

Characteristics of Preconception Readiness in Women Married 1–2 Years with Obesity Status at Community Health Center

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ABSTRACT

Obesity among women of reproductive age is a significant preconception risk factor because hormonal, metabolic, and psychosocial disturbances associated with obesity can adversely affect fertility and pregnancy outcomes. In 2025, the prevalence of obesity among couples at the Panekan Community Health Center in Magetan Regency reached 9.19%, ranking among the highest in the district. This study aimed to describe physical, psychological, and attitudinal readiness among 44 women married for 1–2 years with obesity. A descriptive cross-sectional design with total sampling was used. Data were collected from January to May 2026 using the Health Promoting Lifestyle Profile II (HPLP II), consisting of 52 Likert-scale items, and the Preconception Care Improvement Scale (PCIS), consisting of 17 nominal-scale items. Descriptive analysis used frequencies and percentages, while bivariate analysis used cross-tabulations. Respondents were aged 21–35 years (mean 27.11 years); most had senior high school education (79.55%) and were unemployed (61.36%). Physical, psychological, and attitudinal readiness were sufficient in 75.00%, 77.27%, and 70.45% of respondents, respectively. All respondents (100%) were classified as preconception-ready based on PCIS. In conclusion, although overall preconception readiness was sufficient/ready, obesity remains a critical fertility-related risk, particularly in the physical domain, and therefore requires intensive and structured preconception management. Health centers should integrate nutrition counseling, structured weight management, and psychological support into preconception services.

Keywords: obesity; preconception readiness; newly married women; reproductive age; cross-sectional

INTRODUCTION

Preconception is the period before conception that can be used to optimize the physical, mental, and social health of individuals or couples of reproductive age. During this period, health checks related to risk factors that may affect fertility and pregnancy outcomes, including nutritional status, chronic diseases, high-risk behaviors, and psychological readiness, should be performed [1]. Couples of reproductive age are therefore an important target of reproductive health programs because of their role in pregnancy planning, infertility prevention, and reduction of maternal and perinatal complications [2]. Obesity is one condition requiring attention because women of reproductive age with obesity may experience metabolic and hormonal disturbances affecting menstrual cycles and ovarian function [3].

Clinical studies report a high prevalence of overweight and obesity among women with infertility. Approximately 39.56% are classified as obese and 37.27% as overweight [4]. In Indonesia, the 2023 Indonesia Health Survey (IHS) also indicates a high prevalence of overweight and obesity among women of reproductive age, particularly in association with low physical activity and unbalanced dietary patterns [5,6]. At Panekan Community Health Center, Magetan Regency, 9.19% of couples of reproductive age were reported to have obesity in 2025, placing the area among those with a high obesity burden in the regency.

Obesity may increase infertility risk through reproductive hormone imbalance, insulin resistance, and anovulation [2]. Excess adiposity can affect the hypothalamic-pituitary-ovarian axis and may contribute to anovulation, disrupted folliculogenesis, and reduced oocyte and embryo quality [7]. Obesity is also associated with reduced ovarian response to hormonal stimulation and lower likelihood of conception, both naturally and through assisted reproductive technology [8]. These mechanisms make obesity particularly relevant to preconception preparation and fertility counseling.

Preconception readiness should not be assessed only from obesity or fertility outcomes. Behavioral and psychosocial components, including nutrition knowledge, attitudes toward lifestyle change, and behavioral intention, are also important [9]. Previous research recommends nutrition education, motivation for lifestyle change, structured weight-management programs, psychosocial support, and reproductive-health monitoring before pregnancy [9,10].

Unlike studies that focus primarily on obesity and infertility, this study describes physical, psychological, attitudinal, and overall preconception readiness among women married for 1–2 years with obesity and no children in the Panekan Community Health Center service area. The study provides community-based information that can support primary health-care interventions, particularly nutrition counseling, weight management, and healthy-lifestyle guidance before conception. This study aimed to describe physical, psychological, and attitudinal readiness among 44 women married for 1–2 years with obesity.

METHODS

This study employed a descriptive quantitative design with a cross-sectional approach. It was conducted from January to May 2026 in the Panekan Community Health Center service area, Magetan Regency, East Java, Indonesia, which covers 13 villages. Data collection was carried out door-to-door with the assistance of research assistants and village midwives.

