



SCHOOL OF GRADUATE STUDIES

**INTENTION TO DO PHYSICAL EXERCISE AND ITS ASSOCIATED
FACTORS AMONG PREGNANT WOMEN ATTENDING ANC IN PUBLIC
HOSPITALS OF HARAR TOWN, EASTERN ETHIOPIA USING THEORY
OF PLANNED BEHAVIOR**

MPH/THESIS

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**Intention to Do Physical Exercise and Its Associated Factors Among Pregnant
Women Attending Antenatal Care in Public Hospitals of Harari Regional
State, Eastern Ethiopia, Using the Theory of Planned Behavior**

**A Thesis submitted to the department of Reproductive Health,
School of Graduate studies
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MASTER OF PUBLIC HEALTH IN REPRODUCTIVE HEALTH**

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APPROVAL SHEET
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I hereby certify that I have read and evaluated this Thesis entitled **“Intention to Do Physical Exercise and Its Associated Factors Among Pregnant Women Attending Antenatal Care in Public Hospitals of Harari Regional State, Eastern Ethiopia, Using the Theory of Planned Behavior”**, prepared under my guidance by Tariku Girmay. I recommend that it be submitted as fulfilling the thesis requirement

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Final approval and acceptance of the thesis is contingent up on the submission of final copy of The Thesis to Council of Graduate Studies (CGS) through the Departmental or School Graduate Committee (DGC or SGC) of the candidate.

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BIOGRAPHICAL SKETCH

I was born in Harar, Ethiopia, on March 23, 1994, I attended Keladamba Primary School for elementary education and Harar Aboker Senior Secondary and Preparatory School, respectively. In 2019, I graduated a Bachelor of Science (BSc) in Midwifery from Harar Health Science College. Since February 2020, I have served as a staff Midwifery in the obstetric ward at Hiwot Fana Comprehensive Specialized University Hospital (HFCSUH). My clinical work with pregnant women motivated my research on physical exercise during pregnancy.

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LIST OF ABBREVIATION AND ACRONYMS

ACOG	American College of Obstetrician and Gynecologists
ANC	Antenatal Care
BMI	Body Mass Index
CSA	Central Statistical Agency
DM	Diabetes Mellitus
GDM	Gestational Diabetes Mellitus
HFSUH	Hiwot Fana Specialized University Hospital
IRB	Institutional Review Board
JGU	Jugel General Hospital
IPH	Institute of public Health
MET	Metabolic Equivalent
MMR	Maternal Mortality Rate
PA	physical Activity
PE	physical Exercise
PBC	Perceived Behavioral Control
FPH	Federal Police Hospital
RCT	Randomized Control Trial
SDGs	Sustainable Development Goals
SPSS	Statistical Package for Social Science
TPB	Theory of Planned Behavior
UK	United Kingdom
USA	United States of America
WHO	World Health Organization

ABSTRACT

Background: Physical exercise is a key preventive measure for chronic diseases across the lifespan, including during pregnancy, where it promotes maternal and fetal health. Despite its benefits, evidence on the intention to perform physical exercise during pregnancy and its predictors remains limited in low-income settings, particularly in Sub-Saharan Africa and Ethiopia.

Objective: This study aimed to assess the intention to do physical exercise and its associated factors among pregnant women attending antenatal care services in public hospitals of Harari Regional State, Eastern Ethiopia, from February 1 to March 30, 2024.

Methods: An Institution-based cross-sectional study among 405 pregnant women attending Antenatal Care follow-up at Hiwot Fana Specialized University Hospital and Jugel General Hospital. Participants were selected using systematic random sampling technique. Data were collected through interviewer-administered structured questionnaires, entered using Epi Data version 4.6, and analyzed with STATA version 17. The results of the descriptive statistics were summarized using mean, standard deviation, percentages, frequency tables and graphs. Standardized β and R² values were used to interpret outcome variable. Simple and multiple linear regression analysis were performed. In multiple linear regression analysis, Statistical significance was declared at a p-value of <0.05 with 95% confidence interval.

Results: Of the 411 women approached, 405 completed the study (98.5% response rate). The mean intention score was 16.15 (SD $\pm$ 5.82), with 58.3% (n = 236) scoring above the mean. The TPB model explained 36% of the variance in exercise intention. Significant predictors included: direct attitude [$\beta = 0.230$, $p < 0.001$, 95% CI (0.187, 0.458)], direct perceived behavioral control [$\beta = 0.259$, $p < 0.001$, 95% CI (1.920, 5.855)], knowledge of exercise benefits [$\beta = 0.248$, $p = 0.001$, 95% CI (0.194, 0.786)], high school education [$\beta = 0.169$, $p = 0.005$, 95% CI (0.297, 1.621)], college or university education [$\beta = 0.192$, $p = 0.004$, 95% CI (0.413, 2.135)], and being in the second trimester of pregnancy [$\beta = 0.190$, $p = 0.017$, 95% CI (0.247, 2.504)]

Conclusion: More than half of the pregnant women reported a high intention to engage in physical exercise. Intention was significantly influenced by perceived behavioral control, positive direct attitude, higher educational attainment, knowledge of exercise benefits, and second-trimester pregnancy, were significant associated factors. Therefore, study aimed at promoting physical exercise during pregnancy should strengthen perceived control and positive attitudes, particularly among less-educated women and those in earlier stages of pregnancy.

Keywords: Physical exercise, Theory of Planned Behavior, pregnancy, associated factor, intention, Ethiopia.

1. INTRODUCTION

1.1. Background

Physical exercise (PE_x), defined as planned, structured, and repetitive physical activity, offers profound health benefits for pregnant women and their developing fetuses (Mottola et al., 2018, WHO, 2020). The antenatal period presents a critical window of opportunity for health promotion, as women are often highly motivated to adopt healthy behaviors and are in frequent contact with the healthcare system for monitoring (FMoH, 2021). This aligns with the goals of comprehensive antenatal care, which emphasizes risk assessment, health education, and preventive strategies, including the integration of safe exercise practices (WHO, 2016, FMoH, 2021).

The World Health Organization (WHO) recommends regular physical activity throughout all life stages, including gestation (WHO, 2020). Similarly, the American College of Obstetricians and Gynecologists (ACOG) advises at least 150 minutes of moderate-intensity exercise per week (ACOG, 2021). This recommended physical exercises (PE_x) in pregnancy include Brisk walking, jogging, pelvic floor exercises, back care exercises, aerobic swimming, and labor preparation exercises, such as squatting and pelvic tilts (WHO, 2020). Furthermore, Moderate Physical exercise (PE) is beneficial for both maternal and fetal health among pregnant women (Murray et al., 2020).

These recommendations are supported by extensive evidence demonstrating that moderate PE_x reduces the risk of major obstetric complications such as preeclampsia and gestational diabetes mellitus (Sujindra et al., 2015, Du et al., 2019). Furthermore, it is associated with clinically meaningful outcomes including shortened labor duration, reduced low back pain, lower rates of cesarean section and operative vaginal delivery, and a decreased risk of fetal macrosomia (Garland, 2017, Al Hassan et al., 2022). Perhaps equally important is its role as a protective behavior against antenatal and postnatal depression, a condition affecting a significant proportion of women, particularly those with limited education and social support (Sattler et al., 2017).

In response to this global evidence, Ethiopia has demonstrated a commitment to integrating PE_x into maternal healthcare through the adoption of its National Antenatal Care Guideline, 2022, (FMoH, 2022). Which explicitly addresses and promotes physical exercise for pregnant women,

this policy-level adoption is a crucial step towards improving maternal and fetal health nationally.

1.2. Statement of the Problem

Physical inactivity presents a profound global public health crisis, ranking as the fourth leading risk factor for global maternal mortality (Mekonnen and Gebremariam, 2018, WHO, 2019a). It is a significant contributor to non-communicable diseases, accounting for an estimated 5.3 million premature deaths annually and causing 9% of global mortality (Garland, 2017, WHO, 2019b). This risk is acutely magnified during pregnancy, where a sedentary lifestyle is an independent predictor of devastating complications such as gestational hypertension, diabetes, and poor neonatal outcomes (Garland, 2017, ACOG, 2021).

Despite irrefutable evidence of its benefits, a staggering majority of pregnant women worldwide fail to meet minimum exercise guidelines (Ali et al., 2021). Globally, less than 15% of pregnant women achieve the recommended 150 minutes of moderate-intensity exercise per week (Mottola et al., 2018). This crisis is universal but manifests differently across studies reveal prevalences as low as 13.4% in the USA (Rodrigues-Denize et al., 2024), 13% in Norway (Carlsen et al., 2021) and 18% in India (Sujindra et al., 2015).

The situation is markedly more severe in low and middle-income countries (LMICs) (Beetham et al., 2019).where physical inactivity among pregnant women is exceptionally high, with estimates suggesting over 80% do not meet recommended exercise guidelines and factors like economic constraints, cultural values, and urbanization further suppress activity levels (Beetham et al., 2019, Okafor and Goon, 2020b, Coll et al., 2023). Alarming rates of inactivity have been documented in studies focused on pregnant populations in Colombo, Sri Lanka (85% inactive), and Serbia (89% inactive) (Todorovic et al., 2020, Gunarathna et al., 2023). As well as in Nigeria (78% inactive) and Zimbabwe (82% inactive) (Suberu and Adeoye, 2024, Hove et al., 2025). Primarily due to a lack of knowledge and cultural beliefs about safety for the fetus (Nkhata et al., 2024).

This trend is acutely evident in Sub-Saharan Africa,Studies in Kenya and Uganda confirm that only a small percentage (as low as 10-15%) of pregnant women meet recommended exercise levels (Sabiri et al., 2018). Ethiopia Regional studies paint a consistent picture of a national health emergency research in Mekele found only 8.4% of pregnant women met guidelines while,

a study in Gonder found a rate of just 11.7% (Hailemariam et al., 2020, Janakiraman et al., 2021). Critically, the prevalence of sedentary behavior among Ethiopian pregnant women is catastrophically high, estimated between 76–79% (Hailemariam et al., 2020). Study done Haramaya, Eastern Ethiopia found that while 66.1% of pregnant women had a favorable attitude towards physical exercise during pregnancy (Teshome, D. et al.2020).

The WHO's global action plan aims to reduce physical inactivity by 10% (2025) and 15% (2030) (WHO, 2019a). To achieve this, improved health promotion, reproductive healthcare, and preventive services to avoid pregnancy related complications (Canton, 2021) Especially, for the pregnant population being physically inactive is found to be an independent risk factor for maternal obesity, gestational diabetes mellitus (GDM), and gestational hypertension (GHTN) (ACOG, 2021). In addition to minimizing the direct causes of maternal morbidity; the focus has shifted to correcting the modifiable health risk factors (WHO, 2019a).

Expanding health promotion & preventative services for pregnant women is the main objective of antenatal physical exercise clinics (Lattof et al., 2020). One of the components of health promotion, and prevention of pregnancy-related complications is physical exercise during pregnancy (Garland, 2017). ThatProviding effective counseling to pregnant women to continue or commence physical exercise during pregnancy is necessarily improving women's health and it is found to be the initial activity of comprehensive Antenatal care (ANC) (ACOG, 2021).

Recognizing this urgency, the Ethiopian Federal Ministry of Health made a pivotal advancement by integrating physical exercise promotion into the 2022 National Antenatal Care Guideline (FMoH, 2022). Despite the clear benefits and supportive policy environment,Most pregnant women including those in Ethiopia, do not meet the recommended exercise levels and often become less active than they were prior to pregnancy (Ussery et al., 2020, ACOG, 2021). However, previous studies in Ethiopia (including Harar) have described what women know and practice, they have consistently neglecting to investigate the underlying reasons why they make these choices (Gebregziabher et al., 2019, Kasahun et al., 2023). The underlying cognitive and psychosocial determinants their attitudes, social pressures (subjective norms), and perceived control that ultimately shape their intention to exercise where not assessed (Sattler et al., 2017).

Therefore, this study will address this critical gap Guided by the Theory of Planned Behavior (Ajzen, 2020) and systematically assess the attitudes, subjective norms, and perceived behavioral

control that influence the intention to exercise among pregnant women in Harar. Also provide actionable insights to generate evidence-based data that moves beyond description to explain the behavioral drivers of inactivity.

1.3. Significance of the Study:

This study holds significance for multiple stakeholders in maternal and neonatal health For Pregnant Women: The findings will identify key factors influencing their ability to engage in safe physical activity. This knowledge can empower them to make informed decisions and help in developing targeted educational programs to address misconceptions, thereby promoting the benefits of exercise for maternal and fetal well-being.

For Healthcare Providers the study will offer data-driven insights into common barriers and motivators for exercise during pregnancy. This evidence can guide the integration of structured exercise promotion into routine antenatal care counseling and inform the creation of context-appropriate educational materials for health facilities.

For the Academic and Research Community: The results will provide a foundational framework and baseline data for future studies in similar settings. Furthermore, the evidence generated can contribute to larger systematic reviews and meta-analyses on physical activity in pregnancy, particularly in low-resource contexts.

1.4. Objectives

1.4.1 General Objective

To assess the level of Intention to do Physical Exercise and Its Associated Factors among Pregnant Women Attending Antenatal Care in Public Hospitals of Harari Regional State, Eastern Ethiopia, from February 01 to March 30, 2024, using the Theory of Planned Behavior.

1.4.2 Specific Objectives

- To determine the level of intention to do physical exercise among pregnant women attending antenatal care in public hospitals of Harari Regional State, Eastern Ethiopia.
- To identify the factors associated with intention to do physical exercise among pregnant women attending antenatal care in public hospitals of Harari Regional State, Eastern Ethiopia.

2. LITERATURE REVIEW

2.1. Theory of planned behavior

The Theory of Planned Behavior (TPB), an extension of The Theory of Reasoned Action (Ajzen, 1991, Ajzen, 2011). Provides a psychological framework for understanding how attitudes, subjective norms, and perceived behavioral control (PBC) shape intentions to engage in specific behaviors (Ajzen, 2010). According to TPB, behavioral intention a precursor to action is influenced by three factors: an individual's positive or negative evaluation of the behavior (attitudes), perceived social pressure from peers or institutions (subjective norms), and self-efficacy or perceived barriers to performing the behavior (PBC) (Ajzen, 2020). TPB suggests that a pregnant woman's intention to exercise is driven by her attitudes toward PE (e.g, beliefs about safety), subjective norms (e.g, encouragement from healthcare providers or partners), and PBC (access to prenatal exercise resources), which collectively predict her actual PE participation (De Vivo and Mills, 2021).

The social, cognitive, and behavioral determinants is critical for designing targeted interventions to promote PA in pregnant populations (Watson et al., 2015, Hagger et al., 2020). For instance, TPB-based strategies might address misconceptions about exercise risks (attitudes), foster supportive social environments (subjective norms), or improve access to prenatal fitness programs (PBC) (Choi et al., 2016, Ajzen, 2020). By systematically addressing these modifiable factors, interventions grounded in TPB can enhance PE engagement during pregnancy, contributing to improved maternal and fetal health outcomes (Foley et al., 2021).

2.2. The Level of intention to do physical exercise

Globally, TPB models explain studies shows that In Wuhan, China, subjective norms dominated ($\beta = 0.42$, $p < 0.01$; $R^2 = 63.9$) (Zhu et al., 2020). Study conducted Asia at Taiwan on intention to engage in regular physical exercise among pregnant mother showed that that the model explained 59% of variance pregnant planned to exercise regularly till delivery (Lee et al., 2016) also, study in Canada reveal that the sample consists of 193 women ($M_{age} = 31.2 \pm 3.6$), results indicate that prenatal MVPA over all model interaction of MVPA show R^2 44% (Simard et al., 2025).

However, only 25.7% of women in Buffalo City met exercise guidelines (Mukona et al., 2016). Contrastingly, While intention scores in South Africa only 18% met guidelines due to socioeconomic constraints (Okafor and Goon, 2020a). And studies in Ethiopia, Mekele, only 8.4% of pregnant women met the recommended ≥ 150 minutes/week of moderate-intensity activity (Hailemariam et al., 2020). Mean intention scores is cores (13.2 ± 2.8), with over all model of variance explain 79% of intention to antenatal exercise (Addis et al., 2022). The WHO's guidelines advocate integrating exercise into prenatal care, yet implementation remains uneven, particularly in regions with fragmented healthcare systems (WHO, 2020).

2.3. Factors associated with intention to do physical exercise during pregnancy

2.3.1. Socio demographic factors

Study in In Cork, Ireland, pregnant women aged 30–34 (AOR = 1.8, 95% CI: 1.2–2.7) and ≥ 35 years (AOR = 2.1, 95% CI: 1.4–3.1) were more likely to engage in high physical exercise (PE) levels compared to younger women (<30) (Flannery et al., 2017). In UK study found that higher education levels were inversely associated with intention to rest ($\beta = -0.31$, $p = 0.002$) (Newham et al., 2016). Also, Brazil Study showed much stronger intentions than those with less education around the world, this link isn't always positive. good healthcare and cultural acceptance make education more helpful for exercise plan (Rezaeizadeh et al., 2024).

Study in Sub-Saharan Africa In Zambia, 60% of pregnant women cited lack of exercise as a barrier with education level showing no direct association with Physical exercise practice (AOR = 1.1, 95% CI: 0.8–1.5) (Nkhata et al., 2014). In Nigeria, businesswomen (AOR = 2.3, 95% CI: 1.5–3.6), multiparous women (AOR = 1.9, 95% CI: 1.2–3.0), were associated with sufficient physical exercise (PE) (De Vivo, 2017). Attending non-formal education (AOR: 13.50, 95% CI: 2.65–68.91), were significantly associated with a higher risk of sedentary activity status (Okafor and Goon, 2020a).

Study in Ethiopia, Dessie town shows primary education (AOR = 8.86, 95% CI(4.519-17.40), secondary education (AOR = 4.27% CI(2.14-8.52) and college+ education (AOR = 4.98 95% CI (2.36-10.5), education all linked to better attitudes about exercise (Yimer et al., 2024). Another Gonder study also found higher education meant stronger intentions (diploma: AOR = 1.49, 5% CI: 1.13–3.14), degree+: AOR = 1.6 ,5% CI: 1.01–2.94), (Janakiraman et al., 2021). Hawassa,

study also reveal, that exposure to mass media (AOR = 2.43, 95% CI: 1.57–3.78), husbands with college education (AOR = 1.57, 95% CI: 1.05–6.12) (Belachew et al., 2023).

2.3.2. Knowledge towards antenatal exercise

Study In Bangladesh, mobile health education increased antenatal exercise knowledge from 32% to 58% ($\beta = 0.41$, $p < 0.001$) (Mishra M, 2023). Study in In Brazil, 65.6% of pregnant women demonstrated adequate knowledge of antenatal exercise, with higher education (>12 years) strongly predicting knowledge retention ($\beta = 0.31$, $p = 0.002$) (Nascimento et al., 2015). A study in India reported that 50.7% of participants were knowledgeable about antenatal exercise, with access to prenatal care ($\beta = 0.26$, $p = 0.01$) (Wijesiriwardana and Gunawardena, 2016). Study in Low-Income Countries: In Nigeria, 52.4% of pregnant women had sufficient knowledge, (Ojukwu et al., 2018). Tanzanian study found that community health worker interventions improved knowledge scores by 18% ($\beta = 0.18$, $p = 0.02$) and exercise adherence (AOR = 2.4, 95% CI: 1.6–3.7) (Joseph and Maluka, 2021).

In Ethiopia, knowledge levels ranged from 39.5% in Gondar (Janakiraman et al., 2021), 53.3% bahir dar northern Ethiopia, where media exposure ($\beta = 0.29$, $p = 0.003$) and partner education (AOR = 1.9, 95% CI: 1.3–2.8) predicted knowledge adequacy (Bayisa et al., 2022), In Hawassa, only 43.7% understood exercise benefits and contraindications, with rural residency reducing odds of adequate knowledge (AOR = 0.5, 95% CI: 0.3–0.8) (Belachew et al., 2023). In Dessie, Ethiopia, women with good antenatal exercise knowledge had 13.5 times higher odds of practicing it (AOR = 13.54, 95% CI: 7.84–23.39) (Yimer et al., 2024).

