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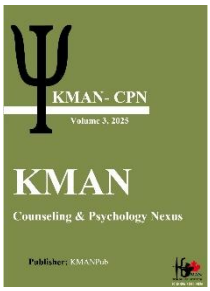

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The Effectiveness of Healthy Lifestyle Education Combined with Yoga Therapy on Self-Care Behaviors and Daily Physical Activity Levels in Overweight Individuals at Risk of Developing Diabetes

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1. Round 1

1.1. Reviewer 1

Reviewer:

In the Introduction paragraph beginning "Yoga therapy has increasingly attracted attention as a complementary lifestyle-based intervention," the description of yoga is comprehensive, but the manuscript should define what is meant by "yoga therapy" in the context of this study. Yoga therapy may include posture-based practice, breathing, meditation, relaxation, mindfulness, or individualized therapeutic adaptation. Since the intervention combines yoga with lifestyle education, the authors should clarify whether the yoga component was therapeutic, preventive, group-based, standardized, or adapted to participants' physical limitations.

In the Introduction paragraph that cites multiple reviews and meta-analyses on yoga and diabetes-related outcomes, the manuscript should more clearly identify the research gap. The current text states that fewer studies have examined self-care

and daily physical activity indicators among overweight individuals at risk of diabetes, but this point appears late in the introduction. The authors should move this gap statement closer to the end and make it sharper by explaining why self-care, step count, and sedentary behavior are important proximal outcomes before metabolic changes such as HbA1c or fasting glucose can be expected.

In the final sentence of the Introduction, "Accordingly, the present study aimed to examine the effectiveness of healthy lifestyle education combined with yoga therapy on self-care behaviors and daily physical activity levels in overweight individuals at risk of developing diabetes," the aim is clear but could be improved by specifying the study design and comparison condition. For example, the aim could mention that the study compared the intervention group with a wait-list control group across pretest, posttest, and follow-up stages. This would make the aim more aligned with the empirical design.

In Table 2, the descriptive statistics show that self-care increased from 34.90 to 44.65 and daily steps increased from 4320.50 to 4669.50 in the experimental group, while the sedentary index decreased from 53.60 to 43.15. However, the manuscript should define the possible score range and clinical interpretation of the self-care scale and sedentary index. Without explaining whether these changes are small, moderate, or clinically meaningful, the reader can only interpret statistical significance and not practical significance.

In the assumptions paragraph, the sentence "the assumptions of normality, homogeneity of variances, and homogeneity of covariance matrices were examined and confirmed" is incomplete for a scientific report. The authors should report the specific tests used, including Shapiro–Wilk for normality, Levene's test for homogeneity of variances, Box's M for covariance matrices if applicable, and Mauchly's test for sphericity. Since the ANOVA table notes that Mauchly's test was significant and Greenhouse–Geisser correction was applied, the assumptions paragraph should not simply state that all assumptions were confirmed.

In Table 2 of the repeated-measures ANOVA results, the degrees of freedom are reported as corrected values, such as "1.039, 39.481," and the note states that Greenhouse–Geisser correction was applied. This is appropriate, but the manuscript should also report the original Mauchly's W statistics and Greenhouse–Geisser epsilon values for each variable. These values would allow readers to evaluate the extent of sphericity violation and the appropriateness of the correction.

Response: Revised and uploaded the manuscript.

1.2. Reviewer 2

Reviewer:

In the Methods paragraph "The present study was applied in terms of its objective and quasi-experimental in terms of its methodological approach," the manuscript should provide a stronger justification for calling the study quasi-experimental despite random assignment to experimental and control groups. If random allocation was truly used, the design may be closer to a randomized controlled trial, although possibly with nonprobability sampling. The authors should clarify whether randomization occurred after purposive recruitment and whether allocation concealment was implemented.

In the Study Design and Participants paragraph, the sentence "participants were selected through purposive sampling based on the inclusion and exclusion criteria and were then randomly assigned to the experimental and control groups" requires methodological elaboration. The authors should state how many individuals were screened, how many were eligible, how many declined participation, and whether any participants dropped out before follow-up. A participant flow description would improve the transparency of recruitment and reduce concerns about selection bias.

In the inclusion criteria paragraph, the phrase "being in the prediabetes range or having a high risk of developing diabetes based on the Finnish Diabetes Risk Score" needs operational definition. The manuscript should specify the exact laboratory or clinical criteria used for prediabetes, such as fasting plasma glucose, HbA1c, or oral glucose tolerance test thresholds, and should also report the FINDRISC cut-off score used to define high risk. Without these thresholds, the study population cannot be replicated accurately.

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In the Data Collection Tools section, the paragraph on the Summary of Diabetes Self-Care Activities Measure should explain whether the instrument was appropriate for participants who were at risk of diabetes but not necessarily diagnosed with diabetes. Since several SDSCA domains, such as blood glucose testing and foot care, are more directly relevant to diagnosed diabetes, the authors should clarify whether the original scale was used unchanged, whether items were adapted for prediabetes risk, and whether the adapted version was validated in the present sample.

In the Data Collection Tools section, the paragraph on the International Physical Activity Questionnaire–Short Form appears inconsistent with the results, which report "daily step count" and "sedentary index." The IPAQ-Short Form typically provides MET-minutes per week and sitting time, not direct step counts, unless combined with pedometer or accelerometer data. The authors should clarify whether daily steps were measured using a device, self-report, smartphone application, or another tool. If a device was used, its model, measurement protocol, wear-time criteria, and data validity procedures should be reported.

In the Results section, the demographic paragraph states that "the two groups did not differ substantially in demographic characteristics," but no statistical comparison is reported. The authors should provide appropriate baseline equivalence tests, such as independent t-test for age and chi-square or Fisher's exact test for categorical variables such as gender and marital status. Reporting only descriptive values is insufficient to support the claim that the groups were comparable at baseline.

In Table 1 and its reporting paragraph, the demographic variables are limited to age, gender, and marital status. Given the topic of diabetes risk, the manuscript should also report clinically relevant baseline characteristics such as BMI, waist circumference, baseline diabetes risk score, prediabetes indicator, medication use, educational level, occupation, and baseline physical activity status. These variables are important because they may influence self-care behaviors, physical activity capacity, and response to yoga-based lifestyle intervention.

Response: Revised and uploaded the manuscript.

2. Revised

Editor's decision after revisions: Accepted.
Editor in Chief's decision: Accepted.

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