THE EFFECTIVENESS OF THE "OBESICARE WEB" IN A WEIGHT LOSS PROGRAM FOR OBESE STUDENTS AT INSTITUT KESEHATAN PAYUNG NEGERI PEKANBARU

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Abstract

Obesity is a global health problem that continues to rise, including among university students, and is a major risk factor for various chronic diseases. This study aims to determine the effectiveness of using the ObesiCare web as a digital intervention tool in a weight loss program for obese students at IKes Payung Negeri Pekanbaru. This research employed a Research and Development (R\&D) approach using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). The sample consisted of 43 obese students meeting the inclusion criteria, selected through simple random sampling. The intervention was carried out over two weeks using the ObesiCare web, which features a BMI calculator, low-calorie diet menus, nutrition education, and daily progress monitoring. Pre- and post-intervention body weight data were analyzed using the Wilcoxon Signed Rank Test. The results showed an average weight loss of 1.54 kg, with 90.7% of respondents experiencing weight reduction. The Wilcoxon test yielded a p-value < 0.000, indicating a statistically significant difference between pre- and post-intervention body weight. In conclusion, the use of the ObesiCare web is effective in supporting weight loss among obese students. This application has the potential to serve as a practical tool for nutrition education and guidance to promote a healthy lifestyle among adolescents and young aults.

Keywords: obesity, weight loss, digital intervention, ObesiCare web, students

INTRODUCTION

Obesity is a chronic condition characterised by excessive fat accumulation due to an imbalance between energy intake and expenditure (Khohir et al, 2024). Obesity increases the risk of non-communicable diseases (NCDs) such as diabetes mellitus, hypertension, and cardiovascular disease (Putri & Wirawan, 2025). Therefore, effective prevention and control measures are needed. The use of web-based digital technology has been proven to improve compliance in diet management and weight loss (Ediana et al, 2025). However, some studies show suboptimal results, requiring the development of more targeted applications that are tailored to user needs (Hafizah et al, 2023). In Indonesia, the prevalence of obesity among people aged >18 years is 35.4%, with a distribution of 39.7% in urban areas and 30% in rural areas. The prevalence of obesity among men is 26.6% and among women is 44.4%7. Overweight and obesity were rarely discussed before the 20th century, as at that time the majority of the world's population was still malnourished (Ridho et al., 2021). An increase in body weight was considered a sign of improved health and economic status. It is only in the

last 25 years that discussions about overweight and obesity and their impacts have become more frequent in various scientific meetings and global public health planning (Mohamad Reza Assidhiq1, Setyo Prihatin1, 2018). The use of audio-visual media has significantly increased adolescents' knowledge about obesity (Fitri & Fitriani, 2019).Web ObesiCare was developed as an educational and support medium to encourage a healthy lifestyle, especially for students who are obese(Niara et al., 2009) .

RESEARCH METHOD

The development of the ObesiCare website utilised the Research and Development (R&D) method, as it aimed to produce a structured prototype that could be used to support efforts to measure, prevent and treat obesity. The ADDIE model is used as the main framework in the development process, which consists of five stages: Analysis, Design, Development, Implementation, Evaluation (Zulfa et al., 2025). The population in this study consisted of obese students from two study programmes (Bachelor of Nursing and Bachelor of Midwifery), selected randomly, totalling 74 people. The sampling technique used in this study was simple random sampling. Thus, the sample size in this study was 43 people.

RESEARCH RESULTS

A. Univariate Analysis

Table 1.Frequency Distribution of Gender, Family Genetic Obesity and BMI Category

No	Characteristic	Frequency (*f*)	Percentage (%)
1	Gender		
	a. Male		41,9
	b. Female		58,1
		25	
	Total	**43**	**100 %**
2	Family Genetic Obesity		
	a. Yes		88,4
	b. No		11,6
	Total	**43**	**100%**
3	Kategori IMT		
	Class 1 Obesity	15	34,9
	Class 2 Obesity	18	41,9
	Class 3 Obesity	10	23,3
	Total	**43**	**100%**

Source: Primary data

Table 1. it is known that of the 43 respondents involved in this study, the majority were female, namely 25 people (58.1%), while male respondents numbered 18 people (41.9%). This

indicates that most Web Obesicare users in this study are female, which could be an important consideration in developing a gender-based approach to weight loss interventions.
Regarding the variable of familial obesity genetics, most respondents had a family history of obesity, namely 38 people (88.4%), while 5 people (11.6%) did not have a genetic history of obesity. This finding indicates that most respondents have hereditary risk factors that can contribute to their obesity, reinforcing the importance of a holistic approach to obesity management, including consideration of genetic factors. These findings indicate that the majority of respondents have hereditary risk factors that may contribute to their obesity, reinforcing the importance of a holistic approach to obesity management, including consideration of genetic factors. Furthermore, in terms of Body Mass Index (BMI) categories, it was found that most respondents were in the Class 2 Obesity category, namely 18 people (41.9%). A total of 15 people (34.9%) were in the Class 1 Obesity category, and 10 people (23.3%) were in the Class 3 Obesity category. These data indicate that all respondents in this study were obese with varying degrees of severity, and most were moderately to severely obese. This condition is an important basis for evaluating the effectiveness of the Obesicare Web intervention on weight loss based on the initial severity of obesity.