Study show in ethiopia population may have lower average attendance at structured antenatal care sessions, where counseling occurs (WHO, 2016). Lower female literacy rates limiting engagement with educational materials (CSA, 2016). Study in jimma, reveal that there was fewer community-based health promotion programs specifically targeting maternal exercise. Furthermore, cultural norms prioritizing rest over physical exercise during pregnancy may present a significant barrier not observed in the Brazilian context (Jiregna et al., 2020).

2.3.3. Past experience of exercise

Study in Portugal, among participants in Braga, 33.6% had exercised for 1–5 years pre-pregnancy, and 38.6% for >5 years, with longer pre-pregnancy exercise duration correlating with

higher antenatal adherence ($\beta = 0.41$, $p < 0.001$) (De Vivo, 2017, Rodrigues et al., 2020). Study in Low- and Middle-Income Countries (LMICs) like Kenya, cohort study reinforced this, showing that women with >2 years of pre-pregnancy exercise had 4.8 times higher odds of meeting antenatal guidelines (AOR = 4.8, 95% CI: 2.9–7.9) (Lalani, 2020). In Bahir Dar, Ethiopia, women who exercised pre-pregnancy had 3.6 times higher odds of antenatal exercise adherence (AOR = 3.64, 95% CI: 1.09–12.12) (Bayisa et al., 2022). In Debreworkos, only 6.3% of pregnant women had prior exercise experience, with 95.2% practicing brisk walking and 4.8% jogging ≥ 3 days/week pre-pregnancy, identified prior exercise as a predictor of antenatal exercise (Addis et al., 2022).

2.3.4. Obstetric history and physical Exercise

Study In the U.S only 15.5% of pregnant women met ACOG exercise guidelines, with adherence lowest in the first (13.6%) and third trimesters (13.4%) compared to the second (17.1%) (Hesketh and Evenson, 2016). Canadian studies found trimester-specific motivational shifts: intention peaked in the second trimester ($\beta = 0.29$, $p < 0.001$) but declined in the third ($\beta = -0.19$, $p = 0.01$) (Davenport et al., 2018). The second trimester compared to other pregnancy stages. Consequently, this trimester represents the optimal window to initiate and promote exercise programs, as it aligns with UK guidelines for using exercise to prevent pregnancy complications (Poote and McKenzie-McHarg, 2019). As suggested by study in Polish the second trimester remains ideal for establishing sustainable healthy exercise habits (Wojtyła et al., 2020).

Study in South Africa study found that women with ≥ 2 children had 65% lower exercise adherence (AOR = 0.35, 95% CI: 0.2–0.6) (Okafor and Goon, 2020b). In Kenya, second-trimester women reported higher exercise frequency ($\beta = 0.21$, $p = 0.02$) due to reduced nausea and fatigue (Odiwuor and Judith, 2016). In Northern Ethiopia, women in their second trimester had 0.65 unit higher exercise odds than those in the first ($\beta = 0.65$, 95% CI: 0.071 1.23) (Addis et al., 2022). Multiparous women in Mekele, Ethiopia, were 87% less likely to exercise (AOR = 0.13, 95% CI: 0.03–0.59) compared to primiparous women (Hailemariam et al., 2020).

2.4. Theory of planned behavior constructs

The Theory of Planned Behavior (TPB) posits that behavioral intention shaped by attitude (personal evaluation of exercise), subjective norms (perceived social expectations), and

perceived behavioral control (PBC) (self-efficacy and barriers) is the strongest predictor of actual behavior (Ajzen, 2020, Zhu et al., 2020). These constructs collectively represent an individual's motivation to engage in a behavior, such as prenatal exercise (Hamilton et al., 2019).

Cross-cultural studies highlight variations in TPB's predictive power. Study in Australian pregnant women exhibited stronger intentions to exercise due to higher instrumental Attitudes ($\beta = 0.34$, $p < 0.001$), subjective norms ($\beta = 0.28$, $p = 0.002$) and PBC ($\beta = 0.41$, $p < 0.001$) (Rauff and Downs, 2018). While among Chinese women, only PBC significantly predicted intentions ($\beta = 0.49$, $p < 0.001$), reflecting cultural emphasis on self-efficacy (Zhu et al., 2020). Study in Canada the full model including the interaction, attitude ($\beta = 0.59$; $p < 0.001$), subjective norm ($\beta = 0.20$; $p < 0.01$) and PBC ($\beta = 0.26$; $p < 0.05$) (Simard et al., 2025).

In Northern Ethiopia, TPB variables correlated positively with intention ($p < 0.05$), with PBC having the strongest effect ($\beta = 0.34$, 95% CI 0.23-0.44) followed by attitude ($\beta = 0.19$, 95% CI 0.105-0.279) and subjective norms ($\beta = 0.10$, 95% CI 0.019-0.195) (Addis et al., 2022). Despite robust evidence linking TPB constructs to exercise intention, gaps persist in understanding their combined and trimester-specific influences across pregnancy. For instance, while study in China 63.9% of behavioral intention variance is explained by TPB in some populations (Zhu et al., 2020). And study in Canada, trimester-specific declines in PBC ($\beta = -0.18$, $p = 0.01$) (Davenport et al., 2018).

Existing literature shows knowledge, Attitude, benefits of exercise during pregnancy and in few studies TPB's role in predicting health intentions has addressed. However, a gap exists in fully applying the TPB to understand pregnant women's intention to exercise throughout pregnancy. This study aims to address this by examining how attitude, subjective norms, and perceived behavioral control predict pregnant women's intention to exercise across trimesters, also investigating the unique factors shaping these beliefs regarding exercise intention.

2.5. Conceptual frame work

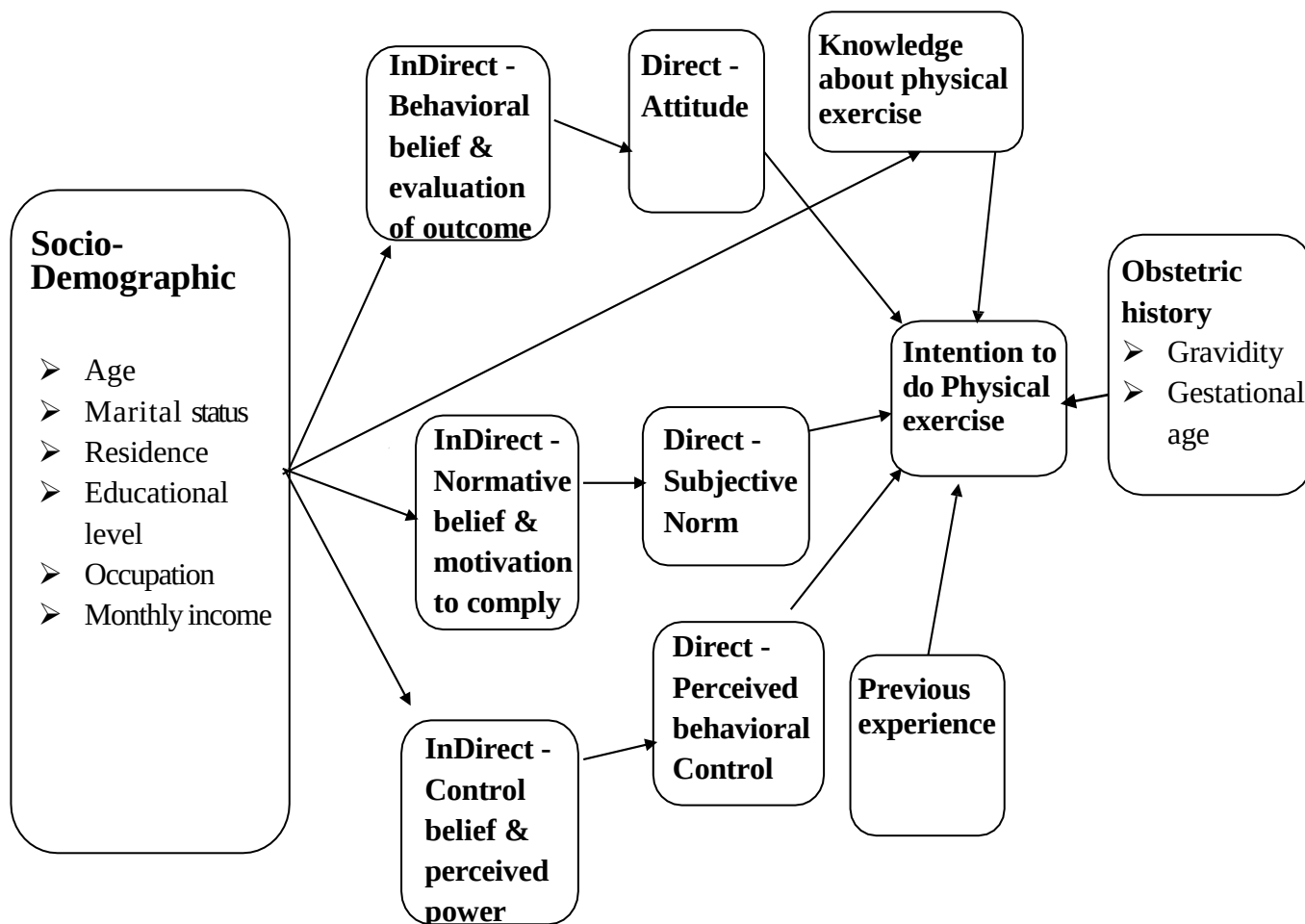


Figure 1: Conceptual framework of intention to do physical exercise and associated factor among pregnant women attending ANC at public hospitals of Harar town Eastern, Ethiopia, 2025. Developed by reviewing different literatures, Source: adapted from (Ajzen, 1991, Ajzen, 2010, Addis et al., 2022)

3. METHODS AND MATERIALS

3.1. Study area and period

This study was conducted in the Harari Regional State, located approximately 515 kilometers east of Addis Ababa, Ethiopia. According to the most recent Ethiopian *Statistical* service, the region had a projected population of 246,000 as of 2022, with a nearly equal gender distribution. (Ethiopian Statistical Service, 2023). The study was carried out at the two public hospitals in the region that provide comprehensive maternal health services.

Hiwot Fana Specialized University Hospital (HFSUH): A tertiary-level teaching hospital affiliated with Haramaya University. It serves as a referral center for the eastern part of Ethiopia. Its Maternal and Child Health (MCH) department, which includes antenatal care (ANC) services, is staffed by 2 obstetrician-gynecologists, 2 senior midwives, 4 resident physicians, and 8 nurses. Annually, the hospital provides ANC services for an estimated 3,500-4,000 pregnant women (Hospital Administration Report, 2024). Jugel General Hospital (JGH): A primary-level regional general hospital. It has a bed capacity of 95 and serves as a first-line facility for the Harari population. The MCH unit is staffed by 2 general practitioners and 5 midwifery nurses. It provides ANC services for approximately 2,000-2,500 pregnant women annually (Hospital Administration Report, 2024).

The study period was from February 01 to March 30, 2024. This timeframe allowed for the recruitment of a sufficient number of pregnant women attending antenatal care at the selected hospitals.

3.2. Study design

An institution-based cross-sectional study design was employed.

3.3. Population

3.3.1. Source Population

The source population was all pregnant women attending antenatal care (ANC) follow-up at any public hospital in Harari Regional State, Eastern Ethiopia.

3.3.2. Study Population

The study population was all systematically selected pregnant women who attended ANC follow-up at Hiwot Fana Specialized University Hospital and Jugel General Hospital during the data collection period (February 1 to March 30, 2024) and who met the eligibility criteria.

3.4. Inclusion and Exclusion criteria

3.4.1. Inclusion criteria

Pregnant women who attending ANC follow-up in selected public hospitals of Harari Regional State during data collection period was included.

3.4.2. Exclusion criteria

- Pregnant women who does not attend ANC follow-up in selected public hospitals during data collection period
- Pregnant women who Currently meeting physical exercise guidelines for pregnancy (ACOG, 2021).

3.5. Sample size determination

The sample size for the first objective was determined by using single population proportion formula by considering the following assumption: 5% margin of error, 95% confidence level, and 10 % non-response rate, using the magnitude intention to do physical exercise during pregnancy from the previous study conducted at different part of the country. Study done in northern Ethiopia, (Debremarkose) magnitude intention to do physical Exercise was mean intention 13.02 and standard deviation 4.18 (Addis et al., 2022).

- Mean Intention (μ) = 13.02, Standard Deviation (σ) = 4.18 · Confidence Level = 95% ($Z_{\alpha/2} = 1.96$) ·

Step 1: Calculate the absolute margin of error (d). $d = 5\% \text{ of the mean} = 0.05 \times 13.02 = 0.651$

Step 2: Calculate the initial sample size. $n = (Z_{\alpha/2})^2 \times \sigma^2 / d^2$

$$n = (1.96)^2 \times (4.18)^2 / (0.651)^2 \quad n = (3.8416 \times 17.4724) / 0.423801$$

$$n = 67.118 / 0.423801 \quad n = 158.38 \text{ Round } n = 158$$

Step 3: Adjust for a 10% non-response rate. Total Sample Size = $158 \times 10 = 174$ Final Sample Size (rounded up) = 174

To determine the second objective double population formula using Epi Info version 7.2 for individual factors at 95% confidence level with 5% margin of error, 80% power and 1:1 ratio of exposed to unexposed as shown in table below.

Table 1: Sample size required to assess intention to do physical exercise and associated factor among pregnant women attending ANC in public hospitals of Harari Regional State Eastern Ethiopia, 2025. From the reviewed literatures (Table 1)

Factor	% of exposed with outcome	%of unexposed with outcome	AOR	Sample Size	10% for non-response	Reference
Exercise done before current pregnant.	39.08%	25.07%	1.6	374	411	(Beyene et al., 2022)
Heard exercise during pregnancy	34.5%	13%	2.7	140	154	(Negash et al., 2022)
Women's Occupation	85%	63%	1.4	140	154	(Beyene et al., 2022)

After comparing the sample size for the first objective with the sample size for the second objective, the final sample size was determined to be 374, the larger of the two. To account for a 10% non-response rate, $(374 + 37.4 = 411.4)$ that final sample was increased to 411.

3.6. Sampling procedure

The study setting is the public hospitals in harari region, Out of the three existing public hospitals, two (Hiwot Fana Comprehensive Specialized University Hospital and Jugel General Hospita) were selected as study sites using simple random sampling to ensure an unbiased selection and enhance the representativeness of the sample

The final calculated sample size of 411 was allocated to each hospital proportionally. The allocation was based on the average client load from the same two-month period (February–March) in the preceding year (2023), obtained from hospital registries. This historical data established an expected sampling frame (N) of 1,020 eligible women: 700 at HFSUH and 320 at JGH.

- The sample size for HFSUH was calculated as: $(700 / 1020) \times 411 \approx 282$ participants.
- The sample size for JGH was calculated as: $(320 / 1020) \times 411 \approx 129$ participants.

Selection of Study Participants: Within each hospital, eligible pregnant women were selected using a systematic random sampling technique. The sampling interval (k) was determined by dividing the total sampling frame by the required sample size ($k = N/n = 1020/411 \approx 2$). The first

participant was chosen at random from the first two eligible women on the daily ANC registration list. Subsequently, every second eligible woman was invited to participate. This process continued until the predetermined sample size for each hospital was achieved. In the event of a refusal, the immediate next eligible woman was approached as a replacement.

This sampling strategy ensured the selection of a representative sample of pregnant women attending the primary public ANC services in the region during the study period.

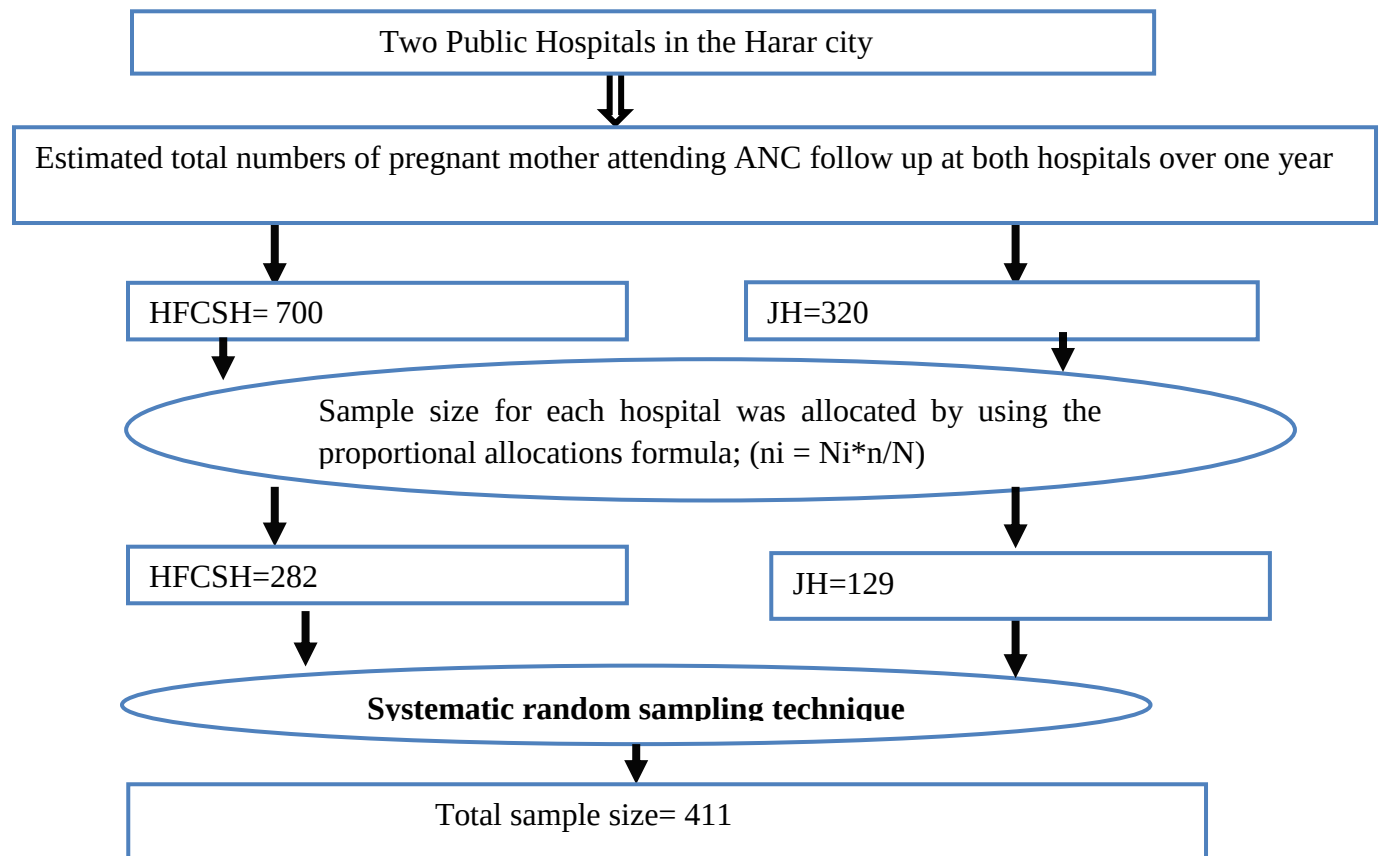


Figure 2: Schematic presentation of sampling procedure to assess intention to do physical exercise and its associated factor among pregnant women attending ANC at public hospitals of Harar town Eastern, Ethiopia, 2025.

3.7. Data Collection Methods

3.7.1. Data collection tool

A structured, pre-tested questionnaire was developed through an extensive review of literature (Alkema et al., 2016, Lee et al., 2016, De Vivo and Mills, 2021, Sitot and Workye, 2022) and administered by trained investigators. The tool underwent validation, including pre-testing on 5% of the sample size (n=21) at Federal Police Hospital followed by translation for

(English→Amharic→back-translation→reconciliation). The questionnaire comprised about five key domains (1) socio demographic characteristics (age, education, occupation), (2) obstetric history (5 items), (3) prior exercise experience (4 yes/no items), (4) knowledge of antenatal exercise (10 yes/no items scored 0-10), and (5) Theory of Planned Behavior (TPB) constructs. TPB components included direct measures (3-item attitude, 4-item subjective norm, and 5-item perceived behavioral control Likert scales, all 1-5 scales where higher scores indicated greater exercise propensity) Intention was assessed via a 4-item Likert scale (1=strongly disagree to 5=strongly agree). The internal consistency of the multi-item TPB scales was confirmed using Cronbach's alpha, with most of scales demonstrating acceptable internal consistency ($\alpha \approx 0.7$) (Lamm et al., 2020). The instrument was designed for 40-minute administration during ANC visit.

