating factors such as population characteristics, intervention duration, or study design. Consequently, the results of this meta-analysis should be interpreted with caution, and further well-designed studies with more homogeneous methodologies are recommended to provide more robust evidence.

Conclusion

This meta-analysis shows that yoga Further well-designed studies with standardized interventions are needed to confirm the long-term effects significantly improves self-efficacy across diverse populations. These findings support yoga as a low-cost, non-pharmacological strategy for strengthening self-efficacy and promoting preventive health behaviors.

Ethics Consideration

Ethics approval was received from the Ethics Committee of Deputy of Research and Technology, Kermanshah University of Medical Sciences (IR.KUMS.REC.1403.575). All ethical issues of the Declaration of Helsinki were observed from the search for articles to the publication of the results.

Acknowledgements

This study is the result of research project No. 4030926 approved by the Student Research Committee of Kermanshah University of Medical Sciences. We thank the esteemed officials of that center for accepting the financial expenses of this study.

Conflict of Interest

The authors declare no conflict of interest.

Funding

Funding source: Deputy for Research and Technology, Kermanshah University of Medical Sciences (IR) (Grant number: 4030926).

Authors' Contributions

Data collection: Kazeminia M, Heidarian P, Ghasemianrad M, Taheri M, Pourmirza Kalhori R, Magholi M; Study design: Jalali A, Kazeminia M; Writing the original draft: Kazeminia M, Ghasemianrad M; Review and editing: Jalali A, Taheri M, Pourmirza Kalhori R; Data analysis: Kazeminia M, Jalali A; Conceptualization: Jalali A, Kazeminia M. All authors have read and approved the content of the manuscript.

Artificial Intelligence Utilization

Not used.

Data Availability Statement

Data available upon reasonable request from the corresponding author.

Abbreviations

SID: Scientific Information Database; WoS: Web of Science; MeSH: Medical Subject Headings; JBI: Joanna Briggs Institute; PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analysis; SEQ-C: Self-Efficacy Questionnaire for Children; RCT: Randomized Controlled Trial; MS: Multiple Sclerosis; MSSS: Multiple Sclerosis Self-Efficacy Scale; SEQ: Self-efficacy questionnaire; BREQ-2: Behavioral Regulation in Exercise Questionnaire–2.

