ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSNG AND MIDWIFERY

POST GRADUATE PROGRAM

Assessment of Knowledge, Attitude, Practice Towards Antenatal Exercise And Its Associated Factor Among Pregnant Women Attending Antenatal Care At Health Centers In Kirkos Sub City, Addis Ababa, Ethiopia, 2018.

Principal investigator: Beyene Tadesse (BSc)

Thesis Report Submitted To Addis Ababa University, College Of Health Sciences, School Of Nursing And Midwifery For Partial Fulfillment Of Requirements For The Degree Of Masters Of Maternity And Reproductive Health Nursing.

June, 2018

Addis Ababa, Ethiopia

ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

Assessment of Knowledge, Attitude, Practice Towards Antenatal Exercise And Its Associated Factor Among Pregnant Women Attending Antenatal Care At Health Centers In Kirkos Sub City, Addis Ababa, Ethiopia, 2018.

Primary advisor: - Mesfin Abebe (MSc,BSc) Asst. Professor

Co-advisor:- Semarya Berhe (PhD Fellow,MSc,BSc) Asst. Professor

June, 2018

Addis Ababa, Ethiopia

APPROVAL SHEET

ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY GRADUATE STUDIES

I hereby certify that I have read and evaluated this research thesis entitled assessment of knowledge, attitude, practice towards antenatal exercise and its associated factor among pregnant women attending antenatal care at health centers in kirkos sub city, Addis Ababa, Ethiopia, 2018 prepared under my guidance by Beyene Tadesse.

Beyene Tadesse	_____	_____
Principal investigator	Signature	Date

I recommend that it is submitted as fulfilling the requirements of research thesis.

_____	_____	_____
1. Primary advisor	Signature	Date
_____	_____	_____
2. Co-advisor advisor	Signature	Date

As a member of the MSc research open defense examination, I certify that I have read and evaluated the thesis prepared by Beyene Tadesse and examined the candidate. I recommend that the thesis be accepted as fulfilling the thesis requirements for the degree of masters of Science in Maternity and reproductive health nursing.

_____	_____	_____
Examiner	Signature	Date

Statement of the author

By my signature below, I declare and affirm that this Thesis is my own work. I have followed all ethical and technical principles of scholar in the preparation, data collection, data analysis and compilation of this Thesis. Any scholarly matter that is included in the Thesis has been given recognition through citation.

This thesis is submitted in partial fulfillment of the requirements for a master degree at the Addis Ababa University. The thesis will deposit in Addis Ababa University Library and is made available to borrowers under the rules of the Library. I solemnly declare that this thesis has not been submitted to any other institution anywhere for the award of any academic degree, diploma of certificate.

Brief quotations from this thesis may be made without special permission provided that accurate and complete acknowledgement of the source is made. Requests for permission for extended quotations from or reproduction of this thesis in whole or in part may be granted by the Head of the School or Department when in his or her judgment the proposed use of the material is in the interest of scholarship. In all other instances, however, permission must be obtained from the author of the thesis.

Beyene Tadesse	_____	_____
Principal investigator	Signature	Date
_____	_____	_____.
Primary advisor	Signature	Date
_____	_____	_____
Co-advisor advisor	Signature	Date

ACKNOWLEDGEMENT

First, I would to thank my advisors Mr. Mesfin Abebe (Asst. professor) and Mrs. Semarya Berhe (Asst. professor, PhD fellow) for their valuable support for the preparation of this thesis.

My Deepest and heartfelt appreciation goes to AAU, School of nursing and midwifery for providing the opportunity to develop this research thesis. I want to extend my thanks for the Librarian & computer lab staffs of AAU.

I would like to thank for all Kirkos sub city health bureau office administrators for their cooperation and giving valuable data.

My special thanks goes to Mr. Endalew Gemechu (Asst.professor) and Mr. Bazie Mokonen (MSc,BSc) for reviewing questioner tool and giving constructive comments.

My acknowledge also goes to Mr. Fkadu Ag (Asst. professor, PhD fellow) for his support.

I would also like to extend my thanks to study participants, data collectors and supervisors and my class mate.

The last but not the least, my special thanks also go for my family and friends for their love and encouragements to accomplish my study.

LIST OF ACRONYMS AND ABBREVIATIONS

ACOG---American Congruence of Obstetrics and Gynecology

AOR----Adjusted Odd Ratio

BMI-----Body Mass Index

CI----Confidence Interval

COR—Crude Odd Ratio

EDHS---Ethiopian Demographic Health Survey

EPMM----Ending Preventable Maternal Mortality

FIGO---International Federation of Obstetrics and Gynecology

GDM---Gestational Diabetic Mellitus

MDSR---Maternal Death Surveillance Reponses

MMR---Maternal Mortality Ratio

OR-----Odd Ratio

RR-----Relative Risk

SDGs---Sustainable Development Goals

SD-----Standard Deviation

TABLE OF CONTENTS

Contents

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

Background: Being physical inactivity during pregnancy increases the risks of pregnancy related complication. Consequently, around 830 thousand of pregnant women were pass way every day worldwide. However, having adequate knowledge helps to do physical exercise during pregnancy in order to avoid these pathologies and its sequel later in life. Therefore, this aimed to assess knowledge, attitude, practice to wards antenatal exercise and its associated factor among pregnant women attending antenatal care at health centers in Kirkos sub city, Addis Ababa, Ethiopia, 2018. **Methodology:** A Health facility based cross-sectional quantitative study design was employed and 355 of participant were invited to interview and got 100 % response rate. It studied from March 6-April 24, 2018. Data entered into a computer using Epi data version 4.2 and analyzed by SPSS version 2. Binary and multivariate logistic-regressions were used to identify possible predictors. And OR and 95% CI were used to measure strength of associations at p-value of <0.05. **Result**: About 56.6% and 52.1% pregnant women were not knowledgeable and had positive attitudes about antenatal exercise respectively. In addition, 24.8% practiced antenatal exercise. Significant associations was found between knowledge of antenatal exercise and better schooling like college with AOR= [2.85, 95% CI (1.38, 5.91), *P*=0.005]. Pregnant who was knowledgeable about antenatal exercise were more likely to have favorable attitude and practiced antenatal exercise with AOR= [5.65, 95% CI (3.26, 9.80), *p*=0.000] and AOR= [3.76, 95%CI (1.68, 8.45), *P*=0.001] respectively. Moreover, experience of physical exercise before pregnancy was found a significant influence on practice with AOR= [0.42, 95%CI (0.211, 0.84), *P* = 0.014] **Conclusion:** This study indicated majority of the participant were not knowledgeable and more than half had positive attitude about antenatal exercise and level of practice of antenatal exercise is very low. Therefore, health care providers and other respective bodies should be creating awareness on actual benefits of Antenatal exercise to prevent pregnancy-related complication.

Key words: knowledge, attitude, practice, antenatal exercise, pregnant women

CHAPTER ONE: INTRODUCTION

1.1 Background

Providing comprehensive antenatal care helps to have safe mother hood or positive pregnancy experience, these comprehensive cares includes, risk identification, prevention and management of pregnancy-related or concurrent diseases; and health education and health promotion(1). One of the health promotion and preventing pregnancy related complication is physical exercise in pregnancy time (2-4). Physical activity is a bodily movement produced by the contraction of skeletal muscles in all stages of life maintains and improves cardio respiratory fitness, reduces the risk of obesity and associated comorbidities, and results in greater longevity. Exercise is a structured or planned and repetitive movement to improve or maintain one or more components of physical fitness(2, 4, 5).

Pregnancy is an ideal time for behavior modification, maintaining, or adopting a healthy life style. Participating in regular physical activity in all phases of life, including pregnancy, helps to maintain and health promotion benefit(2, 4, 6). The earliest recommendations of prenatal physical exercise largely reflected the cultural and social norms of the times, rather than scientific evaluation. However, from the 18^{th} Century till current studies showed that maternal physical activity (PA) were viewed favorably and associated with easier labor, reduced fetal size and improves sleep (7-9).

Currently, American college of obstetrics and gynecology (ACOG) committee opinion#650 recommends light to moderate physical activity during pregnancy has minimal risks and has been showed to benefit most of the women, with some modification to exercise routines may be necessary because of normal anatomic and physiologic changes and fetal requirement (2, 10). For healthy pregnant and postpartum women, at least 150 minutes per week a moderate intensity of aerobic exercise, is recommended(2, 3). Pregnant women who are regularly engaging in vigorous intensity aerobic activity (i.e., the equivalent of running or jogging) or who highly active can continue physical activity during pregnancy. And their health care provider should better to counsel how and when physical exercise will be done over time(2).

Growing evidence showed that participating in exercise in pregnancy time reduces the risk of pregnancy related complications (e.g., preeclampsia, gestational diabetes mellitus), shorten the

duration of labor, reduce low back pain and antenatal and postnatal depression(2-4, 7, 10). Furthermore, decreased rate of cesarean section and operative vaginal delivery and reduce delivering macrocosmic baby (10, 11).

Pregnant women that are physical inactive or sedentary life style are associated with pregnancy related complication and its squeal (3). As a result, due to physical inactivity and other preventable and immeasurable pregnancy related complication thousands of pregnant women suffered different problem and lose their life everyday worldwide and majority of death is from developing country (12). As study showed in Jima town Ethiopia on intensity and level of physical activity around 1.46% were physical active during pregnancy (13). It is very crucial to create awareness about benefit and contraindication, and engaging in physical exercise to compact pregnancy related complication. As far as the researcher knowledge, there is no study on knowledge, attitude, and practice of physical exercise during pregnancy among pregnant women in our country especially, in Kirkos sub city, Addis Ababa. Therefore, this study is concerned to assess knowledge, attitude and practice towards antenatal exercise among pregnant women to fill the gap by generating base line information.

1.2 Statement of problem

In the general population, Physical inactivity is the fourth leading risk factor of early mortality worldwide(5). Sedentary behavior during pregnancy is associated with serious short and long-term risks for mothers and babies(3). Pregnant women that are sedentary during pregnancy or physical inactive are at increased risk for gestational diabetes, preeclampsia, excessive gestational weight gain, complications during labor and birth, postpartum weight retention and more than 60% pregnant women suffered low back pain. In addition to this, being in sedentary activity life styles also increase the risk of antenatal and postnatal depression (2, 3).