The total population was used as the sample through total sampling. The sample consisted of 44 women who had been married for 1–2 years, had obesity status (BMI ≥ 25.0 kg/m² for the Asian population), and had no children. Variables included maternal characteristics (age, education, and employment status), physical readiness, psychological readiness, attitudinal readiness, and overall preconception readiness.

Data were collected using two validated instruments. The Health Promoting Lifestyle Profile II (HPLP II), adapted from Pender, Walker, and Sechrist (1995), consists of 52 Likert-scale items (Never=1, Sometimes=2, Often=3, Always=4). It comprises physical readiness (19 items; score 19–76; good 59–76, sufficient 39–58, insufficient 19–38), psychological readiness (15 items; score 15–60; good 47–60, sufficient 31–46,

insufficient 15–30), and attitudinal readiness (18 items; score 18–72; good 56–72, sufficient 37–55, insufficient 18–36). The Preconception Care Improvement Scale (PCIS), adapted from Teshome, Birhanu, and Kebede (2022), consists of 17 nominal-scale items (Yes=1, No=0; score 0–17; ready 9–17, not ready 0–8).

Descriptive analysis was presented as frequency distributions and percentages. Bivariate analysis was presented using cross-tabulation of frequencies and percentages. Because this was a descriptive study, the cross-tabulations were used to describe distribution patterns rather than to establish causal or statistically significant associations. The study obtained ethical approval from the Health Research Ethics Committee and research permits from the relevant regional authorities.

RESULTS

Based on Table 1, all respondents were aged 21–35 years, with a mean age of 27.11 years (minimum 22, maximum 35). Most respondents had senior high school education (79.55%) and were unemployed (61.36%).

Sufficient readiness dominated physical (75.00%), psychological (77.27%), and attitudinal (70.45%) domains. All respondents (100%) were classified as ready for preconception based on PCIS (Tble 2).

Based on Table 3, sufficient readiness dominated all readiness dimensions across education and employment subgroups. Psychological readiness was slightly higher in the sufficient category among university/college-educated respondents (77.78%), while attitudinal readiness in the sufficient category was highest among employed respondents (76.47%). Overall PCIS readiness was 100% across all subgroups. These descriptive patterns should not be interpreted as evidence of statistical association because inferential testing was not performed.

Table 1. Distribution of maternal characteristics (n=44)

Maternal characteristic	Frequency	Percentage
Age 21–35 years (mean = 27.11, min = 22, max = 35)	44	100
Education Senior high school University/college	35 9	79.55 20.45
Employment status Unemployed Employed	27 17	61.36 38.64

Table 2. Distribution of physical, psychological, attitudinal, and preconception readiness (n=44)

Variable	Category	Frequency	Percentage
Physical readiness	Good	5	11.36
	Sufficient	33	75.00
	Insufficient	6	13.64
Psychological readiness	Good	9	20.45
	Sufficient	34	77.27
	Insufficient	1	2.27
Attitudinal readiness	Good	11	25.00
	Sufficient	31	70.45
	Insufficient	2	4.55
Preconception readiness (PCIS)	Ready	44	100
	Not Ready	0	0

Table 3. Distribution of preconception readiness based on maternal characteristics (n=44)

Variable	Category	Age 21–35 years: f (%)	SHS: f (%)	University/College: f (%)	Unemployed: f (%)	Employed: f (%)
Physical readiness	Good	5 (11.36)	3 (8.57)	2 (22.22)	2 (7.41)	3 (17.65)
	Sufficient	33 (75.00)	27 (77.14)	6 (66.67)	21 (77.78)	12 (70.59)
	Insufficient	6 (13.64)	5 (14.29)	1 (11.11)	4 (14.81)	2 (11.76)
Psychological readiness	Good	9 (20.45)	7 (20.00)	2 (22.22)	5 (18.52)	4 (23.53)
	Sufficient	34 (77.27)	27 (77.14)	7 (77.78)	21 (77.78)	13 (76.47)
	Insufficient	1 (2.27)	1 (2.86)	0 (0)	1 (3.70)	0 (0)
Attitudinal readiness	Good	11 (25.00)	7 (20.00)	4 (44.44)	7 (25.93)	4 (23.53)
	Sufficient	31 (70.45)	26 (74.29)	5 (55.56)	18 (66.67)	13 (76.47)
	Insufficient	2 (4.55)	2 (5.71)	0 (0)	2 (7.41)	0 (0)
Preconception readiness	Ready	44 (100)	35 (100)	9 (100)	27 (100)	17 (100)
	Not ready	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

SHS = Senior High School

DISCUSSION

The respondents were all aged 21–35 years, representing an active reproductive-age group. Age is relevant to obesity and reproductive health because changes in body composition and metabolism with increasing age may contribute to adiposity [11,12]. In women with obesity, excess adipose tissue may affect the hypothalamic-pituitary-ovarian axis and potentially contribute to anovulation, altered folliculogenesis, and reduced oocyte or embryo quality [7]. Thus, reproductive-age women with obesity require early preconception assessment rather than waiting until pregnancy occurs.