References

1. Hamann KR, Wullenkord MC, Reese G, Van Zomeren M. Believing that we can change our world for the better: A Triple-

A (Agent-Action-Aim) Framework of self-efficacy beliefs in the context of collective social and ecological aims. Personality and Social Psychology Review. 2024;28(1):11-53. https://doi.org/10.1177/10888683231178056
2. Sunarti V, Rahman MA, Handrianto C, Syuraini S, Putri LD, Azizah Z, et al. Understanding women's empowerment through exercise: Insights from a study on physical activity and self-efficacy. Retos: Nuevas Tendencias en Educación Física, Deportey Recreación. 2024(58):227-37. https://dialnet.unirioja.es/servlet/articulo?codigo=9641883
3. Clemente J, Kilag O, Ypon A, Groenewald E, Groenewald CA, Ubay R. Enhancing mathematics self-efficacy: Intervention strategies and effectiveness–A systematic review. International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence (IMJRISE). 2024;1(2):274-80. https://risejournals.org/index.php/imjrise/article/view/149
4. Cheng Y-y. Academic self-efficacy and assessment. Taylor & Francis; 2020. p. 389-91. https://www.tandfonline.com/doi/full/10.1080/01443410.2020.1755501
5. Rafiola R, Setyosari P, Radjah C, Ramli M. The effect of learning motivation, self-efficacy, and blended learning on students' achievement in the industrial revolution 4.0. International Journal of Emerging Technologies in Learning (iJET). 2020;15(8):71-82. https://doi.org/10.3991/ijet.v15i08.12525
6. Peechapol C, Na-Songkhla J, Sujiva S, Luangsodsai A. An exploration of factors influencing self-efficacy in online learning: A systematic review. International Journal of Emerging Technologies in Learning (Online). 2018;13(9):64. https://doi.org/10.3991/ijet.v13i09.8351
7. Hewett ZL, Pumpa KL, Smith CA, Fahey PP, Cheema BS. Effect of a 16-week Bikram yoga program on perceived stress, self-efficacy and health-related quality of life in stressed and sedentary adults: A randomised controlled trial. Journal of Science and Medicine in Sport. 2018;21(4):352-7. https://doi.org/10.1016/j.jsams.2017.08.006
8. Nagendra H, Kumar V, Mukherjee S. Cognitive behavior evaluation based on physiological parameters among young healthy subjects with yoga as intervention. Computational and Mathematical Methods in Medicine. 2015;2015(1):821061. https://doi.org/10.1155/2015/821061
9. Prathikanti S, Rivera R, Cochran A, Tungol JG, Fayazmanesh N, Weinmann E. Treating major depression with yoga: A prospective, randomized, controlled pilot trial. Plos One. 2017;12(3):e0173869. https://doi.org/10.1371/journal.pone.0173869
10. Kiecolt-Glaser JK, Christian LM, Andridge R, Hwang BS, Malarkey WB, Belury MA, et al. Adiponectin, leptin, and yoga practice. Physiology & Behavior. 2012;107(5):809-13. https://doi.org/10.1016/j.physbeh.2012.01.016
11. Cramer H, Lauche R, Anheyer D, Pilkington K, de Manincor M, Dobos G, et al. Yoga for anxiety: A systematic review and meta-analysis of randomized controlled trials. Depression and Anxiety. 2018;35(9):830-43. https://doi.org/10.1002/da.22762
12. Ross A, Thomas S. The health benefits of yoga and exercise: a review of comparison studies. The Journal of Alternative and Complementary Medicine: Paradigm, Practice, and Policy Advancing Integrative Health. 2010;16(1):3-12. https://doi.org/10.1089/acm.2009.0044
13. Kim S-D. Effects of yoga exercises for headaches: a systematic review of randomized controlled trials. Journal of Physical Therapy Science. 2015;27(7):2377-80. https://doi.org/10.1589/jpts.27.2377
14. Nanthakumar C. The benefits of yoga in children. Journal of Integrative Medicine. 2018;16(1):14-9. https://doi.org/10.1016/j.joim.2017.12.008
15. Janalipour K, Essazadegan A, Jahanbin E, Hatamian H. The effectiveness of yoga therapy in increasing the self-efficacy of women with MS. Caspian Journal of Neurological Sciences. 2018. https://doi.org/10.29252/cjns.4.13.77
16. Koyuncu SB, Bülbül M. The impact of yoga on fear of childbirth and childbirth self-efficacy among third trimester pregnants. Complementary Therapies in Clinical Practice. 2021;44:101438. https://doi.org/10.1016/j.ctcp.2021.101438
17. Kwasky AN, Serowoky ML. Yoga to enhance self efficacy: An intervention for at-risk youth. Archives of Psychiatric Nursing. 2018;32(1):82-5. https://doi.org/10.1016/j.apnu.2017.10.009
18. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. British Medical Journal. 2021;372. https://doi.org/10.1136/bmj.n71
19. Tufanaru C, Munn Z, Aromataris E, Campbell J, Hopp L. Systematic reviews of effectiveness. Joanna Briggs Institute Reviewer's Manual. 2017;3. https://doi.org/10.46658/JBIRM-17-03
20. Zhao B, Wu Y, Jin X, Yang L, Yang J, Ma X, et al. Objectively measured sleep characteristics and incidence of ischemic stroke: the sleep heart health study. Nature and Science of Sleep. 2021:1485-94. https://doi.org/10.2147/NSS.S313891
21. Lin L, Chu H, Murad MH, Hong C, Qu Z, Cole SR, et al. Empirical comparison of publication bias tests in meta-analysis. Journal of General Internal Medicine. 2018;33(8):1260-7. https://doi.org/10.1007/s11606-018-4425-7
22. Das M, Deepeshwar S, Subramanya P, Manjunath NK. Influence of Yoga-based personality development program on psychomotor performance and self-efficacy in school children. Frontiers in Pediatrics. 2016;4:62. https://doi.org/10.3389/fped.2016.00062
23. Martin EC, Dick AM, Scioli-Salter ER, Mitchell KS. Impact of a yoga intervention on physical activity, self-efficacy, and motivation in women with PTSD symptoms. The Journal of Alternative and Complementary Medicine: Paradigm, Practice, and Policy Advancing Integrative Health. 2015;21(6):327-32. https://doi.org/10.1089/acm.2014.0389
24. Sun Y-C, Hung Y-C, Chang Y, Kuo S-C. Effects of a prenatal yoga programme on the discomforts of pregnancy and

