ADDIS ABEBA UNIVERSITY

COLLEG OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

Unhealthy weight control practice and related factors among postpartum women in

Addis Abeba, Ethiopia

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A thesis Submitted to the school of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirement for the Degree of Masters of Public Health in Public Health Nutrition.

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ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCE

SCHOOL OF PUBLIC HEALTH

UNHEALTHY WEIGHT CONTROL PRACTICE AND RELATED FACTORS AMONG POSTPARTUM WOMEN IN ADDIS ABABA, ETHIOPIA

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Jun, 2021

ADDIS ABABA, ETHIOPA

DECLARATION

I Hana Assefa declare that this work entitled “Unhealthy weight control practices and related factors among postpartum women in Addis Ababa, Ethiopia” is a result of my effort and all the materials used for the study have been duly acknowledged, I have produced it independently except for the guideline and suggestions of my advisors. This study has not been submitted for any degree in this and any other universities. It offered for the partial fulfillment of the degree of Master in Public Health Nutrition.

Hana Assefa

Signature _____

Date _____

APPROVED BY THE BOARD OF EXAMINERS

We, the undersigned members of the board of examiners of the final open defense by Hana Assefa, have read and evaluated her thesis which entitled as “Unhealthy weight control practices and related factors among postpartum women in Addis Ababa Ethiopia”. This thesis, by Hana Assefa is accepted in its present form by the board of examiners as fulfilling for the degree of masters of public health in public health nutrition.

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Acronyms and Abbreviations

ANC	Antenatal Care
AOR	Adjusted Odd Ratio
BAQ	Body Attitude Questionnaire
BMI	Body Mass Index
BSC	Bachelor science
BSQ	Body Shape Questionnaire
BIS	Body Image Satisfaction
BWP	Body Weight Perception
CI	Confidence Interval
CL	Confidence Level
COR	Crude Odd Ratio
EAT	Eating Attitude Test
EDHS	Ethiopian Demographic Health Survey
ED	Eating Disorder
EDE-Q	Eating Disorder Examination Questionnaire
EPI	Expanded Program of Immunization
FID	Feel Ideal Difference
FP	Family Planning
HC	Health Center

IgA	Immunoglobulin A
IQR	Inter Quartile Range
MCH	Maternal Child Health
NGO	Non-Governmental Organization
PHQ-9	Patient Health Questionnaire
PNC	Postnatal Care
PP	Post-Partum
PPD	Post-partum Depression
RDA	Recommended Daily Allowance
SD	Standard Deviation
SES	Socio Economic Status
TEM	Technical Error Measurement
TV	Television
UWCP	Unhealthy Weight Control Practice
VIF	Variance Inflation Factor
WHO	World Health Organization

Abstract

Background: Women in the postpartum period are more concerned about their weight status and frequently practice unhealthy weight control methods. However, little is known about the practice of unhealthy weight control among postpartum women in Ethiopia.

Objectives: To investigate the prevalence of unhealthy weight control practices and related facors with postpartum weight status and body image dissatisfaction among postpartum women in Addis Ababa, Ethiopia.

Methods: A health facility-based cross-sectional study was conducted among 640 postpartum women from 6 months to 9 months postpartum period from randomly selected public health centers and private maternal and child medical centers. Unhealthy weight control practices were assessed by using the 12 item self-reporting tool with the reference period of 30 days. Body image dissatisfaction was measured by using 8 items Evan & Dolan Body Shape Questionnaire. Bivariable and multivariable logistic models were fitted to identify predictors of unhealthy weight control practice while controlling for possible confounders. The results are presented using adjusted odds ratio (aOR) with the respective 95% confidence interval (CI).

Results: The prevalence of unhealthy weight control practice among postpartum women in the past 30 days was 38.3% (95%CI: 34.4-42.2). Factors that were associated with unhealthy weight control practices were Perceived overweight (aOR = 7.68; 95%CI: 2.01-29.38), being overweight (aOR=6.48; 95%CI:1.86-22.53), having only one child (aOR = 2.98; 95%CI: 1.63-5.45), being a single mother (aOR=5.94; 95%CI: 2.13-16.55 and having body image dissatisfaction (aOR=1.16; 95%CI: 1.11-1.21). Further reported peer (aOR = 2.96; 95%CI: 1.56-5.62), husband/dating partner (aOR = 2.63; 95%CI: 1.44-4.82) and social media (aOR = 4.79; 95%CI: 2.22-10.33) influences were associated practice of unhealthy weight control practices.

Conclusion: Unhealthy weight control practice are commonly among post-partum women in Addis Ababa. To address the problem, programmatic and severe provision related attentions should be given attention.

Keywords: unhealthy weight control, postpartum women, eating disorder, Ethiopia

1. INTRODUCTION

1.1. Background

Postpartum is a period from delivery of the placenta until the return of the reproductive organs to their normal non-pregnant state. In humans, the postpartum period generally lasts for six to eight weeks (1, 2). However, because of the long persistence of much physiological change now it is recommended to extend the period to one year (3). The postpartum period, is characterized by physiological and metabolic adjustment that foster return to a pre-gravid state. In this period, women become susceptible to physical and psychological complications, including unhealthy weight status and body image dissatisfaction (4). Cultural, psychological, and economical factors also put postpartum women on to unbalanced diet with a greater risk of overweight or obesity. Many women perceive this body shape and size change negatively, causing in body image dissatisfaction (5, 6)

Weight control practices include engagement in weight loss, gain or maintenance attempts (7). These weight control practices are divided into healthy, unhealthy, and extreme which is life-threatening (8, 9). Healthy weight control behaviors could include exercise, eating less fat, and increasing fruit and vegetable intake ((9, 10). Healthy weight control practice that recommends for postpartum lactating women is the combination of a healthy diet and exercise (11). On the other hand, unhealthy weight control practices are a departure from the recommended weight loss strategies. The common unhealthy weight control strategies are fasting for more than 24hours, eating small amounts of food than usual, using a food substitute, skipping meals, and vigorous exercise. Extreme weight control practices include use of drugs which suppress appetite, laxatives and diuretics and induced vomiting (9, 12,13). Nowadays, such practices are not limited only to high income countries and adolescents, it is also affecting postpartum women in low and middle income countries (12, 14-16).

Many factors may predispose women to practice unhealthy weight control activities. This may include body image dissatisfaction (14, 17-22), which mainly relates to pregnancy-related weight change, postpartum weight status, and weight retention (6, 18). Weight misperception,

socioeconomic status, race, culture and ethnicity, social pressure, and some demographic factors including age and marital status are other predisposing factors (14, 23).

Studies show that overweight and obesity among women is increasing globally and also in low and middle-income countries (27,31,32). Analysis from Ethiopia Demographic and Health Survey (EDHS) data found that the prevalence of overweight/ obesity of adult women in Addis Ababa shows rapid growth; which was 19.9% in 2011 and it became 29.4% in 2016 (33, 34). Based on the same data analysis shows that, between 2000 and 2011, the prevalence of overweight and obesity increased by 28%, and urban obesity raised by 43.3% (28). Other studies also shows the increasing burden of overweight and obesity among women in Addis Ababa and other cities in Ethiopia. Based on the study that has been done in Hawasa city, the prevalence of overweight including obesity among adult women was 36.4% and in Addis Ababa among civil servants it was about 27.9% (29, 35). The Common effects of unhealthy weight control practice on postpartum women are depression (24), eating disorders (13), and breastfeeding difficulties (24-27).

In order to design effective intervention, first we need to understand the extent of unhealthy weight control practice and factors that lead postpartum women to engage in it. Therefore, it is necessary to study the magnitude and predicting factors of UWCP among postpartum women in Ethiopian context.

1.2. Statement of the problem

The prevalence of weight control attempts is directly related to the increasing prevalence of overweight and obesity and it is more common in high-income countries. However; nowadays the problem of overweight and obesity is not limited to those countries, it also getting increased among low and middle-income countries like Ethiopia (1, 28, 29). In the postpartum period majority of women attempted to lose weight. In this period weight loss attempt reaches about 70% to 82% (16, 30), the use of excessive exercise range from 2.1% to 25%(16, 18), fasting reaches about 73%, using dietary pills about 8.3% (16), %, self-induced vomiting 2.6%, and laxative and diuretic misuse about 2.6 % (18).

Studies show that overweight and obesity among women is increasing globally and also in low and middle-income countries (27,31,32). One of the main contributing factor for overweight and obesity of women is pregnancy-related weight gain and postpartum weight retention (36). As a result, women in the postpartum period experience high dissatisfaction with their weight and body shape (17, 22). Study shows by 4 months postpartum, 70 % of women were attempting to lose weight and many of them experience food restraint such as food avoidance and adherence to specific food rules (30). Women who are less satisfied with their body shape and weight have mostly used unhealthy weight control strategies; this experience puts them at a risk of developing eating disorders and depression (23, 24). In addition, weight misperception, depressive symptoms, and socioeconomic status are found to be other contributing factor to engage in different unhealthy weight control methods (14).

The extreme unhealthy weight control practices are indicators of eating disorder symptoms (13, 24). This practice among postpartum women may result in maternal and child health complications. Extreme obsession of lactating women in loss of weight, mostly result in decreased intention to breastfeed (17). Lactating women who devote their time to experience UWCP fail to get the recommended daily allowance of energy and other nutrients. As a result they may not have sufficient energy available to breastfeeding their infant (37). They are less likely to breastfeed their children and more difficult to interact when feeding those, because of this infants are smaller than those of mothers without eating disorders (24-26).

Postpartum women with high body image dissatisfaction and weight concerns were more engaged in unhealthy weight control practices and all these practices have a great impact on the development of postpartum depression and anxiety symptom which is an important health concern that affects the health of mother and child. Depression among mothers affects the child's early mental growth and development to a large extent (21, 23, 38). Extreme weight control practices may also be a cause physically damaging and life-threatening problems, causing osteoporosis, dental erosion, gastrointestinal problems, kidney damage, and cardiac abnormalities, which combined with higher suicide risk, result in elevated mortality (39).

1.3. Significance of the study

The problem of overweight and obesity among reproductive age women is not limited to high income countries, it also becoming a problem in low income countries like Ethiopia. With the increasing burden of overweight and obesity; weight loss concern among women become highly trained. In Ethiopian context most postpartum women start to move out for work and for other social reasons after 6 months. In relation to this, different factors push postpartum women to practice unhealthy weight control practices.

The problem of unhealthy weight control practices are not only limited in the adolescent period, it also becomes highly prevalent among postpartum women and women in the reproductive age group in both developed and developing countries. However; most studies are focused only on unhealthy weight control behavior among adolescent and there are limited number of studies among postpartum women while this period is critical period in the lives of mother and babies.

As my knowledge the magnitude of unhealthy weight loss practices and related factors among postpartum women has not been yet studied in Ethiopia. This study was therefore aimed to assess the magnitude of unhealthy weight control attempt and its association with postpartum weight status and body image dissatisfaction among postpartum women in Addis Ababa, Ethiopia.

The finding of this study could be used to know the extent of weight lose attempt behaviors of postpartum women in Ethiopia and to identify the risky practices they take to control their weight. It also helps to develop strategies to address those factors associated with unhealthy weight lose attempt of postpartum women. In addition, the result of this study could also use to design and implement prevention strategy and to promote healthy weight control strategies as a result, it will promote maternal and child health.

2. LITRATURE REVIEW

This section summarizes literature from worldwide, continental, and national levels about the prevalence of unhealthy weight control attempts and factors associated with unhealthy weight control attempts. It includes studies done among the general population, adolescents, adult women, and postpartum women. It also includes a conceptual framework that shows the predictors of unhealthy weight control practices; which drives from different kinds of literature.

2.1. Prevalence of unhealthy weight control practice

In most studies reviewed the included unhealthy weight control behavior are long hour fasting, eating small amounts of food than usual, using a food substitute like powdered and special drink, skipping meals, more exercise, excessive smoking and the extreme weight control practices include using drugs that suppress appetite, self-induced vomiting and using laxatives and diuretics (14,15,18).

The prevalence of UWCP is directly related to the prevalence of overweight and obesity. With the increasing overweight and obesity problem, studies show the increasing prevalence of weight control attempt both healthy and unhealthy in the low and middle-income country (1, 14, 38). Most studies are focused on the adolescent period and there are only a few studies done on postpartum women with unhealthy weight control attempt prevalence (15,16,18,30).

Those available studies done among postpartum women reveal that, women in this period are not satisfied with their weight and shape, and this leads them to weight loss attempts (15, 34). Many postpartum women who attempt to lose weight do not use the recommended weight-loss strategies, rather they use the unhealthy even extreme weight control methods. A commonly used weight control method is dieting which is changing the way of eating for weight loses. Laxatives and diuretics misuse also practiced by women (15, 16, 18, 30).

A study in the US reported that at 4 months postpartum 70 % of women were trying to lose weight and this is also related to decreased weight satisfaction. The Satisfaction and Dieting Scale was used in this study to assess dieting behavior and weight satisfaction (30). Similarly in Qatar high

proportion of postpartum women at 6 month postpartum period engages in some form of unhealthy weight control practice; 73% by fasting or crash dieting, 25% excessive physical exercise, and taking diet pills about 8.3% (16). Among Australian prim-parous postpartum women, 16.3% stated that they had dieted since the birth of the baby, while 18.4% indicated that they were currently dieting. The women who dieted had both lower weight and shape satisfaction (15).

The study done among disadvantaged Brazilian postpartum women shows the figure of different unhealthy eating behavior among 4th -5th month postpartum women by using Eating Disorder Examination Questionnaire (EDE-Q) and inappropriate eating behavior assessment. Based on the study result, the prevalence of self-induced vomiting 2.6%, laxative misuse 1.9%, diuretic misuse 0.7% and excessive exercise was 2.1% (18).

Data analysis from a national survey in the US in 1999 and 2004 shows that; the prevalence of weight loss attempts among adult women is 43.6 % and 37.6% respectively, this is about twice that of men. Only 19.4% and 34% of them use recommended weight loss method which is a combination of eating fewer calories and 150 minutes or more leisure-time physical activity in the respective years. Others use unhealthy weight loss strategies like skipping meals, eating food supplements, joining a weight loss program, taking a diet pill, taking water pills or diuretics, fasting for > 24 hours, taking laxatives, and vomiting (12, 40).

According to the report from the population study done in Brazil, the prevalence of both healthy and unhealthy weight control attempt among women was 30.8%. The most common methods they used were dietary control and physical activities. However, 12.8% used some substance with the aim of weight loss. The most commonly used substances were teas it accounts about 8.7% followed by the drug which was 7.3% (41). In South Africa among 15 years and older adults; 12.1 % of participants are attempted to lose weight, from the total participant 9.2% of participants reported using medication, supplements, or other products to lose weight. Increasing water intake and drinking hot water to lose weight in this study accounts for 9.2 % (42). Similarly in Togo, weight loss attempts among adults reached about 40% (43).

The prevalence of weight loss attempts among adolescents is also high. A cross-sectional study among university students in Beirut shows 7.8% of female students use extreme weight loss practices within the preceding 3 months (44). Similarly among South African female university students 64.8% attempt to lose weight (8).

In Addis Ababa, Ethiopia, 30.8% of high school female adolescents were engaged in unhealthy weight control practices (14). In this study, they use self-reported weight control practices of adolescents in the previous 30 days and those who practice at least one methods in a week was considered as UWCP. Skipping a meal, eating less amount of food, and doing excessive exercise which is more than 1 hour per day is the most commonly used weight control method. This study reveals the hidden and unrecognized burden of the problem (14). Another study in Addis Ababa, Ethiopia by using EAT-26 Questionnaire, found 8.6% prevalence of eating disorder among adolescent (45). From the above studies, we can understand that the concern of weight control and the use of unhealthy weight loss practices becoming an increasing problem among postpartum women, adolescents, and adult women. Even though the studies done in Ethiopia was conducted among adolescents, other studies which was done in other low and middle-income countries among postpartum women have reveal that the problem was not limited to adolescents and the western population (1, 10, 16, 18).

2.2. Factors associated with unhealthy weight control attempt

There are so many predictors of unhealthy weight control practice. From different studies done in the general population and postpartum women, we can divide these factors into two; individual factors which include physical and psychological factors, and socio-cultural factors which include demographic and socio-economic factors. This section will focus on these individual and social factors associated with unhealthy weight control practice.