3.7.2. Data Collectors

To ensure standardized data collection, three qualified midwives with diplomas were carefully selected as data collectors, along with an external BSc-level midwife supervisor. The principal investigator conducted a comprehensive two-day training program prior to data collection that covered all aspects of the study protocol. The training included detailed explanations of the research objectives, ethical considerations, and participant rights, along with thorough review and practice of the questionnaire items through mock interviews. Particular emphasis was placed on proper administration of Likert scales, neutral probing techniques, handling participant queries, and accurate recording of responses. All trainees successfully demonstrated their competency through supervised role-playing exercises before commencing fieldwork. Throughout the data collection period the supervisor conducted random spot-checks to ensure strict adherence to the study protocols and maintain data quality.

3.7.3 Data collection Procedure

Data were collected from pregnant women attending antenatal care services at two selected public hospitals. A structured, pre-tested questionnaire was administered face-to-face by trained interviewers in a private setting immediately following each participant's ANC visit to minimize disruption. Prior to each interview, eligible women received a comprehensive explanation of the study purpose, procedures, potential risks and benefits, along with assurances of confidentiality and voluntary participation. Informed consent was obtained from all participants. Daily quality control measures were implemented, including on-site supervision by both the principal

investigator and a designated supervisor to monitor adherence to protocols. All Completed questionnaires were reviewed and cross-checked daily for completeness, accuracy, and internal consistency by the supervisor and principal investigator. Any identified discrepancies or missing information were addressed through immediate feedback and appropriate corrective actions.

3.8. Study variables

3.8.1. Dependent variable

Intention to do physical exercise during pregnancy

3.8.2. Independent variables

- Socio demographic variables: (age, Residency, educational status, occupation, income and media)
- Past experience of physical exercise
- Obstetric history
- Knowledge
- Theory of planned behavior variables (Direct Attitude, Direct Subjective norm, Direct Perceived behavioral control,
- Theory of planned behavior variables InDirect Attitude, InDirect Subjective norm and InDirect Perceived behavioral control).

3.9. Operational definitions

Regular Physical Exercise: Aerobic exercise lasting at least 30 minutes continuously, performed on at least three days per week. Examples include brisk walking and jogging (Gerrard, 2020).

Direct Attitude: The individual's feelings and beliefs about physical exercise measured using three, five-point Likert scale items. A composite score was calculated by summing all items. A higher score (above or equal to the mean) indicated a more positive attitude toward physical exercise (Hamilton et al., 2019).

Subjective Norm: The individual's perception of social pressure to perform physical exercise measured using four, five-point Likert scale items. A composite score was calculated by summing all items. A higher score (above or equal to the mean) indicated a stronger perceived social influence to perform physical exercise (Ajzen, 1991, Ajzen, 2010).

Perceived Behavioral Control: The individual's perceived ability to control factors that influence physical exercise measured using five, five-point Likert scale items. A composite score was calculated by summing all items. A higher score (above or equal to the mean) indicated a stronger perceived ability to control factors related to physical exercise (Ajzen, 1991, Ajzen, 2010).

Indirect Attitude: Composed of behavioral belief (one's belief about the Likely outcomes of physical exercise) and outcome evaluation assessed using a total of eighteen items for behavioral belief nine and also nine items for outcome evaluation. The final value was derived by calculating the sum of the products of the behavioral belief and outcome evaluation scores for each participant (Ajzen, 2010, Lee et al., 2016).

Indirect Subjective Norm: Composed of normative belief (one's perception of social pressure to perform physical exercise) and motivation to comply assessed using a total of thirteen items for normative belief six items and for motivation to comply seven. The final value was derived by calculating the sum of the products of the normative belief and motivation to comply scores for each participant (Ajzen, 2010, Ajzen, 2020).

Indirect Perceived Behavioral Control: Composed of control belief (one's perception of factors influencing physical exercise) and perceived power. Assessed using a total of ten items for control belief five and five items for perceived power. The final value was derived by calculating the sum of the products of the control belief and perceived power scores for each participant (Ajzen, 2010, Ajzen, 2020).

Previous Experience: Pregnant women who reported having exercised for at least 30 minutes, at least three days per week, during the antenatal period at any point in their lifetime (yes/no) (Addis et al., 2022).

Knowledge: Knowledge: Composed of belief about knowledge (one's belief about possessing accurate information regarding physical exercise during pregnancy) and knowledge evaluation. Assessed using a total of ten items for belief about knowledge, the items were developed from works of various literatures each response was valued with “1” for NO responses and “1” for yes responses. The knowledge score of each individual was obtained by summing up all the ten items and the expected score ranged from 0 to 10 (Sujindra et al., 2015, Alvis et al., 2019).

Intention: The mother's readiness to perform physical exercise during pregnancy measured using four question with, five-point Likert scale items. (1 =strongly disagree to 5 =strongly agree), yielding a total possible score range of 4 to 20. A composite score was calculated by summing all items. (Ajzen, 2010, Lee et al., 2016, Addis et al., 2022).

3.10. Data quality control

Data collection was conducted after the Data collectors and supervisors was trained on the objective of the study, the contents of the Questionnaires, and how to maintain the confidentiality and privacy of the study subjects. After that, the questionnaire was pre-tested at Police Hospital on 5% (21 individuals) to assess the reliability, clarity, sequence, consistency, understand ability and the total time that take to finish the questionnaire before one week of the actual data collection and necessary corrections was made. The overall data collection process was strictly supervised and by the end of each day, the filled questionnaires was checked for completeness. The questionnaire was translated into the local language by individuals with good command of both languages. All completed surveys were randomly checked and reviewed by the principal investigator and supervisors.

The data collectors sent all completed tools to supervisors after verifying that they were accurate, consistent, and complete. Inaccurately filled data were corrected daily by the appropriate data collectors. In order to facilitate data handling, each responder was assigned with a unique identification code. The whole data collection process was also closely monitored by the supervisors. Data quality was also ensured during entry and analysis.

3.11. Data processing and analysis

Following data collection, all responses were systematically coded, cleaned, and entered into Epi Data v4.6 before being transferred to Stata v17 for statistical analysis. We conducted descriptive analyses to examine frequency distributions, means, and standard deviations. For regression modeling, we first performed simple linear regression with all independent variables, retaining those with $p < 0.25$ for inclusion in the final multiple linear regression model. We tested all regression assumptions: Based on diagnostic testing, the regression model meets key statistical assumptions. The residuals demonstrate normality, with skewness and kurtosis tests yielding non-significant p-values (0.5533 and 0.1092, respectively) and supported visually by a QQ-plot. Multicollinearity is not a concern, as indicated by a mean Variance Inflation Factor (VIF) of 2.06

and a tolerance value of 0.48. The linearity assumption was assessed via a scatter plot, and there is no potential outliers were examined using Cook's distance and box-plot visualizations. The final model's explanatory power was evaluated using R^2 . While standardized β coefficient was used to interpret factors associated to intention to do physical exercise. Variables with p value less than 0.05 at 95% confidence interval were considered as statistically significant.

3.12. Ethical consideration

Before the commencement of data collection, ethical clearance, and approval official Letter was written from the Institutional Health Research Ethical Review Committee (IHRERC) of the College of Health Medical Sciences, Haramaya University with Re.No. IHRERC/039/2024. Subsequently, official permission letters were obtained from the administrative bodies of Hiwot Fana Comprehensive Specialized University Hospital and Jugal General Hospital. Then informed consent was obtained from all participating pregnant women. Also, for participants under 18 years of age, additional assent was obtained from a parent or legal guardian. The consent process included a detailed explanation of the study's purpose, procedures, potential risks and benefits, and the voluntary nature of participation. Participants were assured of their right to withdraw at any time without affecting the quality of their antenatal care. To protect confidentiality, we implemented several measures: (1) all questionnaires were anonymized, with no personal identifiers collected; (2) unique code numbers replaced participant names throughout data handling; and (3) all data were stored securely with restricted access.

3.13. Information dissemination

The findings of this study will be presented in multiple formats to ensure broad utilization. First, results will be shared through Haramaya University's College of Health and Medical Sciences as partial fulfillment of the Master of Public Health degree requirements, including an open defense presentation. Formal reports will be submitted to key stakeholders: Hiwot Fana Comprehensive Specialized Hospital administration and Jegula General Hospital, and Targeted presentations will be made for hospital managers, ward case teams (particularly ANC/MCH wards). Moreover the finding of the study will be present on various seminars/workshop, scientific conferences and disseminated through publication in local and international journals. All dissemination materials will maintain participant confidentiality, while emphasizing actionable recommendations for improving physical exercise promotion during antenatal care services.

4. RESULTS

4.1. Socio-demographic characteristics of the respondents

This study had a total of 405 participants, representing a 98.5% response rate. The median age of the pregnant women was 25 years, with the largest proportion (40.7%) falling within the 25–29 year age group. The majority of respondents were married (72.6%) and resided in urban areas (74.8%). Educationally, over half (51.1%) had attained a high school level of education. In terms of occupation, housewives constituted 31.8% of the sample. Regarding household economics, slightly more than three-fifths (62.2%) reported a mid-range monthly income between 5,001 and 10,000 Ethiopian Birr. These participant characteristics are detailed in (Table 2).

Table 2: Socio- demographic characteristic of pregnant women attending ANC in Public hospitals of Harari regional state, Eastern, Ethiopia, 2025 (n=405).

Factor	Category	Frequency (N)	Percentage (%)
Age	15-19	27	6.7%
	20-24	127	31.4%
	25-29	165	40.7%
	30-34	45	11.1%
	35 and Above	41	10.1%
Marital status	Married	294	72.6%
	Unmarried	111	27.4%
Your level of education	Unable to read and write	45	11.1%
	Able to read and write	14	3.5%
	primary school(1-8)	42	10.4%
	High school(9-12)	207	51.1%
	College or above	97	23.9%
Residence	Urban	303	74.8%
	Rural	102	25.2%
Your occupation	House wife	129	31.8%
	Daily laborer	46	11.4%
	Government	100	24.7%
	Non-Government	18	4.4%
	Private	53	13.1%
	Merchant	36	8.9%
	Student	13	3.2%
	Farmer	10	2.5%
Montly Income (in birr)	5,000 and below	61	15.1%
	5,001-10,000	252	62.2%
	10,001-15,000	70	17.3%
	15,001 and above	22	5.4%

4.2. Obstetric history of Participants

This study revealed that more than half (52.8%, n=214) were multigravida. More than three fifth (81.2%, n=329) were in their second trimester and all respondents (100%) were attending antenatal care (ANC) follow-up visits. Complete obstetric characteristics are detailed in (Table 3).

Table 3: Obstetric history of pregnant women attending ANC in Public hospitals of Harari regional state, Eastern Ethiopia, 2025 (n=405)

Factor	Category	Frequency (N)	Percentage (%)
Gravidity	Primi gravida	130	32.1%
	Multi gravida	214	52.8%
	Grand multi gravida	61	15.1%
Gestational age	1-3 month	31	7.7%
	4-6 month	329	81.2%
	7-9 month	45	11.1%
ANC follow up	Yes	405	100%

4.3. Previous Experience of Exercise

The study found that only (13.8%, n=56) reported any previous experience with structured physical exercise. Among this small group of women who had exercised, brisk walking was the most common type of activity, reported by more than half of them (57.1%, n=32). Complete details of these exercise patterns are presented in (Table 4).

Table 4: previous experience of physical exercise in pregnant women attending ANC in Public hospitals of Harari regional state, Eastern, Ethiopia, 2025 (n=405)

Factor	Category	Frequency (N)	Percentage (%)
Previous experience of physical exercise	Yes	56	13.8%
	No	349	86.2%
Type of physical exercise the respondent responds having previous experience of physical exercise (n = 56)			
Type of physical exercise	Brisk walking	32	57.1%
	Jogging	20	35.7%
	Others*	4	7.2%

*Prenatal yoga (Pilates), Swimming, Stationary cycling

4.4. Knowledge of physical exercise during pregnancy

This study assessed knowledge of physical exercise during pregnancy. The findings showed that most participants were aware of key benefits and contraindications that Majority 287 (70.9%) have knowledge physical exercise during pregnancy can reducing Reduce back pain and 354 (87.4%) have knowledge physical exercise can reducing revents excessive weight gain, similarly (90.1%, n=365) have knowledge physical exercise contradicated to severe anemia and (89.1%, n=361) have knowledge its contradicated to for vaginal bleeding (Table 5).

Table 5: Knowledge of physical exercise among pregnant women attending ANC in Public hospitals of Harari regional state, Eastern, Ethiopia, 2025 (n=405).

Factor	Category	Frequency (N)	Percentage (%)
Reduce back pain	Yes	287	70.9%
	No	118	29.1%
Prevents excessive weight gain	Yes	354	87.4%
	No	51	12.6%
Reduce risk of high blood pressure	Yes	316	78%
	No	89	22%
Reduce risk of gestational diabetes	Yes	352	86.9%
	No	53	13.1%
Reduce the likely hood of cesarean section delivery	Yes	220	54.3%
	No	185	45.7 %
Helps more rapid recovery after delivery	Yes	226	55.8%
	No	179	44.2 %
Vaginal bleeding during pregnancy	Yes	361	89.1%
	No	44	10.9%
Severe anemia during pregnancy	Yes	365	90.1%
	No	44	10.9%
Uncontrolled type 1 DM during pregnancy	Yes	206	50.9%
	No	199	49.1%
Uncontrolled hypertension during pregnancy	Yes	339	83.7%
	No	66	16.3%

4.5. TPB model variables

Summary of TPB variables

The study demonstrated internal consistency across all Theory of Planned Behavior (TPB) constructs, with Cronbach's alpha values of indirect attitude was 87.9%, indirect subjective norm was 82.7%, Indirect perceived power was 76%. And the mean of indirect attitude was 67.91 ± 16.13 , indirect subjective norm was 49.67 ± 8.25 and mean of indirect perceived power was 37.35 ± 6.96 . More information listed below on (Table 6).

Table 6: Distribution of TPB variables on intention of pregnant women attending ANC in Public hospitals of Harari regional state, Eastern, Ethiopia, 2025 (n=405).

Variable	Item	Mean	Standard deviation	Minimum	Maximum	Crobnach alpha
Intention	4	16.15	2.82	10	20	70%
Direct attitude	3	10.05	2.02	5	14	22%
Direct subjective norm	4	15.43	2.81	6	20	60%
Direct perceived behavior	5	18.27	3.17	11	23	70%
Indirect attitude	18	67.91	16.13	18	90	87.9%
Indirect subjective norm	13	49.67	8.25	26	62	82.7%
Indirect perceived behavior	10	37.35	6.96	22	50	76%

4.6. Magnitude of intention to do physical exercise

This study showed that Magnitude of intention do physical exercise during pregnancy among the 405 respondents, using four question with, five-point Likert scale items. (1 =strongly disagree to 5 =strongly agree), a total possible score range of 4 to 20 which yields the mean intention score was 16.15 (SD $\pm$ 2.82; 95% CI: 15.87–16.43) (Figure 3).

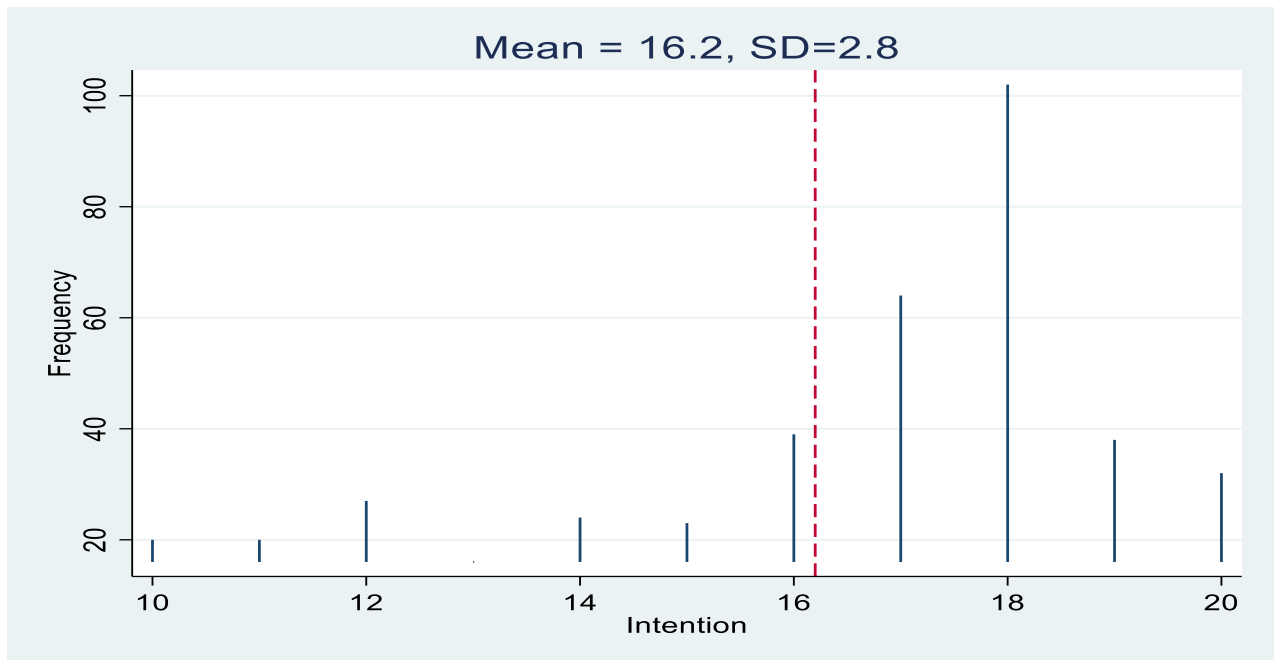


Figure 3: Score of Magnitude of intention to do physical exercise and its associated factor among pregnant women attending ANC at public hospitals of Harar town Eastern, Ethiopia, 2025.

This study finding showed that Magnitude of intention to do physical exercise during pregnancy from total of 405 participants responded to the 4 intention items 58.3% (n = 236) 95% CI (53.29-63.12) (Figure 4).

Magnitude of Intention

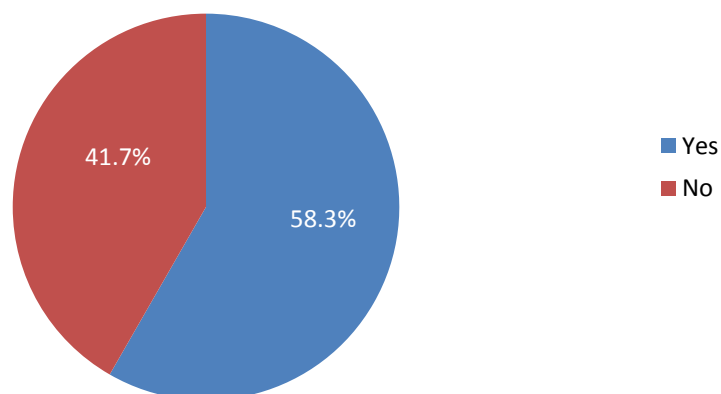


Figure 4: Magnitude of intention to do physical exercise and its associated factor among pregnant women attending ANC at public hospitals of Harar town Eastern, Ethiopia, 2025.

Intention to do physical exercise revealed variations across different trimester of pregnancy with gestational age. This pattern of intention levels across gestational age is illustrated in (Figure 5).