maternal childbirth self-efficacy in Taiwan. Midwifery. 2010;26(6):e31-e6. https://doi.org/10.1016/j.midw.2009.01.005
25. Paranjape MM, Deshmukh N, SPPU P. Benefits of Yoga for Self-Esteem and Self-Efficacy: A Quasi Experimental Investigation among Normal Adults. Indian Journal of Social Sciences and Literature Studies. 2022;8(1). https://jcprpub.org/storage/media/dynamic_values/t3x_yBp1648647544GCYX
26. Khojasteh F, Evin A, Ansari H. The effect of hatha yoga on anxiety and self-efficacy of primiparous women in labor. Complementary Medicine Journal.
2019.http://cmja.arakmu.ac.ir/article-1-634-en.html
27. Stapp A. The Impact of a Yoga Curriculum Intervention on Pre-Service Teachers' Perceived Self-Efficacy, Experience, and Value. Journal of Teacher Education and Educators. 2024;13(2):134-44.
https://dergipark.org.tr/en/pub/jtee/article/1373346?issue_id=86891
28. Franzblau S, Smith M, Echevarria S, Van Cantfort T. Take a breath, break the silence: the effects of yogic breathing and testimony about battering on feelings of self-efficacy in battered women. International Journal of Yoga Therapy. 2006;16(1):49-57.
https://doi.org/10.17761/ijyt.16.1.d8qw1532m0121w35
29. Martinez SR, Dueñas A, Ordoñes X. Effects of brief daily Kundalini yoga meditation on self-esteem, mood and emotional self-efficacy: A randomized comparison study. International Journal of Transpersonal Studies. 2021;40(2):8. https://doi.org/10.24972/ijts.2021.40.2.88
30. Dal NA, Gümüşsoy S, Sarıdoğan E, Özdemir Ç. The effect of pregnancy yoga on breastfeeding self-efficacy and prenatal attachment: A semi-experimental study. International Medicine. 2021;3(3):80.
https://doi.org/10.5455/im.54333
31. Samavati S, Kazemi F, Aghababaei S, Soltani F. The effect of yoga on fear of childbirth and childbirth self-efficacy in primigravid women: a randomized controlled trial. The Iranian Journal of Obstetrics, Gynecology and Infertility.2022. https://doi.org/10.22038/ijogi.2022.20428
32. Padmavathi R, Kumar AP, Dhamodhini K, Venugopal V, Silambanan S, Maheshkumar K, et al. Role of yoga in stress management and implications in major depression disorder. Journal of Ayurveda and Integrative medicine. 2023;14(5):100767. https://doi.org/10.1016/j.jaim.2023.100767
33. Csala B, Springinsfeld CM, Köteles F. The relationship between yoga and spirituality: a systematic review of empirical research. Frontiers in Psychology.
2021;12:695939. https://doi.org/10.3389/fpsyg.2021.695939
34. Kinkel CL, Candray H, Fruhauf CA, Atler KE, Schmid AA. Merging Yoga and self-management Skills (MY-Skills) to influence self-efficacy among individuals with persistent pain: A pilot study. Complementary Therapies in Clinical Practice. 2022;49:101678.
https://doi.org/10.1016/j.ctcp.2022.101678
35. Kumar S, Rathi A. School-based yoga intervention for internet resilience and holistic well-being of adolescents. Brain Behavior and Immunity Integrative. 2025;9:100102. https://doi.org/10.1016/j.bbii.2024.100102
36. Baishya A, Metri K. Effects of yoga on hypothyroidism: A systematic review. Journal of Ayurveda and Integrative Medicine. 2024;15(2):100891.
https://doi.org/10.1016/j.jaim.2024.100891
37. Jalali A, Ziapour A, Ezzati E, Kazemi S, Kazeminia M. The impact of training based on the pender health promotion model on self-efficacy: a systematic review and meta-analysis. American Journal of Health Promotion. 2024;38(7):918-29. https://doi.org/10.1177/08901171231224101
38. Tsai C-F, Chang C-P, Chen T-L, Hsu M-L. Exploring the influence of personality traits, self-efficacy, and creativity on employability for hospitality and tourism college students. Sustainability. 2024;16(4):1490. https://doi.org/10.3390/su16041490
39. Noohi S, Karamitanha F, Shoghli A. Self-care ability of the elderly and related factors. Preventive Care in Nursing & Midwifery Journal. 2022;12(4):19-25.
http://nmcjournal.zums.ac.ir/article-1-826-en.html
40. Abdelrahman H, Al Qadire M, Zehry H, Ballout S, Aljezawi H, Hayman LL. Predictors of Self-Care Behaviours Among Patients With Chronic Disease: A Multicountry Survey. Nursing Research and Practice. 2026;2026(1):5262222. https://doi.org/10.1155/nrp/5262222
41. Gebauer MM, McElvany N, Koeller O, Schöber C. Cross-cultural differences in academic self-efficacy and its sources across socialization contexts. Social Psychology of Education. 2021;24(6):1407-32.
https://doi.org/10.1007/s11218-021-09658-3
42. Hosseini SE, Amirpour M, Javadi M. The Effect of Foot Reflexology Massage on Pain and Fatigue after Lumbar Spine Surgery: A Randomized Controlled Trial. Preventive Care in Nursing & Midwifery Journal. 2026;16(2):3-12. http://nmcjournal.zums.ac.ir/article-1-1027-en.html
43. Lee J, Han M, Chung Y, Kim J, Choi J. Effects of foot reflexology on fatigue, sleep and pain: a systematic review and meta-analysis. Journal of Korean Academy of Nursing. 2011;41(6):821-33.
https://pubmed.ncbi.nlm.nih.gov/22310867/
44. Klaus M, Kutschan S, Männle H, Hübner J, Dörfler J. Reflexology in oncological treatment–a systematic review. BMC complementary medicine and therapies. 2024;24(1):32. https://doi.org/10.1186/s12906-023-04220-4