Consequently, thousands of pregnant women pass away due to these risks and other immeasurable and preventable pregnancy related complication. Worldwide maternal mortality ratio (MMR) is 216 and Sub Saharan Africa has a very high MMR is 546, (12). Ethiopia is one of sub-Saharan country with high MMR, 412 (14). Although, there is no central global strategy which prescribes a list of interventions that will maximize progress toward EPMM in every country, to achieve MDG5 in decreasing maternal mortality by two third, by 2030 (15). But expanding health promotion and preventative services, and improving integration of all forms of care for women which is crucial to prevent pregnancy related complication(1, 6, 15).

However, ACOG recommends participating in structured aerobic physical exercise in pregnancy time reduces excessive maternal weight gained and risk of GDM and its complications by 25% (7, 16, 17). And also it reduced the risk of large new borne, rate of operative delivering, low back pain, antenatal and postnatal depression and helps to cope up with labor pain (2, 3, 7, 10, 11, 18) and reduced risk of having of cesarean delivery by 15% than physically inactive(18). Engaging in exercise like brisk walking decrease by 30-33% the risk of preeclampsia (7).

Regardless of the importance of physical exercise, some pregnant women and health care provider concerned that regular physical exercise during pregnancy my cause fetal risks, but as studies showed except vigorous physical activity under dehydration condition, exercise in supine position, and motionless posture, it is beneficial to pregnant women and fetus (2, 7, 10, 19).

In Africa a systematic review study showed that low levels of physical exercise in pregnancy is prevalent in developing and developed countries (20). This may due to lack of information or counseling, awareness about benefit of antenatal exercise and from inadequate knowledge of physical exercise during pregnancy (3, 21-24). As studies revealed in South Africa (46%) are physically inactive whereas a study in Jima town Ethiopia (76.4%) of pregnant women had sedentary life style (13, 20). As far as the researcher's knowledge, there is no study in our country especially in the study area concerning knowledge, attitude and practice towards regular physical exercise during pregnancy among pregnant women. Therefore, this study aimed to assess knowledge, attitude, practice towards antenatal exercise and its associated factor of pregnant women attending antenatal care at health centers in Kirkos sub city to produce base line data for further investigation and intervention based on the findings.

1.3 Significance of the study

In pregnancy, physical inactivity and excessive weight gain have been known as independent risk factors for maternal obesity and pregnancy related pathologies, including GDM, as a result, a thousand pregnant women pass away due to preventable pregnancy related complication. In addition to this, during pregnancy many our mothers and sisters are at risk of having cesarean section, operative delivery, low back pain, and antenatal and postnatal depression.

Preventing pregnancy related pathologies or complication by improving maternity health care services including antenatal exercise, which is a convenient for pregnant women and contributes to reduction of maternal morbidity and mortality. Apparently, knowledge, attitude and practice towards exercise during pregnancy were not assessed. Therefore, the objective of this study was to assess KAP towards antenatal exercise among pregnant women in Kirkos sub city, Addis Ababa, Ethiopia.

The study has the following significances; it has generated information about knowledge, attitude and practice of pregnant women towards physical exercise during pregnancy among pregnant women in facility of attending antenatal care. In addition, this study helps to identify important misconception of pregnant women to wards exercise during pregnancy on advantage for themselves and their fetus. The result that obtained from this study might indicate as to making an emphasis on the possible interventions depending on the findings. Moreover, it can give insight and base line data on to policy makers (academic institution and MOH), health care provider for future planning and emphasizing or developing antenatal physical exercise guideline by integrating into maternity health service. Finally, this study will be an opening door and or it gives base line information for future researcher.

CHAPTER TWO: LITERATURE REVIEW

2.1. Concept of antenatal exercise

Physical activity, defined as any bodily movement produced by the contraction of skeletal muscles in all stages of life maintains and improves cardiorespiratory fitness, reduces the risk of obesity and associated comorbidities, and results in greater longevity. Women who begin their pregnancy with a healthy lifestyle (e.g., exercise, good nutrition, nonsmoking) should be encouraged to maintain those healthy habits. Those who do not have healthy lifestyles should be encouraged to view the preconception period and pregnancy as opportunities to embrace healthier routines(2). Exercise, defined as physical activity consisting of planned, structured, and a repetitive bodily movement done to improve one or more components of physical fitness and it is an essential element of a healthy lifestyle. For healthy pregnant and postpartum women, the ACOG guidelines recommend at least 150 minutes per week of moderate-intensity aerobic activity (i.e., equivalent to brisk walking) (2). ACOG recommends a moderate-intensity exercise for at least 20–30 minutes per day on most or all days of the week should be developed with the patient and adjusted as medically indicated is recommended(2).

2.1.1. Safe Exercises to initiate or continue:

- According to ACOG, Walking, Swimming, Stationary cycling and Low-impact aerobics recommended for women with uncomplicated pregnancies. Yoga modified positions that result in decreased venous return and hypotension should be avoided as much as possible(2).
- Running or jogging in consultation with an obstetric care provider, running or jogging, racquet sports, and strength training may be safe for pregnant women who participated in these activities regularly before pregnancy(2).

2.1.2. Activities to be avoided:

Contact sports (e.g., ice hockey, boxing, soccer, and basketball) and Activities with a high risk of falling (e.g., downhill snow skiing, water skiing, surfing, off-road cycling, gymnastics, and horseback riding) (2).

2.1.3. Benefits of exercise during pregnancy

Regular aerobic exercise during pregnancy has been shown to improve or maintain physical fitness (2, 6). Observational studies of women who exercise during pregnancy have shown benefits such as decreased GDM, reduce the risk rate of having cesarean and operative vaginal delivery (10, 18, 25). And also facilitate postpartum recovery time and it reduced low-back pain (2, 10),. Studies have shown that exercise during pregnancy can lower glucose levels in women with GDM, or help prevent preeclampsia, reduce excessive gestational weight gain and reduce risk of delivery macrocosmic baby. It helps for improvement of cardiorespiratory endurance, physical fitness, psychological wellbeing and shortens duration of labor (2, 10)

2.2.4. Absolute and relative contraindications to aerobic exercise during pregnancy

women with certain chronic medical conditions, including cardiovascular, respiratory, and systemic diseases or relative contraindications are considered high risk (2, 10).Absolute contraindications include gestational hypertension, preeclampsia, ruptured membranes, incompetent cervix, bleeding in the second or third trimester, and multiple gestations at risk for premature labor, placenta previa, severe anemia and premature labor(2, 10, 26).

Concerning considered relative contraindication:- Anemia, Unevaluated maternal cardiac arrhythmia, Chronic bronchitis, poorly controlled type 1 diabetes, Extreme morbid obesity, Extreme underweight (BMI less than 12),History of extremely sedentary life style, Intrauterine growth restriction in current pregnancy, Poorly controlled hypertension, Orthopedic limitations, Poorly controlled seizure disorder, Poorly controlled hyperthyroidism and Heavy smoker are (2, 3, 10)

2.2. Literature related to knowledge, attitude and practice to wards antenatal exercise

A cross sectional study conducted in Brazil on KAP of antenatal exercise among 161 pregnant women showed that 68.1% of the women had heard about the performance of physical exercise during pregnancy and 65.6% of respondents had adequate knowledge based on established criteria of the study. The main source of information reported by pregnant women were Television(55.3%), Books and magazines 24.2% and healthcare units (20%) (27). Around (93.8%) of women had attitude towards physical exercise in pregnancy. 29% stated that they had exercised or were exercising during their current pregnancy; however, of these practicing 20% had good practice, i.e. occurring at least three times a week. Walking

being the most accomplished. The principal barriers to exercising were lack of time 55.5%and feeling too tired 18.6%and uncomfortable 14.2% (27).

Another study conducted in Brazil on practice pattern and associated factor, compared to the pre-pregnancy period, the prevalence of physical activity among participants was lower throughout pregnancy (20.1%).Half of the women interrupted practicing physical exercise due to pregnancy. The lowest prevalence of exercise was observed in the first (13.6%) and third trimesters (13.4%). Less than half of participants (47.4%) received physical exercise guidance during antenatal visits, and 14.9% were told to stop exercise. The most common guidance way was individualized conversations or discussion with a physician during antenatal care (95.2%).Their sources of information were groups, leaflets, video, and health professionals were minimal. The most common physical exercise reported during all three trimesters was walking, with the greatest frequency during the first trimester (82.2%). The second most common activity was water aerobics, with the greatest frequency during the second and third trimesters. Other types of exercise reported like stretching, Pilates, yoga, dance, weight lifting, biking, swimming, aerobics prenatal class, and pelvic floor exercises(28).

A study in Colombo, Srilanka among 110 pregnant women showed that majority (72.7%, n=80) had poor knowledge of antenatal exercise and 27.3% of participants are knowledgeable. Only 6.4% (n=7) knew the importance of pelvic floor strengthening exercises. 51.8 %(n=57) pregnant women was advised to perform antenatal exercises pregnancy. A majority participant (48.2%, n=53) have been recommended to perform walking, while 30.9% (n=34) were recommended to perform ankles and toes exercises. Concerning attitude, 49.1%, and 35.5% had somewhat and favorable respectively and 5.5% had unfavorable attitudes towards it. An overall practice was ‘poor’, (86.4%, n=95) not exercising .Only 45.5% (n=50) of pregnant mothers were doing ‘walking’ as an exercise more than three times a week. Only about one fourth (23.6%, n=26) of pregnant mothers were practicing. Regarding their sources of information were written media (49.1%) and followed by electronic media (48.2%) (29).

Similarly, a study-conducted India on 200 pregnant women revealed that the total mean knowledge score was 20.53 ± 2.08. Regarding the types of exercises awareness breathing exercise, back exercise and abdominal exercise, 54, 60 and 42% were among the known respectively. When asked about the benefits of antenatal exercises the total mean knowledge score was 6.2 ± 2.1. The total mean knowledge score for contraindications was 8.6 ± 2.6 (30).

51% had favorable attitude. The level of practice of exercise during pregnancy among our respondents was very less (18%) (30).