B. Bivariate Analysis

Table 2. Wilcoxon Test Rankings Before and After Using the Obesicare Website in a Weight Loss Programme for Obese Students

		N	Mean Rank	Sum of Ranks
PostTest responden-PreTest responden	Negative Ranks	39[a]	20,79	811,00
	Positive Ranks	1[b]	9,00	9,00
	Ties	0		
	Total	3[c]		
		43		

Source: Primary data

a. Respondents' post-test score < Respondents' pre-test score
b. Respondents' post-test score > Respondents' pre-test score
c. Respondents' post-test score = Respondents' pre-test score

Table 3. Wilcoxon Test Rankings Before and After Using the Obesicare Website in a Weight Loss Programme for Obese Students at Ikes Payung Negeri Pekanbaru

Test Statisticsa

	Pre-test-Post-test
Z	-5,513[b]
Asymp. Sig. (2-tailed)	<0,000

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks

Source: Primary data

The results of the analysis in Table 1.2 show that of the 43 respondents, 39 people (90.7%) experienced weight loss after using the Obesicare website, as indicated by negative ranks. Only 1 respondent (2.3%) experienced weight gain, while 3 respondents (7.0%) had no change in weight before and after the intervention. The mean rank value for negative ranks was 20.79 with a total sum of ranks of 811.00, while positive ranks only had a mean rank value of 9.00 with a sum of ranks of 9.00.
Table 1.3 shows a Z value of -5.513 and a significance value (Asymp. Sig. 2-tailed) < 0.000. This value is well below the significance threshold of 0.05, indicating that there is a statistically significant difference between body weight before and after using the Obesicare website.

DISCUSSION

It is known that of the 43 respondents who participated in the weight loss programme through the 'Obesicare' website, the majority were female, numbering 25 people (58.1%), while males numbered 18 people (41.9%). This composition shows that female students' involvement in this digital intervention programme is higher than that of males. This result is consistent with the findings of a study by (Ervira et al, 2023), which explains that women tend to have a higher concern for health aspects, including weight and diet. Women are also more responsive to educational approaches based on visual and digital media, making the Obesicare website a relevant medium for them.

In terms of the genetic aspect of familial obesity, it was found that most respondents had a family history of obesity, namely 38 people (88.4%), and only 5 people (11.6%) did not have such a history. This shows that hereditary or genetic factors are important determinants in the incidence of obesity among students(Azmy Mu'thia Hanum, 2023), genetic factors are one of the main components that influence health status, including the risk of obesity. The presence of a family history of obesity can increase a person's susceptibility to weight gain, especially if it is not balanced with a healthy lifestyle.

In the Body Mass Index (BMI) category, it was found that most respondents were in the Class 2 Obesity category, namely 18 people (41.9%), followed by Class 1 Obesity with 15 people (34.9%), and Class 3 Obesity with 10 people (23.3%). These findings indicate that all respondents were classified as obese with varying degrees of severity, and the majority were moderately to severely obese. According to the WHO classification for the Asian region, a BMI above 27 kg/m² indicates a significant level of obesity and can increase the risk of non-communicable diseases such as diabetes mellitus, hypertension, and other metabolic disorders (Yunawati et al., 2025). This condition reinforces the urgency of structured interventions, such as the 'Obesicare' website, which aims to help individuals control their weight independently and consistently.

Of the total 43 respondents, 39 people (90.7%) experienced weight loss after participating in the intervention, as indicated by negative ranks. Only 1 person (2.3%) experienced weight gain (positive ranks), and 3 people (7.0%) experienced no change (ties). The mean rank value for the group that lost weight was 20.79, with a total sum of ranks of 811.00, while the mean rank value for the group that gained weight was only 9.00, with a sum of ranks of 9.00. These findings show that the majority of respondents showed a consistent change, namely weight loss after using the Obesicare website. These results are further reinforced by the statistical test shown in Table 4.5, which shows a Z value of -5.513 and a significance value (Asymp. Sig. 2-tailed) < 0.000. This value is well below the significance threshold of 0.05, so it can be statistically concluded that there is a significant difference

between weight before and after the intervention. In other words, the use of the 'Obesicare' website is effective in reducing weight in obese students.

CONCLUSION

The effectiveness of the ObesiCare website can be seen from the decrease in the average weight of respondents, from 94.79 kg to 93.25 kg after a two-week intervention, with an average difference of 1.54 kg. The results of the Wilcoxon Signed Rank Test showed a significant difference ($p < 0.000$), so it can be concluded that the ObesiCare website is effective in assisting weight loss programmes for obese students. Thus, the ObesiCare website can be used as a digital educational medium that supports the process of healthy lifestyle changes and weight management in obese students.

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