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*(Research/ Review) Article*

# The Effect of Motivational Interviewing on Increasing Physical Activity of Obese Postpartum Mothers : Quasi-experimental one group pre-post test

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**Abstract:** Postpartum obesity increases the risk of postnatal complications and is often triggered by low physical activity. Fatigue, hormonal changes, and the responsibilities of caring for a baby all contribute to this condition. Motivational Interviewing (MI) is a client-centered counseling technique that aims to awaken intrinsic motivation for adopting healthy behaviors, including increased physical activity during the postpartum period. This study analyzed the effect of MI intervention on the physical activity of obese postpartum mothers. A total of 30 respondents were selected through purposive and convenience sampling based on inclusion criteria and accessibility. Physical activity was measured using the International Physical Activity Questionnaire–Short Form (IPAQ-SF). Before the intervention, 63.3% of respondents were in the low physical activity category, indicating a sedentary lifestyle. After a series of MI sessions, there was a significant increase in physical activity levels to the moderate category. The Wilcoxon signed-rank test showed a p-value of 0.000 (< 0.05), indicating a statistically significant improvement in postpartum mothers' physical activity following the intervention. This finding highlights the effectiveness of Motivational Interviewing in encouraging behavior change during the critical postpartum period. MI not only promotes increased activity but also empowers mothers to make healthier choices through reflective listening, goal setting, and self-efficacy building. Given the positive outcomes, this strategy is highly recommended for integration into midwifery and maternal health education programs. It can play a pivotal role in preventing long-term complications associated with obesity, such as cardiovascular disease, diabetes, and depression. Further studies are encouraged to evaluate the long-term adherence to physical activity and to examine the potential psychological benefits of MI in the postpartum population.

**Keywords:** Counseling, Health education, Motivational interviewing, Obesity, Postpartum

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## 1. Introduction

Obesity is one of the growing global health challenges that continues to rise significantly (1). According to the World Health Organization (WHO, 2016), approximately 650 million adults worldwide are obese, with the number having nearly tripled since 1975 (2). In Indonesia, the prevalence of obesity increased from 10.5% in 2007 to 21.8% in 2018, and reached 23.4% in 2023 based on data from the Indonesian Health Survey (SKI) (3). Data from the Gorontalo District Health Office recorded 8,795 cases of obesity (30.9%), with the majority being women, accounting for 6,824 cases (24.0%) (4).

This condition has significant implications for postpartum women, who undergo various physiological and psychological changes after childbirth. Obesity in postpartum mothers can trigger complications such as hypertension, gestational diabetes, preeclampsia, and can also slow down the recovery process after delivery. One of the main causes of obesity during the postpartum period is reduced physical activity due to fatigue, hormonal changes, and the demands of caring for a newborn (5).

Various national programs, such as the Healthy Living Community Movement (GERMAS) and The Archipelago Movement to Eradicate Obesity (GENTAS), have been promoted to reduce the prevalence of obesity through the promotion of healthy lifestyles. However, in practice, many obese postpartum women still struggle to increase their physical activity independently. Therefore, an educational approach that is individualized and participatory is needed (6).

Motivational Interviewing (MI) is a collaborative, person-centered communication method aimed at exploring and strengthening internal motivation for behavior change, including physical activity. In this approach, a person is considered to be experiencing a problem when there is ambivalence within themselves.

Ambivalence refers to a condition where a person both likes and dislikes a certain behavior at the same time (7). Motivational interviewing is a relatively new yet promising therapeutic approach (7).

Preliminary data from Limboto Public Health Center showed 54 cases of obese postpartum women in the past six months. This reflects the urgent need for appropriate interventions to address the issue. Based on this background, this study aims to analyze the effect of motivational interviewing on increasing physical activity among obese postpartum mothers in the working area of Limboto Health Center.

## 2. Preliminaries or Related Work or Literature Review

The postpartum period is the time during and immediately after childbirth, encompassing the following days when the reproductive tract returns to its normal, non-pregnant state. This condition affects postpartum mothers, who undergo both physiological and psychological changes after childbirth. Obesity in postpartum women can trigger various complications such as hypertension, gestational diabetes, preeclampsia, and can also slow down the recovery process after delivery. One of the main causes of obesity during the postpartum period is a decrease in physical activity due to fatigue, hormonal changes, and the demands of caring for a newborn (5).

Motivational Interviewing (MI) is a collaborative, person-centered communication method aimed at exploring and strengthening internal motivation to change behavior, including physical activity behavior. In this approach, a person is considered to have a problem when they experience feelings of ambivalence—conflicting emotions about a particular behavior.