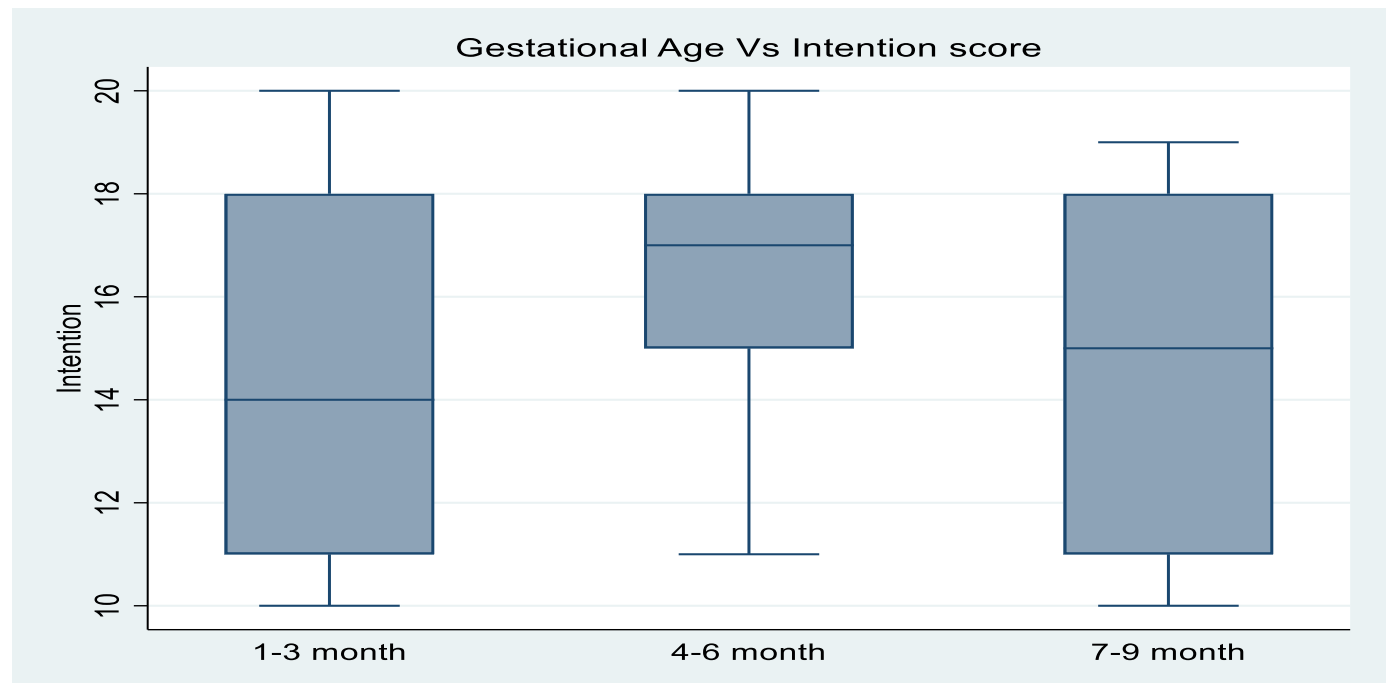


Figure 5: Box plot on intention to do physical exercise among participant with different stage of gestational age on trimester women attending ANC at public hospitals of Harar town Eastern, Ethiopia, 2025.

4.7. Correlation of theory of planed behavior variables with intention

This study demonstrated that nearly all Theory of Planned Behavior (TPB) constructs with intention to exercise ($p < 0.01$). The strongest observed relationship emerged between indirect perceived behavioral control and indirect subjective norm ($r = 0.81$), similarly robust correlations were found between direct and indirect measures of perceived behavioral control ($r = 0.73$) and between direct subjective norms and indirect perceived behavioral control ($r = 0.70$). The complete correlation matrix, including all TPB variable interrelationships, is presented in (Table 7).

Table 7: Pearson correlation of TPB variables among pregnant women attending ANC in Public hospitals of Harari regional state, Eastern, Ethiopia, 2025 ($n = 405$).

	INT	DA	DSN	DPBC	I DA	IDSN	IDPBC
INT	1						
DA	0.424	1					
DSN	0.456	0.493	1				
DPBC	0.479	0.421	0.649	1			
I DA	0.352	0.521	0.575	0.587	1		
IDSN	0.480	0.538	0.626	0.810	0.671	1	
IDPBC	0.412	0.476	0.668	0.733	0.589	0.703	1

Intention (int) indirect attitude (IDA) Direct attitude (DA) Direct subjective (DSN) indirect subjective (IDSN) Direct perceived (DPBC) Indirect perceived (IDPBC)

4.8. Predictor of intention to do physical exercise

4.8.1 Simple linear regression analysis

Prior to analysis the assumptions of linear regression were checked as mention above in method part. Then Simple linear regression was performed to assess the association of each independent variable with intention to do regular physical exercise at 95% confidence interval. Variables with a p-value of less than 0.25 in simple linear regressions were entered to multiple linear regressions for further statistical significance. Participants level of education, participant's level occupation, income, gestational age, and level of knowledge, direct attitude, direct perceived behavioral control, and indirect attitude and indirect perceived .in simple linear regression analysis.

4.9. Multiple linear regressions analysis

After checking the assumptions of normality of dependent variable which is intention statistically Using skewness and kurtosis test i.e. Z value of skewness and it was found to be between -1.96 and +1.96 so that it was normally distributed. Linearity assumption was checked using scatter plot of the standardized residuals versus the predicted values from the regression analysis. Multi-collinearity assumptions were tested by variance inflation factor (VIF).The assumption of

outlier was tested using box plot and there was no outlier. In multiple linear regression, variables which increased intention to do physical exercise were identified and these were level of education, gestational age, knowledge, direct attitude and direct perceived behavioral control were significantly associated variables with intention to do regular physical exercise with at 95% confidence interval.

The developed multiple linear regression model demonstrated a moderate level of fit in explaining the intention to do physical exercise. The model accounted for approximately 36% ($R^2 = 0.36$) of the variance in intention. After adjusting for the number of predictors in the model, the Adjusted R^2 was 0.33, The F Change test indicates that the overall model is statistically significant ($F = 13.52$, $p < 0.000$), Suggesting that at least one predictor in the model significantly contributes to explaining the variance physical exercise .

This study identified several key factors significantly associated with stronger intentions to engage in regular physical exercise among pregnant women. The standardized regression coefficients suggested that Direct perceived behavioral control behavioral control is by far the most important predictor of intention to physical exercise ($\beta = 0.259$, 95% CI [1.919, 5.854], $p=0.000$), followed by level of knowledge about exercise was a significant positive predictor of intention ($\beta = 0.248$, 95% CI [0.194, 0.785], $p=0.001$), Being in the second trimester ($\beta = 0.190$, 95% CI [0.246, 2.504], $p=0.017$), Higher educational attainment showed a positive gradient, with completing high school ($\beta = 0.169$, 95% CI [0.296, 1.621], $p=0.005$) or college and above ($\beta = 0.192$, 95% CI [0.413, 2.135], $p=0.004$).

Education attending high school and college increases intention to do physical exercise by 0.169 and 0.192 points respectively than those with primary education and no formal education provided that other variables are constant. Being Second trimester will increase intention by a 0.190 point than compared with first and third trimester keeping other variables constant. For a unit increase in level of knowledge could result in increased intention by 0.248 point keeping other variables constant. For a positive score increase attitude could result in an increase of intention by 0.190 point keeping other variables kept constant. A positive unit increase in perceived behavioral control this could result increase intention 0.25 point keeping other variables are kept constant. (Table 8)

Table 8: multiple linear regression of intention to do regular physical exercise and its associated factor among pregnant women attending ANC in Public hospitals of Harari regional state, Eastern, Ethiopia, 2025 (n=405).

Variable	Unstandardized Coefficient (B)	Std. Error	Standardized coefficient (β)	t Value	Sig	95% CI for B
Educational status						
Unable to read and write (ref)						
Able to read and write	0.358	0.691	0.232	0.52	0.604	(-0.99-1.71)
Primary school(1-8)	0.462	0.402	0.049	1.15	0.250	(-0.327-1.253)
High school(9-12)	0.958	0.336	0.169	2.85	0.005	(0. 296-1.621)
College or above	1.278	0.437	0.192	2.91	0.004	(0.413-2.135)
Your occupation						
House wife (ref)						
Daily laborer	0.478	0.398	0.527	1.20	0.231	(-0.305-1.261)
Government employee	-0.264	0.361	0.040	-0.73	0.465	(-0.975-0.445)
Non-Government employee	0.617	0.517	0.045	1.19	0.234	(-0.400-1.634)
Private	0.586	0.403	0.069	1.45	0.152	(--0.214-1.387)
Merchant	-0.105	0.345	0.318	-0.31	0.759	(-0.785-0.574)
Student	-0.156	0.427	-0.009	=0.36	0.715	(-0.997-0.684)
Others specify	-1.117	0.798	-0.061	-1.40	0.162	(-2.687-0.452)
Income						
Below 5000(ref)						
5000 - 10,000	- 0.355	0.392	-0.059	-0.91	0.365	(-1.127-0.415)
10,001 - 15,000	-0.301	0.470	-0.408	- 0.64	0.521	(-1.226-0.623)
15,000 above	-1.091	1.175	-0.055	-0.93	0.352	(-3.40-1.216)
Gestational age						
1-3 month (ref)						
4-6 month	1.375	0.574	0.190	2.40	0.017	(0.246-2.504)
7-9 month	0.910	0.647	0.101	1.41	0.160	(-0.361-2.18)
Level of knowledge	0.489	0.150	0.248	3.26	0.001	(0.194-0.785)

Theory of planned Behavior constructs						
Direct attitude	0.323	0.694	0.230	4.65	0.000	(0.186-0.459)
Direct perceived behavior	3.887	1,000	0.259	3.88	0.000	(1.919-5.854)
Indirect attitude	-0.202	0.011	-0.115	-1.75	0.082	(-0.042-0.002)
Indirect perceived behavior	0.002	0.026	0.006	0.09	0.926	(-0.049 -0.546)

Note: (*) statistically significant at $p\text{-value} \leq 0.05$, (**) statistically significant at $p\text{-value} \leq 0.001$, (ref) reference category, CI=Confidence interval.

5. DISCUSSION

Intention to Do Physical Exercise and Its Associated Factors Among Pregnant Women Attending Antenatal Care in Public Hospitals of Harari Regional State was assessed using the Theory of Planned Behavior.

Analysis of Findings within the TPB Framework: This study revealed a strong mean intention score of 16.15 (± 2.82) [95% CI: 15.87–16.43] among pregnant women intention to do physical exercise. This high level of intentionality is robustly explained by the core constructs of the Theory of Planned Behavior (Ajzen, 2010, Ajzen, 2020). This pattern is consistent with international research, which strengthens the external validity of our results. Similar high intention scores have been reported in studies from the Australia (Newham et al., 2016) and in low-resource settings like Northern Ethiopia mean intention (13.05 ± 4.18) (Addis et al., 2022) and South Africa, where strong PBC (16.37 ± 6.05) was also a key correlate (Prioreschi et al., 2023). Collectively, this cross-cultural evidence confirms that when pregnant women possess positive attitudes and high perceived control, their intention to do in health-promoting behaviors is significantly strengthened.

This study's model explained 36% of the variance in pregnant women's intention to engage in regular physical exercise, demonstrating moderate predictive power. This result aligned with studies from Thailand $R^2 = 0.21$ (Supavititpatana et al., 2012), Canada $R^2 = 0.44$; (Simard et al., 2025), Taiwan $R^2 = 0.59$; (Lee et al., 2016), China $R^2 = 0.639$; (Zhu et al., 2020) .and local study conducted in Debreworkos, Ethiopia $R^2 = 0.79$; (Addis et al., 2022). These variations reflect meaningful methodological, environmental, and sociocultural differences across settings rather than limitations of the current model, therefore reinforcing the importance of context-specific behavioral research and intervention design. Like china study use MTC model that specifically address initiation and maintenance of health behaviors, this makes MTM particularly advantageous for designing interventions aimed not only at promoting intention but also at sustaining long-term exercise behavior among pregnant women.

This study also found that a women education level has a strong positive link to her plans to exercise during pregnancy women who finished high school ($\beta = 0.169$), 95% CI (0. 296_ 1.621) or college ($\beta = 0.192$), 95% CI (0.413_2.135), showed much stronger intentions to exercise than mothers with less education. This finding is supported study by global trend like study in Canada

found that higher education was one of the strongest factors linked to exercise during pregnancy (Davenport et al., 2018). Similarly, in Spain showed that university education significantly increased the chance a woman would stay active while pregnant (Sanchez-Polan et al., 2021). study in Brazil, the positive effect of education on exercise plans was even more pronounced, likely amplified by better integration with accessible healthcare services (Rezaeizadeh et al., 2024).

Additionally, this pattern is corroborated by local studies. In Dessie, higher educational attainment was correlated with more positive attitudes toward physical activity (Yimer et al., 2024), while in Gondar, women holding a diploma or degree were found to have more concrete plans to maintain exercise during pregnancy (Janakiraman et al., 2021). It might be due to that those individuals with higher level of education have better health literacy regarding the benefits of exercise during pregnancy, and knew how to do and what types of exercises are recommended. Therefore, they might plan to do exercise to gain the above benefits and avoid the risk.

This study demonstrates a significant association between the second trimester of pregnancy and stronger plans to exercise among women ($\beta = 0.190$), 95% CI (0.246_2.504), a global pattern supported by research from Canada ($\beta = 0.29$) (Davenport et al., 2018), Brazil ($\beta = 1.45$) (Nascimento et al., 2015). Kenya ($\beta = 0.21$) (Odiwuor and Judith, 2016) and to local study DebreMarkos ($\beta = 0.653$) (Addis et al., 2022), in addition it suggested by study in Polish the second trimester remains ideal for establishing sustainable healthy exercise habits (Wojtyła et al., 2020). Consequently, this trimester represents the optimal window to initiate and promote exercise programs, as it aligns with UK guidelines for using exercise to prevent pregnancy complications (Poote and McKenzie-McHarg, 2019) this implies that women experiencing reduced nausea and tiredness alongside fewer physical limitations during the second trimester had better intention to exercise than compared to first and third trimester.

The current study found a significant positive association with antenatal exercise knowledge ($\beta = 0.248$, 95% CI: 0.194 -0.785), a result that aligns with findings from similar global contexts, such as Bangladesh ($\beta = 0.41$) (Mishra M, 2023) and India ($\beta = 0.26$) (Wijesiriwardana and Gunawardena, 2016). In proportional terms, 56.7% (95% CI: 51.8–61.6) of the study participants demonstrated sufficient knowledge. This proportion is comparable to rates reported in Nigeria (52.4 %;) (Ojukwu et al., 2018) and a local study in Bahir Dar, Ethiopia (53.3%) (Bayisa et al.,

2022). Furthermore, it is notably higher than the levels documented in Hawassa (43.7%) (Belachew et al., 2023) and Gondar (39.5%) (Janakiraman et al., 2021) suggesting potentially better access to information within our study population.

However, this knowledge level remains substantially lower than the 65.6% reported in Brazil (Nascimento et al., 2015). These disparities may be attributed to tangible differences in healthcare infrastructure and socioeconomic contexts. Compared to the Brazilian cohort, our population likely has lower average attendance at structured antenatal care sessions where essential counseling is provided (WHO, 2016) as well as lower female literacy rates that limit engagement with educational materials (CSA, 2016). Additionally, there are likely Cultural norms, such as those identified in Jimma which prioritize rest over exercise during pregnancy, may also present a significant barrier that is less prevalent in the Brazilian context (Jiregna et al., 2020).

Our study identified a significant positive association between attitude and intention to perform prenatal exercise. ($\beta = 0.23$), 95% CI(0.186_0.459), this finding consistent with studies conducted globally: Australia ($\beta = 0.41$) (Hamilton et al., 2019), the United States ($\beta = 0.38$) (Rauff and Downs, 2018), Italy ($\beta = 0.29$) (Magro Malosso et al., 2017) and Canada ($\beta = 0.59$) (Simard et al., 2025). Importantly, this positive association was also replicated locally in DebreMarkos ($\beta = 0.192$) (Addis et al., 2022). Collectively, our results and this body of evidence strongly suggest that interventions designed to improve attitudes towards prenatal exercise particularly by emphasizing its protective effects against specific pregnancy complications could effectively increase exercise intentions among pregnant women.

Our study revealed a significant positive association between perceived behavioral control (PBC) and exercise intention among pregnant women ($\beta = 0.25$), 95% CI (1.919_5.854), This finding aligns with the theoretical role of PBC as a cornerstone of the Theory of Planned Behavior (Ajzen, 2010) and is supported by a gradient of evidence from international studies, including those in Taiwan ($\beta = 0.91$) (Newham et al., 2016), Canada ($\beta = 0.26$) (Simard et al., 2025) and the local context study in DebreMarkos, Northern Ethiopia ($\beta = 0.34$) (Addis et al., 2022). This consistency confirms that enhancing pregnant women's confidence to overcome context-specific barriers, such as time constraints and fear of injury, remains an essential mechanism for boosting exercise intention (Zhu et al., 2020).

6. STRENGTHS AND LIMITATIONS

6.1. Strengths of the study

This study has addressed a major public health issue by applying effective behavioral model which might have a great implication to design effective and tailored behavior change communication intervention programs to enhance pregnant women's intentions to do in physical exercise and its associated factors by grounding the investigation in the Theory of Planned Behavior (TPB).

6.2. Limitations of the study

Due to the cross-sectional nature of the study, it's difficult to establish temporal association between intention and its predictors. We cannot predict behavior from intention directly it needs longitudinal study.

The study used a self-reporting instrument that has a potential of introducing social desirability bias and there was no way of validating what the participants reported. To reduce social desirability bias and to increase the validity of self-reports we have tried to assure the participants about confidentiality/anonymity and impress them by telling them about the scientific merit of providing accurate data.

Lack of adequate references conducted on similar setting was the other limitation of the study which leads us to compare the study finding with different set up and context.

7. CONCLUSION AND RECOMMENDATION

7.1. Conclusion

This study reveals level of intention to do physical exercise was identified, with a mean score of 16.15 ± 2.08 and 58.3% (n = 236) that more than half of pregnant women had higher intention to do physical exercise during pregnancy. This research uncovers a finding of significant strategic value: the intention to exercise in pregnancy is driven more by internal psychological constructs attitude and perceived control than by external resource constraints. Furthermore, it identifies a critical intervention window the second trimester and beyond when intention is most malleable, and highlights a key modifiable factor: a woman's knowledge of exercise benefits. Therefore, to effectively promote exercise, programs should focus on building women's confidence, fostering a positive attitude, and providing clear education on the benefits were key steps for improving health outcomes for both mother and child

7.2. Recommendations

The primary recommendation is for stakeholders to leverage this insight by prioritizing programs that directly address the knowledge gap and actively build confidence and positive attitudes, specifically targeting women from their second trimester onward to achieve immediate improvements in maternal health outcomes.

Based on the results of the present study, the following recommendations were suggested

For Harari Regional Health Bureau

Develop a Regional Guideline should:

- Formally integrate structured exercise counseling into every antenatal care visit, using the national and ACOG standards as the mandatory protocol for promoting safe physical exercise.

For Health Facilities: (Hiwot Fana Compressive Specialized Hospital and Jugeal General Hospitals).

Antenatal care services should:

- Assessment and integrate exercise evaluation directly into our standard ANC patient records or checklist. This will ensure the topic about physical exercise has routinely and consistently addressed

- Provide culturally-adapted informational materials (brochures, posters) in local languages detailing safe exercise

For Clinical Practice (doctor, midwife, nurse)

Healthcare providers should:

- Healthcare providers to adapt their counseling style to the patient's level of understanding. For women with less formal education, this means using clear, simple language, practical demonstrations, and visual aids to ensure comprehension.
- Be trimester-specific: we must continue promote and support exercise habits during the second-trimester (Period of peak exercise tolerance), while in the first and third trimesters, we should focus on managing symptoms and integrating gentle, safe movement to alleviate discomfort routinely counsel pregnant women about exercise benefits during antenatal visits

For Pregnant mothers

- Pregnant mothers should base their physical exercise choices on their internal sense of capability, the personal advantage it provides and based health professional advice. This is because their own confidence and positive attitude are significantly more powerful motivators than the expectations of others. Focusing on these internal factors is the most effective strategy for maintaining a sustainable and healthy exercise routine throughout pregnancy.

For Program Implementers and Development Partners:

- Program implementers and development partners should:

Strategies have to designed which focused mainly on educating women about advantage of engaging prenatal exercise in order attain maternal and child health through create enabling as well as facilitating social system

For Future Research:

- A longitudinal study which incorporates physical exercise intention behavior might be considered in the future
- Conduct Qualitative Studies: Further investigate the reasons behind the non-significant findings especially socioeconomic factors and others to understand if there are specific, unmeasured barriers within these groups that require interventions (including environmental barriers, cultural norms, and previous exercise habits).