Most respondents had senior high school education. Education can influence access to and understanding of reproductive-health information [13]. However, the predominance of obesity in a group with this educational background illustrates that knowledge alone may not translate into sustained healthy behavior. Preconception services should therefore combine information with practical skills, motivation, and individualized support for dietary and physical-activity changes.

Most respondents were unemployed. Employment status may be related to daily activity patterns and eating routines, although the present descriptive design cannot establish a causal relationship. Previous literature suggests that less structured daily activity may contribute to sedentary behavior and irregular eating patterns [14,15]. Counseling should therefore focus on realistic daily routines, physical activity, and healthy food choices regardless of employment status.

Physical readiness was sufficient in 75.00% of respondents. Because the physical domain includes health responsibility, physical activity, and nutrition, the result suggests that respondents had moderate engagement in health-promoting behaviors. Nevertheless, sufficient readiness should

not be interpreted as absence of obesity-related risk. Obesity can interfere with ovulation, oocyte quality, and endometrial function [7,8]. Therefore, weight management should remain a central component of preconception care for this population.

Psychological readiness was sufficient in 77.27% of respondents. Psychological preparation is important because stress management and emotional adaptation can influence readiness for parenthood. Women with obesity may also experience psychosocial pressure and weight stigma [16]. Integrating psychological support into preconception services can therefore help maintain readiness while addressing barriers to healthy lifestyle change.

Attitudinal readiness was sufficient in 70.45% of respondents. The interpersonal component highlights communication with partners and health workers. A couple-based approach may strengthen communication, husband involvement, and joint decision-making in reproductive planning [17,18]. Although husband support was not measured in this study, it is an important variable for future research.

All respondents were classified as ready according to the PCIS. The scale covers health screening, micronutrient use, tetanus vaccination, consultation with health professionals, healthy dietary practices, avoidance of addictive substances, discussion with the husband regarding timing of childbearing, and contraception cessation. The finding indicates that respondents reported multiple promotive and preventive behaviors. However, PCIS readiness should be interpreted alongside obesity status. A respondent can meet behavioral readiness criteria while still having a clinically important obesity-related fertility risk. The study therefore supports strengthening structured weight-management interventions before conception, rather than considering behavioral readiness alone sufficient.

The cross-tabulation showed that sufficient readiness dominated across education and employment groups. Because the study was descriptive and included only 44 respondents, these patterns should be viewed as distributions within this population rather than evidence that education or employment causes differences in readiness. Future studies with larger samples and inferential analyses could test these relationships more rigorously.

Several limitations should be considered. The study was conducted in one community health-center service area with a small accessible population, limiting generalizability [19,20]. The cross-sectional design captured readiness at one point in time and could not assess changes before and after intervention. In addition, HPLP II and PCIS relied on self-report, so social desirability and recall bias may have influenced responses. Future research should use longitudinal or prospective designs and consider additional variables such as husband support, cultural norms, and lifestyle behaviors. Intervention studies should also evaluate structured, clinically supervised weight-management programs before conception.

CONCLUSION

Although behavioral and psychosocial indicators of preconception readiness were favorable, obesity remains a central fertility-related risk and an important unmet physical-health concern. Therefore, preconception care for women with obesity should prioritize structured weight management alongside nutrition counseling, healthy physical activity, psychological support, and reproductive-health monitoring before conception. Future longitudinal and intervention studies should assess changes in readiness over time and evaluate the roles of husband support, cultural norms, lifestyle behaviors, and structured preconception weight-management programs.

Ethical consideration, competing interest and source of funding

-This study received ethical approval from the Health Research Ethics Committee of Poltekkes Kemenkes Surabaya, Number: EA/4365/KEPK-Poltekkes_Sby/V/2026.

-There is no conflict of interest related to this research.

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