2.2.1 Individual factors

2.2.1.1 Body image dissatisfaction

Many studies shows that because of pregnancy related physiological change most women are not satisfied with their weight and shape after having a baby. They have a desire to return quickly to their pre-pregnancy shape and weight status and it leads them to engaged in different weight loss attempts ((30, 46).

A qualitative study among postpartum women reveals that many postpartum women are shocked, surprised and disappointed with their changed body shape and weight (17). Other studies which was done among postpartum women also shows women's dissatisfaction with their postnatal body weight and shape is significantly associated with dieting and other unhealthy weight control behaviors (15, 39, 46). Similarly Turkish women in the first year postpartum period show middle level body image dissatisfaction and it correlated negatively with women's age and birth number by using Body Image Satisfaction(BIS) tool (10).

In US 23.6% of adult women are not satisfied with their body size which is about twice of men and those women who are not satisfied with their body size are more likely try to lose weight (20). Similarly other study in US shows increasing scale of body image dissatisfaction from 0-1 month to 9 month postpartum significantly. The body image dissatisfaction among them predicts the practice of some unhealthy eating behavior. Body image dissatisfaction also positively associate with shame, guilt, and depressive symptom; and negatively associated with self-compassion and marital satisfaction (21, 30).

Similarly; another study which was done in Australia shows that women describe more body dissatisfaction during postpartum period than the pregnancy time (19). In Qatar postpartum women shows great body image dissatisfaction by using Body Shape Dissatisfaction score measurement and the body image dissatisfaction relates with increased prevalence of unhealthy dieting behaviour to lose weight (16). Another prospective study among disadvantaged population in Brazil shows that the postpartum period is more risk for weight and shape concern than the pregnancy period. This excessive concern with body shape and weight push them to engage in unhealthy dieting behavior (25).

The study done in Ethiopia also reveals, about one third of female adolescents were not satisfied with their body shape. This study use body part satisfaction scale to measure body dissatisfaction. Body image dissatisfaction was associated with engagement in unhealthy weight control practice especially the middle torso dissatisfaction (14). Similarly in many countries, high level of body image dissatisfaction push adolescents to practice unhealthy weight controls (8, 47, 48).

2.2.1.2 Body weight misperception

Weight status misperception is defined as the disagreement or mismatch between an individual's actual weight status and their perceived weight status (49).

Most women in the reproductive age group show a discrepancy between their real and ideal weight with preference to be slim, because of this they engage in both healthy weight control and unhealthy food restriction strategies (10, 15, 16, 30, 36). A systematic review which includes 68 articles found strong association between overweight perception and weight control attempts. Perceived overweight was related with higher eating disorder but the direction of overweight perception and the development of unhealthy weight control practice was unclear because of the study design (13).

Another nationwide population-based survey among Korean women shows a high prevalence of weight misperception and which is strongly associated with different kind of healthy and unhealthy weight control methods. Older women mostly underestimate their weight and less interested in weight loss activity and on the other hand younger women overestimate their weight and more interested in weight loss attempts (50). Weight misperception mostly overestimation has been found to be associated with more unhealthy weight control behaviors (38, 50, 51).

The study done in South Africa shows, adults those who attempt to lose weight their perceived weight is greater than the ideal weight and they had greater body size dissatisfaction. From the total participant 9.2% of participants reported using some form of unhealthy weight lose methods (42).

Cross-sectional study among Chinese female adolescent found that 46% of participants misperceived their weight status and 4.2 % of the total sample attempt to lose weight. Among those 20.2% were trying unhealthy weight control methods. From this study weight misperception was associated with practicing different unhealthy weight control methods (52). Similar result is found

in Korean, USA African American, Latino, and White Youth, Saudis female college age students and in South Africa community survey (9, 47, 53). On the other side, there are no significant differences in weight reduction behaviors between Thailand females those who have correct perception and misperception of being overweight (54).

In Ethiopia among female adolescents, over weight perception was higher and it was significantly associated with engagement in unhealthy weight control practice. Because of this many underweight and normal weight female adolescents were engaged in UWCP(14).

2.2.1.3. Current weight

The actual body weight status is another predicting factor of unhealthy weight control. In the postpartum period, weight characteristics are their current postpartum weight and weight retention after giving birth (21). The weight retained after pregnancy is the difference between postpartum and pre-pregnancy weight. This change makes women to dissatisfied by their body weight and shape and it may leads them to practice unhealthy weight control attempts practice (21, 48).

The study done among Korean women shows that; their perceived weight is more associated with weight control attempts than their actual weight status. However; an overweight and obese woman shows high weight control attempts, compared with normal weight women. Unhealthy weight control practice was more practiced by obese women(50).

In Qatar, obese and overweight postpartum women shows high body dissatisfaction and unhealthy dieting behavior than normal weight women (16). Similarly a prospective study among Brazilian disadvantaged population shows that eating disorder symptoms was high among women who has excessive weight gain during pregnancy and weight retention at 5-5th month postpartum (18).

Another study among many race groups of adolescents in US shows that; those adolescents with large body size has negative body perception and it is directly related with weight lose attempts (47).

In Ethiopia high proportion of overweight female adolescents are more engaged in UWCP than the normal weight and underweight adolescents, it shows that 85.5% of overweight adolescents were engaged in UWCP (14). Similarly other studies among adolescent also show the effect of high BMI on practicing different type of weight loss practices (44, 47, 52, 55).

Most of the studies reviewed show that actual weight status was associated with unhealthy weight control practice. Overweight and obese women are more prone to practice unhealthy weight control practice than normal and underweight women, even if weight misperception is more predisposed women to unhealthy weight control practice,

2.2.2. Socio-cultural factors

2.2.2.1. Socioeconomic factors

From different studies there are two different arguments on the relation between body dissatisfaction, engagement in unhealthy weight control methods and socioeconomic status. Some found that women and adolescent from high socioeconomic status have many sources of information and more influenced by media. They are close to westernization culture and it leads them to have weight misperception, body image dissatisfaction and engagement in unhealthy weight control practices (14,56,57). On the others hand, researchers discuss that people in the high socio economic status have an access to get the proper information on healthy weight status and healthy weight control practice (10,18,47,58).

Adult women in US from high Socio economic status have more weight concern and practicing healthier weight control practices. Unhealthy dieting practices, on the other hand were more practiced by women in low SES group (58). Similarly the study among youths in Minnesota from different ethnic group reveals that higher SES was associated with positive body perception and fewer weight loss attempts (47) . On the other hand in Sweden and British, adults with higher SES group mostly perceive themselves as overweight. They try to lose their weight by more dietary restrictive and physical activity (56, 57).

A prospective study done among disadvantaged postpartum women in Brazil argued that, their low socioeconomic status are predisposed them to worse mental health and body dissatisfaction; it leads them to unhealthy dieting behaviour (18). On the other hand Turkish postpartum women with high SES also have high satisfaction with their body image (10).

In Seychelles most adults with high socio economic status perceive their weight as overweight. The study also shows that overweight/obese individuals from high SES were more likely to perceive their excess weight appropriately (59).

From the above studies we can see the association of socioeconomic status with weight perception, body dissatisfaction and engagement in unhealthy weight control practices is mixed. So this study will be able to see if socioeconomic status in our country has either positive or negative impact on unhealthy weight loss practice.

2.2.2.2. Race and culture

Now a day, because of widely spreading western culture most societies put thinness as a standard for beauty and give excessive concern on standards of beauty which is often difficult to achieve (60). During the postpartum period because of pregnancy related weight and shape change women move away from the thin ideal. This deviation results in body dissatisfaction and finally engagement in different unhealthy weight control methods (15, 17, 36).

The study done in US among postpartum reveals that; body dissatisfaction is high among those other than black race (6). Similarly the study done among different ethnic group youths shows; their body size status, body perception and weight loss attempt is different in all ethnic groups(47). In US engagement in different unhealthy dieting behavior among adolescents is not the same in all ethnic groups (61).

Taking the above study findings, race and ethnicity in diversified society might have association with weigh concerns and weight control practices.

2.2.2.3. Social pressure and media influence

The role of social relationships is more determining women's body satisfaction, weight concern and weight control practices. Because women "accept weight as a defining aspect of their value"(62)

While the spreading globalization, women in the low and middle-income countries also have access to different source of information which told about different kinds of weight control methods.

Studies show that among married women their husbands play a great role on women's satisfaction with their body, weight concern and weight control attempts. The study done in US shows, most adult women wanted to become thinner because they thought their husbands wanted them to be thin. This study reveals that husbands tend to be more content with their wives' bodies (62). Similarly another study in US shows that; marital satisfaction is significantly related to body satisfaction but their marital status is not associated with increased body dissatisfaction (63).

In US one experimental study reveals that pregnant and postpartum women who exposed to magazines with the picture of pregnant/postpartum women shows more body image dissatisfaction than those who are not exposed to those magazine (64). The study done in Qatar among 6 month postpartum women identifies the sources of information about nutrition and weight loses methods. The main sources of information were Television (TV), Magazines and Newspapers, the Internet, and Family and Friends (16).

In Brazil, the influence of mass media is associated with a greater probability of adolescents presenting with body dissatisfaction and also associated with an increased risk of developing ED (65). In South Africa, adolescent girls are influenced by peers and parental criticism about their weight and it leads them to practice unhealthy weight control methods (66).

2.3. Physical exercise in the postpartum period

Regular physical activity is important life style to the health of women. Physical activity will help women to improve aerobic fitness, decrease body fat, improve bone mineralization and decrease risk of chronic diseases. Despite the health benefit of physical activity the safety issue of vigorous activity are relevant to women (3)

In the postpartum period mild and moderate exercise after baby is feed is recommended because it is helpful and no adverse consequence to the mother or to the breastfeed baby. However, strenuous exercise during postpartum period may have different health consequence. Some studies show it has effect on breast feeding, after vigorous exercise accumulation of lactic acid in breast becomes high and IgA level in breast milk decreased. Breast-feeding women who perform strenuous exercise may be at the risk of developing nutritional deficiency both micro and macro nutrients because of

metabolic demand for lactation and exercise (3,11). From the studies done among postpartum women excessive exercise range from 2.1% to 25% (16, 18). In the study done in Ethiopian adolescent the prevalence of excessive exercise or more than 1 hour per day exercise was 48.4% (14).

CONCEPTUAL FRAMEWORK

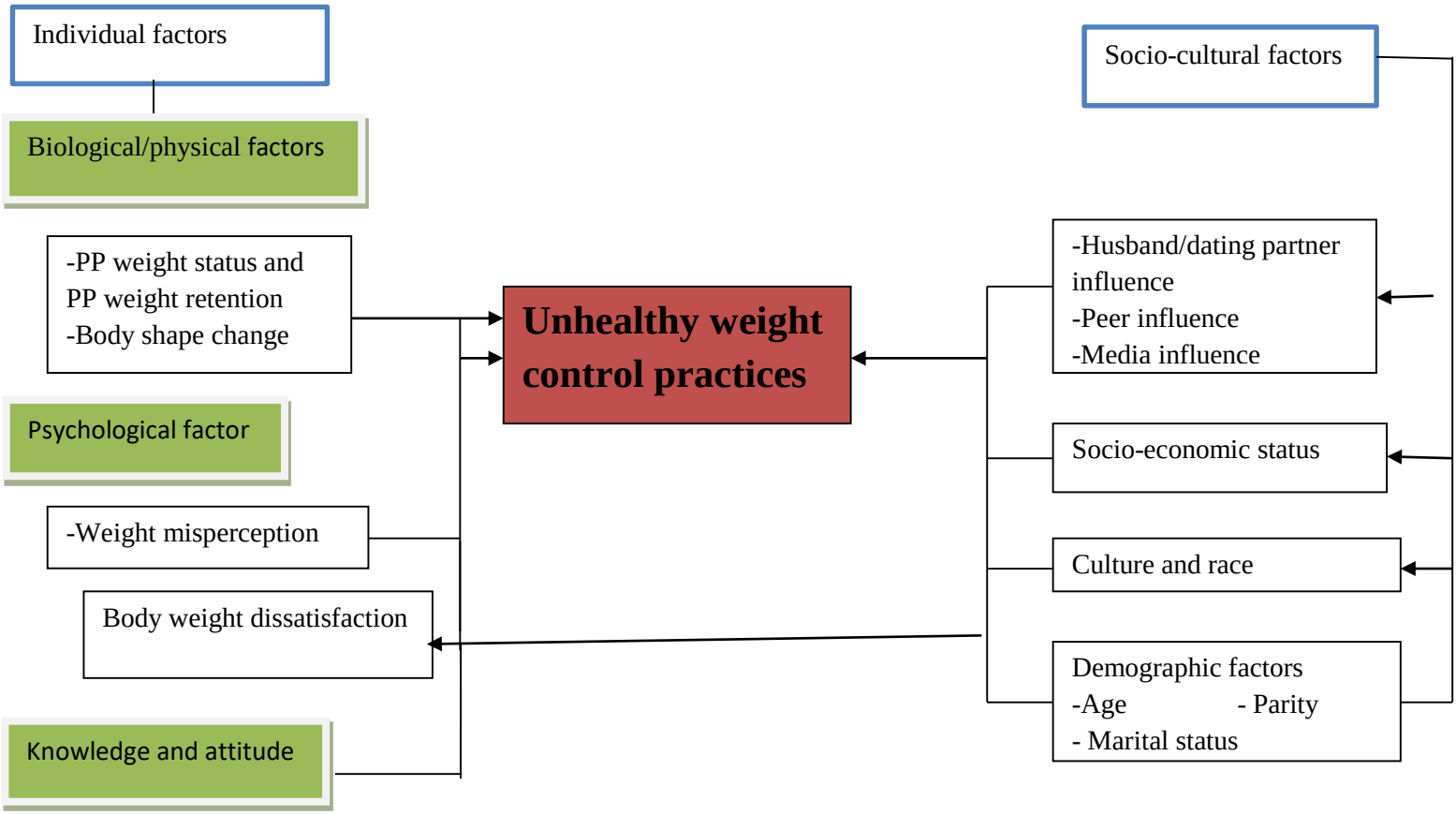

Figure 1.Conceptual Framework for Unhealthy Weight Control Practices

(Developed from different literature)

3. OBJECTIVE OF THE STUDY

3.1. General objective:

- To investigate the magnitude of unhealthy weight control practices and related factors among postpartum women in Addis Ababa, Ethiopia.

3.2. Specific objectives

- To assess the magnitude of unhealthy weight control practices among postpartum women in Addis Ababa, Ethiopia.

- To determine the association between postpartum weight status and unhealthy weight control practices among postpartum women in Addis Ababa, Ethiopia.

- To determine the association between psycho-social factors and unhealthy weight control practices among postpartum women in Addis Ababa, Ethiopia.

4. METHOD AND MATERIAL

4.1. Study Area

The study was conducted in Addis Ababa, the capital city of Ethiopia which lies 9°1′48″N latitude and 38°44′24″E longitude with a total area of 540 Km^2. Next to the city administration the city is divided into ten sub-cities which are the second administrative units. In terms of population size, kolfr Keranio is the largest sub-city followed by Yeka and Nifas Silk. Akaki Kality is the smallest and is followed by Lideta and Arada Sub-cities. The sub-cities are also divided into wereda's and Ketena. The latter is the smallest administrative unit with an approximate population of 400. In the city administration there are 116 woreda's. In the city, there are 1269 health facilities, by ownership status there are 1090 private, 112 public health facilities. According to the Mini EDHS 2019 report, post-natal care (PNC) coverage in Addis Ababa was 73.5% and vaccination coverage was 83.3% (67).

4.2. Study design and period

A health facility based cross-sectional study design was conducted among women from 6 months up to 9 months postpartum in Addis Ababa. The study was conducted from February 15 to March 15, 2021.

4.3. Population

4.3.1. Source and study population

The source populations for the study were all postpartum women from 6 months up to 9 months postpartum period in Addis Ababa. The study population was similar group of women who came for family planning and expanded program for immunization services in the selected public health centers and private maternal and child centers of Addis Ababa during the study period. We only include women from 6 to 9 months postpartum period because most of the time women starts to out for work and other social issue after 6 months and they were more exposed to weight concern.

4.4.3. Inclusion and Exclusion criteria

All postpartum women from 6 months up to 9 months period after giving birth aged 18 years or above were included in this study. Those women who had visible physical deformity were excluded. We exclude women who had visible physical deformity because it needs to give training to the data collectors on anthropometric measurements.