Obesity is a condition that reflects an imbalance between height and weight due to excess body fat, resulting in body weight that exceeds the ideal standard. Obesity occurs when there is an imbalance between energy intake and energy expenditure. It can affect anyone—infants, adults, and even postpartum mothers.

Postpartum or the puerperium is a phase that begins after the placenta is delivered and ends when the uterine organs return to their pre-pregnancy state, typically around six weeks postpartum. The postpartum period is a time of recovery, healing, and adjustment, marking the transition back to the non-pregnant condition. It lasts up to 12 months.

As a result of delivering the baby, placenta, amniotic fluid, and blood, mothers usually experience a weight loss of about 5–6 kilograms. During this time, the body undergoes physiological adaptation, as all organs gradually return to their pre-pregnancy state—from the first hour after the placenta is delivered until approximately six weeks postpartum..

## 3. Proposed Method

This study is a quantitative research with a quasi-experimental one-group pre-post test design. The research was conducted in the working area of Limboto Public Health Center, Gorontalo Regency, from April 2 to June 2, 2025. The population consisted of all postpartum mothers with obesity, totaling 54 individuals. A sample of 30 respondents was selected using purposive sampling and convenience sampling techniques based on inclusion criteria and ease of access.

Data collection was carried out through questionnaires administered before and after the intervention. The data are presented in the form of frequency distribution tables and descriptive narratives. The instrument used was the IPAQ-SF (International Physical Activity Questionnaire – Short Form) to measure the level of physical activity of the respondents before and after the intervention. The motivational interviewing intervention was delivered face-to-face for 30 minutes.

## 4. Comparison

According to Notoatmodjo (2018), univariate analysis aims to describe the characteristics of each research variable separately. This analysis focuses on one variable at a time and is generally used to obtain an overview of frequency distribution, percentages, and measures of central tendency (such as mean and median) for each variable.

**Respondent Characteristics**

**Table 1.** Frequency Distribution of Respondents Based on Their Characteristics.

| Characteristic | Category | Frequency (n) | Percentage (%) |
|---|---|---|---|
| **Age (Years)** | 21–25 | 9 | 30.0 |
| | 26–30 | 13 | 43.3 |
| | 31–35 | 8 | 26.7 |
| | **Total** | **30** | **100.0** |
| **Parity** | 1 | 5 | 16.7 |
| | 2 | 17 | 56.6 |
| | >2 | 8 | 26.7 |
| | **Total** | **30** | **100.0** |

Source: Primary Data, 2025

This study involved 30 postpartum mothers with obesity as respondents. Based on age characteristics, the majority of postpartum mothers were between 26–30 years old, totaling 13 individuals (43.3%). Furthermore, 9 mothers (30%) were aged 21–25 years, and the remaining 8 mothers (26.7%) were in the 31–35 age group. Meanwhile, based on parity characteristics, the majority of respondents had given birth twice, accounting for 17 individuals (56.6%). In addition, 8 mothers (26.7%) had a parity of more than two, while the remaining 5 mothers (16.7%) had only given birth once.

**Bivariate Analysis**

**Table 2.** Frequency Distribution of Motivation After Motivational Interviewing

| Motivational Interviewing | Frequency (n) | Percentage (%) |
|---|---|---|
| Not Motivated | 0 | 0.0 |
| Motivated | 30 | 100.0 |
| **Total** | **30** | **100.0** |

Source: Primary Data, 2025

Based on the table above, it was found that all 30 postpartum mothers (100%) reported feeling motivated after receiving the motivational interviewing intervention.

**Table 3.** Frequency Distribution of Physical Activity Levels Pre- and Post-Test Among Postpartum Mothers with Obesity

| Physical Activity Level | Frequency (n) | Percentage (%) |
|---|---|---|
| **Pre-Test** | | |
| Low | 28 | 93.3 |
| Moderate | 2 | 6.7 |
| High | 0 | 0.0 |
| **Post-Test** | | |

| Physical Activity Level | Frequency (n) | Percentage (%) |
|---|---|---|
| Low | 0 | 0.0 |
| Moderate | 30 | 100.0 |
| High | 0 | 0.0 |
| **Total** | **30** | **100.0** |

Source: Primary Data, 2025

Based on the table above, it was found that the majority of postpartum mothers before receiving the Motivational Interviewing intervention had low levels of physical activity, with 28 respondents (93.3%), and only 2 respondents (6.7%) had a moderate level. None of the respondents were categorized as having high physical activity levels. However, after the intervention, all 30 postpartum mothers (100%) had moderate levels of physical activity, with no respondents falling into the low or high categories.