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9. ANNEXES

9.1. Information Sheet and Informed voluntary Consent form for hospital head

1. Introduction; my name is Tariku Girmay (BSc.) and I am attending my MPH study Reproductive Health in Haramaya University. I am here to conduct a study in your hospital under Haramaya University, college of Health science and medicine, for partial fulfillment of MPH in Reproductive Health. It will also have a paramount importance for your organization to know the problem under study and act accordingly. So, I kindly request you to give me time to explain about the study importance, ethical issues and how the study will be conducted to you. First, I would like to thank you for your time and help.

2. Study Title: Intention to do Physical Exercise and Associated Factor among Pregnant Women Attending Antenatal care in Public Hospitals of Harari Regional State, Eastern Ethiopia, 2024, using Theory of Planned Behavior.

3. Study purpose: The findings of this study can be important for the health care providers working in ANC unit and gynecology and obstetrics unit to identify The purpose of this study is to determine to what extent pregnant women's intend to do physical exercise and identify factors that lead not to do exercise. After that put recommendation with possible solution to reduce hinders of exercise during pregnancy according to the finding. Besides this, the aim of this study is to write a thesis as a partial fulfillment of MPH in Reproductive Health track for the principal investigator.

4. Procedure and duration: To measure intention to do physical exercise and associated factors among pregnant women, will request participants to understand and accept the consent form. If the participants are willing to participate in our study you need to understand and sign the consent form. Then the participants will be requested to give response to the data collectors. The study will be conducted from February 01 To march 30 , 2024 among every pregnant woman 85 Structured interviewer administered questionnaire will be used to Assess intention to do physical exercise and associated factors for 40 minutes of interview. Before I started the data collection I will introduce the data collectors to you. So, I kindly request you to permit to me to collect data only for this particular study.

5. Risk and benefit: The risk of participating in this study is very minimal. The study participants will be informed that participating in this study will not have special tests, emotional

stress or other foreseeable risks associated with the research except for few minutes of their time. but the findings of the study will be important for health planners.

6. Confidentiality: The information collected will be confidential. There will be no information that will identify the individual patient because their name will not be included in the data extraction tools. The findings of the study will be general for the study area and will not reflect anything particular to individual persons. The checklist will be coded to exclude showing names. No reference will be made in oral or written reports that could link participants to the study.

7. Rights: Permitting data collection for this study is fully voluntary. Considering the importance of the research to your health institution you are free to decide. If any violation of ethical rules and conduct is seen throughout study, your health institution has full right to withdraw and stop study.

8. Contact address: Contact address: If you have any questions about the study, the procedure or anything else related to the study, please contact through the following address:

Name	Address	Telephone number	Email
Tariku Girmay	Harar Campus	0963889048	Jotariku84@gmail.com
IHRERC	Harar Campus	0254662011	P.O.BOX: 235, Harar.Ethiopia

9. Declaration of informed voluntary consent: I have read and understand the Institution Information Sheet very well. I have clearly understood the purpose of the research, the procedures, the risks and benefits, issues of confidentiality, the rights and the contact address for any quires. I was informed that the health institution has the right to stop the study in a case where certain misconduct and unethical procedures are reported according to the health institution premises. Also, I understand that the health institution has the right to use the result of the study as public property. Therefore; I declare my voluntary consent on behalf of _____ managment to allow this study to be conducted in the institution with my own name and signature below.

Name and signature of the medical director: _____

Principal Investigator: Tariku Girmay: _____

Thank you for your cooperation!!

9.2. Participant Information Sheet and Informed Voluntary Consent form for pregnant women age ≥ 18 years old Pregnant Women (English version)

1. Introduction; Hello, my name is_____ I am working as data collector for the study being conducted in this hospital for Tariku Girmay who is studying for his MPH degree Reproductive Health track at Haramaya University College of Health and Medical Sciences. I kindly request you to lend me your attention to explain you about the study and being selected as study participant.

2. The title of the study: Intention to do Physical Exercise and Associated Factor among Pregnant Women Attending Antenatal care in Public Hospitals of Harari Regional State, Eastern Ethiopia, 2024, using Theory of Planned Behavior.

3. The purpose of the study: This study will be conducted for partial fulfillment of the requirement for MPH Degree of Reproductive Health Track, Haramaya University. The result of this study may contribute some importance for policy makers and health care planners to improve and scale up maternal and neonatal health care.

4. Duration and Procedure: I will be interviewing you using 85 a Structured interviewer administered questionnaire to provide me with pertinent data that is helpful for the study. The interview will take about 40 minutes, so I kindly request you to allow her spare this time for the interview.

5. Risks and Benefits: risks from being participant in this study are very minimal, but only taking few minutes from your time. There would not be payment for participating in this study. The finding from this research may reveal important information for health facility managers and policy makers.

6. Confidentiality: Your name will not be written in this form. The information you will provide will be confidential. There will be no information that will identify you in particular. The finding of the study will be general to the study population and will not reflect anything particular of individual person. No reference will be made in oral or written reports that could link participant to the research.

7. Rights: Your participation is voluntary and you are not obliged to answer any question you do not wish to answer. You have the right to declare to participate or not in this study and you have the right to withdraw from the study at any time. Your refusal to participate has no penalty or loss of benefits.

Reimbursements: The investigator/I will not charge you payment for your participation.

8. Contact Address: If there are any questions or enquires any time about the study or the procedures, please contact

Name Address Telephone number Email

Tariku GirmayHarar Campus 0963889048 jotariku84@gmail.com

IHRERC Harar Campus 0254662011 P.O.BOX: 235, Harar. Ethiopia

Are you willing to fill the questionnaire? Yes No

9. Declaration of consent

I have read/ was read to me/ the participant information sheet. I have clearly understood the purpose of the research, the procedure, the risk and the benefits, the issue of confidentiality, the rights of participant and the contact address for any queries. I was informed I have the right to withdraw from the study at any time or not to answer any question that I don't want. Therefore, I declare my voluntary consent to participate in this study with my initials (signature) as indicated below.

Name and signature of the participant -----date-----/-----/-----

Name and signature of data collector ----- date-----/-----/-----

Thank you for your cooperation!!!

9.3. Participant information sheet and informed voluntary consent form for parents/gurdian for minor age < 18 years old Pregnant Women (English version)

1. Introduction; My name is _____ I am working as a data collector for the study being conducted in this community by Tariku Girmay who is studying for his/her Master's degree at Haramaya University, the College of Health and Medical Sciences. I kindly request you to lend me your attention to explain your daughter/wife being selected as the study participant.

2. The study/project title: Intention to do Physical Exercise and Associated Factor among Pregnant Women Attending Antenatal care in Public Hospitals of Harari Regional State, Eastern Ethiopia, 2024, using Theory of Planned Behavior.

3. Purpose/aim of the study: The findings of this study may contribute some importance for policy makers and health care planners to improve and scale up maternal and neonatal health care. Moreover, the aim of this study will be conducted for partial fulfillment of the requirement for MPH Degree of Reproductive Health Track, for the principal investigator.

4. Procedure and duration: I will be interviewing your daughter/wife using 85 a structured interviewer administered questionnaire to provide me with pertinent data that is helpful for the study. The interview will take about 40 minutes, so I kindly request you to allow her spare this time for the interview.

5. Risks and benefits: The risk of being participating in this study is very minimal, but only taking few minutes from her time. There would not be any direct payment for participating in this study. But the findings from this research may reveal important information for the local health planners.

6. Confidentiality: The information she will provide us will be confidential. There will be no information that will identify her in particular. The findings of the study will be general for the study community and will not reflect anything particular of individual persons or housing. The questionnaire will be coded to exclude showing names. No reference will be made in oral or written reports that could link participants to the research.

7. Rights: Participation for this study is fully voluntary. You have the right to declare your daughter/wife to participate or not in this study. If you decide she has to participate, you have the

right to withdraw her from the study at any time and this will not label her for any loss of benefits which she otherwise is entitled. She does not have to answer any question that she does not want to answer.

8. Contact address: If there are any questions or enquires any time about the study or the procedures, please contact: Contact address of the Principal Investigator:

Name Address Telephone number Email

Tariku GirmayHarar Campus 0963889048 jotariku84@gmail.com

IHRERC Harar Campus 0254662011 P.O.BOX: 235, Harar.

9. Declaration of informed voluntary consent: I have read/ was read to me/ the participant information sheet. I have clearly understood the purpose of the research, the procedures, the risks and benefits, issues of confidentiality, the rights of participating and the contact address for any queries. I have been given the opportunity to ask questions for things that may have been unclear. I was informed that I have the right to withdraw my child from the study at any time or not to answer any question that she does not want. Therefore, I declare my voluntary consent to allow my child to participate (be involved) in this study with my initials (signature).

Name and signature of guardian: _____ Date: _____

Name and signature of Data Collector: _____ Date: _____

Thank you for your cooperation!!!

9.4. Questionnaire (English Version)

Title: - intention to do physical exercise and its associated factor among pregnant women attending ANC in public hospitals of Harari Regional State, Eastern Ethiopia, 2024.

Name of facility -----

Name of interviewer's-----

Date of interview ----//-----//-----

Code number-----

Instruction: Encircle the response of the respondents in front of each question

Table 9: questionnaires for intention to do physical exercise and associated factor among pregnant women attending ANC in public hospitals of Harari Regional State, Eastern Ethiopia, 2025

Part1. Socio- demographic characteristics

S.N	Question	Option
101	Age	.....
102	Ethnicity	1. Amhara 2. Tigre 3. Oromo 4. Other specify-----
103	What is your Current marital status	1. Married 2. Divorced 3. Widowed
104	What is Your level of education	1. Unable to read and write 2. Able to read and write 3. Primary school(1-8) 4. High school(9-12) 5. College or above
105	What is your husband's level of education?	1. Unable to read and write 2. Able to read and write 3. Primary school(1-8) 4. High school(9-12) 5. College or above
106	What is your Residence	1. Urban 2. Rural
107	What is your Religion	1. Orthodox Christian 2. Muslim 3. Protestant 4. Catholic 5. Other specify...

108	What is your Occupational status	1. House wife 2. Daily laborer 3. Government employee 4. Non Government employee 5. Private 6. Merchant 7. Student 8. Others specify
109	What is your husband's occupation?	1. Daily laborer 2. Government employee 3. Non-Government employee 4. Private 5. Merchant 6. Farmer 7. Others specify
110	What Media do use	1. No access of media 2. Radio 3. Television 4. Phone 5. Other Specify
111	How much is Monthly household income	Eth. Birr

Part 2 Obstetric history

S.N	Question	Alternative	Skip to
201.	How many times in total you became pregnant?	1. 1 2. 2-4 3. Above 4	
202	How many times in total you gave birth?	1. None 2. 1 3. >2	
203	What is your gestational age status in completed months?		.....
204	Do you have ANC follow up	Yes -----1 No -----2	If the answer of Q204is no skip to 301
205	How many times		.....

Part 3 previous experiences of exercise

S.N	Question	Alternative	Skip to
301	Have you ever done physical exercise during pregnancy period?	Yes -----1 No -----2	If the answer of Q301 is no skip to 401
302	What type of physical exercise you did?	1.brisk walking 2.jogging 3.Others specify	

303	For how long you did per day?	.....	
304	How many days per week you did?	.....	

Part 4 knowledge of physical exercise behavior during pregnancy

For question 401-406 answer the questions depending on aerobic exercise for 30 minute per day at least three days in a week during pregnancy-----

401	Can reduces back pain	1. Yes	2. No
402	Can prevents excessive weight gain	1. Yes	2. No
403	reduces risk of high blood pressure	1. Yes	2. No
404	Can reduces risk of gestational diabetes	1. Yes	2. No
405	reduces the likely hood of cesarean section deliver	1. Yes	2. No
406	helps more rapid recovery after delivery	1. Yes	2. No

From 407- 410 answer the question depending on “Is aerobic exercise is not recommended for woman with-----?”

407	Vaginal bleeding during pregnancy	1. Yes	2. No
408	Severe anemia during pregnancy	1. Yes	2. No
409	Uncontrolled type 1 DM during pregnancy	1. Yes	2. No
410	uncontrolled hypertension during pregnancy	1. Yes	2. No

Part 5: predictors of intention to do physical exercise during pregnancy (TPB constructs)
Physical exercise during pregnancy is practicing aerobic physical exercise for at least 30minutes per day three times a week or equivalent walking.

5.1 Direct measures of TPB construct

A. Direct attitude

501	For me exercising regularly for 30min per day at least three days in a week during my pregnancy will be pleasant,	1. Strongly disagree 3. Neutral 5.Strongly agree	2. Disagree 4. Agree
-----	---	--	-------------------------

	For me exercising regularly for 30min per day at least three days in a week during my pregnancy will be Useful	1. Strongly disagree 3. Neutral 5. Strongly agree	2. Disagree 4. Agree
	For me exercising regularly for 30min per day at least three days in a week during my pregnancy will be good	1. Strongly disagree 3. Neutral 5. Strongly agree	2. Disagree 4. Agree

B. Direct subjective norm

502	It is expected of me that I should exercise regularly during my pregnancy period	1. Strongly disagree 3. Neutral 5. Strongly agree	2. Disagree 4. Agree
503	Most people who are important to me want me to exercise regularly during my pregnancy	1. Very unlikely 3. Neutral 5. Very likely	2. Unlikely 4. Likely
504	It is up to me to do regular physical exercise during my pregnancy period	1. Strongly disagree 3. Neutral 5. Strongly agree	2. Disagree 4. Agree
505	Pregnant women like me do regular physical exercise during their pregnancy period	1. Very unlikely 3. Neutral 5. Very likely	2. Unlikely 4. Likely

C. measuring direct perceived behavioral control

506	I am confident that I can do regular exercise during my pregnancy	1. Strongly disagree 3. Neutral 5. Strongly agree	2. Disagree 4. Agree
507	For me doing regular physical exercise during my pregnancy is	1. Very difficult 3. Neutral 5. Very easy	2. Difficult 4. Easy
508	The decision to do exercise regularly during my pregnancy is under my control	1. Strongly disagree 3. Neutral 5. Strongly agree	2. Disagree 4. Agree
509	How much control do you have over exercising during your pregnancy period?	1. Very little control 3. Neutral 5. Complete control	2. No control 4. Control
510	If I wanted to, I can easily exercise during my pregnancy period	1. Strongly disagree 3. Neutral 5. Strongly agree	2. Disagree 4. Agree

5.2 Indirect measures of TPB construct

A. Behavioral belief (indirect measures of attitude)

511	Exercising during my pregnancy period will help me to control my weight	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
512	Exercising during my pregnancy will help me to reduce risk of gestational DM	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely
513	Exercising during my pregnancy will help me to reduce risk of pregnancy related hypertension	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely
514	Exercising during my pregnancy will help me to prepare for labor	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely
515	Exercising during my pregnancy will help me to enhance my muscle fitness	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely
516	Exercising during my pregnancy will help me to increase food appetite	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely
517	Exercise during my pregnancy will result in miscarriage	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely
518	Exercise during my pregnancy will result in premature delivery	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely
519	Exercise during my pregnancy will result in injury	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely

B. Outcome evaluation (indirect measures of attitude)

520	For me controlling my weight during this pregnancy period is	1. Veryundesirable 2. Undesirable 3. Neutral 4. Desirable 5. Very desirable
521	For me reducing risk of gestational DM during this pregnancy is	1. Veryundesirable 2. Undesirable 3. Neutral 4. Desirable 5. Very desirable
522	For me Reducing pregnancy related hypertension during this pregnancy is	1. Veryundesirable 2. Undesirable 3. Neutral 4. Desirable 5. Very desirable
523	For me being better prepared for labour is	1. Veryundesirable 2. Undesirable 3. Neutral 4. Desirable 5. Very desirable
524	For me relaxing my muscles during this pregnancy is	1. Veryundesirable 2. Undesirable 3. Neutral 4. Desirable 5. Very desirable

525	For me increasing food appetite during this pregnancy is	1. Veryundesirable 2. Undesirable 3. Neutral 4. Desirable 5.Very desirable
526	For me resulting in miscarriage during this pregnancy is	1. Veryundesirable 2. Undesirable 3. Neutral 4. Desirable 5.Very desirable
527	For me resulting in premature delivery during this pregnancy period is	1. Veryundesirable 2. Undesirable 3. Neutral 4. Desirable 5.Very desirable
528	For me resulting in injury during this pregnancy period is	1. Veryundesirable 2. Undesirable 3. Neutral 4. Desirable 5.Very desirable

C. Normative belief (indirect measures of subjective norm)

529	My husband/partner thinks that I should exercise during my pregnancy period	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
530	My close friends thinks that I should exercise during my pregnancy	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
531	My sister/brother thinks that I should exercise during my pregnancy	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
532	My mother thinks that I should exercise during my pregnancy	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
533	My neighbors think that I should exercise during my pregnancy	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
534	My health professionals think that I should exercise during my pregnancy	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

D. Motivation to comply (indirect measure of subjective norm)

535	generally speaking, how much do you care to what your husband/partner think you should do during your pregnancy	1. Not at all 2. Not 3. Neutral 4. Somewhat 5. Very much
-----	---	---

536	How much do you care what your close friends think you should do	1. Not at all 2. Not 3. Neutral 4. Somewhat 5. Very much
537	How much do you care what your sister/brother think you should do	1. Not at all 2. Not 3. Neutral 4. Somewhat 5. Very much
538	How much do you care what your mother think to do	1. Not at all 2. Not 3. Neutral 4. Somewhat 5. Very much
539	How workload at home affects your physical exercise during pregnancy	1. Not at all 2. Not 3. Neutral 4. Somewhat 5. Very much
540	How much do you care what your neighbors think to do	1. Not at all 2. Not 3. Neutral 4. Somewhat 5. Very much
541	How much do you care what your health professionals think to do	1. Not at all 2. Not 3. Neutral 4. Somewhat 5. Very much

E. Control belief (indirect measure of perceived behavioral control)

542	How access of the facilities may affect your physical exercise during pregnancy	1. Not at all 2. Not 3. Neutral 4. Somewhat 5. Very much
543	How suitability of facilities may affect your physical exercise during pregnancy	1. Not at all 2. Not 3. Neutral 4. Somewhat 5. Very much
544	How time constraints affect your physical exercise during pregnancy	1. Not at all 2. Not 3. Neutral 4. Somewhat 5. Very much
545	How your health status affects your physical exercise during pregnancy	1. Not at all 2. Not 3. Neutral 4. Somewhat 5. Very much
546	How workload at home affects your physical exercise during pregnancy	1. Not at all 2. Not 3. Neutral 4. Somewhat 5. Very much

F. Perceived power (indirect measures of perceived behavioral control)

547	If I feel that I don't have access of the facilities, it would make me difficult to do physical exercise	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
548	If I feel that I don't get suitable facilities, it would make me difficult to do physical exercise	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
549	If I feel that I don't have enough time, it would make me difficult to do physical exercise	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

550	If I had health problem, it would make me difficult to do physical exercise	1. Strongly disagree 3. Neutral 5. Strongly agree	2. Disagree 4. Agree
551	If I feel that I had work load at home, it would make me difficult to do physical exercise	1. Strongly disagree 3. Neutral 5. Strongly agree	2. Disagree 4. Agree

Part 6 Intention to do physical exercise during antenatal period

Suppose you know the benefits of doing aerobics physical exercise for 30minuts per daily at least three days a week during pregnancy.