4.5. Sample size calculation

For the first objective

Single population survey formula was used to calculate the sample size using the following assumptions. Since the prevalence of unhealthy weight control practice among postpartum women in the low and middle-income country is not known, we assume the prevalence 50% (0.5). The other assumptions made during sample size determination were 95% confidence level, absolute precision or tolerable marginal error (d= 0.05), design effect of 1.5 and non-response rate of 10%.

$$n = \frac{(Z\alpha/2)^2 p\,(1-p)}{d^2}$$

Where:-

n=sample size for unhealthy weight control practice

Z=standard normal distribution

Level of significance: 5% (alpa 0.05) =1.96

d=margin of error 0.05

P= expected prevalence of unhealthy weight control practice among postpartum women 50% (0.5)

Design effect of 1.5

Non response rate 10%

$$n = \frac{(1.96)^2 \times 0.5 \times (1-0.5)}{(0.05)^2}$$

n= 384, by using design effect of 1.5 it becomes 576 then after consider 10% non-response it became 640. So, the final sample size was 640.

For the second objective

Double population proportion formula was used to calculate the sample size for two predicting factors.

$$n= [z \alpha/2 \sqrt{(1+1/r)} + z\beta\sqrt{p1 (1-p1) + p2 (1-p2)/r}]^2 / (p1 - p2)^2$$

Table 1: Sample size calculation for the 2nd objective.

By considering overweight and obesity as an exposure

P1 (proportion of unhealthy weight control practice among overweight and obesity female adolescent) (14)	P2 (proportion of unhealthy weight control practice among normal weight female adolescents) (14)	P (pooled proportion)	Ґ (ratio)	B (power)	A	Design effect	Non-response rate	N
85.5%	62.9%	74.2% (0.74)	1	80%	0.05	1.5	10%	198 in each group (396)

For the third objective

Table 2:- Sample size calculation for the 3rd objective

By considering presence of body image dissatisfaction as an exposure

P1 (proportion of weight reduction medication/supplement among women with body image dissatisfaction(43)	P2 (proportion of weight reduction medication/supplement among women with no body image dissatisfaction (43)	P (pooled proportion	Γ(ratio)	B (power)	A	Design effect	Non-response rate	N
21.2%	7.9%	14.6%	1	80%	0.05	1.5	10%	181 in each group (362)

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The first objective was taken as the final sample size because it gives the largest sample size which was 640.

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4.6. Sampling procedures

A multi-stage sampling procedure was used to obtain a representative sample of the study population. A total of 137 health facilities were stratified into the government health center and private maternal and child center. Among those facilities, there were 98 government/public health centers and 39 private maternal and child centers. From these facilities 8 private maternal and child centers and 20 public health centers a total of 28 health facilities were randomly selected. The total sample size of 640 was allocated proportionally for each selected private and public health facility.

The selected private MCH centers were Sema MCH center, Family Guidance Association clinic (FGA), Mariestopes, Abrak MCH center, Dinberua MCH center, Hemen MCH center, Care MCH center, and Grace MCH center. The selected public health centers were Abuare HC, Akaki HC, Kirkos woreda 5 HC, Kotebe 02 HC, Yeka woreda 10 HC, Nifas Silk woreda 2 HC, Nifas Silk woreda HC, Kirkos woreda 4 HC, Arada Giorgis HC, Shiromeda HC, Addis Ketema woreda 5 HC, Addis Ketema woreda 2 HC, Bole woreda 10 HC, Bole woreda 5 HC, Kolfe woreda 2 HC, Kolfe woreda 5 HC, Akaki Kality woreda 1 HC, Yeka woreda 12 HC, Kotebe Mesalemia HC and Bole Goro HC. All the selected health centers were non-Corona (Covid 19) centers.

Finally, using lottery method women in the postpartum period who meet the inclusion criteria were selected from the appointment list of family planning and EPI registration books. When we come across with women who didn't come during their appointment time, then we select the next consequent women from the appointment list.

Schematic presentation of sampling procedure

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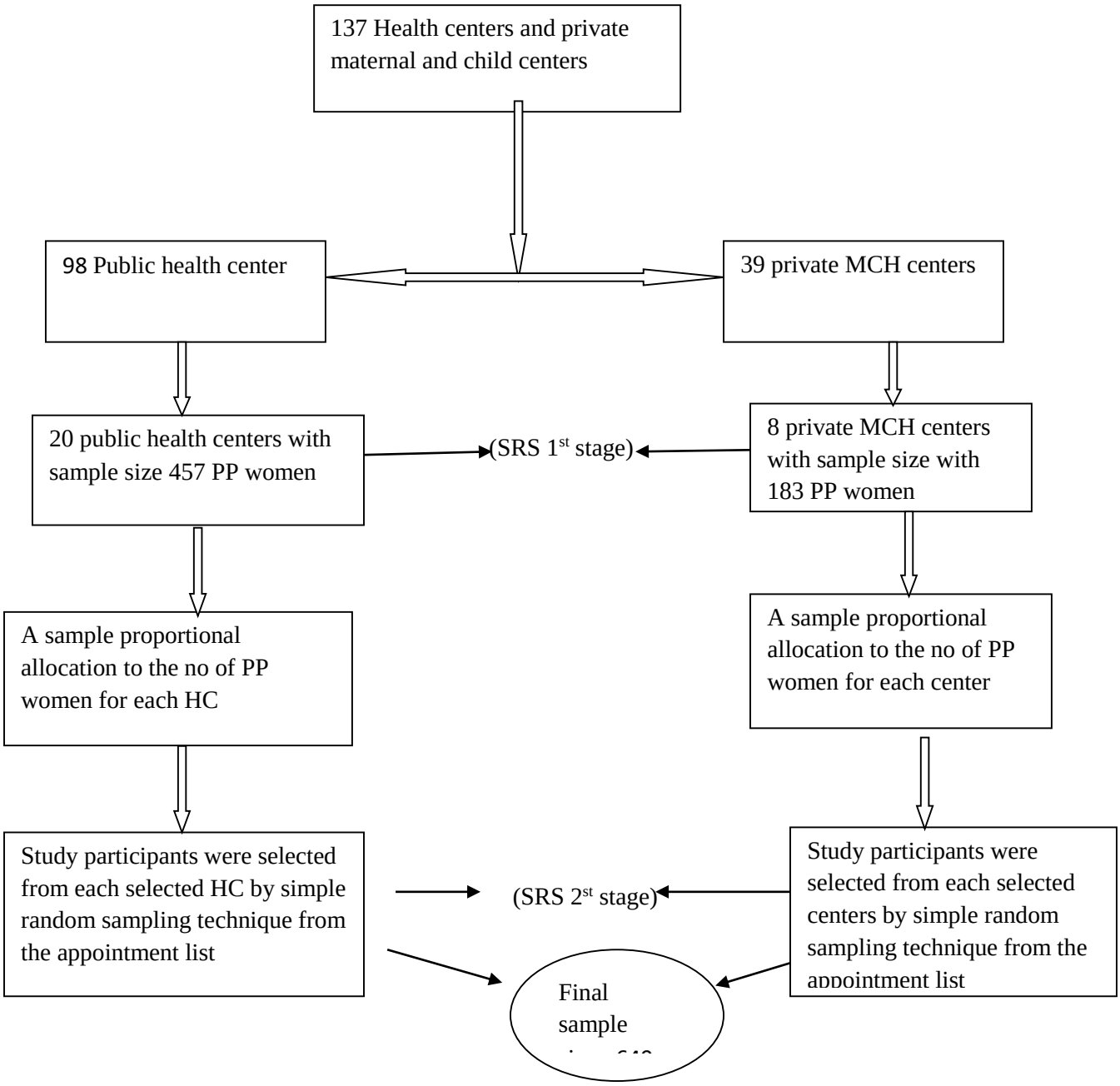

Figure 2: The schematic presentation of sampling procedure

4.7. Data collection tools and procedures

4.7.1 Questionnaire

In the interview questionnaire questions on socio-demographic status, reproductive characteristics, body weight perception, body image dissatisfaction, socio-cultural pressure, physical exercise, weight loss attempt, and engagement in unhealthy weight control practice and the source of information about UWCP were included. First, the questionnaire was prepared in English and then translates to the local language Amharic. Three days of training were given to the data collectors and supervisor. Before data collection, pretest were conducted on a sample of postpartum women from another health facility which was not included in the study.

4.7.2. Personnel and training

Data collection was conducted in a one-month duration which was from February 15 to March 15. The data was collected by four clinical nurses and one BSC degree holder nurse. The principal investigator taken the responsibility to control the quality of the data collected and the anthropometric measurement. Their anthropometric measurement was taken after the interview

4.7.3. Assessment of weight control practices

The questionnaire for this research was developed based on reported weight loss and control strategies of women extracted from different literature (12, 14, 50, 52, 61). It includes the self-reported weight control practices of postpartum women in the previous 30 days. First respondents were asked whether they were now trying to lose weight, gain weight, staying about the same, or are not trying to do anything about their weight. Then they were asked whether they were currently doing any of these unhealthy and extreme weight control practices which consist of 11 items: skipping meal/breakfast, lunch or dinner, long hour fasting (fasting for more than 24 hours), eating less food than usual, eating one-food diet, total avoidance of specific food item, taking traditional home remedies, using a slimming belt, taking laxatives/diuretics , taking slimming tea, eating food substitutes (e.g., canned or powdered or other special drink) and self-induced vomiting. The frequency of practicing each item was categorized as “never”, ”occasionally”,” once a week”, “2-3 times a week”, ”more than 5 times a week” and “daily/always”. The respondent can choose more than one response since the response items are not mutually exclusive. Those who respond “Never”

was taken as “No” and those who respond from “occasionally- daily/always” were taken as “Yes” Engagements in at least one of the listed weight control methods within the previous 30 days were taken as unhealthy weight control practices.

4.7.4. Physical exercise assessment

A separated questionnaire on physical exercise which was derived from the Godin-Leisure time Exercise questionnaire to assess whether the participants was engaged in excessive physical activity for the intention of weight loss (68). It includes three types of physical exercise; strenuous exercise, moderate exercise, and light exercise. The items request the frequency and duration of those physical activities in a week. Those who engaged in intentional strenuous physical activity in the past 30 days were considered as unhealthy weight control practice

4.7.5. Anthropometric measurement

Anthropometric measurement was taken according to the standard procedure as explained below. Weight was measure without shoes and with minimum clothes by using digital scale and it was recorded to the nearest 0.1 kg. Measurement scales were carefully handled. Before the beginning of data collection calibrated every day by placing 2-kilogram iron bars. Before taking each measurement the data collectors checked whether the scales are at 0.00 reading.

Stadiometer was used to measure height. First, the body meter was rest on the ground then it was fixed to the wall with facing the measurer. Women were stand straight with heels where weight is spread evenly on both feet. The head, Shoulder blades, buttocks and heels touching measurement board. The legs were in a straight line, the knees and heels could be together and the arms hanging at sides. Then measurement was recorded to the nearest 0.1 cm. All measurement results were recorded on the questionnaire.

BMI calculation was based on weight and standing height obtained according to standard anthropometric measurement. In line with the WHO guideline BMI was classified as underweight if BMI < 18.5 kg/m2, normal weight BMI 18.5-25 kg/m2, overweight BMI 25-30kg/m2 and obese if BMI > 30kg/m2 .

4.8. Study variables

4.8.1. Outcome variable

Unhealthy weight control practice is the outcome measure of this study. Unhealthy weight control practices that are used in this study is extracted from different literature and it consists of the following 12 items: 1) skipping a meal, 2) long hour fasting (fasting≥24 hours), 3) eating less food than usual, 4) eating a one-food diet only, 5) total avoidance of specific food, 6) eating food substitutes (e.g., canned or powdered or other special drink), 7)using slimming belt, 8) taking laxatives/diuretics, 9) taking slimming tea, 10) taking traditional home remedies and 11) self-induced vomiting and 12) strenuous exercise. The items request the frequency of respondents who have been engaged in those methods, with response categories of "never", "occasionally"," once a week", "2-3 times a week", "more than 5 times a week" and "daily/always". The respondent can choose more than one response since the response items are not mutually exclusive. Practicing at least one of the listed weight control method within the past 30 days were considered as unhealthy weight control practice. (12, 14, 61).

4.8.2. Independent and control variables

Demographic and socio-economic characteristics

Socio-demographic characteristics including age, religion, marital status, educational status, occupational status, and household family size, and monthly household income was included (6).

Occupational status: This question was asked whether the woman is a Housewife, student, government or NGO-employed, self-employed, and daily laborer.

Educational status of women: using scales ranging from 1) can't read and write, 2) read and write 3) primary education 4) secondary education 5) college graduate and above was assessed. Category 1 and 2 was categorized as no formal education.

Monthly household income was categorized in to four category 1) <3500 etb, 2) 3500-5000 etb, 3) 5000-10,000 etb 4) >10,000 etb.

Reproductive characteristics

Number of children, time from last birth, ANC and PNC visit, counseling during ANC and PNC was assessed.

Body dissatisfaction

Body dissatisfaction is defined as not satisfying with some aspects of the body. It was assessed by using 8-item Evans & Dolan, 1993 Body Shape Questionnaire which derived from the 34 item Body Shape Questionnaire (69). Responses were given on a 6-point scale with a possible score range from 8 to 48. For "Never" score 1, for "rarely" score 2, for "sometimes" score 3, for "often" score 4, for "very often" score 5 and for "always" score 6 was given. Participants with higher scores on the scale indicate a greater body concerns and more body dissatisfaction. This measurement had been utilized in several studies (6,21, 46). It was tested for face validity and the internal consistency was estimate by using Cronbach's alpha and it was 0.9.

Perceived Body Weight

The body weight perception measurement tool that was used in this study was the commonly used tool in other literatures (9, 59, 61). To measure weight perception first postpartum women ask: 'How do you describe your weight?' Responses rate on a 5-point scale: 1, very underweight; 2, slightly underweight; 3, about the right weight; 4, slightly overweight; 5, very overweight. This variable was divided into three categories; 'perceived overweight' (scores of 4 or 5), 'perceived normal weight' (score of 3), and 'perceived underweight' (scores of 1 or 2).

Influence by others

The item influence by others was measured by asking women if they had ever been influenced by any of the listed options to practice weight loss activities. Those factors include families, peers, husband or dating partners, social media, mass media and written materials. With response options "yes" or "no" (14).

Source of information about unhealthy weight control practice

The possible source of information for engagement in any of the listed UWCP was assessed by asking “what are your sources of Information to get engaged in these weight control practices?” including family members, peers, health professionals, husband or dating partners, mass media, social media, and written materials/magazines. Source of information and education about healthy weight status and healthy weight control methods also assessed (14, 64).

4.9. Operational definitions

Unhealthy weight control practices: Those weight control methods which includes total avoidance of specific food item, skipping meals, fasting, eating less amount of food, taking food substitutes like powder or special drink, eating only one type of diet, using slimming belt, vigorous exercise, taking traditional home remedies, taking slimming tea, taking laxatives and diuretics, self-induced vomiting. Engagement in one or more UWCP strategies within the last 30 days was considered unhealthy weight control practices. Those methods were grouped into two categories; from 1 up to 10 as unhealthy weight control methods and 11 and 12 was considered as extreme weight control methods.

Body weight misperception: inaccurate perception of body weight compared with BMI. Self-evaluation of one's weight as "very underweight", "slightly under weight", "about the right weight", "slightly overweight" or "very overweight" irrespective of the actual weight status. It was categorized into three 'perceived overweight' (scores of 4 or 5) 'perceived normal weight' (score of 3) and 'perceived underweight' (scores of 1 or 2). From the combination of BMI and BWP, three different categories was produced; Correspondence (BWP = BMI), underestimation (BWP < BMI), and overestimation (BWP > BMI). We had defined a distorted BWP where there is a mismatch between BMI and BWP (underestimation and overestimation).

Body dissatisfaction: feeling of discomfort with some aspect of their body. Body dissatisfaction was assessed by the sum score of 8 item Body Shape Questionnaire. Responses are given on a 6-point scale (possible score range 8-48), with a higher body shape score representing a greater number of body concerns relating to physical appearance, or more body dissatisfaction.

Fasting/long hour fasting: is not taking any kind of food for more than 24 hour with the intention of lose or maintain body weight.

Use of a food substitute: taking powder or a special drink in every meal time with an intention of losing weight.

Skipping meals: is avoiding eating breakfast, lunch or dinner with an intention to lose weight, keep from gaining or maintain weight.

Vigorous exercise: is doing exercise type classified as vigorous in Godin-Leisure time Exercise questionnaire

Traditional home remedies: using eating or drinking substances which is prepare in home with the intention of weight loss like water with lemon or hot water.