Additionally, relative study conducted in India among 106 pregnant women on knowledge, perception and attitude towards role of physical therapy, only 46% of them knew about antenatal exercises. Family and friends (40%) were the main source for their information about antenatal exercises. Respondents had awareness of aerobics (28%), back care exercises (20%), and abdominal exercises (21%), pelvic floor exercises (13%), relaxation and breathing exercise (21%), respectively, as types of antenatal exercise. However, majority of respondents (80%) were not aware of or not sure, about the efficacy of different types of antenatal exercise available. 60% of the respondents had a positive attitude to antenatal exercise. However, only 30% of the participants had adequate knowledge of the benefits of antenatal exercise (31).

A meta-analysis study in Australia ascertained barriers to physical activity were predominantly intrapersonal like fatigue, lack of time, lack of knowledge and pregnancy awkwardness. Most facilitaer included maternal and fetal health benefits (intrapersonal), social support (interpersonal) and pregnancy-specific programs. In addition, few environmental factors identified like policy, accessibility and availability of services. Little information was available about attitudes, barriers and enablers of physical activity for pregnant women with gestational diabetes mellitus who are at risk from physical inactivity(32).

A systematic review study in Canada on pattern and determinant of physical exercise during pregnancy was examined. Changes in any exercise (regardless of intensity or duration) reported decreases from pre-pregnancy to pregnancy. The percentage of women who reported exercising before and during pregnancy ranged from 63% to 87.4% and 38–78.4% respectively. Prevalence exercise during pregnancy was 29% and met the ACOG guidelines(33). Another cross sectional on practice and pattern of Antenatal and Postnatal exercise among Nigerian Women showed that prevalence of physical exercise in antenatal was 84.7% (160/189) and mostly based on self-prescription (32.5%), and (28.1%) and (16.3%) prescribed by nurse and doctor. Aerobic (40.6%), relaxation and breathing (26.3%) and stretching (35.6%) were the most common type of physical exercises. Exercise frequency was mostly 1-2 times per week (40.6%)(34).

A study conducted in selected hospital among 189 Nigeria pregnant women on knowledge and attitude of antenatal exercise and its summative knowledge score revealed was 47.6% and 5.82% of the respondents had below and average knowledge, while 46.6% had good knowledge of antenatal exercises. Relaxation and breathing (59.8%), back care (51.3%), and muscle strengthening (51.3%) exercises are among most commonly known antenatal exercise. Prevention of back pain risk and excess weight gain had (75.9%) and (69.1%) were perceived as benefits. lower extremities swelling (31.8%) and excessive weight gain or loss (30.7%) was considered as contraindications to antenatal exercise. Around fifteen point eight percent of the respondents had negative attitude towards exercise. Lack of feeling to exercise (63.3%), tiredness (70.0%), and insufficient information on exercise (83.3%) were the most implicated factors for negative attitude towards antenatal exercises(22).

Similar study conducted in Zambia on 300 pregnant women, only 19% (n=57) of respondents had adequate levels of knowledge and majority 74% (n=222) exhibited inadequate levels of knowledge. Television and books were the common source of information for 25% (n=75) of respondents and only 5% (n=15) reported having obtained information from a physiotherapist). Their attitudes showed around 93% (n=279) attached positive attitudes towards exercise and seeking medical advice on exercise during pregnancy. Only 67% (n=201) reported practicing or participating in exercise during their pregnancy time and 63% (n=189) in previous pregnancies. Walking was the most prevalent type of exercise 30% (n=90) commonly identified by respondents(35).

One cross sectional study conducted in Jima town, Ethiopia on level and intensity physical activity during pregnancy among 304 urban pregnant women is 1.46% practice physical exercise during pregnancy (13).

2.3 Factors associated with knowledge, attitude, Practice towards antenatal exercise

A study showed in Brazil one of the factor associate with knowledge of physical exercise in pregnancy was significantly higher among the women with better schooling. Nevertheless, no statistically significant association between the practice of exercise and education level or being in paid employment. The practice of physical activity during pregnancy is significantly higher among women who had had fewer pregnancies, nulliparous being the group of women

who were most likely to exercise(27). Relative study on physical exercise pattern and factor affecting exercise during pregnancy conducted in Brazil showed exercise practice pattern were positively associated with higher educational level ,primiparity (OR=1.49; CI 95% 1.07–2.07), exercising before pregnancy (OR= 6.45; CI 95% 4.64–8.96), and exercise guidance during prenatal care (OR=2.54; CI 95% 1.80–3.57)(28).

Similar studies Sri lanka Colombo showed that ,Doing a job during pregnancy is significantly associated with 'Good/Excellent' level of knowledge (p=0.02), while living in a district other than Colombo also associated significantly with a 'Good/Excellent' level of knowledge (p=0.039) and also a 'Good' level of practice (p=0.042). Average family monthly income of > Rs. 25000 was associated with a level of 'Favorable' attitude (p=0.004)(29).

Furthermore, a study conducted in Canada on review on physical exercise pattern during pregnancy and its determinant showed that Married women two times to meet guideline. Socioeconomic status (high household income), premipara, high education level, younger age and pre-pregnancy exercise women were more active during pregnancy. Another association results employed women were twice as likely to engage in aerobic exercise for a minimum of 20 min on two or more days of the week (41.9% vs. 22.7%)than un employed(33).

Similarly a study conducted in Zambia factor associated with exercising were lack of awareness of type of exercises 60% (n=180). Educational levels was found insignificant with practice but it had positive association with knowledge and attitude ($p<0.03$). Also, the number of pregnancies was positively associated with the pregnant women's knowledge (p=0.001), attitude ($P<0.01$) and Practice (p=0.01) towards exercise in pregnancy(35).

From the study of Nigeria Age was significantly influences knowledge about contraindications to antenatal exercise ($p = 0.001$), while attitude was influenced by age and occupation, respectively ($p< 0.05$). There is significant association between attitude and knowledge about benefits and contraindications to ANEx ($p < 0.05$)(22). Similarly, There was significant association between exercise practice and education level (χ^2=18.795; P=0.001)(34).

2.4. Conceptual Frame Work

Concepts that directly associate with major variable of knowledge, attitude, practice towards antenatal exercise adapted and modified from literature of Mbada CE, Akinwande OA, et al. and Sujindra ,Nigeria and India(22, 31). This conceptual framework considers socio demographic characteristic, practice of physical exercise in pre-pregnancy, obstetrical history, awareness and source of information). Pregnancy and obstetric history (number of pregnancy, parity, number of child, history of miscarriage) influence positively and negatively for knowledge, attitude and practice towards antenatal exercise during pregnancy.

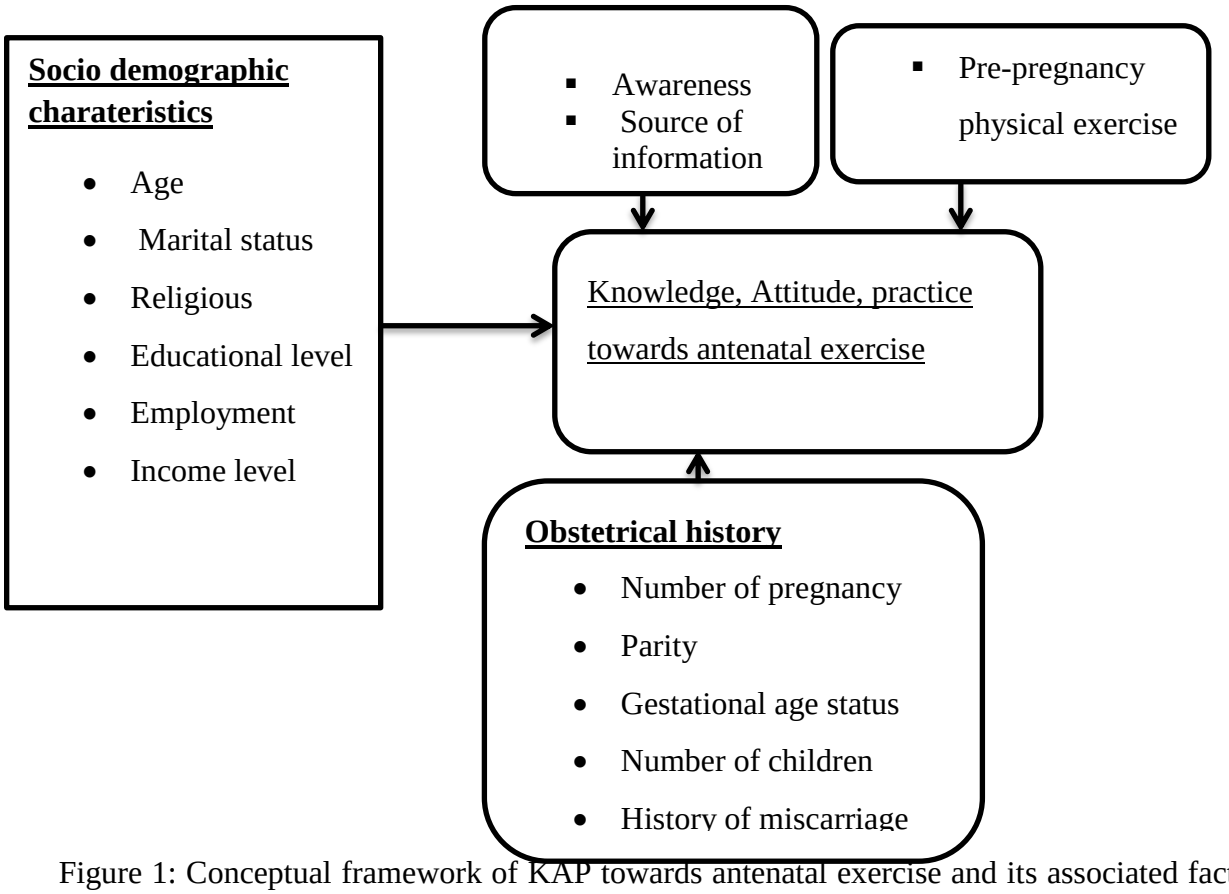


Figure 1: Conceptual framework of KAP towards antenatal exercise and its associated factors for pregnant women attending antenatal care at selected governmental health centers in Kirkos sub city, Addis Ababa, Ethiopia, 2018.