601	intend to do physical exercise during the pregnancy period	1. Strongly disagree 3. Neutral 5. Strongly agree	2. Disagree 4. Agree
602	I have decided to do physical exercise during the pregnancy period	1. Strongly disagree 3. Neutral 5. Strongly agree	2. Disagree 4. Agree
603	I will try to do physical exercise during the pregnancy period	1. Strongly disagree 3. Neutral 5. Strongly agree	2. Disagree 4. Agree
604	I would like to do physical exercise during the pregnancy period	1. Strongly disagree 3. Neutral 5. Strongly agree	2. Disagree 4. Agree

9.5. Participant Information Sheet and Informed voluntary Consent form for Pregnant women age ≥ 18 years old (Amharic Version)

የጥናቱ ተሳታፊዎች መረጃ መስጫና ፈቃደኝነት መጠየቂያ ቅፅ እድሜያቸው ከ18 አመት በላይ የተሳታፊዎች መረጃ (በአማርኛ)

1. መግቢያ ስሜ _____ ይባላል፡፡ እኔ በሀረማያ ዩኒቨርሲቲ የሁለተኛ ድግሪውን የሚያጠናው አቶ ታሪኩ ግርማይ ለሚያደርገው ጥናታዊ ምርምር በመረጃ ሰብሳቢነት እሰራለሁ፡፡

2. የጥናቱ ርዕስ፡- በሐረር ከተማ ምስራቃዊ ኢትዮጵያ ሀረር ከተማ የህዝብ ሆስፒታሎች ውስጥ ቅድመ-ወሊድ እንክብካቤ ለሚ ከታተለ ነፍሰጡር እናቶች መካከል የአካል ብቃት እንቅስቃሴ ለማድረግ ፍላጎት እና ተዛማጅ ምክንያቶች በ2024 ዓ.ም፡

3. የጥናቱ ዓላማ፡- የዚህ ጥናት አላማ ነፍሰ-ጡር ሴቶች የአካል ብቃት እንቅስቃሴ ለማድረግ ምን ያህል እንደሚፈልጉ ለመወሰን እና የአካል ብቃት እንቅስቃሴን ላለማድረግ የሚዳርጉ ምክንያቶችን መለየት ነው፡፡ በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ እንቅፋቶችን ለመቀነስ በምርመራው መሰረት ምክንያቶችን ሀሳብን አስቀምጥ፡፡ ከዚህም በተጨማሪ የዚህ ጥናት አላማ የዋና በሥነ ተዋልዶ ጤና ሁለተኛ ዲግሪ በከፊል ሙሉ ለዋና መርማሪ መፍቻ ነው፡፡

4. የጥናቱ ሂደትና ጊዜ፡- እኔ ጥያቄዎቼን በማንበብ እርሰዎ ደግሞ ለጥያቄዎቼ ምላሽ በመስጠት 40 ደቂቃዎች አብረን እንቆያለን፡፡ ስለዚህ እኔ 85 ጥያቄዎቼን አነብልሽና የምትሰጩኝን የጥያቄ መልሶች በቦታቸው እሞላለሁ፡፡

5. ጥቅምና ጉዳት፡- ይህ ጥናት የርሰዎን የተወሰነ ሰዓት ከመሻማት በቀር የሚያመጣው ብዙ የሚባል ጉዳት የለም፡፡ በጥናቱ ስለተሳተፉ የሚያገኙት ቀጥተኛ የሆነ ጥቅም የለም፡፡ ነገርግን የጥናቱ ውጤት በአካባቢው በጤና ዙሪያ ለሚሰሩ ድርጅቶች ጠቀሚ የሆኑ መረጃዎችን ይሰጣል፡፡

6. ምስጢራዊነት፡- የሚሰጡት መረጃ ምስጢራዊነቱ የተጠበቀ ነው፡፡ በመጠይቁም ውስጥ የርሰዎን ማንነት በተለየ ሁኔታ የሚጠይቅ ጥያቄ የለም፡፡ የጥናቱም ውጤት ጥናቱ ለተካሄደበት አካባቢ ጠቅለል ያለ መረጃ የሚሰጥ ሲሆን የአንድን ግለሰብ ወይም ቤት ማንነት የሚያንጸባርቅ አይደለም፡፡ ጥናቱም በምንም ዓይነት መልኩ በቃልም ይሁን በጽሁፍ የጥናቱን ተሳታፊ ማንነት በሚሳወቅ ሁኔታ ምሳሌ አድርጎ አያቀርብም፡፡

7. የተሳታፊዉ መብት፡- በጥናቱ መሳተፍ ሙሉ በሙሉ በፈቃደኝነት ላይ የተመሰረተ ነው፡፡ በጥናቱ የመሳተፍም ሆነ ያለመሳተፉ መብት አለዎት፡፡ ለመሳተፍ ፈቃደኛ ከሆኑ ደግሞ በማንኛውም ሰዓት የማቆም ወይም መመለስ ያልፍለጉትን ጥያቄ ያለመመለስ መብት አለዎት፡፡ በማንኛውም ሰዓት ጥናቱን ቢያቆሙት በተለየ መልኩ የሚፈረጁበት ነገር የለም፡፡ ጥናቱን የተመለከተ ማንኛውም ዓይነት ጥያቄ ወይም አስተያየት ካለዎት በሚከተሉት አድራሻዎች መረጃ ማግኘት ይችላሉ፡፡

8. አድራሻ፡- በጥናቱ ወይም በመረጃ አሰባሰብ ዙሪያ ጥያቄ ወይም ያልተብራራ ነገር ካለ በሚከተለው አድራሻ ያግኙን ዋና አጥኚ ስም ታሪኩ ግርማይ

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9. ከላይ በቀረበው የግንዛቤ ማስጨበጫ መሰረት የጥናቱ ተሳታፊ ለመሆን የሙሉፈቃደኝነት ማረጋገጫ

በፈቃደኝነት ላይ የተመሰረተ በዚህ ጥናት ለመሳተፍ መወሰንን የሚገልጽ መግለጫ

ይህ የስምምነት መግለጫ በሚገባ ተነበልኛል፡፡ እኔም የጥናቱን ዓላማ በሚገባ ተረድቻለሁ፡፡ ጥቅምና ጉዳቱን ምስጢራዊነቱን መብቴን እንዲሁም ጥናቱን የተመለከቱ ጥያቄዎችና አስተያየቶች ካሉኝ ማንን መጠየቅ እንደምችል ተገንዝቤአለሁ፡፡ ግልጽ ያልሆኑ ነገሮችን እንድጠይቅ እዲሉ ተሰጥቶኛል፡፡ እኔም በማንኛውም ሰዓት መጠይቁን የማቆም ወይም መመለስ ያልፈለኩትን ጥያቄ ያለመመለስ መብት እንዳለኝ ተነግሮኛል፡፡ ስለዚህ በፈቃደኝነት ላይ በተመሰረተ በጥናቱ ለመሳተፍ ወስኜ ከዚህ በታች ፊርማዬን አስቀምጬለሁ፡፡

የተሳታፊዋ ስም _____ ፊርማ _____

የመረጃ ሰብሳቢው ስም _____ ፊርማ _____

ስለተሳትፎዎ በጣም እናመሰግናለን!

9.6. Participant information sheet and informed voluntary consent form for parents/guardian for minor age < 18 years old pregnant women (Amharic version)

በመረጃ የተደገፈ የተሳታፊዎች ፈቃደኝነት መጠየቂያና ስምምነት ቅፅ እድሜያቸው ከ18 አመት በታች (በአማርኛ)

1. መግቢያ; ስሜ_____ እባላለሁ። በሐረማያ ዩኒቨርሲቲ ፤ሐረር ጤና እና ህክምና ሳይንስ ኮሌጅ የሁለተኛ ዲግሪውን የሚያጠናው ታሪኩ ግርማይ ለሚያደርገው ምርምር በመረጃ ሰብሳቢነት እሰራለሁ። ስለሆነም ስለ ጥናቱ የተወሰነውን በራሪያ ተሰጥቶታል ልጅዎ/ባለቤትዎ የጥናቱ ተሳታፊ ይሆኑ ዘንድ ትኩረትዎን ሰጥተዋል በጥሞና እንዲከታተሉ በትህትና እጠይቃለሁ።

2. የጥናቱ ርዕስ; በሐረር ከተማ ምስራቃዊ ኢትዮጵያ ሀረር ከተማ የህዝብ ሆስፒታሎች ውስጥ ቅድመ-ወሊድ እንክብካቤ ለሚ ከታተለ ነፍሰጡር እናቶች መካከል የአካል ብቃት እንቅስቃሴ ለማድረግ ፍላጎት እና ተዛማጅ ምክንያቶች በ2024ዓ.ም።

3. የጥናቱ ዓላማ; የዚህ ጥናት አላማ ነፍሰጡር ሴቶች የአካል ብቃት እንቅስቃሴ ለማድረግ ምን ያህል እንደሚፈልጉ ለመወሰን እና የአካል ብቃት እንቅስቃሴን ላለማድረግ የሚዳርጉ ምክንያቶችን መለየት ነው። በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ እንቅፋቶችን ለመቀነስ በምርመራው መሰረት ምክረ ሀሳብን አስቀምጥ።ከዚህም በተጨማሪ የዚህ ጥናት አላማ የዋና በሥነ ተዋልዶ ጤና ሁለተኛ ዲግሪ በከፊል ሙሉ ለዋና መርማሪ መጻፍ ነው።

4. የመጠይቁ አካሄድ እና የሚፈጀው ጊዜ :- ለጥናቱ አስፈላጊውን መረጃ ለማግኘት መጠይቅ በመጠቀም ስለ ልጅዎ/ባለቤቶ ቃለ-መጠይቅ አደርግልዎታለሁ። መጠይቁ 75 ጥያቄዎችን የያዘ ሲሆን ስለልጅዎ እርስዎን በመጠየቅ ይሞላል።መጠይቁ በአማካኝ 40 ደቂቃ ይወስዳል። ስለሆነም ይቺን ጊዜ ካለዎት ጊዜ ቀን ሰዓድስል ልጅዎ ለመጠየቅ ይፈቅዱልኝ ዘንድ በትህትና እጠይቅዎታለሁ።

5. አደጋዎች እና ጥቅሞች ;ልጅዎ በዚህ ጥናት ውስጥ በመሳተፋቸው ያለው ጉዳት በጣም አናሳነው። ነገር ግን ከጊዜዎ ላይ 40 ደቂቃ ብቻ ይወስዳል። በዚህ ጥናት በመሳተፍዎ በቀጥታ የሚያገኙት ክፍያ የለም።ነገር ግን የዚህ ጥናት ውጤት ለክልል ጤናመምሪያና ጤናጽ/ቤት እቅድ አውጭ መንግስት አካላት ጠቃሚ መረጃ ሊሰጥ ይችላል።

6. ሚስጥራዊነት; የሚሰጡን መረጃ ሚስጥራዊነት የሚጠበቅ ሲሆን በርስዎ ዎይም በልጅዎ ላይ እንደ ግለሰብ ተለይቶ የሚወሰድ መረጃ የለም።የጥናቱ ውጤት የህብረተሰቡን አጠቃላይ ሁኔታ እንጂየአንድን ግለሰብ ምንም ነገር አያንጸባርቅም። የተሳታፊዎችን ስም ላለማሳየት ለመጠይቆቻችን የራሳችንን ቁጥር ሰጥተናቸዋል። የጥናቱ ተሳታፊዎችን ከምርምሩ ጋር በማጣቀስ የሚሰጥ ቃልም ይሁንዩ ጽሁፍ ሪፖርት የለም።

7. መብቶች :- በዚህ ጥናት ውስጥ መሳተፍ ሙሉ በሙሉ በፈቃደኝነት ላይ የተመሰረተ ሲሆን ልጅዎ በጥናቱ ለመሳተፍም ሆነ ላለመሳተፍ የመወሰን መብት አለዎት።ልጅዎ በጥናቱ እንድትሳተፍ ከፈቀዱ በፊለጉት ጊዜ ከጥናቱ መውጣት ይችላሉ።ይህን በማድረግዎም እርስዎ ዎይም ልጅዎ ማግኘት የሚገባዎት ጥቅም አያስቀርብዎትም።

8. አድራሻ :- በጥናቱ ወይም በመረጃ አሰባሰቡ ዙሪያ ጥያቄ ወይም ያልተብራራ ነገር ካለ በሚከተለው አድራሻ ያግኙን
(ዋናአጥኚ ስም፡ታሪኩ ግርማይ)

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ስልክ: 0254662011 ወይም ፖ.ሳ.ቁ 235 ሀረር)

9. ከላይ በቀረበው የግንዛቤ ማስጨበጫ መሰረት የጥናቱ ተሳታፊ ለመሆን የሙሉ ፈቃደኝነት ማረጋገጫ

የተሳታፊዎችን መረጃ ወረቀት አንብቤዋለሁ/ተነብብልኛል። የጥናቱን አላማ፣ ክንዋኔ ፣ጥቅምና ጉዳት፣ ሚስጥራዊነት፣መብት
እና ለማንኛውም ጥያቄ የተሰጠውን የመገኛ አድራሻ በደንብ ተረድቼዋለሁ። ግልፅ ያልሆነ ጥያቄ ካለኝ እንደጣይቅ እድል
ተሰጥቶኛል።ልጄን በፈለግሁት ጊዜ ከጥናቱ ማውጣት እንደምችል እንዲሁም መመለስ የማልፈልገውን ጥያቄ መመለስ
እንደሌለብኝ ተነግሮኛል።ሰለዚህ ልጄ በዚህ ጥናት እንድትሳተፍ ያለኝን ፈቃደኝነት ከዚህ ቀጥሎ በፊርማዬ አረጋግጣለሁ።

የቤተሰብ ስም እና ፊርማ _____ ቀን _____

የመረጃ ሰብሳቢ ስም እና ፊርማ _____ ቀን _____

ስለ ትብብርዎ ከልብ እናመሰግናለን፡፡

9.7. Questionnaire (Amharic Version)

የተቋም ስም ----- መጣየቁ የታሞላበት ቀን ----//----//-----

የመረጃ ሰብሳቢዉ ሥምና ፊርማ----- የጥያቄዉ መለያ ቁጥር -----

ክፍል አንድ:- ማህበራዊ እና ሥነ-ህዝባዊ ጉዳዮችን የሚመለከቱ ጥያቄዎች

ተ.ቁ	ጥያቄዎች	አማራጭ
101	እድሜ	
102	ብሄርዎ	1. አማራ 2. ትግራይ 3. ኦሮሞ 4. ሌላካለ (ይገለፅ)
103	የእርስዎ የጋብቻ ሁኔታ	1. ባለትዳር 2. አግብታ የፈታች 3. ባለቤትዎ የሞተባት
104	የእርስዎ የትምህርት ደረጃ	1. ማንበብ እና መጻፍ አልተቻለም 2. ማንበብ እና መጻፍ የሚችል 3. የመጀመሪያ ደረጃ ትምህርት ቤት (1-8) 4. ሁለተኛ ደረጃ ትምህርት ቤት (9-12) 5. ኮሌጅ ወይም ከዚያ በላይ
105	የባልሽ የትምህርት ደረጃ ?	1. ማንበብ እና መጻፍ አልተቻለም 2. ማንበብ እና መጻፍ የሚችል 3. የመጀመሪያ ደረጃ ትምህርት ቤት (1-8) 4. ሁለተኛ ደረጃ ትምህርት ቤት (9-12) 5. ኮሌጅ ወይም ከዚያ በላይ
106	የእርስዎ መኖሪያዎ	1. የከተማ 2. ገጠር
107	የእርስዎ ሃይማኖትዎ	1. የኦርቶዶክስ ክርስቲያን 2. ሙስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌላ ካለ ይግለጹ...
108	የሙያ ደረጃ	1. የቤት እመቤት 2. የቀን ሰራተኛ 3. የመንግስት ሰራተኛ 4. መንግስት ታዊ ያልሆነ ድርጅት ሰራተኛ 5. የግል ስራ 6. ነጋዴ 7. ተማሪ 8. ሌላ ካለ ይገልጹ..
109	የባልሽ ስራ ምንድን ነው?	1. የቀን ሰራተኛ 2. የመንግስት ሰራተኛ 3. መንግስት ታዊ ያልሆነ ድርጅት ሰራተኛ 4. የግል ስራ 5. ነጋዴ 6. ገበሬ 7. ሌሎች ይገልጻሉ።
110	የሚዲያ አጠቃቀምዎ	1. የመገናኛ ብዙሃን መዳረሻ የለም 2. ሬዲዮ 3. ቴሌቪዥን 4. ስልክ 5. ሌላ ካለ ይገልጹ..
111	ወርሃዊ የቤተሰብ ገቢ?	 የኢት ብር

ክፍል 2:- የወሊድ ታሪክ መረጃ

201.	በጠቅላላው ምን ያህል ጊዜ አርግዘዋል ?	1. አንድ 2. 2-4 3. ከ 4 በላይ
202	በጠቅላላው ስንት ልጆች ወልደዋል?	1. አልወለድኩም 2. አንድ 3. ከሁለት በላይ
203	ያሁኑ እርግዝናዎ ስንት ወር ይሆነዋል ?	.....
204	ቅድመ-ወሊድ እንክብካቤ ከታተሉ ነበር	1. አዎ 2. አይ
205	ለጥ.ቁ 204 መልስዎ አዎ ከሆነ ስንት ጊዜ	

ክፍል 3:- ከመፀነስ በፊት የነበረ የአካል ብቃት እንቅስቃሴ

301	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ሰርተው ያውቃሉ?	1. አዎ 2. አላውቅም
302	ለጥ.ቁ 301 መልስዎ አዎ ከሆነ ከሚከተሉት ውስጥ የትኛውን እንቅስቃሴ ያደርጉ ነበር?	1. ፈጠን ያለ የእግር ጉዞ 2. መሮጥ 3. ተጨማሪ ካለ ይገለፁ
303	በቀን ለምን ያህል ጊዜ ይሰሩ ነበር	
304	በሳምንት ስንት ቀን ይሰሩ ነበር	.....