Avoiding specific food item: is not taking some food item or group that postpartum women think of increasing body weight

Taking only one food type: is taking only some food item or group that postpartum women think of no effect on their body weight

4.10. Data management and analysis

Data were coded, entered, and cleaned by using Epi data version 4.6.0.0. The statistical tests were executed by using STATA version 15.1. Descriptive data was presented as mean, median, percentage, standard deviation, and IQR. To assess the agreement between perceived body weight and actual BMI we used cross tabulation and kappa statistics.

To see the association of each independent variable with the dependent variable, we used binary logistic regression and the strength of the associations was assessed by computing Odds ratios and 95% CI. Variables from the bivariable analysis were selected and entered in the multivariable logistic regression if the p-value is <0.2 (14).

In the multivariable regression model, we had checked for multicollinearity. Those variables with variance inflation factors above 10 were considered as collinear variables (12). In the final multivariable regression model but in this study there was no one variable with vif above 10. Confidence intervals were two-sided and calculated at the 95% confidence level. All testing was two-sided and considered significant at $\alpha = 0.05$ level. Those variables which was significant at a p-value of 0.05 in the multivariable logistic model was identified as an independent predictor. We present the adjusted Odds Ratio (aOR) with 95% CI.

4.11. Data quality management

A three-day theoretical and practical training was provided by the principal investigator for the data collectors and supervisor on anthropometric measurement, interview techniques based on the questionnaire, and the main purpose of the study.

Technical error of measurement (TEM) was calculated and the Intra observer technical error of measurement for height was 0.4 and for weight it was 0.3. On the other hand the inter observer technical error of measurement for height was 0.3 and for weight it was 0.31. All findings of the technical error of measurement were within the acceptable range. While taking weight and height measurements the data collector followed the standard guidelines.

Pre-testing of the whole questionnaire was done. To keep the data accuracy, the principal investigator did the data entry. After data collection, data were entered and cleaned by using EPI DATA version 4.6.0.0 and completeness was checked.

4.12. Ethical consideration

Ethical clearance was secured from the institutional review boards of Addis Ababa University College of Health Sciences (ref number 002). Further, administrated clearance was secured at all various levels of the health system. Written informed consent was obtained from postpartum women. The informed consent was obtained without any undue pressure or inducement.

The study has benefited the participant to assess their weight status and they got counseling on the consequences of engaging in unhealthy weight control practice if they are engaged in UWCP.

The participant of the study was also informed that they could refuse or discontinue the interview at any time and they were informed that only codes were used and their name will not be mentioned in the data. It will keep the confidentiality and privacy of respondents.

In order to minimize the risk of COVID 19 transmission we created a better and safer environment for the data collectors and the participants through providing personal protective equipment like a glove, face mask, and sanitizer. After each measurement, all instruments were disinfected.

4.13. Dissemination of results

The result of this study will be defended at the School of Public Health, Addis Ababa University, and College of Health Sciences as partial fulfillment of Master's degree in Public Health Nutrition. Furthermore, it will be shared to Addis Ababa City Administration Health Bureau. Attempts will also be made to publish the study in a reputable peer review journal and present it in scientific conference.

5. RESULTS

5.1 Socio-demographic and reproductive characteristics of the study participant

From the 640 postpartum women that we approached 606 were willing to take part in the study making the response rate 94.7%. Nearly a quarter (26.9%) of the participants were sampled from private MCH centers and 73.1% were from public health centers.

The mean age of the participant was 32.0 (sd=6.3). The median family size of the participants was 3 (range=4-3). About 89.4% of the participants were married/live together and 5.1% were single. Nearly half (48.7%) of the participants reported a monthly income between 5000 and 10,000 ETB. Concerning occupational status 38.3% of the participants were self-employed (Table 3).

Table 3: Socio-demographic characteristics of postpartum women in Addis Ababa, Ethiopia, June, 2021

Variables (n=606)	Frequency	Percent
Age		
<25	127	20.9
26-30	115	19
31-35	151	24.9
>36	213	35.2
Religion		
Orthodox	285	47
Muslim	150	25
Protestant	123	20.3
Catholic	35	5.8
Other	13	2.1
Marital status		
Married/live together	542	89.4
Divorced or Widowed	33	5.5
Single/never live together	31	5.1
Educational status		
No formal education	131	21.6
Primary education	148	24.4
Secondary education	178	29.4
College or above	149	24.6
Occupation		
House wife	126	20.8
Student	32	5.3
Government and NGO servant	175	28.9
Self-employed	232	38.3
Daily laborer	41	6.8
House hold family size		
<=3	363	59.9
>=4	243	40.1
Monthly household income		
<=3500	104	17.2
3501-5000	119	19.6
5001-10,000	295	48.7
>=10,000	88	14.5

Reproductive characteristics of the study participants

In relation to reproductive health characteristics, the median number of children the participants ever born was 2 (range=3-1). Nearly all of the women had at least one ANC (97.2%) and one PNC (97.0%) visits. Only (2.8%) of women attend at least four PNC visit in there last birth and (17.8%) had at least four ANC visit. In relation to time since last birth, 30.2% were at the 9^{th} postpartum months. (Table 4).

Table 4. Reproductive characteristics of postpartum women in the study, Addis Ababa, June 2021

Variables (n=606)	**Frequency**	**Percent**
No of children		
One	174	28.7
more than one	432	71.3
Time from last birth		
6 month	141	23.3
7 month	138	22.8
8 month	144	23.8
9 month	183	30.2
PNC in last birth		
Yes	589	97.2
No	17	2.8
ANC in last pregnancy		
Yes	588	97
No	18	3
Number of ANC (n=588)		
One	209	34.5
Two	143	23.6
Three	128	21.1
Four or more	108	17.8

Number of PNC (n=589)		
One	448	73.9
Two	86	14.2
Three	38	6.3
Four or more	17	2.8

5.2. Physical exercise among women in the postpartum period

The other part of this study was concerning the exercise trend of postpartum women in the past 30 days. The exercise trend was divided into three; strenuous, mild or moderate type exercise. Strenuous exercise is considered unhealthy for postpartum women. In this study, the prevalence of strenuous exercise was 16.5%, Moderate, and mild exercise were practiced by 18.3% and 20.5% of the women respectively. Physical exercise and the average time postpartum women spend in each exercise type are presented below (Table 5).

Table 5. Exercise type, trend and average time per day of postpartum women in the last 30 days in Addis Ababa, June,2021

	Estimated frequency						**Average time per day**		
Exercise type	Never (%)	Occasionally (%)	Once a week (%)	2-3 times a week (%)	More than 5 times a week (%)	Daily/ always (%)	Less than 30 min/day (%)	30-60 min/day (%)	More than 60 min/day (%)
Strenuous exercise	83.5	2.3	2.5	2.8	6.6	2.3	17.2	71.3	11.5
Moderate exercise	81.2	3.5	3.8	4.1	5.5	1.9	8.6	57.9	20.4
Mild exercise	79.5	2.3	2.5	2.8	6.6	2.3	17.3	52	19.2

5.3. Weight preference and prevalence of unhealthy weight control method

Among the total participants 43.6 % preferred to lose weight, 40 % preferred to maintain their current weight, 8.6% preferred to gain weight, and 7.8 % were not sure about their weight preference. In the last one month 60.1% did something to lose or maintain their weight. From those who attempted to lose or maintain their weight 63.7 % used unhealthy weight control methods including fasting, skipping meals, taking laxatives and diuretics.

The overall prevalence of unhealthy weight control practices in the last 30 days among postpartum women was 38.3% (CI=34.4-42.2). Among those participants who engaged in unhealthy weight control practice, 75.0% preferred to lose weight and 25.0% to maintain their current weight. The prevalence of postpartum women who engaged in at least one unhealthy weight control method at least once in a week was 34.5%.

The strategies used by those who attempted to control weight are presented in Tables 6. The most frequent practices were eating less food than usual (32.4%), skipping meal (27.4%), and total avoidance of specific food items (17.7%). On the other hand, self-induced vomiting (2.1%), use of laxatives/diuretics and diet pills (2.1%) and fasting for more than 24 hours (2.1%) were the least frequently practiced methods.

Table 6 .Characteristics of weight control methods practiced in the last 30 days among postpartum women in Addis Ababa, June, 2021.

UWCP	Never (%)	Occasionally (%)	One times a week (%)	2-3 times a week (%)	More than 5 times a week (%)	Daily (%)
Skipping meal	72.6	8.6	7.9	7.1	1.8	1.9
Fasting	97.9	0.9	1.16	0	0	0
Eating less food than usual	67.7	8.7	6.1	5.3	9.4	2.9
Using traditional remedies	87.1	2.8	2.9	2.9	2.1	1.9
Eating one food type only	90	2.1	2.8	1.9	2.1	0.9
Total avoidance of specific food item	82.3	3.1	3.8	2.9	4.6	3.1
Using slimming belt	94.7	2.6	0	0.8	0.8	0.97
Taking laxative/diuretics	97.9	0	1.2	0.99	0	0
Taking slimming tea	94.4	2.8	2.8	0	0	0
Taking other food substituents	94.2	3.2	1.5	0.99	0	0
Self-induced vomiting	97.9	0.17	0.8	0.9	0.17	0
Strenuous exercise	83.5	2.3	2.5	2.8	6.6	2.3

In this study the prevalence of extremely unhealthy weight control practice which includes self-induced vomiting and using laxative/diuretics among postpartum women was 4.1%. Engagement of postpartum women with unhealthy weight control practice is presented by the type of unhealthy and extremely unhealthy weight control methods (Table 7).

The leading source of information about unhealthy weight control methods for those who engaged in UWCP was social media (51.2%), peers or friends (50.2%), Husbands/dating partners (37.5%), mass media (24.5%) , from health professionals (16.6%), written materials (13.9%) and Families (6.5%).

Table 7: Unhealthy weight control practice by the type of extreme and unhealthy weight control methods among postpartum women in Addis Ababa Ethiopia June,2021.

Weight control methods	YES	
	N	%
Extreme weight control methods		
Taking laxative/diuretics	13	2.1
Self-induced vomiting	13	2.1
Unhealthy weight control methods		
Skipping meal	166	27.4
Long hour fasting	13	2.1
Eating less food than usual	196	32.3
Using traditional remedies	78	12.9
Eating only one food type	61	10
Total avoidance of specific food item	107	17.7
Using slimming belt	32	5.3
Using slimming tea	34	5.6
Taking other food substituents	35	5.8
Strenuous/Vigorous exercise	100	16.5

5.4. Self-reported factors leading to unhealthy weight control practices

Of women who engaged in unhealthy weight control practice 36.6% said they were influenced by husband, 26.7% said they were influenced by their peers and 23.3% said they were influenced by social media to practice these weight control methods. The self-reported influences that leads postpartum women to engage in unhealthy weight control practices is presented. (Figure 3)

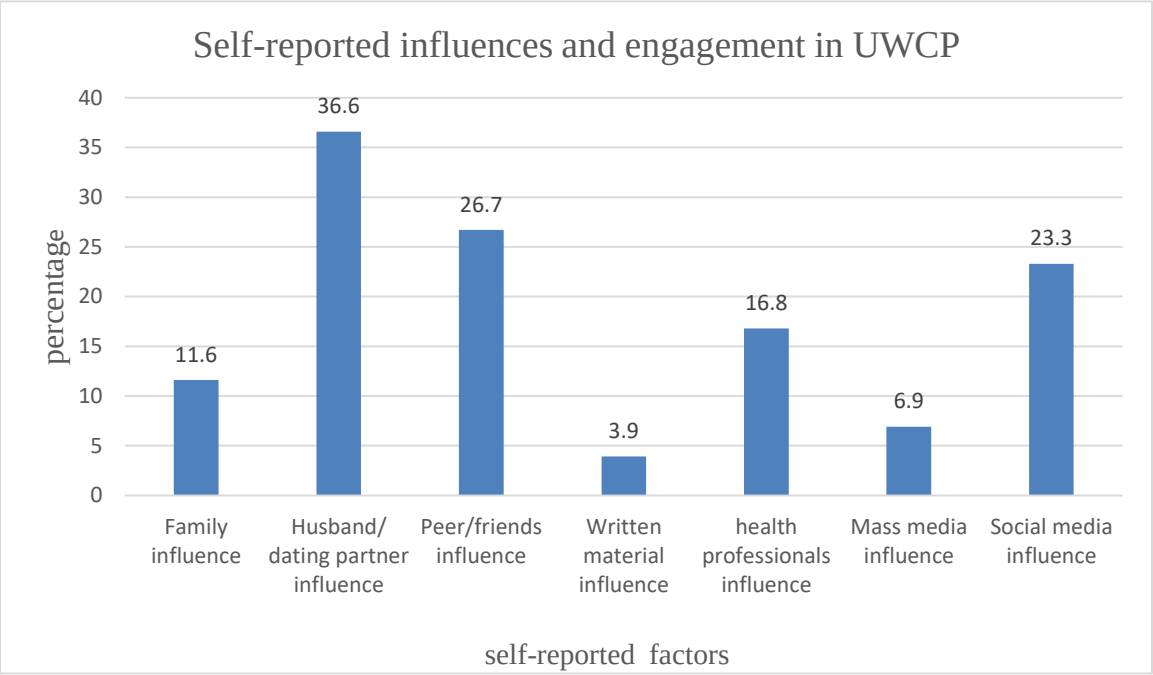

Figure 3. Self-reported factors leading to unhealthy weight control practice among postpartum women in Addis Ababa Ethiopia, June, 2021.

5.5. BMI and body weight perception

In this study, 9.7% of postpartum women were underweight according to their actual BMI, while only 66.1% perceived themselves as underweight. About 55.8% of the participants were normal weight, among them 20.7% perceived themselves as being overweight or obese. About 34.5% were actually overweight or obese, while 21.5% of them reported perceiving themselves as a normal weight. About 29 % of the participants displayed an inaccurate body weight perception by either overestimating or underestimating their actual body weight (Figure 4)

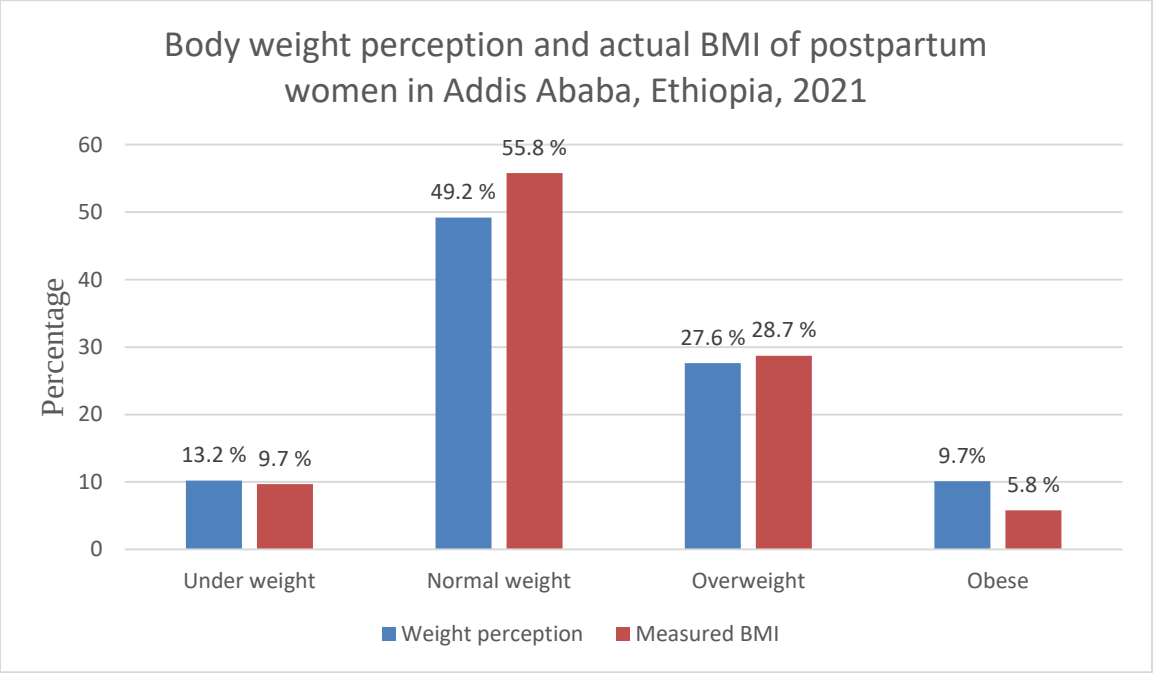

Figure 4. Weight perception and actual weight status (BMI) of post-partum women in Addis Ababa, Ethiopia, June, 2021.