(Adapted and modified from Mbada CE, Akinwand OA, et al. And Nayak R, Paes LKAP towards antenatal exercise Nigeria and India).

CHAPTER THREE: OBJECTIVE OF THE STUDY

3.1 General objective

To assess knowledge, attitude, practice towards antenatal exercise and its associated factor among pregnant women attending antenatal care at health centers in kirkos sub city, Addis Ababa, Ethiopia, 2018**.**

3.2. Specific objectives

To assess knowledge of exercise during pregnancy among pregnant women attending antenatal care.

To assess attitude towards exercise during pregnancy among pregnant women attending antenatal care.

To assess practice of exercise during pregnancy among pregnant women attending antenatal care.

To determine factors associated with knowledge, attitude and practice of exercise during pregnancy.

CHAPTER FOUR: METHOD AND MATERIALS

4.1. Study area

The study was conducted at selected health centers of Kirkos sub city, Addis Ababa, Ethiopia. Kirkos sub city is one of the center sub city in Addis Ababa, Which is place of African union. It is located in east direction, Bole sub city, north direction Arada and Yeka sub city (national palace), in west direction, Lideta sub city and south direction Nifas silk sub city. It has 11 weredas and 8 health centers in the sub city. Its total area or size is around 14.62 sq.km and Population density per sq. m are16, 104. The total projected population estimated to be 235,441. Of these 110,069 Males and 125,372 are Females. Among the total population of female around 79870 are found in reproductive health age group(36).

4.2. Study design

A health facility based cross-sectional quantitative research design was employed.

4.3. Study period

The study was conducted from March 6 to April 24, 2018 GC.

4.4. Source of population and study population

4.4.1 Source population

The source of population was all pregnant women attending Antenatal care in Kirkos sub city health facility during the study period.

4.4.2. Study population

The study population was all pregnant women attending ANC at selected health centers in Kirkos sub city during the study period.

4.4.3. Study participant

The study subject was selected pregnant women attending ANC at selected health centers in Kirkos sub city during the study period and fulfill inclusion criteria.

4.5. Eligible Criteria

4.5.1. Inclusion criteria

- ❖ All pregnant women who are mentally and physically capable of being interviewed and those who volunteer to participate in the study.
- ❖ Pregnant woman attending antenatal cares at governmental health centers

4.5.2. Exclusion criteria

- ❖ Pregnant women < 18 years old. This is because ethical issue and Ethiopian constitution not allowed marriage of women less than 18 years.

4.6 Sample size determination

The sample size was determined using single proportion formula.

this study considered the proportions of pregnant that are knowledgeable about antenatal exercise to be 50% in order to have large sample size to identify predictors , different socio demographic characteristics with other African country study and to have good generalizability, 5% marginal error, 95% confidence interval and 10% non-response rate were added. The total sample required was calculated to be 355.

$$n= \frac{\left(Z\frac{\alpha}{2}\right)^2 p(1-p)}{d^2} = \frac{Z^2 p(1-p)}{d^2} = \frac{(1.96)^2 X\, 0.5(1-0.5)}{(0.05)^2} == 384$$

n= the required sample size

z= standard score corresponding to 95% confidence interval

p= Assumed proportion of antenatal exercise knowledge 50% in order to have enough sample size

d= the margin of error (precision)

Total pregnant women in all health centers in Kirkos sub city reported within 6 months are around N= 2014.Since the population is <10,000

Nf= $n = \frac{n}{1+n/N} = \frac{384}{1+384/2014}$=323.

Assuming10% non-response rate then 323+ (323×0.1) =355

Nf =355

4.7. Sampling procedure

Step one: first the study area were selected by purposive sampling in order to address with in the given resource (time, money, and transportation). Then, three health centers were selected by simple random sampling technique from eight health centers of Kirkos sub city.

Step two: after calculating the sample size, the sample of study population allocated by using probability proportional to their size. Moreover, each study participant was selected by systematic random sampling every K interval. K=N/n=2014/355=5.67=6. Lottery method was used to select between 1 and 6 participant.

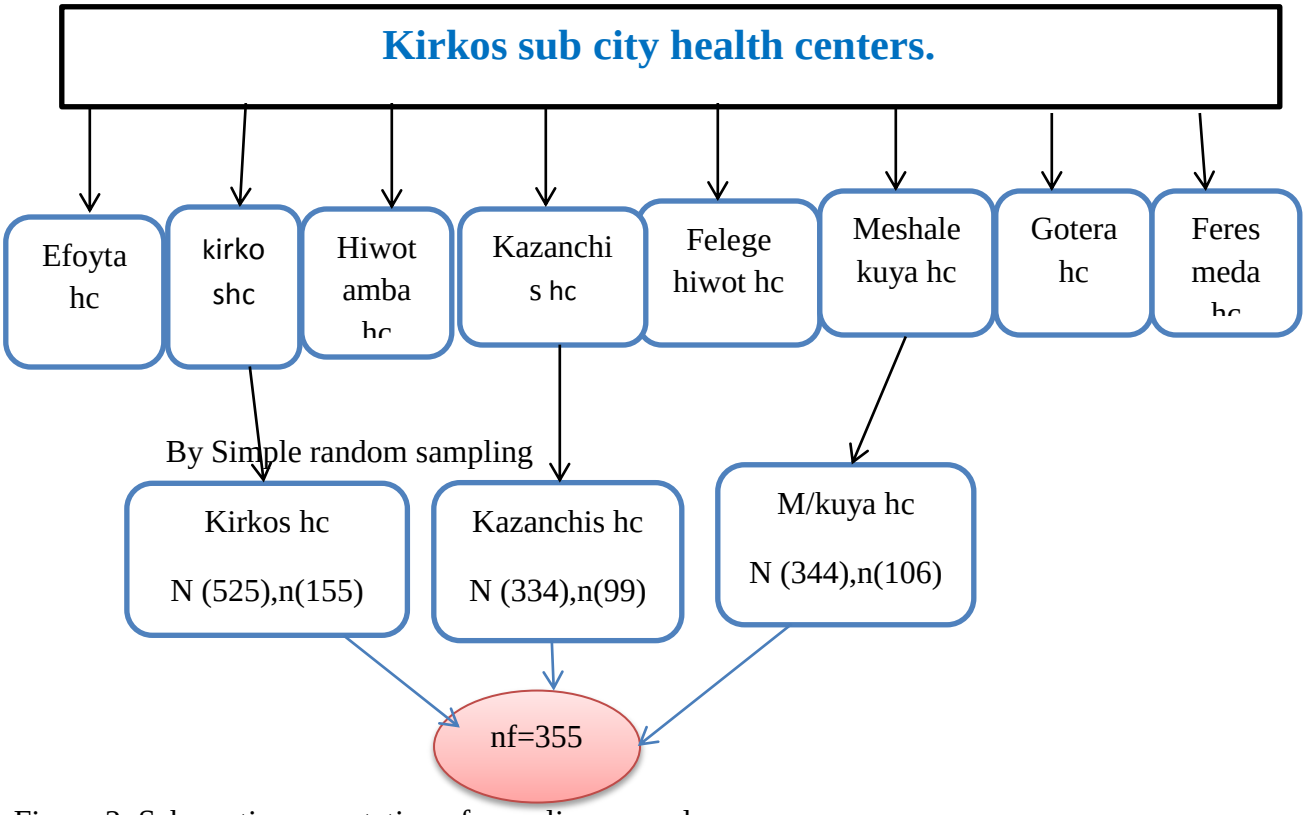


Figure 2: Schematic presentation of sampling procedure

4.8. Sampling frame

	Name of Health centers in Kirkos sub city	Total Number of pregnant women in 6 months in each health center
1	Efoyta HC	N=142
2.	Kirkos HC	N=527,n(155)
3.	Hiwot HC	N=274
4	Kezanchis Hc	N=334, n(99)
5	Felege hiwot Hc	N=59
6.	Feres meda Hc	N=184
7	Meshalekua Hc	N=344,n(106)
8	Gotera Hc	N=150
Total		**2014**

4.9. Study variable

4.9.1 Dependent variables

Knowledge, attitude and practice towards antenatal exercise

4.9.2 Independent variables

- Socioeconomic characteristics:

  Age, religion, educational level, occupation, monthly income, employment and marital status.
- Pregnancy and obstetrical history(gravidity, Parity, gestational ages status, number of children and history of miscarriage)
- Source of information(Media ,health care provider. family or friends), awareness
- Pre pregnancy regular physical exercise experience.

4.10. Operational definition

Ever heard of antenatal exercise: Awareness of different type of physical exercises during pregnancy, these recommended by ACOG.

Knowledge of antenatal exercise: Knowledge of antenatal exercise means knowing or understanding the benefit and contraindication of antenatal exercise.

Knowledgeable: Participants answered correctly to16 knowledge questions, scored greater than, and equal to mean the value.

Not knowledgeable: Participants answered correctly to 16 knowledge questions and scored less than the mean value.

Attitude: A settled way of thinking or feeling towards of antenatal exercise.

Favorable attitude: it refers those who answered to 8-attitude question correctly and scored greater than and equal to the mean value.

Unfavorable attitude: Those who answered to 8-attitude question correctly and scored less than the mean value.

Practice: A pregnant woman who participates in or do any type antenatal exercise in the current pregnancy, that recommended by ACOG.

Good practice: Those who exercise any type of antenatal exercise in frequency at least 3 times in a week and duration ≥20 minute per session.

Poor practice: Exercise any type of antenatal exercise in frequency less than 3 times in week and duration<20 minute per session.

4.11 Data collection instrument and procedure

A structure questionnaire was used for this study, which was adapted and modified from the study conducted in Nigeria, India and Zambia on similar topic (30, 31, 35). The questionnaire items test- retest and yielded an agreement percentage that ranged from 87.4 to 99.6%, the intraclass coefficient was 0.985 (22).The questionnaires were first prepared in English then back translated to Amharic and translated back to English to maintain its consistency. The questionnaires had five parts: the first two part, socio demographic characteristics and obstetrical history include 12 question, and third part is concerning awareness it have 4 question, the fourth part knowledge has 16 question(benefit and contraindication) of antenatal exercise with alternative response of Yes , No and I don't know. The final two parts it includes

8 attitude questions with alternative response yes/no and 6 question on practice of antenatal exercise.