ክፍል 4:- በእርግዝና ወቅት ስለሚደረግ የአካል ብቃት እንቅስቃሴ እውቀትን በተመለከተ

401	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ለ30 ደቂቃ በየቀኑ ቢያንስ በሳምንት ሶስቴ ማድረግ የጀርባ ህመምን ይቀንሳል	1. አዎ 2. አይ
402	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ለ30 ደቂቃ በየቀኑ ቢያንስ በሳምንት ሶስቴ ማድረግ ከብደትን ለመቆጣጠር ይረዳል	1. አዎ 2. አይ
403	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ለ30 ደቂቃ በየቀኑ ቢያንስ በሳምንት ሶስቴ ማድረግ በእርግዝና ወቅት ሊከሰት የሚችልን የደም ግፊት ተጋላጭነት ይቀንሳል	1. አዎ 2. አይ
404	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ለ30 ደቂቃ በየቀኑ ቢያንስ በሳምንት ሶስቴ ማድረግ በእርግዝና ወቅት ሊከሰት የሚችልን የስካር በሽታን ተጋላጭነት ይቀንሳል	1. አዎ 2. አይ
405	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ለ30 ደቂቃ በየቀኑ ቢያንስ በሳምንት ሶስቴ ማድረግ በወሊድ ወቅት ሊከሰት የሚችልን የቀዶ ጥገና መውለድ ይቀንሳል	1. አዎ 2. አይ
406	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ለ30 ደቂቃ በየቀኑ ቢያንስ በሳምንት ሶስቴ ማድረግ ከወሊድ በህላ በፍጥነት ለማገገም ይረዳል	1. አዎ 2. አይ

407	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ለ30 ደቂቃ በየቀኑ ቢያንስ በሳምንት ሶስቴ ማድረግ በእርግዝና ወቅት ከማህፀን የደም መፍሰስ ካለ የአካል-ብቃት እንቅስቃሴ ማድረግ የተከለከለ መሆኑን ያውቃሉ?	1. አዎ 2. አይ
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408	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ለ30 ደቂቃ በየቀኑ ቢያንስ በሳምንት ሶስቴ ማድረግ በእርግዝና ወቅት ከፍተኛ የሆነ የደማክስ ካለ የአካል ብቃት እንቅስቃሴ ማድረግ እንደማይቻል ያውቃሉ?	1. አዎ 2. አይ
409	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ለ30 ደቂቃ በየቀኑ ቢያንስ በሳምንት ሶስቴ ማድረግ በእርግዝና ወቅት ከመጠን በላይ የጨመረን የደም ስካር መጠን ሳይስተካከል የአካል ብቃት እንቅስቃሴ ማድረግ እንደማይቻል ያውቃሉ?	1. አዎ 2. አይ
410	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ለ30 ደቂቃ በየቀኑ ቢያንስ በሳምንት ሶስቴ ማድረግ በእርግዝና ወቅት ከመጠን በላይ የጨመረን የደም ግፊት መጠን ሳይስተካከል የአካል ብቃት እንቅስቃሴ ማድረግ እንደማይመከር ያውቃሉ?	1. አዎ 2. አይ

ክፍል 5:- በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ለማድረግ የሚፈልጉትን በሞዴልን በመጠቀም መለየት በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ስንገልጽ በቀን ለ30 ደቂቃዎች በሳምንት ቢያንስ ሶስት ጊዜ የሚደረግ መጠነኛ የአካል ብቃት እንቅስቃሴን ይመለከታል (ኤሮቢክስ)

5.1 ቀጥተኛ, የታቀደ ባህሪ ንድፈ ሃሳብ መለኪያ

ከዚህ ቢታች ያሉት አመለካከት ፣ማህበራዊተጽዕኖ ፣አዳጋች ወይም አበረታች ፣ሁኔታዎችን በተመለከተ ነው

ሀ. አመለካከት፣

501	በእርግዝና ወቅት ቢያንስ በሳምንት ለሶስት ቀናት በቀን ለ30 ደቂቃ አዘውትሮ የአካል ብቃት እንቅስቃሴ ማድረግ ደስ የሚል ይሆናል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
	በእርግዝና ወቅት ቢያንስ በሳምንት ለሶስት ቀናት በቀን ለ30 ደቂቃ አዘውትሮ የአካል ብቃት እንቅስቃሴ ማድረግ ጥሩ ጠቃሚ ይሆናል?	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
	በእርግዝና ወቅት ቢያንስ በሳምንት ለሶስት ቀናት በቀን ለ30 ደቂቃ አዘውትሮ የአካል ብቃት እንቅስቃሴ ማድረግ ጠቃሚ ይሆናል?	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ

ለ. ማህበራዊ ተጽዕኖ፣

502	በእርግዝና ወቅት አዘውትሮ የአካል ብቃት እንቅስቃሴ ማድረግ ከእኔ ይጠበቃል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
503	ለእኔ አስፈላጊ የሆኑ አብዛኞቹ ሰዎች በእርግዝና ወቅት አዘውትረው የአካል ብቃት እንቅስቃሴ እንዳደርግ ይፈልጋሉ	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
504	በእርግዝና ወቅት መደበኛ የአካል ብቃት እንቅስቃሴ ማድረግ የእኔ ውሳኔ ነው	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
505	እንደ እኔ ያሉ ነፍሰጡር ሴቶች በእርግዝና ወቅት መደበኛ የአካል ብቃት እንቅስቃሴ ያደርጋሉ	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ

ሐ. አዳጋች ወይም አበረታች ሁኔታዎች

506	በእርግዝና ወቅት መደበኛ የአካል ብቃት እንቅስቃሴ ማድረግ እንደምችል እርግጠኛ ነኝ	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
507	በእርግዝና ወቅት መደበኛ የአካል ብቃት እንቅስቃሴ ማድረግ ለእኔ ነው	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
508	በእርግዝና ወቅት አዘውትሮ የአካል ብቃት እንቅስቃሴ ለማድረግ የወሰንኩት ውሳኔ በእኔ ቁጥጥር ስር ነው	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
509	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴን በተመለከተ ምን ያህል ቁጥጥር አለዎት?	1. በጣም ትንሽ ቁጥጥር 2. ምንም ቁጥጥር የለም 3. ገለልተኛ 4. ቁጥጥር 5. ሙሉ ቁጥጥር
510	ከፈለግኩ በእርግዝና ጊዜዬ በቀላሉ የአካል ብቃት እንቅስቃሴ ማድረግ እችላለሁ	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ

5.2 በተዘዋዋሪ የሚወሰዱ የባህሪያ አለካኮች የባህሪያ ለውጦችን መለካት እና ውጤታቸውን መገምገም

ሀ. የባህሪ እምነት (የተዘዋዋሪ የአመለካከት መለኪያ

511	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ ከብደቴን ለመቆጣጠር ይረዳኛል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
512	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ የስእ ካር ህመም ስጋትን ለመቀነስ ይረዳኛል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
513	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ ከእርግዝና ጋር የተያያዘ የደምግፊት ስጋትን ለመቀነስ ይረዳኛል።	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
514	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ ለመውለድ እንድዘጋጅ ይረዳኛል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
515	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ የጡንቻዬን ብቃት ከፍ ለማድረግ ይረዳኛል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
516	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ የምግብ ፍላጎትን ለመጨመር ይረዳኛል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
517	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ የፅንሰ መጨንገፍ ያስከትላል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ

518	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ ያለ ጊዜ ውመውለድን ያስከትላል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
519	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ ብዕውነት ላይጉዳትን ያስከትላል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ

ለ. የውጤት ግምገማ (የተዘዋዋሪ የአመለካከት መለኪያ)

520	ለእኔ በዚህ የእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ ከብደቴን ይቆጣጠራል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
521	ለእኔ በዚህ እርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ የመውለድ አደጋን ይቀንሳል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
522	ለእኔ በዚህ እርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ ከእርግዝና ጋር የተያያዘ የደም ግፊት ልመቀነስ	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
523	ለእኔ በዚህ እርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ ለወሊድ መዘጋጀቴ የተሻለ ነው	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
524	ለእኔ በዚህ እርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ ወቅት ጡንቻዎቼን ማዘናናት የረዳኛል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
525	ለእኔ በዚህ እርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ የምግብ ፍላጎት መጨመር ምክንያት ነው	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
526	ለእኔ በዚህ እርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ የፅንሰ መጨንገፍ ምክንያት ነው	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
527	ለእኔ በዚህ እርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ ያለጊዜ ውመውለድ ምክንያት ነው	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
528	ለእኔ በዚህ እርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ በእርግዝና ላይ ጉዳት ያደርሰብኛል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ

ሐ. የተለመደ እምነት (የተዘዋዋሪ የርእሰ-ጉዳይ መደበኛ ልኬት)

529	ባለቤቱ በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ እንዳለብኝ ያስባሉ	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
530	የቅርብ ጓደኞቼ በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ እንዳለብኝ ያስባሉ	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
531	እህቴ/ወንድሜ በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ እንዳለብኝ ያስባሉ	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
532	እናቴ በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ እንዳለብኝ ታስባለች	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
533	ጎረቤቶቼ በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ እንዳለብኝ ያስባሉ	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
534	የጤና ባለሙያዎች በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ እንዳለብኝ ያስባሉ	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ

መ. የማደረግ ተነሳሽነት (የተዘዋዋሪ የርእሰ-ጉዳይ መደበኛ ልኬት)

535	በአጠቃላይ አነጋገር፣ በእርግዝና ወቅት ባልዎ ምን ማድረግ እንዳለብኝ ስለሚያስቡት ነገር ምን ያህል ያስባሉ	1. በፍጹም 2. አይ 3. ገለልተኛ 4. በመጠኑ 5. እጅግ በጣም
536	ምን ያህል የቅርብ ጓደኞችህ ምን ማድረግ እንዳለብኝ ስለሚያስቡት ነገር ምን ያህል ያስባሉ	1. በፍጹም 2. አይ 3. ገለልተኛ 4. በመጠኑ 5. እጅግ በጣም
537	እህትህ/ወንድምህ ምን ማድረግ እንዳለብኝ ስለሚያስቡት ነገር ምን ያህል ያስባሉ	1. በፍጹም 2. አይ 3. ገለልተኛ 4. በመጠኑ 5. እጅግ በጣም
538	እናትህ ምን ማድረግ እንዳለብኝ ስለሚያስቡት ነገር ምን ያህል ያስባሉ	1. በፍጹም 2. አይ 3. ገለልተኛ 4. በመጠኑ 5. እጅግ በጣም
539	በቤት ውስጥ ያለው የሥራ ጫና በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ላይ ተጽዕኖ ያሳደራል	1. በፍጹም 2. አይ 3. ገለልተኛ 4. በመጠኑ 5. እጅግ በጣም
540	ጎረቤቶችዎ ምን ማድረግ እንዳለብኝ ስለሚያስቡት ነገር ምን ያህል ያስባሉ	1. በፍጹም 2. አይ 3. ገለልተኛ 4. በመጠኑ 5. እጅግ በጣም
541	የጤና ባለሙያዎች ምን ማድረግ እንዳለብኝ ስለሚያስቡት ነገር ምን ያህል ያስባሉ	1. በፍጹም 2. አይ 3. ገለልተኛ 4. በመጠኑ 5. እጅግ በጣም

ሠ. ለመቆጣጠር አስቻይ ሁኔታ(ቀጥተኛ ያልሆኑ መለኪያዎች

542	የተቋማቱ ተደራሽነት በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴን እንዴት እንደሚጎዳ	1. በፍጹም 2. አይ 3. ገለልተኛ 4. በመጠኑ 5. እጅግ በጣም
543	የመገልገያዎች ተስማሚነት በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴዎን እንዴት እንደሚጎዳ	1. በፍጹም 2. አይ 3. ገለልተኛ 4. በመጠኑ 5. እጅግ በጣም
544	የጊዜ ገደቦች በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴዎን እንዴት እንደሚነኩ	1. በፍጹም 2. አይ 3. ገለልተኛ 4. በመጠኑ 5. እጅግ በጣም
545	በእርግዝና ወቅት የጤና ሁኔታዎ በአካል ብቃት እንቅስቃሴዎ ላይ እንዴት እንደሚጎዳ	1. በፍጹም 2. አይ 3. ገለልተኛ 4. በመጠኑ 5. እጅግ በጣም
546	በቤት ውስጥ ያለው የሥራ ጫና በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴን እንዴት እንደሚጎዳ	1. በፍጹም 2. አይ 3. ገለልተኛ 4. በመጠኑ 5. እጅግ በጣም

ረ. እራስን ግንዛቤ (ቀጥተኛ ያልሆኑ መለኪያዎች

547	ተቋሞቹ እንደ ሌሎች ከተሰማኝ የአካል ብቃት እንቅስቃሴ ማድረግ ያስቸግረኛል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
548	ተሰማሚ መገልገያዎችን እንደማላገኝ ከተሰማኝ የአካል ብቃት እንቅስቃሴ ማድረግ አስቸጋሪ ይሆንብኛል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
549	በቂ ጊዜ እንደሌለኝ ከተሰማኝ የአካል ብቃት እንቅስቃሴ ማድረግ አስቸጋሪ ይሆንብኛል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
550	የጤና ችግር ቢያጋጥመኝ የአካል ብቃት እንቅስቃሴ ማድረግ ያስቸግረኝ ነበር	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
551	ቤት ውስጥ የሥራ ጫና እንዳለብኝ ከተሰማኝ የአካል ብቃት እንቅስቃሴ ማድረግ ከባድ ይሆንብኛል	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ

ክፍል 6 በቅድመ ወሊድ ጊዜ የአካል ብቃት እንቅስቃሴ ለማድረግ ፍላጎት

በእርግዝና ወቅት ቢያንስ በሳምንት ለሶስት ቀናት በቀን ለ30 ደቂቃ የኤሮቢክ የአካል ብቃት እንቅስቃሴ ማድረግ ያለውን ጥቅም ያውቃሉ እንበል

601	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ለማድረግ አስባለው	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
602	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ለማድረግ ወስኛለሁ	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
603	በእርግዝና ወቅት አካላዊ እንቅስቃሴ ለማድረግ እሞክራለሁ	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ
604	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ እፈልጋለሁ	1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ

9.8. Participant Information Sheet and Informed voluntary, Consent form for pregnant women age ≥ 18 years old (Afan Oromo Version)

(Hirmaattota Dargaggeessa/ttii umrii 18 fi isaa olii fedhii isaanitiin kan gaafii irratti hirmaatanif, odeeffannoo kennamuufii Waraqaa odeeffannoon irratti guutamu)

1. Seensa. Akkam jirtan. Maqaan Koo_____ jedhama. Ani raga qo'anno sassaabduu/aa barataa digrii lammaffaa Yuniversitii Haramayaa, Damesayinsi hawasuma mume sirna nyata Kan tahee barata Tarikuu Gernayee ngeeggeeffamuun Kan sassabu yoo tahuu. Isinis garee qo'annoo keenyaa taatanii waan filatamtaniif waa'ee qo'annoo kanaa isii ibsuuf gurra fi qalbiikeessanyoo guddate daqiqaasoddoma qofaa akkanaafergitan kabajaan isiin gaafadha.

2. Mata-duree qo'annichaa: sochii qaamaa gochuuf yaada qabaachuu fi sababa kanaan walqabatee dubartoota ulfaada'umsa duraadahumsaakeessatti hospitaala mootummaa magaalaa Harar Bahaa, Ethiopia, 2025.

3. Kaayyoo qo'annichaa: adda baasuuf Kaayyoon qorannoo kanaa dubartoonni ulfaa hammam sochii qaamaa gochuuf akka yaadan adda baasuu fi wantoota sochii qaamaa akka hin hojjenneef sababa ta'an adda baasuudha. Sana booda akka argannootti gufuulee sochii qaamaa yeroo ulfaa hir'isuuf furmaata ta'uu danda'u waliin yaada kaa'i. Kana malees kaayyoon qorannoo kanaa qorataa muummichaaf akka raawwii Mastersii fayyaa hawaasaa Fayyaa Walhormaataa keessatti barruu qorannoo (thesis) barreessuudha

4. Adeemsaa fi yeroo fudhatu: Hojimaataa fi yeroo: Dubartoota ulfaa biratti sochii qaamaa gochuuf yaada qabaachuu fi wantoota kanaan walqabatan safaruuf, hirmaattonni unka hayyamaa akka hubatanii fi fudhatan Ni gaafanna. Hirmaattonni qorannoo keenya irratti hirmaachuuf fedhii yoo qabaatan unka hayyamaa hubachuu fi mallatteessuu qabda. Sana booda hirmaattonni namoota odeeffannoo walitti qabaniif deebii akka Kennan ni gaafatama.

5. Faayidaa miidhaa qo'anichaa: Rakinni qo'annoo kana keessatti hirmaachuu keessaniin isin quunnamu baay'ee xiqqaa yoo tahu, innis yeroo keessan muraasa (daqiiqaa 40) qofaa fudhachuu tahu. Qo'annoo kana irratti hirmaachuu keessaniin kaffaltiin kaffalamu tokko iyyuu hin jiru. Garuu bu'aan qo'annoo kanaa ragaawwan haarawaa naannoo keessaniifi qooda fudhattootakan biroof ni argamiisa.

6. Iccitii eeguu: Odeeffannoon isin nutti himtan hundi isaanii iccitiin kan eegamee fi gaaffiinenyuummakeessanmaqaanibsu kan hinjiree dha. Argannoon qo'anna kanaa hawaasa Qo'annaa kana irratti hirmaatan akka walii galaatti kan ibsu yoo tahu, karaa kamiinuu dhimma nama dhunfaa hin calaqqisiisu. Haala kamiinuu namoota dhunfaa qo'annaa waliin walqabsiisuuf afaaniiniis tahe barreeffamaan ragaa hin waamsiifnu.

7. Mirga: Hirmaannan qo, annoo kana keessatti gootan guutuumaan guutuutti fedhii irratti kan hundaa'e. Mirga hirmaachuu fi hirmaachuu dhiisuu ni qabdu. Hirmaachuuf yoo murteessitan, mirga yeroo barbaaddanitti qo'annoo kanaa keessaa bahu yommuu qabaattan kana gochuu keessaniifis faayidaan isiin argachuu qabaattanii dhabdan tokko iyyuu hin jiru. Gaaffii deebisuu hin barbaadne deebisuufis hin dirqamtan.

8. Naannoo qorannichaa: - qorannichi yeroo taasifamu kamittuu haala qorannichaa ilaalchisee fi gaaffii kamiyyuu yoo qabaataan odeeffannoo kanaa gaditti fayyadamtanii nu argachuu dandeessuu.

Teessoo Qo'ataa muummee: obbo Tarikuu, Germayee lakk. bilbila mobayilii: +251963889048 yookiin e-mayilii, jotariku84@gmail.com

Haramay yuniversititi, Waajjira dhimma naamusaa qo'annaa fayyaa dhaabbatichaa (IHRERC) lakk. Bilbilaa 025-466-20-11 Yookiin lakk. Poostaa 235, Harar.

9. Unkaa walii galtee fedhii irratti hundaa'ee:

Unkaan walii galtee hirmaattootaanaa dubbifameera/ dubbiseera. Kaayyoo qo'annichaa, deemsiiisaa, faayidaa fi midhaa, dhimmi iccitii eeguu, mirga hirmaachuu fi teessoon qo'ataa illee natti himamee jira. Wanta ifaa hin taane akka na gaafadhuuf carraan naaf keennamee jira. Akkan yeroo barbaade qo'annicha addan kutee bahuu dandahu yookiin gaaaffii deebisuu hin barbaannee deebisuu hin dirqamnes natti himameera. Kanaafuu, akkan qo'annaa kana irratti feedhii kootiin hirmaachuu mallattoo koo kan armaan gadiin kanan mirkanneessa.

Maqaa fi mallattoo hirmaattuu _____//_____

Maqaa fi mallattoo odeeffannoo sassaabdu/a _____//_____

Hirmana fi garagrsa keessaniifi Galatoomaa

9.9. Participant information sheet and informed voluntary consent form for parents/gurdian for minor age < 18 years old pregnant women (Afan Oromo version)

(Hirmaattota Dargaggeessa/ttii umrii 18tii gadii fedhii isaanitiin Kan gaafii irratti hirmaatanif, odeeffannoo kennamuufii Waraqaa odeeffannoon irratti guutamu)

1. Seensa. Maqaan Koo _____Jedhama. Ani isin faana kaniin argame kun walitti qabaa ykn sassaabaa odeeffannoo, Qorannoo/Qu'annoo barataa Tarikuu Germayee, kan yuunivarsiitii Haramaayatti koollejjii fayyaa fii saayinsii yaalaatti barataa digirii lammaffaa kan ta'efiidha. Kanaafuu waa'ee qorannoo kanaa ibsi gabaabaan isiniif kennamee, qorannoo kanarratti qooda akka fudhattan kabajaan isin gaafanna

2. Mataduree Qorannichaa: - sochii qaamaa gochuuf yaada qabaachuu fi sababa kanaan walqabatee dubartoota ulfaada'umsa duraadahumsaakeessatti hospitaala mootummaa magaalaa Harar Bahaa, Ethiopia, 2024.

3. Kaayyoo qorannichaa: - adda baasuuf Kaayyoon qorannoo kanaa dubartoonni ulfaa hammam sochii qaamaa gochuuf akka yaadan adda baasuu fi wantoota sochii qaamaa akka hin hojjenneef sababa ta'an adda baasuudha. Sana booda akka argannootti gufuulee sochii qaamaa yeroo ulfaa hir'isuuf furmaata ta'uu danda'u waliin yaada kaa'i. Kana malees kaayyoon qorannoo kanaa qorataa muummichaaf akka raawwii Mastersii fayyaa hawaasaa Fayyaa Walhormaataa keessatti barruu qorannoo (thesis) barreessuudha

4. Haala adeemsa gaaffileefii yeroo itti fudhatu:- Haalli Gaffichi itti gaafatamu afaaniin yoo ta'u, giddugalessatti daqiiqaa 40 ni fudhata. Kanaafuu yeroo qabdanirraa yeroo muraasa gaaffilee kanaaf akka naaf eyyamtan dhifama waliin isin gaafadha

5. Faayidaafi miidhaa qorannichaa: - Rakkinni qo'annoo kana keessatti hirmaachuu keessaniin isin quunnamu baay'ee xiqqaa yoo tahu, innis yeroo keessan muraasa (daqiiqaa 40) qofaa fudhachuu taha. Qo'annoo kana irratti hirmaachuu keessaniin kaffaltiin kaffalamu tokko iyyuu hin jiru. Garuu bu'aan qo'annoo kanaa ragaawwan haarawaa naannoo keessaniifi qooda fudhattootakan biroof ni argamiisa.

6. Iccitiitii Odeeffannoo kessaniif taasifamu: - odeeffannoo isin nuuf laattan icciitiidhan waan qabamuuf waan tokko yaadda`un isinirra hin jiru. Haala kaminuu odeeffannoo kessan qaama hin ilaallanne harka hin galu akkasumas odeeffannoon isiniraa argannu kan barreeffamu/galmeeffamu maqaa keessanii osoo hin taane koodiidhaani. Qorannichi akka waligalaatti malee isin qofa wabii goonee Kan ibsinu miti. Gaafficharratti maqaan keessan hin jiraatu.