**Bivariate Analysis**

Table 4. Results of Paired Test Analysis on the Effect of Motivational Interviewing on Physical Activity Among Postpartum Obese Mothers in the Working Area of Limboto Public Health Center

| Motivational Interviewing | Mean ± SD | Mean Difference | p-value |
|---|---|---|---|
| **Pre-test** | 369.58 ± 180.6 | 394.60 | 0.000 |
| **Post-test** | 764.18 ± 125.6 | | |

Source: SPSS Data, 2025

Based on the data analysis, the mean and standard deviation of physical activity levels in postpartum mothers were obtained both before and after the motivational interviewing intervention. Prior to the intervention, the mean physical activity score was 369.58 with a standard deviation of 180.6. Following the intervention, there was a significant increase, with the mean score rising to 764.18, and a standard deviation of 125.6. The mean difference of 394.60 indicates a substantial improvement in physical activity levels.

The statistical test used was the Wilcoxon Signed-Rank Test, which yielded a p-value of 0.000. This value is lower than the established significance threshold ($p < 0.05$), indicating that there is a statistically significant difference in the physical activity levels of postpartum mothers before and after receiving the motivational interviewing intervention.

Furthermore, based on the data, 100% of postpartum mothers reported feeling motivated after receiving motivational interviewing. The majority of respondents (56.6%) obtained a total motivation score of 9, indicating a high level of motivation, while the smallest group (3.3%) scored 7 points.

These findings emphasize that motivational interviewing is not merely a communication method, but a therapeutic approach that is effective in eliciting intrinsic motivation in postpartum obese mothers to engage in behavior change—particularly increasing physical activity during the postpartum period. In a phase commonly marked by fatigue, role adjustment, and physiological changes, the success of motivational interviewing in stimulating internal drive represents a significant achievement.

The results of this study are in line with the Self-Determination Theory (Deci & Ryan, 1985), which emphasizes that sustainable behavior change strongly depends on intrinsic motivation—the internal drive that aligns with an individual's values, needs, and goals. In this context, motivational interviewing (MI) serves as a catalyst that helps obese postpartum mothers identify and clarify their personal values and health needs, enabling them to overcome barriers, ambivalence, and doubts in initiating lifestyle changes. The successful implementation of this method contributes significantly to the scientific literature, demonstrating that motivational interviewing is not only effective in general contexts but also highly relevant and impactful for postpartum obese mothers facing unique challenges.

Based on data analysis, it was found that before receiving the motivational interviewing intervention, the majority of postpartum mothers with obesity (93.3%) had low levels of physical activity, while only 6.7% had moderate levels. No respondents were classified as having high levels of physical activity. After the intervention, all respondents (100%) showed a significant increase in physical activity and moved into the moderate category. This finding indicates a positive behavioral change in physical activity levels among postpartum obese mothers following motivational interviewing.

This behavioral change reflects the effectiveness of motivational interviewing as a counseling-based intervention that successfully activates intrinsic motivation to voluntarily initiate behavioral change. In this study, previously passive postpartum mothers showed increased awareness and willingness to be more physically active after receiving an empathetic, collaborative, and non-judgmental intervention approach.

These findings support the latest recommendations from The American College of Obstetricians and Gynecologists (ACOG, 2020), which advocate for light to moderate physical activity during the postpartum period, gradually increasing to at least 150 minutes per week. Physical activity during the postpartum phase is proven to accelerate recovery, improve mental health, and reduce the risk of metabolic and cardiovascular disorders, which is particularly critical for obese postpartum mothers who are at higher risk for such complications.

This aligns with previous research (8), which stated that low physical activity among postpartum mothers may be caused by fatigue, postpartum pain, limited social support, time constraints due to caregiving responsibilities, and a lack of information about the benefits of physical activity. In such conditions, motivational interviewing emerges as a relevant strategy, as it focuses on exploring ambivalence and encouraging self-directed goal setting for change.

With increased physical activity, postpartum mothers not only gain physiological benefits such as improved blood circulation, muscle tone, and weight control but also psychological benefits, including reduced anxiety and lower risk of postpartum depression. Based on the findings of this study, the implementation of motivational interviewing proves to be an adaptive and constructive approach in promoting healthy lifestyle changes, particularly among high-risk groups such as obese postpartum mothers.

The Wilcoxon Signed-Rank Test revealed a significant difference in the level of physical activity before and after the intervention, with a p-value of $0.000 < 0.05$. This confirms a statistically significant association between motivational interviewing and increased physical activity in obese postpartum women.