Cohen's kappa test was used to test the percentages of agreement between perceived body weights and BMI, and it shows 70.9% agreement. Kappa value indicating "moderate agreement" (0.5). Among those who perceived being overweight 20.4% were actually in the normal weight range and from those who perceived normal weight 25.4% were actually underweight. Women those who perceived their weight as overweight, 8.5% of them were actually underweight (Table 8)

Table 8.The differences between perceived body weight and BMI among post-partum women Addis Ababa, June, 2021.

Weight perception	BMI			Total	Kappa	Total agreement
	Under weight	Normal weight	Over weight			
Under weight	39(66.1%)	31(9.2%)	10(4.8%)	80	0.5	70.9%
Normal weight	15(25.4%)	238(70.4%)	45(21.5%)	298		
Over weight	5(8.5%)	69(20.4%)	154(73.7%)	228		
Total	59	338	209	606		

5.6. BMI, weight perception and unhealthy weight control practices

From those overweight or obese mothers, 66.5 % were engaged in UWCP, from normal weight 26%, and from underweight mothers, 8.5% were engaged in UWCP. From those postpartum women who perceived themselves as overweight, 70% were engaged in UWCP and from perceived normal weight and perceived underweight women the prevalence of UWCP was 22.2% and 7.5% respectively. Bivariable logistic regression result of the association between unhealthy weight control practice, BMI and weight perception is present below (Table 9).

Table 9. Bivariable logistic regression of the association between unhealthy weight control practice, BMI and weight perception of post-partum women in Addis Ababa, Ethiopia, June, 2021.

	UWCP				
	Yes	%	No	%	P-value (chi2)
BMI					0.000
Under weight	7	11.8	52	88.2	-
Normal weight	86	25.4	252	74.6	0.03
Over weight	139	66.5	70	33.5	0.000
Weight perception					0.000
Under weight	6	7.5	74	92.5	-
Normal weight	66	22.2	232	77.8	0.005
Over weight	160	70.2	68	29.8	0.000

5.7. Body image dissatisfaction and unhealthy weight control practice

The mean Body Shape Score of postpartum women in this study was 16.1 (sd =9.5). The mean score for those who engaged in unhealthy weight control practice was 22.7 (sd =10.7) and for those not engaged in unhealthy weight control practices it was 11.9 (sd=5.5) (P-value <0.001). The mean body shape score for perceived overweight was 22.6 (sd = 11.1), for those perceived normal weight it was 12.2 (sd=4.8) and for perceived underweight it was 11.6 (sd=6.8) The mean body shape score for those real overweight women was 21.2(sd =11.8), for normal weight women it was 13.5 (sd=6.9) and for underweight women it was 12.5 (sd=4.1)

5.8. Multivariable logistic regression analysis showing the association between main predicting factors and unhealthy weight control practice

In the bivariable analysis, we consider all the reproductive and socio-demographic characteristics, BMI, weight perception and body dissatisfaction. From these variables marital status, occupational status, educational status, monthly household income, time from last birth, number of children, body dissatisfaction, weight perception and actual BMI were significantly associated with UWCP.

After controlling the effect of other independent variables, the multivariable logistic regression analysis showed unhealthy weight control practice were statistically significant association with marital status, number of children, body dissatisfaction, body weight perception and actual BMI (Table.10).

From single postpartum mothers 64.5% were engaged in UWCP. Women in single /never married group had 5.9 times higher odds of getting engaged in unhealthy weight control practice than married postpartum women. (aOR=5.94; 95% CI=2.13-16.56). Engagement in UWCP was found to be high in the 9-month postpartum period (54.1%) than 6 months postpartum which was 20.6%. In relation to the number of children which postpartum women ever born, 33.3% of mothers who had more than one child were engaged in UWCP which was 50.6% among mothers who had only one child. The odds of engagement in unhealthy weight control practice was 2.9 for those women who had only one children compared with women who had more than one child (aOR=2.98; 95% CI= 1.63-5.44).

In this study the odds of getting engaged in UWCP was increased by 1.1 times higher in every 1 unit increment of body dissatisfaction score. (aOR=1.15; 95%CI=1.11-1.20)

Furthermore, postpartum women within actually overweight group had 6.4 times higher odds of getting engaged in unhealthy weight control practice than those within underweight group, (aOR=6.48; 95% CI=1.86-22.52). In this study, the odds of getting engaged in unhealthy weight control practice were 7.6 times higher among those within perceived overweight group than women in perceived underweight group, (aOR =7.68; 95% CI =2.01-29.38).

In relation to self-reported influences from others, the odds of getting engaged in unhealthy weight control practice among those with husband/dating partner influence were 2.6 times higher than those

with no husband/dating partner influence, (aOR=2.63; 95%CI=1.44-4.82). Likewise, the odds of getting engaged in unhealthy weight control practice among those with peer/friends influence was 2.9 times higher than those with no peers/friends influence, (aOR=2.96; 95%CI=1.56-5.62). Again, postpartum women who had social media influence has 4.8 times higher odds of getting engaged in unhealthy weight control practice than those who doesn't had social media influence (aOR=4.79; 95%CI=2.22-10.33).

Table 10. Multivariable analysis on factors associated with unhealthy weight control practice within the last 30 days among post-partum women, Addis Ababa, June, 2021.

Characteristics	Unhealthy weight control practices		COR(95% CI)	AOR(95% CI)
	Yes (n)	No (n)		
Marital status				
Married/live together	201	341	1.0	1.0
Divorced or widowed	11	22	0.84 (0.40- 1.78)	1.65(0.51-5.29)
Single/never married	20	11	3.08 (1.45-6.57)**	5.94 (2.13-16.55)**
Educational status				
No formal education	33	98	1.0	1.0
Primary education	56	92	1.80 (1.07-3.03)	1.76 (0.72-4.24)
Secondary education	84	94	2.65 (1.62-4.34)*	1.37 (0.63-2.96)
College or above	59	90	1.94 (1.16-3.25)**	2.00 (0.89-4.49)
Monthly income (ETB)				
<3500	23	81	1.0	1.0
3500-5000	40	79	1.78 (0.97-3.25)	1.38 (0.54-3.48)
5000-10,000	118	177	2.34 (1.39-3.94)**	1.58 (0.69-3.62)
>10,000	51	37	4.85 (2.59-9.09)**	0.80 (0.26-2.44)

Time from last birth				
6 months	29	112	1.0	1.0
7 months	45	93	1.86 (1.08-3.21)*	0.69 (0.31-1.52)
8 months	59	85	2.68 (1.58-4.53)**	2.11 (0.95-4.64)
9 months	99	84	4.55 (2.75-7.51)**	1.34 (0.61- 3.00)
Number of children				
one child	88	86	2.04 (1.43-2.93)**	2.98 (1.63-5.44)**
More than one child	144	288	1.0	1.0
Weight perception				
Perceived underweight	6	74	1.0	1.0
Perceived normal weight	66	232	3.51 (1.46-8.42)*	3.31(0.93-11.69)
Perceived Over weight	160	68	29.01 (12.04-69.89) **	7.68 (2.01-29.38)**
BMI				
Underweight	7	52	1.0	1.0
Normal weight	86	252	2.53 (1.11-5.79)*	2.60 (0.76- 8.88)
Overweight	139	70	14.75 (6.36-34.16)**	6.48 (1.86- 22.52) **
Body image dissatisfaction			1.18 (1.15-1.22)**	1.15 (1.11-1.21)**
Influences on weight control				
family influence				
Yes	27	66	0.61 (0.37-0.99)*	0.61 (0.31-1.19)
No	205	308	1.0	1.0
Peer/friend influence				
Yes	62	42	2.88 (1.86-4.44)**	2.96 (1.56-5.63) **
No	170	332	1.0	1.0
Husband/dating partner				
influence				
Yes	85	44	4.33 (2.87-6.55)**	2.63 (1.44-4.82) **
No	147	330	1.0	1.0

Social media influence				
Yes	54	23	4.62 (2.75-7.78)**	4.79 (2.22-10.33)**
NO	178	351	1.0	1.0

*p-value <0.05, **p-value<0.01

6. DISCUSSION

The main purpose of the study was to assess the prevalence and factors associated with unhealthy weight control practices among postpartum women. In this study the overall prevalence of unhealthy weight control practice was 38.3%. We found that unhealthy weight control practices were associated with being a single mother, having only one child, having actual or perceived body overweight, body image dissatisfaction and influence from peers, husband/dating partner and social media.

The finding of this study shows that, the prevalence of unhealthy weight control practice among postpartum women in the past 30 days was 38.3%. However; we couldn't find the overall prevalence of unhealthy weight control practice in other studies which was done among postpartum women. When we try to compare each single unhealthy weight control method, the prevalence of excessive physical activity was 2.1% in Qatar and 25% in Brazil (16,18). In our study, the prevalence of excessive exercise among postpartum women was 16.5%; the reason for these difference in the findings are the difference in the definition of excessive exercise. In relation to the extreme weight control practices, among Brazilian disadvantaged postpartum women the prevalence of laxative misuse was 1.9%, diuretics misuse 0.7% and self-induced vomiting was 2.6% (18). According to the current study findings, laxative and diuretics misuse was 2.1% and self-induced vomiting was 2.1%, these two findings were comparable with the figure showed in the Brazil study. The prevalence of long hour fasting in Qatar among postpartum women was 73%, but in our study it was 2.1% (16,18). The possible explanation for this much difference in the findings might be due to the inconsistent definition of fasting, in our study it was fasting for more than 24 hours and in the Qatar study it was for more than 12 hours (16).

In this study, the overall weight loss or weight maintain attempt among postpartum women during the last 30 days was 60.1%. It was slightly lower than the figures reported by studies from Qatar (82.3%) and US (70%) (16, 30). The reason for this difference might be socio-cultural and economic variation with our study setting. The high prevalence of unhealthy weight control may imply that frontline health workers have to provide counseling on healthy weight control as part of their ANC follow up.

In the studies done among adolescents or adults in low and middle-income countries, the prevalence of UWCP were range from 23% -77 % (70-72). Our finding was lying in the above range, but there was slight difference. The possible explanation for this difference is the use of various cutoff point and different reference period. That means some studies use 30 days reference period and others 1 year period. The other reason is the difference in the study population characteristics across the studies.

Previous studies in Addis Ababa, Ethiopia among female adolescents found the prevalence of UWCP was 30.7%, this was slightly lower than our study. The possible explanation for this slight difference is, in the previous study UWCP was defined as engagement at least one unhealthy weight control method in a week, but in our study we defined UWCP as engagement at least one unhealthy weight control method in the past one month. In contrast, another study in Addis Ababa, Ethiopia found low prevalence of eating disorder among adolescents and it was 8.6%. The reason behind this difference is due to the use of different measurement tools. They use EAT-26 Questionnaire it measures attitude towards dieting and bulimia. And the other explanation for this is the study population in the previous studies were adolescent and they haven't similar characteristics with our study population (14, 45).

The most commonly practiced unhealthy weight control methods in this study were skipping meals, eating less food than usual, total avoidance of specific food items and being engaged in strenuous exercise. Skipping meals and eating less food than usual was used as a frequent weight control method among Ethiopian female adolescents (14). Engagement in more exercise and dieting were mostly used weight control methods in Brazilian and US adults (12, 41). But in Qatar long hour fasting or crash diet was a frequently used weigh control method among postpartum women (16). The reason behind might be the cognitive developed among postpartum women on practicing these methods as a healthy or it doesn't have any harmful consequence and it is more likely cost-effective. However, studies show that these practices have a risk on maternal and child health complications (13, 24-26)

In this study single/never married postpartum women were more engaged in UWCP than married women. Similarly, other studies show that single postpartum women were more dissatisfied with their body image and they were more prone to practice such activities to lose weight (21,74). The

reason for this might be related with less self-confidence and decreased body dissatisfaction is more in single mother than married one (21). But, other study in US shows no association of UWCP with marital status (75).

In the current study we observed a significant association between the number of children women had and UWCP. Women who had only one child were more likely to practice UWCP. When the number of children increased the prevalence of UWCP tend to decline. A similar result was found in other studies conducted in US and Turk (6,10). Prim-parous women were more engaged in UWCP than multi-parous women because of first exposure to prim-parous women for body shape and weight change from their pre-pregnancy status. Due to this change they might want to restore their pre-pregnancy weight as quickly as they are trying to lose weight and engaged in UWCP. The other reason might be the more children she has, the highest she becomes busier by taking care of her children, following this she might have no time to think of her body image or practice weight loss activities.

The other finding we observed was the significant association between high BMI and unhealthy weight control practice. Overweight women were more practiced UWCP than normal weight and underweight women. A similar finding of overweight and UWCP association were observed in other studies (14, 16, 18, 47, 49). However, the finding in the Hong Kong study shows no association between overweight and UWCP, the possible explanation is that they used self-reported weight and height to calculate BMI and it might cause underestimation of BMI (76). In the previously done study in Ethiopia, there was also an association between normal weight adolescents and UWCP (14). The reason for this might be postpartum women were more concerned about their breastfeeding baby and if they were on the line of normal weight they may not want to practice weight loss activity. It shows body weight concern is the main leading factor to engage in UWCP.

In the present study, there was a strong association between weight perception and unhealthy weight control practice. It was found that, 29% of postpartum women were either overestimate or under estimate their actual body weight. Similarly in other studies, body weight misperception or the variation between real BMI and perceived weight was high (9, 10, 14, 16, 36). Inaccurate perception of being overweight was higher than the perception of being underweight and it was found to be

significantly associated with engagement in unhealthy weight control practices. Similarly, in many other studies weight overestimation was associated with UWCP (38, 50, 51). This implies that the interest of women to become thin, is leading them to conclude with a wrong perception about their weight even if they are in a normal weight range. When postpartum women don't have the right information about their actual weight status, they will have a distorted weight perception. The distorted weight perception is leading postpartum women to engage in unhealthy weight control practices. On the other hand, there was no significant difference in weight perception and UWCP in Thailand female adolescents; the reason for this might be the sample in the study was both male and female adolescents (57).

The other major finding was the strong association between body image dissatisfaction and engagement in unhealthy weight control practices. A similar association was also found in other studies (15,16,20,25). The mean BSQ score among women who engaged in unhealthy weight control was significantly higher than those who don't engage in UWCP. This indicated greater body satisfaction in our sample, compared to the study done in US at 9 months postpartum and Evans & Dolan's study of most sample of single young adult women (6,69). Body part dissatisfaction in Ethiopian female adolescent was 34.3% and in other developing countries it ranges from 52%-75.2% (14,77, 78). However; the measurement scale in this study and the other study was different and we can only assess the mean BSQ score, not the prevalence. Body dissatisfaction was associated not only with unhealthy weight control practice but also with age and number of birth of postpartum women (10), with a feeling of guilt, depression, and marital satisfaction (19,21). This indicate that, the aim of several women is not only to achieve the standard weight somewhat they have a tendency to achieve unattainable flawless body. However, failure to achieve this idealized body image may resulted in body dissatisfaction which is the leading factor for UWCP.

Regarding self-reported influences that predispose women to engage in unhealthy weight control practice; peer, husband/dating partner and social media influences were strongly associated with UWCP. We found that 36.6% of postpartum women who engaged in UWCP were found to have husband/dating partner influence, 26.7% had peer/friends influence and 23.3% had social media influence. Correspondingly in other studies, husband influence was associated with UWCP. The reason given for this association is, many husbands want their wives to become thin and to have attractive body shape (61,79,80). In Ethiopian study, among female adolescent the only significant

social influence was peer influence which was 34.3%, this was greater than the current study; the reason for this might be adolescents have a more exposer to influence by their peers (14). In a study from US, postpartum and pregnant women showed more body dissatisfaction and they were influenced by written material like posters and magazines. But in our study there was no significant association of UWCP with written material influences. This may be related with reading a written materials like magazines in Ethiopia had becoming less practiced compared with other medias (64). In the postpartum period husband, family, friend and the media have played a vital role in supporting women by providing positive advice on the physical change of her body.