After ethical clearance letter obtained from Addis Ababa heath bureau and supportive letter from the sub city to the study actual health centers and place of pretest conducted, then after the purpose of the study explained to the medical director of each health centers. Moreover, the structured questionnaires pretested in Lideta sub city, Teklehaymanot health centers before the actual data collection on 5% of the study subject outside of the study area to check clarity and consistency of the questionnaire and its cronbach alpha was 83%. After pretest ethnicity variable were removed and the pretested data has been discarded. Data collection was undertaken by 3 nurses and one midwifes who are not working at the antenatal clinic of the health center and supervised by 2 supervisors. After recruiting data collector and supervisor, one day training was given about the objectives and process of data collection. Data collection took place in the antenatal clinic when pregnant mother coming for follow up.

4.12 Data quality assurance

To maintain data quality pretest was conducted and translated questioners in local language. Principal investigator gave training and instruction to data collectors and supervisors. Supervisor and principal investigators were closely following the data collection process. In each day, principal investigator collected the completed questioners from the data collector and checked for missed and incomplete data.

4.13 Data processing and analysis

After data collected, data were edited, coded, cleaned and some consistency checks was made to assess the quality of data and entered in to Epidata 4.2 version. In knowledge question, Yes = 1 and no and don't know = 0. The same thing in attitude question Yes = 1, and No and I don't know = 0 were coded and It was analyzed by computer statistical package for social science (SPSS) version 23. Frequency tables and Charts were used to describe categorical variables. Graphs, central tendency and standard deviations were used to describe numerical variables. Bi-variable and then multi-variable level analysis using logistic regression was done to identify factors that are independently associated with the dependent variable if variables with $P \leq 0.2$. Then for variable associated with $p<0.05$ reported as statically significant and

Odds ratio used for associated potential factor while reported as measure of strength with 95% confidence interval.

4.14 Ethical consideration

Ethical clearance letter was obtained from Addis Ababa University, Department Of Nursing And Midwifery Research Committee and College Of Health Sciences Institutional Review Board and Addis Ababa heath bureau ethical review committee. A formal permission letter was written to Kirkos sub city health bureau office from Addis Ababa health bureau and to respective health centers from the sub city health bureau office and permission was obtained from health centers. Moreover, all the study participants were informed verbally on the purpose before interviewed and, as there is no direct benefit of rather than indirect benefit of the study. In addition to this, participating in this study did not have any potential risks, participants have the right to refuse at any time, and there is no inequity incentive among participants. Furthermore, their confidentiality was maintained and reassured. Beside to this, data collection progress was reported to Addis Ababa health bureau ethical review committee.

4.15 Dissemination of results

Result of the study will be disseminated to Addis Ababa University School of Nursing and Midwifery for partial fulfillment of master's degree in maternity and reproductive health nursing. The findings this study will be presented in different workshop and seminars. Hard and soft copy and will be available in the library of Addis Ababa University for graduate students as well as for other concerned readers. Finally, the study will be submitted to Addis Ababa health bureau ethical review committee and Kirkos sub city health bureau.

5. RESULT

5.1 Socio-economic characteristics of pregnant women attending ANC at health center in Kirkos sub city, Addis Ababa.

From total 355 pregnant mothers who were invited for interview, all consented to participate in the study giving a response rate of (100%). Mean age of the respondents was 27.65(SD± 5.1) years with a minimum and maximum age of 18 and 41 respectively and 83.1% were married. Above one third of the respondents and 19.4% had completed high school and college or university respectively. Concerning to occupation and income around 104 (29.3%) participant had private business, 22.5% were employed in governmental sector. More than half of the respondents belong to the income level of ≥2000 ETB and the median of income of the respondent's was 2000 ETB with interquartile range 1500-30000 ETB (**Table 1**).

Table 1: Socio-economic characteristics of pregnant women attending ANC at health centers in Kirkos sub city, Addis Ababa, 2018(n=355).

Variables		Frequency(N)	Percent (%)
Age			
	15-19	8	2.3
	20-24	107	30.1
	25-29	121	34.1
	30-34	72	20.3
	35 and above	47	13.2
Marital status			
	Single	24	6.8
	Married	295	83.1
	Divorced	15	4.2
	Separated	10	2.8
	Widowed	2	0.6
	Cohabiting	9	2.5
Religion			
	Orthodox	239	67.3
	Protestant	55	15.5
	Catholic	8	2.3
	Muslim	50	14.1
	Other	3	0.8
Educational level			

	≤ Elementary school	162	45.6
	High school	124	34.9
	College or university	69	19.4
Occupation			
	Employed in governmental sectors	80	22.5
	House wife	81	22.8
	Private business	104	29.3
	Employed in NGO	90	25.4
Income level			
	<2000	192	54.1
	≥2000	163	45.9

5.2. Obstetrical characteristics of pregnant women ANC at health center in Kirkos sub city

Majority of the respondents (60.6%) were multigravida and 58.9%, were multiparas. More than ninety per cent of respondents hadn't history of miscarriage and 40 % of the participant were belongs with in third trimester of pregnancy stage (**Table 2**).

Table 2: Obstetrical characteristics of pregnant women attending ANC at health center in Kirkos sub city, Addis Ababa, Ethiopia, 2018 (n=355).

Characteristics		Frequency (n)	Percent (%)
Gravida			
	Premigravida	140	39.4
	Multigravida	215	60.6
Parity			
	Premipara	146	41.1
	Multipara	209	58.9
Number of child they have			
	No child	151	42.5
	1-2 child	172	48.5
	>2child	32	9.0
History of miscarriage			
	Yes	34	9.6
	No	321	90.4
Gestational age			
	<4months	109	30.7
	4-6months	104	29.3
	7-9 months	142	40.0

5.2 Awareness of antenatal exercise among pregnant women attending ANC in Kirkos sub city, Addis Ababa.

Majority of the respondents (63.7%) had not participated in physical exercise before becoming pregnant and 59.4% never heard about antenatal exercise. Of these who heard about antenatal exercise144 (40.6%), about 136 (38.3%), 51 (14.1%), 33 (9.3%) of the participant was heard walking, relaxation and breathing and ankle and toe exercise as antenatal exercise respectively (**Table 3**).

Table 3: Awareness of antenatal exercise among pregnant women attending ANC at health centers in Kirkos sub city, Addis Ababa, Ethiopia, 2018.

Characteristics	**Frequency(n)**	**Percent (%)**
Ever done physical exercise before becoming pregnant		
Yes	129	36.3
No	226	63.7
Ever heard about antenatal exercise		
Yes	144	40.6
No	211	59.4
Type of antenatal exercise heard (N=144)*		
Walking	136	94.4
Aerobics	12	11.8
Relaxation or Breathing	51	35.4
Pelvic floor exercises	18	12.5
Back care exercises	11	7.6
Ankle and toe exercise	33	22.9

*Denotes multiple answer of those heard

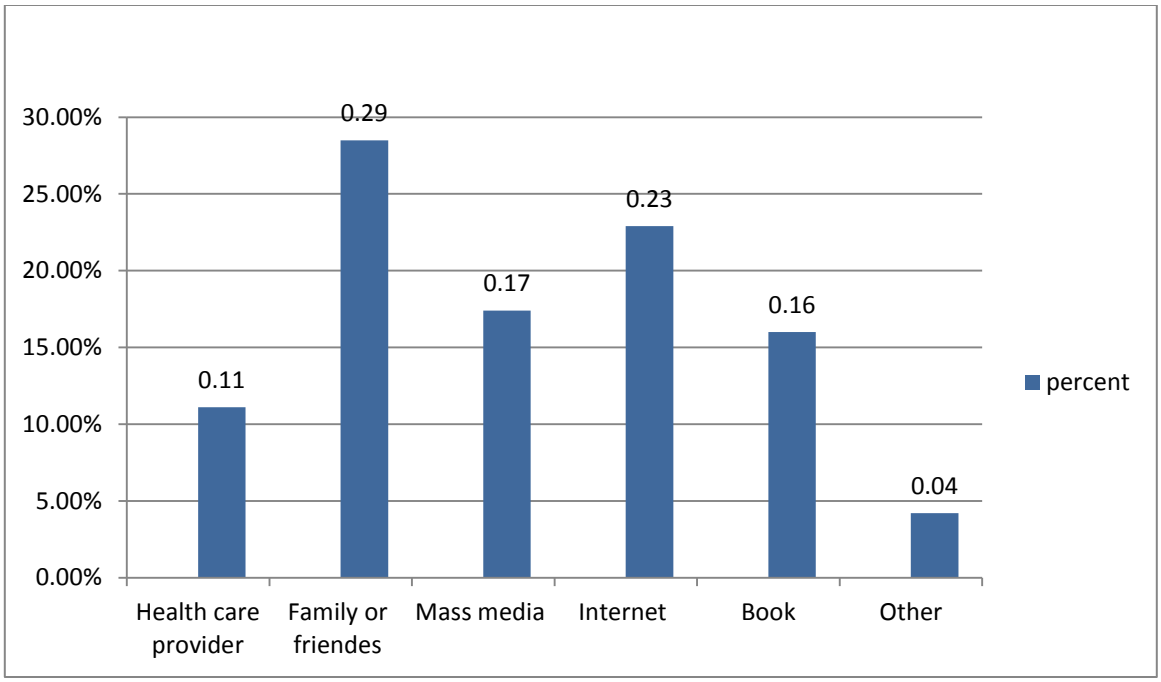


Figure 3: Source of information about antenatal exercise among pregnant women attending antenatal care in Kirkos sub city, Addis Ababa, Ethiopia, 2018(n=144)

5.3 Knowledge about the benefit and contra indication of antenatal exercise among pregnant women attending ANC in Kirkos sub city, Addis Ababa

This study examined pregnant women knowledge about benefit and contraindication of antenatal exercise. Of the total respondents 43.4%, 42.5% and 60.0% were correctly identified antenatal exercise can decrease back pain, prevents excessive weight gain and increase energy and stamina during pregnancy respectively. In addition, 54.6%, 43.4%, and 45.1% of the respondents were correctly identified ANEx (antenatal exercise) helps to cope with labor and delivery pain, decrease risk of having gestational diabetic mellitus and high blood pressure during pregnancy respectively. Finally, by computation over all knowledge questions the respondents mean value =7.17, median = 7.00 and S.D ±3.42. Therefore, regardless of knowledge of ANExs summary index below, majority of the respondents 154(43.4%) were knowledgeable about antenatal exercise (**Table 4**).

