

EFFECTIVENESS OF AN E-MODULE AND ITS IMPACT ON CONTROLLING HYPERTENSIVE EPISODES AS PART OF A LIFESTYLE INTERVENTION AMONG OBESE ADULTS

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Abstract

In the city of Madinah, a notable gap exists in the realm of awareness programs aimed at curbing the rising incidences of obesity

Methodology

A quasi-experimental study using purposive sampling was conducted with 168 obese participants, including 86 in the experimental group and 82 in the control group, based on specific inclusion and exclusion criteria. The enrolled participants took the same pre- and post-tests. The newly created lifestyle survey questionnaire, used as both pre- and post-tests, combined the Impact of Weight on Quality of Life-Lite (IWQOL-Lite) and the Hypertension Quality of Life Questionnaire (HQLQ), with adaptations were made for the Saudi context.

Findings

The results of the Wilcoxon signed-rank test, conducted for 86 participants in the experimental group and 82 participants in the control group across the following lifestyle factors: "Diet as a Lifestyle," ($p < 0.05$) "Emotional Feeling as a Lifestyle," ($p < 0.05$) "Career Pressure as a Lifestyle," ($p < 0.05$) "Activities of Daily Living as a Lifestyle," ($p < 0.05$) "Exercise as a Lifestyle," ($p < 0.05$) and "Sleep Pattern as a Lifestyle," ($p < 0.05$), all revealed significant differences in the experimental group; while no significant changes ($p > 0.05$) were observed in the control group across all factors.

Conclusion

An e-module can be an effective tool for changing the lifestyle among obese adults in controlling hypertension. The highest-ranking lifestyle factors, along with the second rank, were identified as "Exercise as a Lifestyle" and "Diet as a Lifestyle," respectively, based on their significant impact on controlling hypertension among obese adults.

Keywords: Obesity, adults, lifestyle, e-module, Saudi

Introduction

Obesity remains a primary contributor to hypertension and other cardiovascular conditions, posing a significant public health concern worldwide (Ryan, 2023). As global obesity rates escalate, there is a pressing need for scalable interventions that support sustainable lifestyle changes (Mensah et al., 2023). In Saudi Arabia, obesity prevalence has surged markedly over recent decades, correlating with a rise in hypertension and related chronic illnesses (Melson et al., 2023). Although several public health campaigns have been initiated, there is still a noticeable gap in the implementation of structured, lifestyle-focused awareness programs tailored to the population's

needs (Alkharji et al., 2023). Digital health solutions, particularly e-modules, present a promising approach by enabling autonomous learning and fostering behavioral change (Alhussein et al., 2021). This study explores the effectiveness of a digital e-module intervention in promoting lifestyle modifications to aid hypertension management among obese individuals.

Methodology

A quasi-experimental research design utilizing purposive sampling was adopted, involving 168 obese adult participants—86 assigned to the experimental group and 82 to the control group—based on clearly defined inclusion and exclusion criteria. The experimental group accessed a dedicated e-module through the following link: <https://sufyanihussainahmed.wordpress.com/activities/> and engaged with its content over a 30-day period. The e-module focused on key lifestyle areas, including nutrition, physical activity, stress reduction, and sleep hygiene. Meanwhile, the control group followed conventional, unguided lifestyle practices for hypertension control. Data collection was conducted through a customized lifestyle survey, which merged elements from the Impact of Weight on Quality of Life-Lite (IWQOL-Lite) (Kolotkin et al., 2019) and the Hypertension Quality of Life Questionnaire (HQLQ) (Xiao et al., 2019), contextualized for relevance within Saudi Arabia. Pre- and post-intervention assessments were administered to capture behavioral changes, with statistical evaluation performed using the Wilcoxon signed-rank test to assess significant variations within and between groups.

Results

Statistical analysis indicated that the experimental group showed marked improvement across all assessed lifestyle domains: "Diet as a Lifestyle," "Emotional Feeling as a Lifestyle," "Career Pressure as a Lifestyle," "Activities of Daily Living as a Lifestyle," "Exercise as a Lifestyle," and "Sleep Pattern as a Lifestyle," all achieving significance at $p < 0.05$. Conversely, the control group exhibited no statistically significant improvement in any category ($p > 0.05$). Among the various components, dietary habits and physical activity emerged as the most impactful on hypertension control, suggesting that the structured, behavioral focus of the e-module substantially contributed to effective blood pressure regulation.

Discussion

The study's findings are consistent with prior evidence supporting the efficacy of lifestyle interventions in hypertension management. Improvements in diet and exercise among participants in the experimental group reinforce earlier conclusions that structured educational programs enhance adherence to health-promoting behaviors (Malkin et al., 2022). The deployment of e-modules as a digital intervention offers distinct benefits such as widespread accessibility, cost efficiency, and personalized learning experiences (Salem et al., 2022a). Additionally, the observed improvements in emotional regulation and career-related stress underscore the holistic nature of health, suggesting that successful interventions should address both physical and psychological dimensions (Salem et al., 2022b).

The absence of measurable progress in the control group highlights the limitations of passive health education approaches and illustrates the necessity of interactive, participant-centered

learning models (Althumiri et al., 2021). These outcomes support the integration of digital health innovations into national strategies aimed at mitigating the growing burden of obesity-related hypertension (Melson et al., 2023).

Conclusion

This study confirms that e-modules are an effective tool for facilitating lifestyle changes and managing hypertension among obese individuals. Significant post-intervention improvements in nutrition, exercise, emotional well-being, stress management, functional daily activities, and sleep patterns demonstrate the wide-reaching benefits of digitally delivered, structured interventions. Given the increasing incidence of obesity and hypertension in Saudi Arabia and globally, adopting digital health strategies within preventive care frameworks is vital. Future research should focus on the long-term sustainability of behavioral changes initiated by e-modules and explore their integration into broader public health initiatives.

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