7. Limitation and strength of the study

This study has few limitations that need to be taken into consideration while interpreting its findings. The first limitation is the study design, since it is a cross-sectional study design, the finding does not assure the temporal relationship between unhealthy weight control practices and some of the independent variables. The second one is, the body image questionnaire has not validated in Ethiopian setup. This may have resulted in under or over estimation of the variable of interest. Finally, recall bias could occur, since the participant reports the frequency of unhealthy weight control practice which was happened in the past 30 days, it may underestimate the prevalence of unhealthy weight control practices.

The study has also some strengths that should be noted. The study attempted to address a problem that is largely unrecognized in low- and middle-income countries. In relation to this, the study may use as baseline information since to my knowledge there is no prior study concerning this issue among postpartum women in Ethiopia. Second, the study includes both private and public health facilities. Lastly, BMI was calculated after taking anthropometric measurements instead of using self-reported weight and height.

7. Conclusion and recommendation

7.1. Conclusions

This study document the prevalence of unhealthy weight control practice among postpartum women was 38.3%. The findings might alert for the course of unhealthy weight control practice after childbirth in the urban Ethiopia, where western beauty norms prevail and thinness is becoming a common beauty model.

Unhealthy weight control practices were associated with being a single mother, having only one child, having actual or perceived body overweight, body image dissatisfaction and influence from peers, husband/dating partner and social media.

7.2. Recommendations

For health sector authorities and health workers

- In both private and public health facilities information and health promotion activity on healthy weight control strategies and healthy weight status should be provided to women during ANC, PNC and other health visits
- Women should be encourage to routinely monitor their weight throughout the postpartum period.
- Training should be given for healthcare professionals concerning on this issue.
- Plan to design a follow up visit after 6 months postpartum period.

For researchers

- Longitudinal studies are recommended to elucidate temporal associations between unhealthy weight control practice and its risk factors.
- Studies addressing the effect of unhealthy weight control practice on breastfeeding in postpartum women.

For the media and the general population

- Since social media is the major source of information, attentions should be given on the information that shared and transmitted about weight status and weight control methods.
- The mass media should give information and education on the way of healthy weight control methods and promote a healthy lifestyle.
- The society and women's life partner should not criticise them on their weight and shape change after giving birth since it push them to engage in unhealthy weight control methods. Help and motivate overweight and obese postpartum women to follow a healthy lifestyle.

8. REFERENCES

1. Faria-Schützer D, Surita F, Rodrigues L, Turato E. Eating Behaviors in Postpartum: A Qualitative Study of Women with Obesity. Nutrients. 2018;10(7):885.
2. Organization WHO. WHO recommendations on postnatal care of the mother and newborn: 1.Postnatal care – standards. 2.Maternal welfare. 3.Infant, Newborn. 4.Guideline. I.World Health Organization. ISBN 978 92 4 150664 9
3. Mottola MF. Exercise in the postpartum period: practical applications. Current sports medicine reports. 2002;1(6):362-8.
4. Hoekzema E, Barba-Müller E, Pozzobon C, Picado M, Lucco F, García-García D, et al. Pregnancy leads to long-lasting changes in human brain structure. Nature Neuroscience. 2017;20(2):287.
5. Andrade RD, Santos JS, Maia MAC, Mello DFd. Factors related to women's health in puerperium and repercussions on child health. Escola Anna Nery. 2015;19(1):181-6.
6. Gjerdingen D, Fontaine P, Crow S, McGovern P, Center B, Miner M. Predictors of mothers' postpartum body dissatisfaction. Women & health. 2009;49(6-7):491-504.
7. Vartanian LR. Self-discrepancy theory and body image. Encyclopedia of body image and human appearance. 2012;2:711-7.
8. Senekal M, Lasker GL, van Velden L, Laubscher R, Temple NJ. Weight-loss strategies of South African female university students and comparison of weight management-related characteristics between dieters and non-dieters. BMC public health. 2016;16(1):918.
9. Khutlang I. Body weight perception weight management and depressive symptoms in a South African community sample: University of Pretoria; 2018.
10. Erbil N, Şenkul A, Başara GF, Sağlam Y, Gezer M. Body image among Turkish women during the first year postpartum. Health care for women international. 2012;33(2):125-37.
11. Adegboye ARA, Linne YM. Diet or exercise, or both, for weight reduction in women after childbirth. Cochrane Database of Systematic Reviews. 2013(7). PP
12. Kruger J, Galuska DA, Serdula MK, Jones DA. Attempting to lose weight: specific practices among US adults. American journal of preventive medicine. 2004;26(5):402-6.

13. Haynes A, Kersbergen I, Sutin A, Daly M, Robinson E. A systematic review of the relationship between weight status perceptions and weight loss attempts, strategies, behaviours and outcomes. Obesity reviews. 2018;19(3):347-63.
14. Ajeme T. Unhealthy Weight Control Practice and Related Factors among Female High School Adolescents in Addis Ababa, Ethiopia: Addis Ababa University; 2017.
15. Jenkin W, Tiggemann M. Psychological effects of weight retained after pregnancy. Women & health. 1997;25(1):89-98.
16. Alam M, Zayed R. Prevalence and Determinants of Body Dissatisfaction Among Post-Partum Arab Women in Qatar. Value in Health. 2018;21:S59.
17. Patel P, Lee J, Wheatcroft R, Barnes J, Stein A. Concerns about body shape and weight in the postpartum period and their relation to women's self-identification. Journal of Reproductive and Infant Psychology. 2005;23(4):347-64.
18. Angélica Nunes M, Poyastro Pinheiro A, Feliciati Hoffmann J, Inês Schmidt M. Eating disorders symptoms in pregnancy and postpartum: A prospective study in a disadvantaged population in Brazil. International Journal of Eating Disorders. 2014;47(4):426-30.
19. Clark A, Skouteris H, Wertheim EH, Paxton SJ, Milgrom J. The relationship between depression and body dissatisfaction across pregnancy and the postpartum: A prospective study. Journal of Health Psychology. 2009;14(1):27-35.
20. Millstein RA, Carlson SA, Fulton JE, Galuska DA, Zhang J, Blanck HM, et al. Relationships between body size satisfaction and weight control practices among US adults. The Medscape Journal of Medicine. 2008;10(5):119.
21. Dolejsova B. Predictors of Body Image Dissatisfaction in Postpartum Women. 2018.
22. Walker LO. Weight-related distress in the early months after childbirth. Western Journal of Nursing Research. 1998;20(1):30-44.
23. Zerwas SC, Von Holle A, Perrin EM, Cockrell Skinner A, Reba-Harrelson L, Hamer RM, et al. Gestational and postpartum weight change patterns in mothers with eating disorders. European Eating Disorders Review. 2014;22(6):397-404.
24. Astrachan-Fletcher E, Veldhuis C, Lively N, Fowler C, Marcks B. The reciprocal effects of eating disorders and the postpartum period: a review of the literature and recommendations for clinical care. Journal of Women's Health. 2008;17(2):227-39.

25. Squires C, Lalanne C, Murday N, Simoglou V, Vaivre-Douret L. The influence of eating disorders on mothers' sensitivity and adaptation during feeding: a longitudinal observational study. BMC pregnancy and childbirth. 2014;14(1):274.
26. Larsson G, Andersson-Ellström A. Experiences of pregnancy-related body shape changes and of breast-feeding in women with a history of eating disorders. European Eating Disorders Review: The Professional Journal of the Eating Disorders Association. 2003;11(2):116-24.
27. Chowdhury MAB, Adnan MM, Hassan MZ. Trends, prevalence and risk factors of overweight and obesity among women of reproductive age in Bangladesh: a pooled analysis of five national cross-sectional surveys. BMJ open. 2018;8(7):e018468.
28. Tebekaw Y, Teller C, Colón-Ramos U. The burden of underweight and overweight among women in Addis Ababa, Ethiopia. BMC Public Health. 2014;14(1):1126.
29. Darebo T, Mesfin A, Gebremedhin S. Prevalence and factors associated with overweight and obesity among adults in Hawassa city, southern Ethiopia: a community based cross-sectional study. BMC obesity. 2019;6(1):8.
30. Baker CW, Carter AS, Cohen LR, Brownell KD. Eating attitudes and behaviors in pregnancy and postpartum: Global stability versus specific transitions. Annals of Behavioral Medicine. 1999;21(2):143-8.
31. Kanguru L, McCaw-Binns A, Bell J, Yonger-Coleman N, Wilks R, Hussein J. The burden of obesity in women of reproductive age and in pregnancy in a middle-income setting: A population based study from Jamaica. PLoS One. 2017;12(12):e0188677.
32. Onubi OJ, Marais D, Aucott L, Okonofua F, Poobalan AS. Maternal obesity in Africa: a systematic review and meta-analysis. Journal of Public Health. 2016;38(3):e218-e31.
33. Abrha S, Shiferaw S, Ahmed KY. Overweight and obesity and its socio-demographic correlates among urban Ethiopian women: evidence from the 2011 EDHS. BMC Public Health. 2016;16(1):636.
34. Central Statistics Agency.(2016). Ethiopian. demographic and health survey: Addis Ababa, Ethiopia.
35. Bogale KA, Zewale TA. Determinant factors of overweight/obesity among federal ministry civil servants in Addis Ababa, Ethiopia: a call for sector-wise occupational health program. BMC research notes. 2019;12(1):449.

36. Gore SA, Brown DM, West DS. The role of postpartum weight retention in obesity among women: a review of the evidence. Annals of Behavioral Medicine. 2003;26(2):149-59.
37. Carwell ML, Spatz DL. Eating disorders & breastfeeding. MCN: The American Journal of Maternal/Child Nursing. 2011;36(2):112-7.
38. Rallis S, Skouteris H, Wertheim EH, Paxton SJ. Predictors of body image during the first year postpartum: A prospective study. Women & health. 2007;45(1):87-104.
39. Watson HJ, Torgersen L, Zerwas S, Reichborn-Kjennerud T, Knoph C, Stoltenberg C, et al. Eating disorders, pregnancy, and the postpartum period: Findings from the Norwegian Mother and Child Cohort Study (MoBa). Norwegian journal of epidemiology. 2014;24(1-2):51.
40. Serdula MK, Mokdad AH, Williamson DF, Galuska DA, Mendlein JM, Heath GW. Prevalence of attempting weight loss and strategies for controlling weight. Jama. 1999;282(14):1353-8.
41. Machado EC, Silveira MFd, Silveira VMFd. Prevalence of weight-loss strategies and use of substances for weight-loss among adults: a population study. Cadernos de saude publica. 2012;28:1439-49.
42. Mchiza ZJ, Parker W-a, Makoae M, Sewpaul R, Kupamupindi T, Labadarios D. Body image and weight control in South Africans 15 years or older: SANHANES-1. BMC public health. 2015;15(1):992.
43. Napoé GS, Kim YH, Wang L, Bunker CH, Damorou FJ, Conroy MB. Predictors of Attempted Weight Loss and Physician Advice for Weight Loss in a Group of Overweight and Obese Patients in Togo. Ethnicity & disease. 2013;23(1):83.
44. Tamim H, Tamim R, Almawi W, Rahi A, Shamseddeen W, Ghazi A, et al. Risky weight control among university students. International Journal of Eating Disorders. 2006;39(1):80-3.
45. Yirga,B,Gelaw, Y.A, Derso.t.,& Wassie,M.M.(2016). Disorderd eating attittude and associated factors among high school adolesents aged 12-19 years in Addis Ababa, Ethiopia: a cross-sectional study.BMC Research Notes,9(1),503.
46. Lee MF, Williams SL, Burke KJ. Striving for the thin ideal post-pregnancy: a cross-sectional study of intuitive eating in postpartum women. Journal of reproductive and infant psychology. 2019:1-12.
47. Epperson AE, Song AV, Wallander JL, Markham C, Cuccaro P, Elliott MN, et al. Associations among body size, body image perceptions, and weight loss attempts among African American,

Latino, and White youth: A test of a mediational model. Journal of pediatric psychology. 2014;39(4):394-404.

48. Furnham A, Badmin N, Sneade I. Body image dissatisfaction: Gender differences in eating attitudes, self-esteem, and reasons for exercise. The Journal of psychology. 2002;136(6):581-96.

49. Jansen W, van de Looij-Jansen PM, de Wilde EJ, Brug J. Feeling fat rather than being fat may be associated with psychological well-being in young Dutch adolescents. Journal of Adolescent Health. 2008;42(2):128-36.

50. Park B, Cho HN, Choi E, Seo DH, Kim S, Park Y-R, et al. Self-perceptions of body weight status according to age-groups among Korean women: A nationwide population-based survey. PLoS One. 2019;14(1):e0210486.

51. Kim DS, Kim HS, Cho Y, Cho SI. The effects of actual and perceived body weight on unhealthy weight control behaviors and depressed mood among adult women in Seoul, Korea. J Prev Med Public Health. 2008;41(5):323-30.

52. Tanenbaum HC, Felicitas JQ, Li Y, Tobias M, Chou C-P, Palmer PH, et al. Overweight perception: associations with weight control goals, attempts, and practices among Chinese female college students. Journal of the Academy of Nutrition and Dietetics. 2016;116(3):458-66.

53. Kim Y, Austin SB, Subramanian S, Kawachi I. Body weight perception, disordered weight control behaviors, and depressive symptoms among Korean adults: The Korea National Health and Nutrition Examination Survey 2014. PLoS One. 2018;13(6):e0198841.

54. Sirirassamee T, Phoolsawat S, Limkhunthammo S. Relationship between body weight perception and weight-related behaviours. Journal of International Medical Research. 2018;46(9):3796-808.

55. Albeeybe J, Alomer A, Alahmari T, Asiri N, Alajaji R, Almassoud R, et al. Body size misperception and overweight or obesity among Saudi college-aged females. Journal of obesity. 2018;2018.

56. Bärebring L, Winkvist A, Augustin H. Sociodemographic factors associated with reported attempts at weight loss and specific dietary regimens in Sweden: The SWEDIET-2017 study. PLoS One. 2018;13(5):e0197099.

57. Wardle J, Griffith J. Socioeconomic status and weight control practices in British adults. Journal of Epidemiology & Community Health. 2001;55(3):185-90.

58. Jeffery RW, French SA. Socioeconomic status and weight control practices among 20-to 45-year-old women. American journal of public health. 1996;86(7):1005-10.
59. Alwan H, Viswanathan B, Williams J, Paccaud F, Bovet P. Association between weight perception and socioeconomic status among adults in the Seychelles. BMC public health. 2010;10(1):467.
60. Thompson JK, Heinberg LJ, Altabe M, Tantleff-Dunn S. Exacting beauty: Theory, assessment, and treatment of body image disturbance: American Psychological Association; 1999.
61. Chin SN, Laverty AA, Filippidis FT. Trends and correlates of unhealthy dieting behaviours among adolescents in the United States, 1999–2013. BMC public health. 2018;18(1):439.
62. Markey CN, Markey PM, Birch LL. Understanding women's body satisfaction: The role of husbands. Sex roles. 2004;51(3-4):209-16.
63. Friedman MA, Dixon AE, Brownell KD, Whisman MA, Wilfley DE. Marital status, marital satisfaction, and body image dissatisfaction. International Journal of Eating Disorders. 1999;26(1):81-5.
64. Coyne SM, Liechty T, Collier KM, Sharp AD, Davis EJ, Kroff SL. The effect of media on body image in pregnant and postpartum women. Health communication. 2018;33(7):793-9.
65. Uchôa FNM, Uchôa NM, Daniele TMdC, Lustosa RP, Garrido ND, Deana NF, et al. Influence of the mass media and body dissatisfaction on the risk in adolescents of developing eating disorders. International journal of environmental research and public health. 2019;16(9):1508.
66. Tshililo R, Netshikweta LM, Tshitangano GT, Nemathaga HL. Factors influencing weight control practices amongst the adolescent girls in Vhembe District of Limpopo Province, South Africa. African journal of primary health care & family medicine. 2016;8(2).
67. Indicators K. Mini Demographic and Health Survey. 2019.
68. Godin .G, Amireault .S.The Godin-Shephard Leisure-Time Physical Activity Questionnaire: Perceptual & Motor Skills: Physical Development & Measurement 2015, 120, 2, 1-19
69. Evans C, Dolan B. Body shape questionnaire: Derivation of shortened “alternate forms.”. International Journal of Eating Disorders 1993;13:315–321. [PubMed: 8477304]
70. Tabither M. Gitau LKM, John M. Pettifor, Shane A. Norris Changes in Eating Attitudes, Body Esteem and Weight Control Behaviors during Adolescence in a South African Cohort. wwwplosoneorg. October 2014;9(10):e109709.