Table 4:Knowledge about the benefit and contraindication of antenatal exercise among pregnant women attending ANC at health center Kirkos sub city, Addis Ababa, Ethiopia, 2018 (n=355).

Characteristics	Frequency(n)	Percentage (%)
Reduces risk of back pain		
Yes	154	43.4
No	56	15.8
I don't know	145	40.8
Prevents excessive weight gain during pregnancy		
Yes	151	42.5
No	87	24.5
I don't know	117	33.0
Increases energy and stamina during pregnancy		
Yes	213	60.0
No	54	15.2
I don't know	88	24.8
Helps to cope with labor and delivery pain		
Yes	194	54.6
No	59	16.6
I don't know	102	28.7
Reduces risk of gestational diabetes		
Yes	154	43.4
No	58	16.3
I don't know	143	40.3
Decrease risk of high blood pressure during pregnancy		
Yes	160	45.1
No	64	18.0
I don't know	131	36.9
Facilitate postnatal recovery time		
Yes	183	51.5
No	85	23.9
I don't know	87	24.5
Prevents antenatal and postnatal depression		
Yes	183	51.5
No	67	18.9
I don't know	105	29.6
Exercise benefits general health and development of the baby		
Yes	190	53.5
No	58	16.3
I don't know	107	30.1
Vaginal bleeding during pregnancy		
Yes	190	53.5
No	58	16.3
I don't know	107	30.1

Uterine contractions		
Yes	115	32.4
No	92	25.9
I don't know	148	41.7
Chest pain during pregnancy		
Yes	100	28.2
No	87	24.5
I don't know	168	47.3
Difficulty of breathing during pregnancy		
Yes	118	33.2
No	89	25.1
I don't know	148	41.7
Premature labour during pregnancy		
Yes	138	38.9
No	65	18.3
I don't know	152	42.8
Poorly controlled type 1 Diabetic during pregnancy		
Yes	123	34.6
No	61	17.2
I don't know	171	48.2
Dizziness during pregnancy		
Yes	194	54.6
No	40	11.3
I don't know	121	34.1
knowledge of ANEx (Summary index)		
Knowledgeable	154	43.4
Not knowledgeable	201	56.6

5.4 Attitude towards antenatal exercise among pregnant women attending ANC

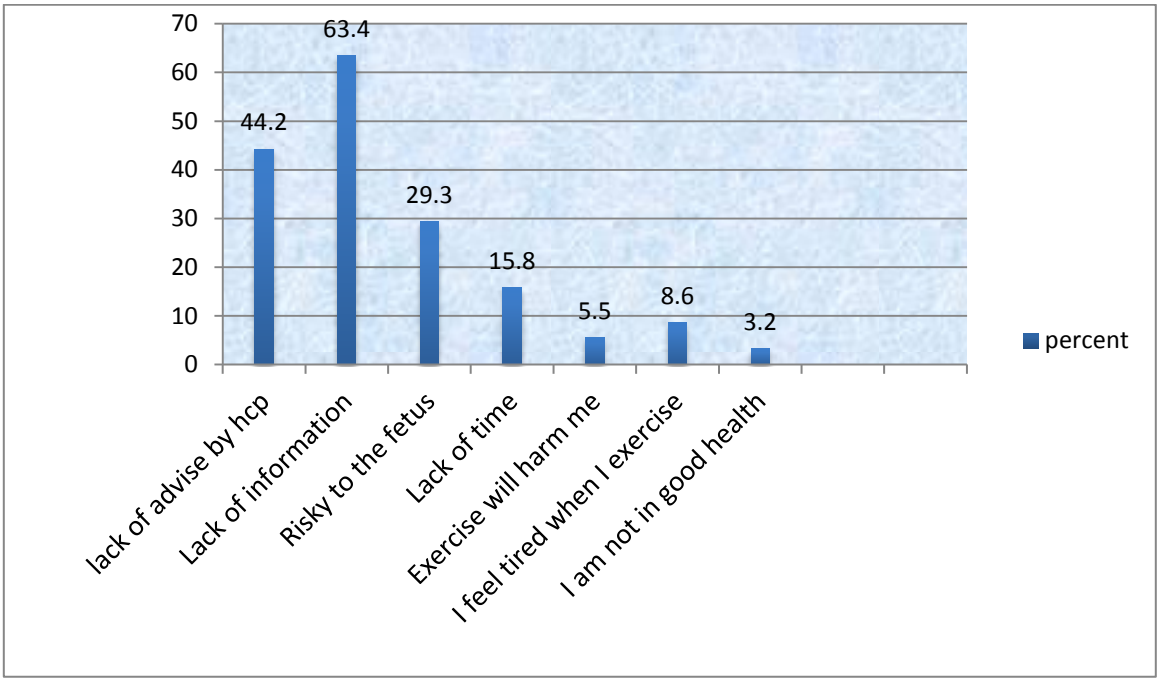
As presented in table 5 concerning the attitude assessment questions towards physical exercise during pregnancy among pregnant women. About79.4 percentage of the respondents thought that physical exercise during pregnancy is necessary. More than half of the pregnant woman's 52.1% and 53.5% felt physical exercise during pregnancy is not risky to the fetus and helps to prevent pregnancy related complications. The respondent's attitude score was with mean of 4.68, median 5.00 and SD 2.04. Based on this majority of the pregnant women185 (52.1%) had favorable attitude towards antenatal exercise (**Table 5).**

Table 5: Percentage distribution of attitude of antenatal exercise among pregnant women attending ANC at health centers in Kirkos sub city, Addis Ababa, Ethiopia, 2018 (n=355).

Variables	Frequency(n)	Percent (%)
think physical exercise during pregnancy is necessary		
Yes	282	79.4
No	43	12.1
I don't know	30	8.5
Feels physical exercise during pregnancy is risky to the fetus		
Yes	112	31.5
No	185	52.1
I don't know	58	16.3
Doing antenatal exercise suit with our culture		
Yes	156	43.9
No	115	32.4
I don't know	84	23.7
Belief pregnant women should perform exercise under the guidance of health care professionals.		
Yes	232	65.4
No	75	21.1
I don't know	48	13.5
Feel exercise during pregnancy helps in post-delivery recovery		
Yes	190	53.5
No	78	22.0
I don't know	87	24.5
Thinks antenatal exercise can reduce pregnancy-related complications		
Yes	213	60.0
No	66	18.6
I don't know	76	21.4
Feel the exercising helps you get back your shape		
Yes	212	59.7
No	70	19.7
I don't know	73	20.6
Feel exercise regimen should vary from one pregnant woman's to another woman		
Yes	191	53.8
No	82	23.1
I don't know	82	23.1
Attitude of ANEx (summary index)		
Positive attitude	185	52.1
Negative attitude	170	47.9

5.5 Practice of antenatal exercise during pregnancy among pregnant womens in kirkos sub city, Addis Ababa.

Regarding practice of antenatal exercise (physical exercise during pregnancy) about one fourth of the participants 88(24.8%) practiced antenatal exercises in the current pregnancy and the remaining was not doing antenatal exercises. Most common reasons cited by pregnant women why not engaged in physical exercise in current pregnancy were lack of information, lack of health care provider counseling and risky to the fetus with value 63.4 %, 44 .2% and 29.3% respectively (**Figure 4**). Of these who are participated in ANEX (antenatal exercise), 93.2 % practiced walking followed by relaxation/breathing and ankle and toe exercise with the value of 35.5% and 18.2%, respectively. Among those that practiced ANEx, 67% and 70 % was practicing with frequency ≥ three time per week and ≥20 minute of duration of exercise per session with respective value. Moreover, majority of them (60.2%) guided by themselves (self-prescriber) and 38(43.2%) had poor practice of antenatal exercise (**Table 6**).



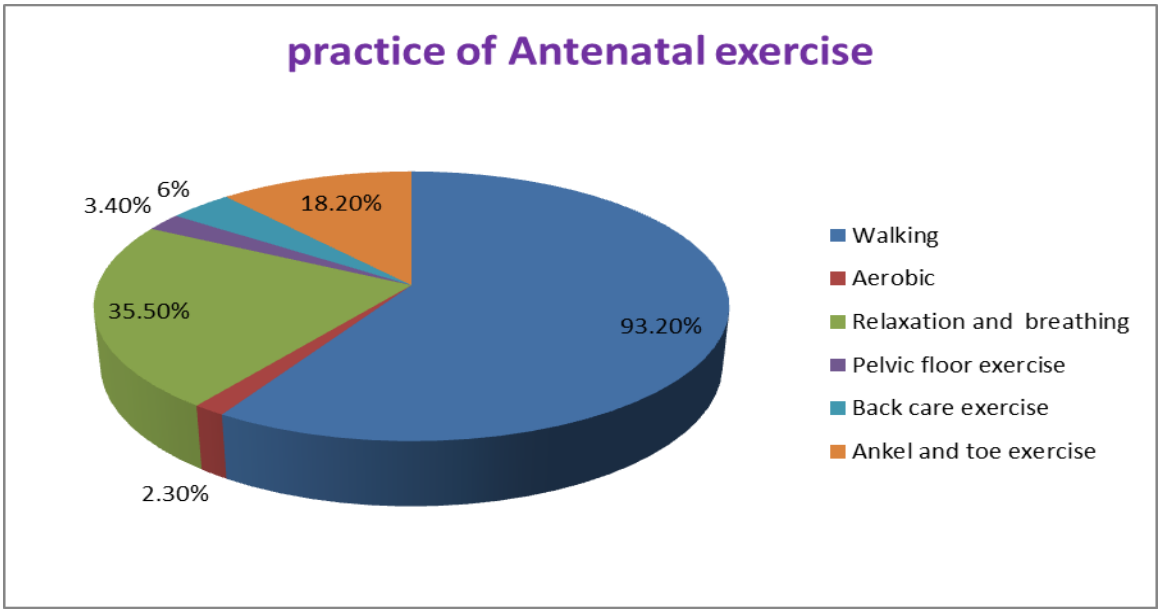
NB: multiple responses hcp: health care provider

Figure 4: Reasons for not doing in the current pregnancy exercise among pregnant women attending ANC at health centers in Kirkos sub city, Addis Ababa, Ethiopia, 2018**(**n=267)

Table 6: Percentage distribution of antenatal exercise practice among pregnant women who attending ANC at health centers in Kirkos sub city, Addis Ababa, Ethiopia, 2018.