7. Mirga: Hirmaannaan qo, annoo kana keessatti gootan guutummaan guutuutti fedhii irratti kan hundaa'e. Mirga hirmaachuu fi hirmaachuu dhiisuu ni qabdu. Hirmaachuuf yoo murteessitan, mirga yeroo barbaaddanitti qo'annoo kanaa keessaa bahu yommuu qabaattan kana gochuu keessaniifis faayidaan isiin argachuu qabaattanii dhabdan tokko iyyuu hin jiru. Gaaffii deebisuu hin barbaadne deebisuufis hin dirqamtan.

8. Naannoo qorannichaa: - qorannichi yeroo taasifamu kamittuu haala qorannichaa ilaalchisee fi gaaffii kamiyyuu yoo qabaataan odeeffannoo kanaa gaditti fayyadamtanii nu argachuu dandeessuu.

Teessoo Qo'ataa muummee: obbo Tarikuu Germayee lakk. bilbila mobayilii: +251963889048
yookiin e-mayilii, jotariku84@gmail.com

Haramay yuniversititi, Waajjira dhimma naamusaa qo'annaa fayyaa dhaabbatichaa (IHRERC)
lakk. Bilbilaa 025-466-20-11 Yookiin lakk.Poostaa 235, Harar.

9. Hubanno gubbatti argattan irratti hundaa`udhaan hirmaattota qorannoo kanaa ta`uu kessan Kan itti dhugomsitan/labsitan/mirkaneessitan: - haala qorannichaa odeeffannoo kennamerraa naaf dubbifameera/dubbifadheera. Kaayyoo bu`uura qorannichaa, adeemsi isaa, faayidaafi midhaa, fayyummaa odeeffannoo kootii, mirga hirmannaa koofi bakki qoratichaa naaf ibsameera. Yeroo qoranna Sana gaaffii naaf hin Galle gaafachuu akkan danda`uufi yeroon barbaadetti qoranicha addan kutuu akkan danda`u carraan naaf laatameera. Haaluma kanaan qoranicharatti hirmachuuf fedha qabaachu KO mallattoo ko kanan armaan gadiitiin mirkaneessa.

Maqaa fi mallattoo wardiyyaa hirmaataa.....Guyyaa.....

Mallatto walitti qabaa/Sassaabaa/bduu Guyyaa.....

Hirmana fi garagrsa keessaniifi Galatoomaa

9.10. Questionnaire (Afaan Oromo Version)

Maqaa dhaabbatichaa -----

Maqaa gaafataa-----

Guyyaa gaaffii fi deebii ----//-----//-----

Lakkoofsa koodii-----

Qajeelfama: Deebii deebii kennitootaa tokkoon tokkoon gaaffii fuulduratti marsi

Kutaa:-I- Gaaffiilee hawwaasummaa fi haala jireenyaa ilalalatan

lakk	Filannoo	Gaaffii.....
101	Umuri	
102	sabnni kee maalii	1. Amaaraa 2. Tigraze 3. Oromoo 4. Kanneen biroo ibsu-----
103	Haala gaa'ela keessanii	1. Fuudhaa fi heeruma 2. Fuudhanii fi wal hiikan 3. Abbaan manaa ishee dubartii abbaan manaa irraa du'eedha
104	Sadarkaa barnootaa keessan	1. Dubbisuu fi barreessuu dadhabuu 2. Dubbisuu fi barreessuu kan danda'u 3. Mana barumsaa sadarkaa tokkoffaa(1-8) 4. Mana barumsaa sadarkaa lammaffaa(9-12) 5. Kolleejjii fi isaa olii
105	Sadarkaa barnootaa abbaa warraa keetii?	1. Dubbisuu fi barreessuu dadhabuu 2. Dubbisuu fi barreessuu kan danda'u 3. Mana barumsaa sadarkaa tokkoffaa (1-8) 4. Mana barumsaa sadarkaa lammaffaa(9-12) 5. Kolleejjii fi isaa o
106	Mana jireenyaa	1. Magaalaa 2. Baadiyyaa
107	Amantii keessan	1. Kiristaana Ortodoksii 2. Muslim 3. Pirootestaantii 4. Kaatolikii 5. Kanneen biroo ibsu...
108	Hojiin kee maali	1. Haadha manaa

		2. Hojjettuu guyyaa 3. Hojjetaa mootummaa 4. Hojjetaa mootummaa hin taane 5. Hojjetaa dhuunfaa 6. Daldalaa 7. Barataa 8. Kan biraa yoo jiraate ibsaa.
109	Hojiin abbaa manaa kee maali? .	1. Hojjetaa guyyaa 2. Hojjetaa mootummaa 3. Hojjetaa mootummaa hin taane 4. Hojjetaa dhuunfaa 5. Daldalaa 6. Qonnaan bulaa 7. Kaan immoo ibsu
110	Miidiyaan fayyadamtuu malii	1. Miidiyaa argachuu dhabuu 2. Raadiyoo 3. Televiizhinii 4. Bilbila 5. Kanneen biroo ibsu
111	Galii maatii ji'a ji' aan argamu	Eth. Birr

Kutaa:-2 Seenaa dahumsaa

201.	Kan ibsame walumaagalatti yeroo meeqa ulfoofte?	1. Tokko 2. 2-4 irratti kan ibsame 3. Olii 4
202	Kan ibsame walumaagalatti yeroo meeqa deesse?	1. Tokkollee hin jiru 2. 1 3. >2
203	Ulfi kee amma ji'a meeqa?	.....
204	Hordoffii kunuunsa dahumsa duraa qabdaa	Eeyyee -----1 Lakki -----2
205	Yoo eeyyee ta'e,yeroo meeqa	

Kutaa 3ffaa muuxannoowwan sochii qaamaa kanaan duraa

301	Kan ibsame Yeroo ulfaa sochii qaamaa gootanii beektuu?	Eeyyee-----1 Lakki -----2	
302	301 eeyyee yoo ta'e, hojiiwwan armaan gadii keessaa isa kam hojjetta?	1. Deemsa saffisaa 2. Fiigichaan fiiguu 3. Kaanis ni ibsu	
303	Guyyaattiyeroo hammamiif	.....	

	hojjetee?		
304	Torbanitti guyyaa meeqa hojjetee?	.....	

Kutaa 4 ffaa beekumsa amala sochii qaamaa yeroo ulfaa ilaalchise

Gaaffii 401-406 yeroo ulfaa yoo xiqqaate torban tokko keessatti guyyaa sadii guyyaatti daqiiqaa 30f sochii qaamaa eroobikii (brisk walking) irratti hundaa'uun gaaffilee deebisi-----

401	Dhukkubbii dugdaa ni hir'isa	1. Eeyyee 2. Lakki
402	Ulfaatina qaamaa garmalee akka dabaluu ittisa	1. Eeyyee 2. Lakki
403	Carraa dhiibbaa dhiigaa olka'aa hir'isa	1. Eeyyee 2. Lakki
404	Carraa dhukkuba sukkaaraa ulfaa hir'isa	1. Eeyyee 2. Lakki
405	Carraa hood of cesarean section da'uu hir'isa	1. Eeyyee 2. Lakki
406	Erga da'umsa booda saffisaan fayyuuf gargaara	1. Eeyyee 2. Lakki

407- 410 irraa gaaffii “Sochii qaamaa erobiik (deemsa saffisaa) dubartii----- qabduuf ni gorfamaa?

407	Dhiigni qaama saalaa yeroo ulfaa	1. Eeyyee 2. Lakki
408	Hir'inni dhiigaa cimaa yeroo ulfaa	1. Eeyyee 2. Lakki
409	Gochuun akka hin danda'amne beektuu?	1. Eeyyee 2. Lakki
410	Yeroo ulfaa dhiibbaa dhiigaa to'annaa ala ta'e	1. Eeyyee 2. Lakki

Kutaa 5: tilmaa mtoota sochii qaamaa yeroo ulfaa gochuuf yaada (ti'oorii amala karoorfame)

5.1 Safartuuwwan kallattiin ijaarsa ti'oorii amala karoorfame

A. Ilaalcha kallatti

501	Yeroo ulfaa yoo xiqqaate torbanitti guyyoota sadiif guyyaatti daqiiqaa 30f sochii qaamaa yeroo hunda gochuun gaarii ta'a	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
	Yeroo ulfaa yoo xiqqaate torbanitti guyyaa sadii guyyaatti daqiiqaa 30 yeroo hunda sochii qaamaa gochuun gaariidhaa?	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
	Yeroo ulfaa yoo xiqqaate torbanitti guyyaa sadii guyyaatti daqiiqaa 30 yeroo hunda sochii	1. Cimsee walii hin galu 2. Walii hin galu

	qaamaa gochuun faayidaa qabaa?	3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
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B. Dhiibbaa hawaasummaa

502	Yeroo ulfaa kootti yeroo hunda sochii qaamaa gochuun narra eegama	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
503	kan argamu Namoonni naaf barbaachisoo ta'an baay'een isaanii yeroo ulfaa yeroo hunda sochii qaamaa akkan godhu barbaadu	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
504	Yeroo ulfaa kootti sochii qaamaa yeroo hunda gochuun kan kooti	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
505	kan argamu Dubartoonni ulfaa akka koo yeroo ulfaa sochii qaamaa yeroo hunda ni godhu	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala

C. Haalota qormaata ykn jajjabeessaa

506	Yeroo ulfaa kootti sochii qaamaa yeroo hunda gochuu akkan danda'u ofitti amanamummaa qaba	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
507	Yeroo ulfaa sochii qaamaa idilee gochuun...	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
508	Yeroo ulfaa kootti yeroo hunda sochii qaamaa gochuuf murtoon to'annaa koo jala jira	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
509	Yeroo ulfaa sochii qaamaa gochuu irratti to'annoo hangamii qabda?	1. To'annoo baayyee xiqqaa 2. To'annoo hin qabu 3. Yaadaa hin kabuu 4. To'anno 5. To'annoo guutuu
510	Yoon barbaade yeroo ulfaa salphaatti sochii qaamaa gochuu nan danda'a	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala

5.2. Safartuuwwan Amala Al-kallatti Jijjiirama Amala Safaruu fi Bu'aa Isaanii Madaaluu

A. Amantii amala (safartuuwwan ilaalchaa al-kallatti)

511	Yeroo ulfaa sochii qaamaa gochuun ulfaatina koo to'achuuf na gargaara	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
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512	Yeroo ulfaa sochii qaamaa gochuu Carraa dhukkubsachuu hir'isuuf gargaara	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
513	Yeroo ulfaa sochii qaamaa gochuun carraa dhiibbaa dhiigaa ulfaan walqabatee dhufu hir'isuuf na gargaara	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
514	Yeroo ulfaa sochii qaamaa gochuun da'umsaaf akkan qophaa'u na gargaara	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
515	Yeroo ulfaa sochii qaamaa gochuun maashaalee koo akkan guddifadhuna gargaara	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
516	Yeroo ulfaa sochii qaamaa gochuun fedhii nyaataa akkan dabaluu na gargaara	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
517	Yeroo ulfa koo sochii qaamaa gochuun ulfi akka bahu taasisa	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
518	Yeroo ulfaa koo sochii qaamaa gochuun yeroo malee da'umsaaf sababa ta'a	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
519	Sochii qaamaa gochuun miidhaan narra ga'a	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala

B.Madaallii bu'aa (safartuuwwan ilaalchaa al-kallatti)

520	Anaaf yeroo ulfaa kana ulfaatina koo to'achuun...	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
521	Anaaf yeroo ulfa kanaa balaa DM ulfaa hir'isuun	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
522	Anaaf yeroo ulfaa kanatti dhiibbaa dhiigaa ulfaan walqabatu hir'isuun	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
523	Anaaf yeroo ulfaa kanaa sochii qaamaa gochuun da'umsaaf qophaa'uuf karaa hundarra gaarii ta'edha	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala

524	Anaaf yeroo ulfa kanaa maashaalee koo boqochiisuun...	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
525	Anaaf yeroo ulfa kanaa fedhii nyaataa dabalun	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
526	Anaaf yeroo ulfa kanaa ulfi irraa bahuun bu'aan isaa	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
527	Anaaf yeroo ulfaa kana keessatti yeroo malee da'uun bu'aan isaa	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
528	Anaaf yeroo ulfaa kana keessatti miidhaan irra gahuun isaa	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala

C.Amantii naamusaa (safartuuwan al-kallattiin seera subjektiwii)

529	Abbaan manaa/hiriyaan koo yeroo ulfaa sochii qaamaa gochuu akkan qabu natti fakkaata	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
530	Hiriyoonna koo dhihoo yeroo ulfaa sochii qaamaa gochuu akkan qabu yaadu	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
531	Obboleettiin/obboleessi koo yeroo ulfaa sochii qaamaa gochuu akkan qabu natti fakkaata	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
532	Harmeen koo yeroo ulfaa sochii qaamaa gochuu akkan qabu yaaddi	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
533	Ollaan koo yeroo ulfaa sochii qaamaa gochuu akkan qabu yaadu	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
534	Ogeeyyiin fayyaa koo yeroo ulfaa sochii qaamaa gochuu akkan qabu yaadu	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala

D.Kaka'umsa ajajamuu (safartuu al-kallatti (istaandaardii jijjiirama)

535	walumaa galatti, abbaan manaa/hiriyaan kee yeroo ulfaa maal gochuu qabda jettee yaaduuf hangam dhimma qabda	1. Tasumaa miti 2. Miti 3. Yaadaa hin kabuu 4. Hamma tokko 5. Baay'ee
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536	Hiriyoonna kee dhihoo ta'an maal gochuu qabda jedhanii yaadan hammam siif dhimmicha	1. Tasumaa miti 3. Yaadaa hin kabuu 4. Hama tokko	2. Miti 5. Baay'ee
537	Obboleettiin/obboleessi kee maal gochuu qabda jettee yaadu hangam si dhiba	1. Tasumaa miti 3. Yaadaa hin kabuu 4. Hama tokko	2. Miti 5. Baay'ee
538	Haati kee maal gochuuf akka yaaddu hangam siif dhimmi	1. Tasumaa miti 3. Yaadaa hin kabuu 4. Hama tokko	2. Miti 5. Baay'ee
539	Fe'iinsi hojii mana keessatti sochii qaamaa yeroo ulfaa irratti dhiibbaa akkamii akka qabu	1. Tasumaa miti 3. Yaadaa hin kabuu 4. Hama tokko	2. Miti 5. Baay'ee
540	Ollaan kee maal gochuuf akka yaadan hangam dhimma itti ba'a	1. Tasumaa miti 3. Yaadaa hin kabuu 4. Hama tokko	2. Miti 5. Baay'ee
541	Ogeeyyiin fayyaa keessan maal gochuuf akka yaadan hangam isin dhimma itti baata	1. Tasumaa miti 3. Yaadaa hin kabuu 4. Hama tokko	2. Miti 5. Baay'ee

E.Amantii to'annoo (safartuu al-kallatti to'annoo amala hubatame)

542	Akkamitti dhaqqabummaan dhaabbilee yeroo ulfaa sochii qaamaa keessan irratti dhiibbaa uumuu danda'a	1. Tasumaa miti 3. Yaadaa hin kabuu 4. Hama tokko	2. Miti 5. Baay'ee
543	Mijachuun meeshaalee yeroo ulfaa sochii qaamaa keessan irratti dhiibbaa akkamii geessisuu danda'a	1. Tasumaa miti 3. Yaadaa hin kabuu 4. Hama tokko	2. Miti 5. Baay'ee
544	Yeroo ulfaa sochii qaamaa irratti dhiibbaan yeroo akkamii akka qabu	1. Tasumaa miti 3. Yaadaa hin kabuu 4. Hama tokko	2. Miti 5. Baay'ee
545	Haalli fayyaa keessanii yeroo ulfaa sochii qaamaa keessan irratti dhiibbaa akkamii akka qabu	1. Tasumaa miti 3. Yaadaa hin kabuu 4. Hama tokko	2. Miti 5. Baay'ee
546	Fe'iinsi hojii mana keessatti sochii qaamaa yeroo ulfaa irratti dhiibbaa akkamii akka qabu	1. Tasumaa miti 3. Yaadaa hin kabuu 4. Hama tokko	2. Miti 5. Baay'ee

F.Humna hubatame (safartuuwan al-kallattiin to'annoo amala hubatame)

547	Mijaa'ina sana akkan hin arganne yoo natti dhaga'ame sochii qaamaa gochuun na rakkisa ture	1. Cimsee walii hin galu 3. Yaadaa hin kabuu 5. Cimsee walii gala	2. Walii hin galu 4. walii gala
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548	Bakka mijaawaa akkan hin arganne yoo natti dhaga'ame sochii qaamaa gochuun na rakkisa ture	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
549	Yeroon gahaa akkan hin qabne yoo natti dhaga'ame sochii qaamaa gochuun natti ulfaata ture	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
550	Osoo rakkoon fayyaa qabaadhee sochii qaamaa gochuun natti ulfaata ture	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
551	Mana keessatti ba'aan hojii akkan qabu yoo natti dhaga'ame sochii qaamaa gochuun natti ulfaata ture	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala

Kutaa 6 Yeroo dahumsa duraa sochii qaamaa gochuuf yaaduu yeroo ulfaa yoo xiqqaate torbanitti guyyaa sadii guyyaatti daqiiqaa 30f sochii qaamaa aerobic gochuun faayidaa isaa beekta haa jennu

601	yeroo ulfaa sochii qaamaa gochuuf ni yaadu	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
602	Yeroo ulfaa sochii qaamaa gochuuf murteesseen jira	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
603	Yeroo ulfaa sochii qaamaa gochuuf nan yaala	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala
604	Yeroo ulfaa sochii qaamaa gochuu nan barbaada	1. Cimsee walii hin galu 2. Walii hin galu 3. Yaadaa hin kabuu 4. walii gala 5. Cimsee walii gala

9.11. Curriculum Vitae

1. Personal Information

Name: Tariku Girmay Tesfaye

Gender: Male

Age: 32

Date of birth: April-02-1985 E.C.

Place of birth: Harar Town.

Nationality: Ethiopian

Marital status: Single

Current Address: Harar town

Telephone number: +251-963889048, +251-927908675

Email address: jotariku84@gmail.com

2. EDUCATION HISTORY

Level	Class	Year (E.C)	Name of school/ collage
Primary school	1-8	1991-1999	Kelad ameba primary school
Secondary school	9-10	2000-2001	Guner secondary school
Preparatory	11-12	2002-2003	Aboker preparatory school
Undergraduate		2007-2010	Harar health science. college
Post graduate		2014...	Haramaya university college of health and medical science.

3. HIGHER EDUCATION DETAILS

- ✓ Undergraduate institution attended: Harar health science. College in Department of midwifery.
- ✓ Year of Graduation 2010 E.C /2018 G.C.

4. Training:

Certificate	ART:Training obstetric Ultrasound ,Adolescent youth Health(AYH)
Certificate	Baby friendly Health,(BFHI),Essential care for baby ,BEmONC

5. Post graduate details.

- ✓ Following MPH at Haramaya University College of Health and Medical Science.
- ✓ Working at Hiwot fana specialized hospital.

6. Experience.

At Hiwot fana specialized hospital Last 4 years.

7. SKILLS

- ✓ **Computer skill:** MS- office (MS- Word, MS- Excel, Power point, publisher).

Other skill: Being a team member communicative and leadership experienced, cooperative and transparent. Working independently, assuming responsibility. Managing the project, productions, man power and resource cost effectively. Learning life long, improving the skills and exploring new areas.

8. Project experience.

- ✓ Final year project on factor affecting family planning utilization among child bearing age in Jenela woreda, Harar town eastern harerge zone, Oromia region Ethiopia

9. Language proficiency:

- ✓ Afan Oromo. Excellent communication (speaking and writing)
- ✓ Amharic- Excellent communication (speaking and writing)
- ✓ English-Excellent communication (fluent speaking and writing)

10. Hobbies:

- ✓ Reading, different books
- ✓ Browsing internet
- ✓ Public service and volunteer work.

Reference

1. Mr. Assefa Tola (MPH, Assistant Professor), Assistant professor at Haromaya University
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