71. Melissa H Stigler MA, Poonam Dhavan, Radhika Shrivastav, K Srinath Reddy, Cheryl L Perry. Weight-related concerns and weight-control behaviors among overweight adolescents in Delhi, India: A cross-sectional study. International Journal of Behavioral Nutrition and Physical Activity , . 2011;8(9).

72. Mercado.I Prevalence of healthy and unhealthy weight loss practice of Latino Women at colledge in Neyork city: Terapia psicologica, vol.26, num. 2, Dec, 2008, pp. 199-205.

73. Manos D, Sebastian J, Bueno MJ, Mateos N, De la Torre A. Body image in relation to self-esteem in a sample of Spanish women with early-stage breast cancer. PsicoOncologia 2005;2(1):103–116.

74. Fairburn CG, Welch SL. The impact of pregnancy on eating habits and attitudes to shape and weight. International Journal of Eating Disorders 1990;9:153–160.

75. Patrick CH Cheung PLI, ST Lam and Helen Bibby. A study on body weight perception and weight control behaviors among adolescents in Hong Kong. Hong Kong Med J. 2007;13:16-21.

76. Monireh Hatami MNMT, Abol ghassem Djazayery, Mansooreh Sadat Mojani and Fariborz Hamidi Mejlej. Relationship between body image, body dissatisfaction and weight status in Iranian adolescents. Archives of obesity ,licensee Vernon Innovative Publishers. 2015:1-6.

77. Mariana Contiero San Martini DdA, Marilisa Berti de Azevedo Barros, Ana Maria Canesqui,, Filho AdAB. Are normal-weight adolescents satisfied with their weight? Sao Paulo Med J 2016;134(3):219-27.

78. Novak.S, Gregory D. Webster Spousal Social Control During a Weight Loss Attempt: A Daily Diary Study, Pers Relatsh. 2011 ; 18(2): 224–24

79. Tavakoli. M, Batool. S Hasanpoor-Azghady. Predictors of mothers' postpartum body dissatisfaction based on demographic and fertility factors : Tavakoli et al. BMC Pregnancy and Childbirth (2021) 21:8

ANNEXES

Annex 1: Informed Consent

Addis Ababa University, School of public health

Information Sheet

Hello, my name is ———————————————— I am here on behalf of Hana Assefa, a student in Addis Ababa University School of public health nutrition unit. She is conducting a research for partial fulfillment of her Master's in Public Health Nutrition at Addis Ababa University on "unhealthy weight control practices among postpartum women in Addis Ababa, Ethiopia". She has received permission from Addis Ababa university school of public health and Addis Ababa health bureau to conduct this study. You are selected by random technique to participate in this study because currently you have an appointment in one of the selected health facility. Your participation on this study will only be based on your willingness .You have the right to choose not to participate in this study. If you choose to participate, you have the right to stop at any time. If you refuse or decide to withdraw later, you will not be subjected to any ill-treatment. If you agree to participate in the study, your weight and height will be measured using standard measuring instruments. Only light closes will be wearing during weight measurement and height will be measured with bare foot. You will also be interviewed about your body weight perception, body satisfaction, your weight control practice and any social pressure and possible sources of information that could be associated with your weight control practice. The measurement and the interview may take about 30 minutes. The study will give insight on the prevalence of unhealthy weight control practice among postpartum women and factors associated with it. It could also provide the data for policy makers and stakeholders on the prevention of unhealthy weight control methods and promotion of healthy weight control methods. The information that you provide will be kept by using only code numbers. The data will not be used for purposes other than the study. You have the right not to answer any question which you do not want to answer. If you are not comfort with the interview, you can ask any questions or withdraw at any time you want. This study will be successful with your willingness and active participation.

Informed Consent Form

Based on the above information, are you willing to participate in this study?

A) Yes B) No

If yes, I will continue and

If no I will skip to next participant after writing the reasons of refusal ———————— —— ———————————————————

Respondent Signature _____Date_____

Data collector Name_____ Signature_____

Questionnaires ID number_____

Date of data collected_____

Result of data collected A) Completed B) Not completed C) Partially completed D) Refused

Checked by Supervisor: Name _____Signature_____

For further explanation use the Principal Investigator's Address;

Name: Hana Assefa Mengistu

Email: assefahana5@gmail.com

Cell phone: +251 920488124: +251910096480

Annex 2: Survey Questionnaire (English Version)

Questionnaire ID Number _____

Addis Ababa University School of Public Health

Survey Questionnaire to assess unhealthy weight control practice among postpartum women and related factors and source of information in Addis Ababa

Name of health facility ————

Service type/room ————

.

Date ————/DD/———— /MM/————/YR/

Data collector Name ————————

Signature ————————

Supervisor Name ————————

Signature ————————

Part1. Demographic and Socio-economic information

No.	Questions	Responses	Skip
101	Age		
102	What is your Religion	1. Orthodox 2. Catholic 3. Protestant 4. Muslim 5. Other(Specify) _____	
103	What is your current marital status	1. Married or live together 2. Divorced/separated 3. Widowed 4. Never married before 5. Others (specify) _____	
104	What is your educational status	1. 1.Can't read and write 2. Read and write 3. Primary education 4. Secondary education 5. College graduate or above	
105	Occupation	1. Housewife 2. Student 3. Government employed 4. Self- employed 5. Daily labourers 6. Others (specify)	
106	Household family size including you		

107	Monthly house hold income		
108	Are you a member of social safety nets	1. Yes 2. No	

Part 2. Reproductive characteristics

201	Number of children		
202	Time from last birth (in month)		
203	Have you ever attend Postnatal care in your last delivery	1. Yes 2. No ……..	……207
204	How many times did you receive PNC in your last delivery		
205	Have you ever attend antenatal care in your last pregnancy	1. Yes 2. No ……	……..301
206	How many times did you receive ANC in your last pregnancy		

Part 3. Body weight perception assessment

For the following question answer one choice on the way you feel about your weight status

No.	Questions	Responses
301	How do you Perceive your body weight status?	1. Very underweight 2. Slightly underweight 3. About the right weight 4. Slightly overweight 5. Very overweight

Part 4. Body Shape Questionnaire (8 items Evans & Dolan, 1993 BSQ)

	Questions	Never	Rarely	Sometimes	often	Very often	Always
1	Have you worried about your flesh being not firm enough?						
2	Has eating even a small amount of food made you feel fat?						
3	Have you avoided wearing clothes which make you particularly aware of the shape of your body?						
4	Have you felt ashamed of your body?						
5	Has worry about your shape made you diet?						
6	Have you felt happiest about your shape when						

	your stomach has been empty (e.g., in the morning)?						
7	Have you felt that it is not fair that other women are thinner than you?						
8	Have you worried about stretch marks on different part of your body?						

Part 5.weight control practice assessment

No.	Questions	Responses	Skip
501	What is your Preference about your body weight?	1. Nothing / not sure 2. Gain weight 3. Lose weight 4. Maintain weight	
502	Have you ever tried to lose weight in the last 30 days?	1. Yes …… 2. No	…….604
503	Have you ever tried to avoid gaining weight or maintain your body weight in the last 30 days?	1. Yes 2. .No	
506	Have you tried to do any of the following things within the last 30 days in order to lose weight, avoid gaining weight or maintain your body weight?		

		Never	Occasionally	Once a week	2-3 times a week	More than 5 times a week	Daily / always
1	Skipping meal/breakfast, lunch or dinner						
2	Fasting for ≥ 24 hr./long hour fasting						
3	Eating less food than usual						
4	Taking traditional home remedies (like lemon tea, hot water, etc.)						
5	Eating one-food diet						
6	Total avoidance of specific food item						
7	Using slimming belt						
8	Eating food substitutes (e.g., a special drink, supplements).						
9	Taking slimming tea/diet pill						
10	Taking laxatives or diuretics						

11	Self-induced vomiting after taking meal						
507	What are your sources of information to get engaged in these weight control practice?						
		Yes	No				
1	Families						
2	Peers/friends						
3	Husband or Dating partners						
4	Written materials (newspapers and magazines)						
5	Health Professionals						
6	Mass medias (TV, Radio)						
7	Social medias (e.g. Facebook, instagram)						
508	Have you ever been influenced by any of the following to get engaged in weight control practice?						
		Yes	No				
1	Families						
2	Peers/friends						
3	Husband or dating partners						
4	Written materials (newspapers and magazines)						
5	Mass medias (TV, Radio)						
6	Social medias(e.g. Facebook, instagram)						

Part 6. Physical exercise questionnaire (derived from Godin – Leisure Time Exercise)

How many times on the average do you do the following kinds of exercise intentionally for the purpose of weight loss in the last 30 days?

	Never	Occasionally	days per Week	Time per day
STRENUOUS EXERCISE (HEART BEATS RAPIDLY) (e.g., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance bicycling)				
MODERATE EXERCISE (NOT EXHAUSTING) (e.g., fast walking, baseball, tennis, easy bicycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing)				
MILD/LIGHT EXERCISE (MINIMAL EFFORT) (e.g., yoga, archery, fishing from river bank, bowling, horseshoes, golf, snow-mobiling, easy walking)				

Part 7.Anthropometric measurement /BMI assessment

No	Height		Weight	
701	Measurement 1	Measurement 2	Measurement 1	Measurement 2
Result				

Annex 3

: Informed Consent (Amharic version)

አዲሰ አበባ ዩኒቨርሰቲ፡ የህብረተሰብ ጤና አጠባበቅ የስነ-ምግብ ትምህርት ክፍል

<u>የመረጃ መመ.ያ ቅፅ</u>

ሰላም እንደምን ነወት፡

እኔ----------እባላለሁ የመጣሁት የአዲስአበባ ዩኒቨርሰቲ የህብረተሰብ ጤና አጠባበቅ የስነ-ምግብ ትምህርት ክፍል በማስተርስ ድግሪ መርሃ ግብር እየተማረች ያለችዉን ሀና አሰፋን በመወከል ነዉ.፡፡ ተማሪዋ የመመረቂያ ፅሁፏን ለማዘጋጀት ይረዳት ዘንድ '' በድህረ-ወሊድ ጊዜየሚታይ ጤናማ ያልሆነ ክብደትን የመቆጣጠር ልምምድ' ፣ በሚል ርዕስ በአዲስአበባ በሚገኙ በተመረጡ ወረዳወች ላይ ጥናታዊ ፅሁፍ እንድታዘጋጅ ከአዲስአበባ ዩኒቨርስቲ እና ከአዲስአበባ ጤና ቢሮ ህጋዊ ፈቃድ ተቀብላለች፡፡

እርስዎም በተደጋጋሚ በተደረገ የአጋጣሚ የናሙና አወሳሰድ ስሌት መሰረት በዚህ ጥናትላይ ተሳታፊ እንዲሆኑ የተመረጡ ሲሆን በዚህ ጥናት ላይ የርስዎ ተሳታፊነት በፈቃደኝነት ላይ የተመሰረተ ይሆናል፡፡ በዚህ ጥናት ላይ ላለመሳተፍ መብትዎ የተጠበቀ ነዉ፡፡ ፍቃደኝነትዎን ከሰጡ በኋላም በመሃል ላይ ማቆም ቢፈልጉም መብትዎ የተጠበቀ ይሆናል፡፡ በዚህ ጥናት ላይ ለመሳተፍ ፈቃደኛ ባይሆኑና በድንገት በምሃል ለማቋረጥ ቢፈልጉ በዚህ ምክንያት የሚደርስብወት ምንም አይነት ችግር ኤይኖርም፡፡

ይህን ጥናት ለማገዝ ፍቃደኛ ከሆኑ ክብደትዎ እና ቁመትዎን ደረጃዉን በጠበቀ የክብደት የቁመት መለኪያ ይለካል ማለት ነዉ፡፡ በምርምሩ ሂደት ወቅት ክብደተዎን ሲመዘኑ ቀለል ያሉ ልብሶች መልበስ እንዲሁም ቁመትዎን ሲለኩ በባዶ እግርወ ይሆናሉ ፡፡ በተጨማሪም ቃለ መጠይቅ የደረግልወታል፡፡ በዚህ መጠየቅም ስለ ሰዉነትዎ ክብደት ያለዎት ግምት፣ በ ሰዉነት ክብደትወ ስለሚሰማወትሰ እርካታ ፣ክብደትወን ለመቆጣጠር የሚተገብሯቸውን ልምምዶች ከዚህም ጋር በተገናኘ የመረጃ ምንጭ ሉሆኑ የሚችለ ምክንያቶች እንዲሁም እነዚህን ተግባራት እንዲያከናዉኑ ስላሉብዎት ማህበራዊ ጫና የሚያነሱ ጥያቄወችን እንጠየቅወታለን፡፡ ጥናቱን ስናደርግ በአጠቃላይ ክብደትዎን ለመመዘን፣ ቁመትዎን ለመለካትና ቃለ-መጠይቁን ለማድረግ 30 ደቂቃእንጠቀማለን፡፡

ይህ ጥናት በአጠቃላይ ከድህረ-ወሊድ በኋላ ስለሚተገበር ጤናማ ያልሆነ ክብደትን የመቆጣጠር

ልምምድ እና ተያያዝ ጉዳዮች መረጃን የሚጠቀም ይሆናል። ከዚህም አልፎ ጥናቱ ፖሊሲ ለሚያረቁ እና ለሚመለከታቸዉ ባለድርሻ አካላት ጤናማ ያሌሆኑ ውፌረትን ለመቀነስ ከሚረጉ ተግባራት የመከሊከያና መቆጣጠርያ መንገዶችን እንዱቀርፁና እንዱተገብሩ እንዲሁም ጤናማ የሆነ ክብደትን የመቆጣጠር ልምምድን እንዲያስፋፉእንደ መነሻ ይሆናል የሚሌ ዕኩ እምነት አለን። ይህ እርስዎ ያሚሰጡት መረጃ በሚስጢር የሚጠበቅና የራሱ መለያ ኮድ የሚኖረዉ ይሆናል። በቃለ-መጠይቁ ሰነድ ላይ የእርስዎ ስም አይቀመጥም። ይህ መረጃ ይህን ጥናት ከመደገፍ ባለፈ ለሌላ ለምንም ተግባር አይዉልም። ይህንንም መረጃ ክሚመለከትዉ አካል ዉጭ ሌላ ሰዉ የማይመለከተዉ ይሆናል። የማይመለከትዎን ጥያቄና ሊመልሱት የማይፈልጉትን ጥያቄ እንዲመልሱ አይገደዱም። ቃለ-መጠይቅ በሚደረግልዎት ወቅት ምቹ ሁኔታ ካልተሰማዎት በማነኛዉም ሰአት ማቋረጥ ይችላሉ። በቃለ-መጠይቁ ላይ የእርስዎ የነቃ ተሳትፎ ለዚህ ጥናታዊ ፅሁፍ ሚናዉ እጅግ የጎላ ነዉ።

የመግባቢያ ስምምነት ሰነድ

በመጀመሪያ ገፅ ላይ ያለዉን ሃሳብ በዉል ከተረዱት፣ በዚህ ጥናት ላይ ለመሳተፍ ፈቃደኛ ነዎት?