Characteristic	**Frequency(n)**	**Percent (%)**
Practicing antenatal exercise in the present pregnancy(n=355)		
Yes	88	24.8
No	267	75.2
Type of Antenatal exercise you exercised now**(n=88)***		
Walking	82	93.2
Aerobics	2	2.3
Relaxation and breathing exercise	31	35.5
Pelvic floor exercise	3	3.4
Back care exercise	5	6
Ankle and toe raising	16	18.2
Advise(guide dance) to do antenatal exercise(n=88)		
Heath care provider	18	20.5
Self	53	60.2
Another person	17	19.3
Frequency of exercise per week(n=88)		
≤Two times/week	29	33.0
≥ three times/week	59	67.0
Duration of exercise per session(n=88)		
<20 mnt	26	29.5
≥20 mnt	62	70.5
Practice level(n=88)		
Poor practice	38	43.2%
Good practice	50	56.8%

NB. * denotes that multiple answer



NB: with multiple responses

Figure 5: Type of antenatal exercise practiced by pregnant women attending ANC at health centers Kirkos sub city, Addis Ababa, Ethiopia, 2018 (n=88).

5.6 Determinants of knowledge, attitude and practice towards antenatal exercise

5.6.1 Determinant factors related to knowledge about antenatal exercise

Adjusted for other variables, educational level of pregnant mother has to be a significant factor on respondent's knowledge of ANEx. Those who completed high school and college or university were found to be 3.55 and 2.85times more likely to be knowledgeable about antenatal exercise than illiterate with AOR= [3.55, 95% CI (1.99, 6.33)] and AOR= [2.85, 95% CI(1.38, 5.91)*] respectively. In addition, income level found as a significant factor on knowledge of ANEx. , those who had ≥2000 income level were 1.76 times more likely to be knowledgeable about antenatal exercise [AOR=1.76(1.06, 2.94)]. (**Table7**).

Participating in physical exercise before becoming pregnancy had significant association with knowledge of ANEx. Respondents who had never practiced physical exercise before becoming pregnant were 70% times less likely to be knowledgeable than who ever done physical exercise with AOR=[0.30, 95% CI (0.18, 0.51) Moreover, pregnant women who was never heard about antenatal exercise 52% times less likely to be knowledgeable about antenatal exercise with AOR= [0.38,95% CI(0.22,0.64))] (**Table7**).

Table 7: Bivariate and multivariate analysis of determinant for knowledge of antenatal exercise among pregnant women at health centers in Kirkos sub city, Addis Ababa, Ethiopia, 2018.

Characteristics	**N(%) knowledge of antenatal exercise**		**Odd ratio (95 % CI)**	
	Not knowledgeable	**knowledgeable**	**Crude**	**Adjusted**
Education level				
≤Elementary	122(60.7%)	40(26.0%)	1	1
High school	54(26.9%)	70(45.5%)	**3.95(2.39,6.54)****	**3.55(1.99, 6.33)****
College or university	25(12.4%)	44(28.6%)	**5.37(2.93,9.85)****	**2.85(1.38, 5.91)***
Occupation:				
Employed in governmental sector	36(17.9%)	44(28.6%)	1	1
House wife	58(28.9%)	23(14.9%)	**0.32(.17,0.62)***	0.69(0.32,1.52)
Private business	56(27.9%)	48(31.2%)	0.701(0.39,1.26)	1.22(0.59,2.52)
Employed in NGO	51(25.4%)	39(25.3%)	0.63(0.34, 1.15)	0.73(0.35, 1.49)
Income level:				
<2000 ETB	132(65.7%)	60(39.0%)	**1**	1
≥2000 ETB	69(34.3%)	94(61.0%)	**2.99(1.939,4.63)****	**1.76(1.06,2.94)***
Practicing physical exercise before pregnancy				
Yes	42(20.9%)	87(56.5%)	1	1
No	159(79.1%)	67(43.5%)	**0.20(0.13, 0.32)****	**0.30(0.18, 0.51)****
Ever heard antenatal exercise:				
Yes	49(24.4%)	95(61.7%)	1	1
No	152(75.6%)	59(38.3%)	**0.20(0.13,0.32)****	**0.38(0.22,0.64)****

*Statically significant at $p<0.05$

** Statically significant at $p<0.001$

5.6.2 Determinant factors related to attitude about antenatal exercise

Moreover, the multivariate analysis revealed educational level, ever heard and knowledgeable about antenatal exercise had significant association with attitude towards antenatal exercise. Respondents who completed college or university 2.19 times more likely to have favorable attitude than those completed less than elementary school [AOR=2.19, 95% CI (1.04, 4.62)]. Those who never heard about ANEx 60% times less likely to have favorable attitude compared to those who ever heard it with AOR= [0.40,95% CI(0.23, 0.70]. Controlling all other variable, those who was knowledgeable have 5.65 times more likely to have favorable attitude than those not knowledgeable about antenatal exercise with AOR= [5.65, 95%CI (3.26, 9.8] (**Table8**).

Table 8: Bivariate and multivariate analysis of determinant for Attitude toward antenatal exercise among pregnant women attending ANC in Kirkos sub city, Addis Ababa, Ethiopia, 2018 (n=355).

Variable	**N(%)of attitude towards antenatal exercise**		**Odd Ratio (95% CI)**	
	Unfavorable	Favorable	Crude	Adjusted
Educational level:				
≤Elementary	105(61.8%)	57(30.8%)	**1**	1
High school	41(27.6%)	77(41.6%)	**3.02(1.86,4.9)****	1.71(0.96,3.06)
College or university	18(10.6%)	51(27.6%)	**5.21(2.79,9.77)****	**2.19(1.04,4.62)***
Income level:				
<2000	113(66.5%)	79(42.7%)		1
2000 and above	57(33.5%)	106(57.3%)	**2.70(1.73,4.10)****	1.41(0.83, 2.40)
Practicing physical exercise before pregnancy				
Yes	35(20.6%)	94 (50.8%)	**1**	1
No	135(79.4%)	91(49.2%)	**0.251(0.16,0.40)****	0.59(0.33, 1.05)
Heard about antenatal exercise				
Yes	36(21.2%)	108(58.4%)	**1**	**1**
No	134(63.5%)	77(41.6%)	**0.19(0.120,0.31)****	**0.40(0.23, 0.70)***
Knowledge level				
Not Knowledgeable	141(82.9%)	60(32.4%)	**1**	**1**
Knowledgeable	29(17.1%)	125(67.6%)	**10.13(6.12,16.78)****	**5.65(3.26,9.8)****

*Statically significant at $p<0.05$

** Statically significant at $p<0.001$

5.6.3 Determinant factors related to Practice about antenatal exercise

In multivariate analysis, high income level had positive association with practice of ANEx. Those who had income level ≥2000, ETB were 2.25 times more likely to engage in antenatal exercise than those who had income level <2000, ETB with AOR= [2.25, 95% CI (1.13, 4.48)](**Table9**).

Moreover, the multivariate analysis ascertained that, experience of physical exercise before pregnancy, These respondents who never done physical exercise before becoming pregnant 58% less likely to do ANEx than those who ever done physical exercise before becoming pregnant with AOR= **[**0.42,95% CI(0.21, 0.84)]. In addition, those who never heard about antenatal exercise were 82% less likely to practice ANEx compared to who ever heard about ANEx with AOR= [0.18, 95% CI (0.09, 0.38)]. And participants who were knowledgeable were 3.55 times more likely to practice ANEx relative to not knowledgeable with AOR= [3.76, 95% CI (1.68, 8.45)] (**Table 9).**

Table 9: Bivariate and multivariate analysis of determinant for practice of towards of antenatal exercise among pregnant women attending ANC in Kirkos sub city, Addis Ababa, Ethiopia, 2018 (n=355).

Characteristics	**N(%) of Practice of antenatal exercise**		**Odd Ratio (95%CI)**	
	No	Yes	COR	AOR
Educational level:				
≤Elementary	139(52.1%)	23(26.1%)	**1**	**1**
High school	92(34.5%)	32(36.4%)	**2.10(1.16,3.82)***	0.79(0.34,1.80)
College or university	36(13.5%)	33(37.5%)	**5.54(2.90,10.57)****	1.20(0.46,3.06)
Occupation:				
Employed in governmental sector	52(19.5%)	28(31.8%)	**1**	
House wife	71(26.6%)	10(11.4%)	**0.26(0.12, 0.59)***	0.80(0.26, 2.40)
Private Business	79(29.6%)	25(28.4%)	0.59(0.31, 1.12)	0.91(0.36, 2.30)
Employed in NGO	65(24.3%)	25(28.4%)	0.71(0.37, 1.37)	1.22(0.49,3.04)
Income level				
<2000 ETB	167(62.5%)	25(28.4%)	**1**	**1**
≥2000 ETB	100(37.5%)	63(71.6%)	**4.23(2.49,7.12)****	**2.25(1.13, 4.48)***
Gravidity:				
Premigravida	98(36.7%)	42(47.7%)	**1**	**1**
Multigravida	169(63.3%)	46(52.3%)	0.64(0.39,1.03)	0.31(0.06,1.71)
Parity :				
Premipara	104(39.0%)	42 47.7%)	**1**	
Multipara	163(61.0%)	46(52.3%)	0.70(0.43,1.14)	2.11(0.27, 16.45)
Gestational age:				
<4months	75(28.1%)	34(38.6%)	**1**	
4-6months	75(28.1%)	29(33.0%)	0.85(0.47,1.54**)**	0.96(0.43, 2.15)
7-9 months	117(43.8%)	25(28.4%)	**0.47(0.26,0.85)***	0.51(0.23, 1.134)
Number of child:				
No childe	108(40.4%)	43(48.9%)	**1**	
One child	130(48.7%)	42(47.7%)	0.81(0.49, 1.33)	1.10(0.19,6.49)
≥2 child	29(10.9%)	3(3.4%)	**0.26(0.08,0.89)***	0.44(0.04, 4.50)
Practicing physical Exercise before pregnancy				