The improvement in physical activity following the intervention illustrates that motivational interviewing effectively elicits internal motivation for health behavior change, even under the complex physiological conditions of the postpartum period. Although few studies have specifically examined the impact of MI on postpartum obese mothers' physical activity, this study demonstrates a positive association between MI implementation and behavioral improvement in this population. Therefore, this research expands the scope of motivational interviewing to high-risk postpartum populations vulnerable to sedentary lifestyles.

These findings are supported by research (9) showing that motivational interviewing combined with nutritional education via social media significantly improved knowledge of healthy weight loss and reduced energy, carbohydrate, saturated fat, and sodium intake in obese women. Although the subjects and indicators differed, these results reinforce the idea that MI can lead to tangible changes in healthy lifestyle behavior.

This is also in line with another study (10), which demonstrated that group-based motivational interviewing significantly increased physical activity in obese individuals. The proportion of participants in the action and maintenance stages rose from 14.3% to 41.3%, with a 125% increase in physical activity and an 8% reduction in sedentary time. Despite differences in approach and participant context, motivational interviewing effectively promoted health behavior change, particularly in increasing physical activity.

A randomized controlled trial (11) involving 334 adults found that motivational interviewing increased walking activity and reduced cholesterol levels for up to 12 months post-intervention. Although the respondent characteristics and implementation duration varied, the effectiveness of this approach in lifestyle behavior change remained consistent.

Another study (12), involving 60 respondents, found that combining motivational interviewing with physical exercise (aerobics) improved quality of life in patients with type 2 diabetes mellitus, especially in aspects related to physical activity. Meanwhile, a study (13) involving 100 overweight and obese women showed that this approach increased weight efficacy lifestyle, particularly in eating control. Although the subjects and research focus were different, the present study adds important scientific contributions by targeting a rarely studied population—postpartum obese mothers—who face unique physical, psychological, and social challenges in increasing physical activity during the postpartum period.

A meta-analysis (14) involving over 5,000 obese children and adolescents across 31 studies demonstrated that motivational interviewing significantly increased moderate-to-vigorous physical activity and reduced snack food consumption. This success across age groups provides a strong rationale for the applicability of MI in obese postpartum populations.

However, the findings of this study contrast with the HIPP Randomized Controlled Trial (15), which found no significant differences in physical activity levels between intervention and control groups of obese postpartum mothers. This inconsistency is likely due to differences in intervention focus, cultural influences, social support, and participants' level of engagement.

Overall, this study strongly demonstrates a robust association between motivational interviewing and increased physical activity among postpartum obese mothers. The strength of this study lies in its specific population, pre-post test design that allows direct observation of behavioral change, and the use of an internationally standardized instrument (IPAQ) to measure physical activity. These findings offer meaningful contributions to the development of personalized, motivation-based health promotion strategies that support sustainable behavior change during the postpartum period.

## 5. Conclusions

Based on the results of the study on the effect of motivational interviewing on increasing physical activity among postpartum obese mothers in the working area of Limboto Public Health Center, the following conclusions can be drawn:

1. Physical activity before the intervention:
   Most postpartum obese mothers (93.3%) had low levels of physical activity before receiving the motivational interviewing intervention, while only 6.7% had a moderate level of physical activity. This indicates that, prior to the intervention, the majority of postpartum obese mothers did not engage in optimal levels of physical activity.

2. Physical activity after the intervention:
   After the motivational interviewing intervention was administered, all respondents (100%) showed an improvement in physical activity, falling into the moderate activity category. This suggests that the motivational interviewing intervention contributed to encouraging postpartum mothers to be more physically active during the postpartum period, including moderate, vigorous, and walking activities.

3. Significant effect of the intervention:
   The statistical analysis showed a significant effect of motivational interviewing on increasing physical activity among postpartum obese mothers, with a p-value of 0.000 ($p < 0.05$). This confirms that motivational interviewing is an effective method for motivating postpartum obese mothers to enhance their physical activity during the postpartum period..

**Author Contributions:**

Dhea Ananda S. Abdul was responsible for the overall research design, data analysis, and drafting of the manuscript.

Efri Leny Rauf contributed to the literature review, assisted in instrument development, participated in data collection, supported fieldwork coordination, and was involved in data processing and interpretation.

Yuliandary Yunus was involved in the formulation of the research framework, provided critical revisions to the manuscript, coordinated with respondents, and assisted in editing the final version of the manuscript."

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