1) **አዎ**
2) **አይደለሁም**

ፈቃደኛ ከሆኑ ልቀጥል

ፈቃደኛ ካልሆኑ ወደ ቀጣይ ሌላኛዉ ሰዉ እንለፍ ፈቃደኛ ያልሆኑበትን ምክንያት ቢነግሩን-------

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የተሳታፊው

ፊርማ---------- ቀን----------

የመረጃ ሰበሳቢዉ

ስም---------- ፊርማ----------

የቃለ-መጠይቁ መለያ ቁጥር----------

መረጃዉ የተሰበሰበበት ቀን ----------

የተሰበሰበዉ መረጃ ዉጤት 1).**የተሟላ** 2). **የልተሟላ** 3). **በከፊልየተሟላ** 4). **ተቃዉሞ**

በተቆጣጣሪወች ተረጋግጧል :: **ስም----------ፊርማ----------**

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ለበለጠ ገለፃና መረጃ የሚመለከተዉን የዋና አጥኝዉን አድራሻ ይጠቀሙ

ስም፡ ሃና አሰፋ

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Annex 4:Survey questionnaires (Amharic version)

የመጠይቁ መለያ ቁጥር----------

አዲስአበባ ዩኒቨርስቲ የህብረተሰብ ጤና አጠባበቅ የስነ-ምግብ ትምህርት ክፍል "በድህረ-ወሊ ጊዜ የሚተገበር ጤናማ ያልሆነ ክብደትን የመቆጣጠር ልምምድ እና ተያያዥ ምክንያቶች እንዱሁም የመረጃ ምንጭ ሉሆኑ የሚችለ መንገዶች" በተመለከተ የተዘጋጀ ጥናት ለማጥናት የተዘጋጀ መጠይቅ፡፡

የጤና ተቋሙ ስም----------

የአገልግሎት መስጫ ክፍል----------

ቃለ መጠይቁ የተሞላበት፡ ቀን----------ወር----------ዓ.ም----------

መረጃዉን የሰበሰበዉ፡ ስም----------

ፊርማ----------

በተቆጣጣሪዉ ተረጋግጡል ፡ ስም----------

ፊርማ----------

:

ክፍል 1፡ መሰረታዊ መረጃ የተመለከቱ ጥያቄወች

ተ.ቁ	ጥያቄ	መልስ	ወደ ሚቀጥለዉ ጥያቄ ይለፉ
101	እድሜ		
102	ሀይማኖት	1. ኦርቶዶክስ 2. ካቶሊክ 3. ፕሮቴስታንት 4. ሙስሊም 5. ሌላ (ይግለፁት) ----------	
103	የጋብቻ ሁኔታ	1. ያገባች/ አብሮየሚኖሩ 2. የፈታች 3. ባል በሞት የተለያት 4. ከዚህ በፊትያላገባች 5. ሌላ (ይግለፁት) ----------	
104	የትምህርት ደረጃ	1. መሰረታዊ ትምህርት ያልተማረ(ማንበብና መፃፍ የማይችል) 2. ማንበብና መፃፍ የሚችል 3. የመጀመሪያ ደረጃ 4. ሁለተኛ ደረጃ ት/ት 5. የኮሌጅ ምሩቅ ወይም ከዚያ በላይ	
105	የስራ ሁኔታ	1. የቤት እመቤት	

		2. ተማሪ 3. የመንግስት ሰራተኛ 4. የግልስራ 5. የቀን ሰራተኛ 6. ሌላ ካለ ይገለፅ ----------	
106	እርስወን ጨምሮ የቤተሰብ ቁጥር ብዛት		
107	ወርሀዊ የቤተሰቡ የነፍስ ወከፍ ገቢ		
108	የማህበረሰብ አቀፍ ሴፍቲኔት ተጠቃሚ ነወት		

ክፍል 2፡ ስነ ተዋልዶ ጤናን የተመለከቱ ጥያቄወች

201	ምን ያህል ልጆች አለወት		
202	የመጨረሻ ልጂወን ከወለዱ ምን ያህል ጊዜወ ነዉ(በወር)		
203	በመጨረሻ ወሊድ በቃላ የድህረ ወሊድ ክትትል አድርገዉ ያዉቃሉ	1. አወ 2. አይ----------	-------207
204	በመጨረሻ ወሊድ በቃላ ለምን ያህል ጊዜ የድህረ ወሊድ ክትትል አድርገዋል		
205	በመጨረሻ የእርግዝና ወቅት የቅድመ ወሊድ	1. አወ 2. አይ----------	-------301

	የእርግዝና ክትትል አድርገዉ ያዉቃሉ		
206	በመጨረሻ የእርግዝና ወቅት ለምን የህል ጊዜ የቅድመ ወሊድ የእርግዝና ክትትል አድርገዋል		

ክፍል 3፡ ስለ ሰዉነትዎ ክብደት መጠን ያለዎትን አረዳድ የተመለከቱ ጥያቄዎች

ተ.ቁ	ጥያቄ	መልስ
301	የሰዉነትዎን ክብደት ሁኔታ እንዴት ይረዱታል?	1. ከ ጤናማ የሰውነት ክብደት መጠን በጣም ዝቅተኛ ነዉ፡፡ 2. ከ ጤናማ የሆነ የሰውነት ክብደት መጠን በመጠኑ ዝቅተኛ ነዉ፡፡ 3. ጤናማ የሆነ የሰውነት ክብደት መጠን፡፡ 4. ከጤናማ የሰውነት ክብት መጠን በመጠኑ ከፍ ያለ፡፡ 5. ከጤናማ የሰውነት ክብደት መጠን እጅግ በጣም ከፍ ያለ፡፡

ክፍል 4፡ የሰውነት አቋም እርካታ/የሰውነት አካላዊ እርካታ መለኪያ

ተ.ቁ	ጥያቄ	በፍፁም	ከስንት አንዴ	አልፎ አልፎ	በተደጋ ሚ	በጣም በተደጋ ጋሚ	ሁለ ጊዜ

1	ሰዉነቱ ብቁ ወይም ዉብ አይደለም ብለሽ ተጨንቀሽ ዉቂያለሽ?						
2	በምትመገቢበት ወቅት /ትንሽም ከተመገብሽ በኃላ እነደሚያወፍርሽ ወይም እንደወፈርሽ ይሰማሻል ?						
3	የሰዉነት ቅርፅሽን ወይም ዉፍረትሽን የጉልቶ የሚያሳይ አለባበስን ታስወግጃለሽ?						
4	ባለሽ የሰዉነት አቋም ታፈሪያለሽ /ትሸማቀቂያለሽ?						
5	ስለ ሰዉነትሽ ቅርፅ መጨነቅ አመጋገብሽን እንድታስተካክይ አድርጎሻል?						
6	ሆድሽ ባዶ ሲሆን ለምሳሌ ጠዋት ከእንቅልፍሽ እንደተነሳሽ ያለሽ የሰዉነትሽ ቅርፅ ደሽተኛ ያደርግሻል						
7	ሌሎች ሼቶች ካንቺ ሰዉነት ይልቅ ቀጥነዉ ስታያቸዉ አግባብ						

	አይደለም ብለሽ ታስቢያለሽ?						
8	ሰውነትሽ ላይ የሚወጡ ምልክቶች ለምሳሌ ሰርጎድ ያሉ ምልክቶች ያስጨንቁሻል?						

ክፍል5፡ የሰውነት ክብደትወን ለመቆጣጠር የሚደረጉ ተግባራትን በተመለከተ

ተ.ቁ	ጥያቄ	መልስ	ይተዉት
501	ክብደትዎን በተመለከተ የሚመርጡት ነገር ምንድን ነዉ?	1. ምንም 2. ክብደት መጨመር 3. ክብደትን መቀነስ 4. አሁን ያለኝን ክብደት ጠብቆ መቆየት	
502	እስከ ዛሬ ድረስ የመጨረሻ ልጅሺን ከወለድሽ በኋላ ክብደትሽን ለመቀንስ ሞክረሽ ታዉቂያለሽ?	1. አዎ 2. አይ…… ……..	604
503	እስከ ዛሬ ድረስ የመጨረሻ ልጅሺን ከወለድሽ በኋላ ክብደትሽን ባለበት ለመቆየትወይም ላለመወፈር ሞክረሽ ታዉቂያለሽ?	1. አዎ 2. አይ	
504	እስከ ዛሬ ድረስ የመጨረሻ ልጅሺን ከወለድሽ በኋላ ስለ ጤናማ የሰዉነት ክብደት እና ጤናማ የሰዉነት ክብደት	1. አወ 2. አይ…… ……..	606

	ማስተካከያ መንገዶች ትምህረት ወይም መረጃ አግኝተዉ ያዉቃሉ		
505	የመጨረሻ ልጅሺን ከወለድሽ በኋላ ስለ ጤናማ የሰዉነት ክብደት እና ጤናማ የሰዉነት ክብደት ማስተካከያ መንገዶች ትምህረት ወይም መረጃ ያገኙት ከየት ነዉ	1. ከጤና ባለሙያ 2. ከቤተሰብ 3. ከባል ወይም ከፍቅር ጓደኛ 4. ከማህበራዊ ድር-ገፅ 5. ከመገናኛ ብዙሃን 6. ከተሌ ፅሁፎች 7. ሌላ ካለ ይግለፁ _____	

506	ባለፉት 30 ቀናት ከሚከተሉት ውስጥ የሰውነትወን ክብደት ለመቀነስ ፤ ላለመወፈር ወይም ባሉበት ለማቆየት ሞክረው ወይም አድርገውት የምታውቂው ተግባር አለ?						
		በፍፁም	አልፎ አለፎ	በሳምንት አንዴ	በሳምንት ከ 2-3 ጊዜ	በሳምንት ከ 5 ጊዜ በላዩ	በየቀኑ/ሁል ጊዜ
1	ምግብ መዝለል/ቁርስ ፤ ምሳ ወይም እራት መዝለል						
2	ለረዥም ሰአት ወይም ከ 24 ሰአት በላይ መፆም						
3	ከወትሮው በተለየ አነስተኛ ምግብ መመገብ						
4	በቤት ዉስጥ የሚዘጋጅ ባህላዊ ዉፍረት የሚቀንስ ምግብ ወይም መጠጥ መጠቀም(ለምሳሌ፤ ሻይ በሎሚ፣ትኩስ ዉሃ)						

5	አንድ አይነት ምግብ ብቻ መመገብ						
6	ሊያወፍር ይችላል ብለዉ የሚያስቡትን የምግብ አይነት ፊዕሞ አለመመገብ						
7	የሚያከሳ የወገብ ቀበቶ መጠቀም						
8	የሚያስቀምጥ ወይም ቶሎቶሎ የሚያሸና መድሀኒት መዉሰድ						
9	ውፈረት ለመቀነስ የሚረዲ መድሀኒት መውሰድ ወይም የሚያከሳ ሻይ መጠጣት						
10	ምግብን የሚተኩ ሌሎች ነገሮችን ለምሳሌ እንደ መጠጥና ክኒን ያሉ ነገሮችን መውሰድ						
11.	ምግብ ከወሰዱ በኋላ በራስዎ ጥረት እንዲያስታዉከዎት ማድረግ						
507	ክብደትዎን ለመቆጣጠር የሚጠቀሚቸዉ አማራጭ ዘዴዎችንና መረጃዎችን የሚያገኙት ከየት ነዉ?						
1	ከቤተሰብ	1. አለ		2. የለም			
2	ከአቻ-ጓደኞች	1. አለ		2. የለም			
3	ከባል ወይም ከፍቅር ጓደኛ	1. አለ		2. የለም			
4	ከተለያዩ ፅሁፎች(መፅሔት፣ጋዜጣ)	1. አለ		2. የለም			
5	ከጤና ባለሙያ	1. አለ		2. የለም			
6	ከመገናኛ ብዙሃን (ቴሌቪገርን፣ራዲዮ)	1. አለ		2. የለም			

7	ከማህበራዊ ድረ-ገፅ (ለምሳሌ ፌስቡክ)	1. አለ	2. የለም
507	ከሚከተለት ውስጥ የሰውነት ክብደት ለመቆጣጠር የሚረዳ መንገዶችን ተግባራዊ እንድታደርጊ ተፅእኖ የሚፈጥርብሽ አለ?		
1	ቤተሰብ	1. አለ	2. የለም
2	የአቻ-ጓደኞች	1. አለ	2. የለም
3	ባል ወይም ከፍቅር ጓደኛ	1. አለ	2. የለም
4	ከተለያዩ ፅሁፎች(መፅሔት፣ጋዜጣ)	1. አለ	2. የለም
5	የጤና ባለሙያ	1. አለ	2. የለም
6	መገናኛ ብዙሃን (ቴሌቪዢን፣ራዲዮ)	1. አለ	2. የለም
7	ማህበራዊ ድረ-ገፅ (ለምሳሌ ፌስቡክ)	1. አለ	2. የለም

Part 6. ክብደትን ለመቀነሽ ታስቦበት የሚሰራ የአካል ብቃት እንቅስቃሴ (drived from Godin Leisure-Time Exercise)

ክብደትወን ለመቀነስ ከታች የተዘረዘሩትን የአካል ብቃት እንቅስቃሴ አይነቶች ባለፉት 30 ቀናት በአማካኝ ለምን ያህል ጊዜ ይሰራሉ ?

	በፍፁም አልፎ አልፎ	በሳምንት ለምን ያህል ቀን	በቀን ለምን ያህል ደቂቃ

ከባድ የኣካል ብቃት እንቅስቃሴ (የልብ ምት በፍጥነት እስከሚመታ ድረስ) (ለምሳሌ., ሩጫ, ሶምሶማ ሩጫ, የገና ጨዋታ , እግር ኳስ, የመረብ ኳስ, ብርቱ ዋና, ለረጂም ሰአት ብርቱ ሳይክል መንዳት)				
መካከለኛ የኣካል ብቃት እንቅስቃሴ (በጣም አድካሚ ያልሆነ) ለምሳሌ., በፍጥነት መራመድ, ቴኒስ, ቀላል የሆነ ሳይክል ማሽከርከር, መርብ ኳስ, , ቀላልኳና, የባህል ጭፈራ				
ቀላል የኣካል ብቃት እንቅስቃሴ (ጥቂት ጥረት ብቻ የሚጠይቅ) (ለምሳሌ., ዮጋ, ቀስት, አሳ ማስገር, ፈረስ መጋለብ, ጎልፍ, ቀላል እርምጃ/Walk)				

በመረጃ ሰብሳቢ/ በጠያቂው የሚሞላ

ክፍል 7፡ የሰውነት መጠን ሌኬት

ተ.ቁ	ቁመት(በሴንቲ ሜትር)		ክብደት(በኪሎ ግራም)	
701	ልኬት 1	ልኬት 2	ልኬት 1	ልኬት 2
ንባብ				

ስለ ትብብርዎ በጣም እናመሰግናለን !!

CURRICULM VITAE

PERSONAL INFORMATION

Name	Hana Assefa Mengistu
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WORK EXPRIENCES

- From Oct 2014 – Oct 2016 SNNPR, Gamo gofa Zone, Uba debretsehay Woreda, Beto H. Center
- From Nov 2016 – Oct 2018, KembataTembaro Zone, Damboya Woreda Funto H. Center

  - ✓ SC Focal at SNNPR, Gamo Gofa Zone, Uba debretsehay Woreda, Beto H. Center
  - ✓ Health extension worker Supervisor at SNNPR, Gamo Gofa Zone, Uba debretsehay Woreda, Beto H. Center
  - ✓ Facilitate trainings on management of SAM to health professionals in collaboration with GOAL Ethiopia and gamogofa zohe health office
  - ✓ Facilitate trainings on YFS and Family plannimg training to health professional and health extension workers in collaboration with IFHP and gamogofa zohe health office

- ✓ HEAD of health center , EPI and YFS focal SNNPR, Kembata Tembaro Zone, Funto H. Center

- ✓ Organize each reporting system from each service unit and from health posts.

EDUCATONAL BACKGROUND

High School & Preparatory (9-12) south wollo, Kutaber secondary & Preparatory School 2007-20010

BSC Public Health Officer Haremaya University 2011-2014

Languages:

S/N	Language	Speak	Read	Write
1	Amharic	Excellent	Excellent	Excellent
2	English	Excellent	Excellent	Excellent

Additional Trainings

- May 23-29/2018, Blended &Integrated Nutrition, Transform PHCU Woliata Sodo /Ethiopia
- Oct 2-3/2017, Training on PITC and VCT **,**Kembata tembaro zone health bureau Durame
- June 2-4/2017, Health sector transformation plan, Kembata Tembaro zone health officer Durame/Ethiopia
- April 20-22/ 2017, Heath communication and leadership skill, Communication for health /gogota care wolayita sodo
- March 20-24/2017 Training on eHMIS and eIDSR , JSI/SNNP health bureau Butajira Ethiopia
- Jun18-Aug 6/2016 Facilitate training on implanon next to health extension workers, IFHP/Gamogofa zone health burea Arbaminch,Ethiopia
- Jun 21- Jun 28/2016 Training on comprehensive family planning and long acting FP service, IFHP/SNNP health bureau Yirgalem ,Ethiopia
- May 20-26/2016 Facilitate training on management of Sever acute malnutrition, GOAL Ethiopia Arbaminch Ethiopia

- May 12-18/2016 Training on Management of sever acute malnutrition, GOAL Ethiopia Arbaminch Ethiopia
- Dec 15-22/2014 Training on youth friendly service and syndromatic management of sexually transmitted infections(YFS/STI) IFHP/SNNP health bureau Halaba, Ethiopia

Additional skills

Statistical and software:- Word, Power point, MS Excel

SPSS, STATA

Hobbies and Interest

- Leading and Providing services
- Identifying and analyzing Problems
- Planning and Implementing
- Capacity building in different activities
- Data analysis and interpretation

REFFERANCE:

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