Yes	68(25.5%)	61(69.3%)	**1**	**1**
No	199(74.5%)	27(30.7%)	**0.15(0.09, 0.26)****	**0.42(0.21, 0.84)***
Ever heard about antenatal exercise				
Yes	72(27.0%)	72(81.8%)	**1**	**1**
No	195(73.0%)	16(18.2%)	**0.08(0.05, 0.15)****	**0.18(0.09,0.36)****
Knowledge level				
Not knowledgeable	184(68.9%)	17(19.3%)	**1**	**1**
knowledgeable	83(31.1%)	71(80.7%)	**9.26(5.14, 16.69)****	**3.76(1.68, 8.45)**
Attitude				
Un Favorable	153(57.3%)	17(19.3%)	**1**	
Favorable	114(42.7%)	71(80.7%)	**5.61(3.13, 10.03)****	1.31(0.59, 2.88))

*Statically significant at $p<0.05$

** Statically significant at $p<0.001$

6. DISCUSSION

The study was carried out to assess the level of knowledge, Attitude, practice and associated factor of antenatal exercise among pregnant women in Kirkos sub city, Addis Ababa Ethiopia. The respondent's age range from 18-41 years with the mean of age was 27.5±5.1 years. It is almost comparable with a study reported in Nigeria with a mean age of 28.9 ± 4.63 (22). In addition, more than one third of the respondents had completed high school and 19.4% had completed college or university, it is incomparable with study showed in Nigeria (69.4%) had tertiary education (22).

The result from this study indicated that, 40.6% of the respondents heard about antenatal exercise. This is lowers than the studies reported in Brazil (68.1%) and India (66%) heard about antenatal exercise (27, 30). This difference may be due to unavailability of the services and lack of counselling of health care providers. This study showed that, of these aware about antenatal exercise (38.3%), (14.1%) and (11.8%) heard walking, relaxation/breathing and aerobics as type of physical exercises in pregnancy time respectively. Which is inconsistent with a study conducted in Nigeria (31.2%) and (59.8%) of the participant heard aerobics and relaxation/ breathing exercises respectively (22). This discrepancy could be due to lack of health care provider counseling about antenatal exercise, lack of information and the study participant were less likely literate comparing other countries studies reports were more literate and counseled about antenatal exercise. Generally, it might be due to unavailability of antenatal exercise guideline and antenatal exercise class.

In this study about 43.4% of the respondents were knowledgeable about antenatal exercise, this finding is lower than comparing with a study that reported from Nigeria (52.4%) and Brazil (65.6%) of the respondents were knowledgeable (22, 27). This incongruity might be due to different reasons. First, it might be due to different educational level of the participant as majority of other studies were literate (22, 27). Second, it could be due to paucity of information, unavailability of antenatal exercise guideline and antenatal education class (interpersonal problem), but other studies indicated that pregnant women were accessible to information, met antenatal exercise guideline and counseled by health care provider(22, 27). However, this result higher than a study conducted in India (30%) and Zambia (19%) of pregnant women were knowledgeable (31, 35). This discrepancy could be due to different

factors like differences of educational level, experience of physical exercise before having pregnancy and study time.

Regarding the attitude of pregnant women to physical exercise during pregnancy, more than half 185 (52.1%) of the pregnant women had favorable attitude towards antenatal exercise. This result is incomparable with a study conducted in Nigeria (85%) and Brazil (93.8%) of the respondents had favorable attitude to exercise(22, 27). Nevertheless, it is comparable with a study reported on India (51%) had positive attitude towards exercise in pregnancy(30). The reason for low magnitude of favorable attitude towards antenatal exercise might be due to safety concern for their fetus, lack of awareness and inadequate level of knowledge of the respondents comparing the study reported in Brazil and Nigeria, majority of the respondents were literate, heard and knowledgeable about antenatal exercise (22, 27). In addition, the study reported on these countries they used a single question to measure attitude level of their respondents. In this study, majority of the respondents thought that antenatal exercise is necessary (79.4%) and 65.4% of pregnant women believed that pregnant women should perform exercise under the guidance of health care providers. Over all the reason for low favorable attitude could be due to the influence of awareness and knowledge of antenatal exercise on attitude.

This study depicted that around one-fourth (24.8%) of the respondents practiced antenatal exercise during their current pregnancy. While this finding is almost similar with a study conducted in India (22.0%) (31), it is lower than that reported from Nigeria (84.7%), Canada (29.0%) and Brazil (29.0%) and (27, 33, 34). This difference might be due to low level of knowledge, lack of awareness and experience of physical exercise before pregnancy, lack of motivation and health care provider counseling, comparing with other countries study (22, 27, 28, 33, 34), their respondents were more knowledgeable about antenatal exercise, guided by health care provider. Also motivated and supported by other person to do physical exercise during pregnancy and majority of respondents were had habit of physical exercise before pregnancy. This study demonstrated that walking, relaxation/ breathing and ankle and toe exercise were the most common practiced. This finding is in agreement with a study that reported from Serilanka (29) and walking was the most practiced in Brazil (27) and also a study conducted in Nigeria shows that, aerobics, relaxation and breathing were among the

most common practiced type antenatal exercise (34), but in our study result aerobics is the lowest practiced type of antenatal exercise. Moreover, a few of these doing physical exercise was guided by health care provider and it is not in line with a study reported from Nigeria and India, majority of them were guided by health care provider(31, 34). The reason might be due to unfamiliarity of health care provider about actual benefit of physical exercise during pregnancy.

The finding of this study showed that, knowledge of antenatal exercise was significantly higher among pregnant women with high educational level. This finding is similar with a study reported in Zambia and Brazil (27, 35). However, level of education was found insignificant association with attitude of physical exercise during pregnancy but level of attitude was higher among knowledgeable pregnant women and this outcome consistent is with a study reported on Nigeria(22). Furthermore, this study demonstrated practice of physical exercise is higher among pregnant women who had high-income level, and experience of physical exercise before pregnancy, had awareness and knowledgeable about antenatal exercise. These factors had significant positive association with practice of antenatal exercise and these findings are in line with studies that reported from Australia, Brazil and Canada (28, 32, 33). But among pregnant women that are in the last trimester and having children were less likely to practice, these findings are similar with a study reported in Canada (33). Lastly, the most reported reasons mentioned by pregnant women why not engaging in antenatal exercise in the current pregnancy about 63.4 %,44 .2% and 29.3% were lack of information, lack of health care provider counseling and risky to the fetus respectively. Those cited reasons are consistent with a studies ascertained from Australia, Brazil and Canada (27, 32, 33). Therefore, all concerned bodies should consider about possible intervention of this problem.

7. STRENGTH AND LIMITATION OF THE STUDY

7.1 Strength of the study

- The study tried to address areas, which not covered in previous studies.
- The study tried to generate such valuable empirical data and identify some factors, which valuable as base line data onto future researchers.

7.2 limitation of the study

- This study included only pregnant women attending ANC at governmental health center, private health institution in the were excluded
- Not supported by qualitative data, especially perception and experience of physical exercise of pregnant women.

8. CONCLUSION AND RECOMMENDATION

8.1 Conclusion

The study result suggests majority of pregnant women were not knowledge about actual benefit antenatal exercise in prevention pregnancy related complication and its contraindication and more than half had favorable towards antenatal exercise. The level of practice of exercise during antenatal care was very low. Educational level and income level were among the predictor of knowledge. In addition, pregnant women knowledge about antenatal exercise was found as a determinant of attitude and practice of antenatal exercise. Moreover, high-income level, awareness and experience of physical exercise before pregnancy and knowledgeable about antenatal exercise were predictors of practice of antenatal exercise. Finally, lack of information and lack of health care recommendation and fear of fetal risk was among the most common reasoned or barriers reported why they did not engage in physical exercise in current pregnancy time.

8.2 Recommendation

Based on the finding from this study, the following recommendations are forwarded.

For MOH

- Strategies and programs should be specifically designed to provide appropriate information and access to antenatal exercise services in the country health institutions incorporating with health education program.
- There is also a need for an intervention in aiming at pregnant women creating awareness of physical exercise in pregnancy time and its benefit, by using different Medias like leaflet, magazine and mass media as the main means to broadcast appropriate information and creating antenatal exercise class to address the target issues.

For academic institution

- The academic institutions and other organizations working on maternity areas should work on the awareness of their students and health care provider about the benefit and contraindication of physical exercise in pregnancy time by including in their curriculum and giving training for health care provider.

For professionals/researchers

- ✓ To overcome these problem health care providers, healthcare managers and other respective bodies need to be familiarizing with respect to the actual benefits of antenatal exercise and possible control of certain pregnancy-related complication and its sequels later in life.
- ✓ Health care provider should be giving health education, counseling and service of antenatal exercise for pregnant women to increase their knowledge and practice of antenatal exercise.
- ✓ Similar other studies are recommended to generating more in-depth information on physical exercise in pregnancy time, especially among urban residents to identify possible factors.
- ✓ In the future researcher better to study perception and experiences in pregnant women about antenatal exercise by qualitative study in order to have in-depth information.
- ❖ Generally, to address this problem, respective bodies should focus intrapersonal problem (knowledge, safety, motivation, attitude and awkwardness), interpersonal problem (lack of counseling or information, lack of support) and environmental problem (policies or unavailability of physical exercise class or services).

9. REFERENCE

1. WHO. WHO recommendations on antenatal care for a positive pregnancy experience. 2016.

2. ACOG. Physical Activity and Exercise During Pregnancy and the Postpartum Period.coommmitte opinion no.650. 2017.

3. Garland M, MSN,CNM. Physical Activity During Pregnancy: A Prescription for Improved Perinatal Outcomes. The Journal for Nurse Practitioners. 2017;13(1):54-8.

4. Puchalski S. Physical activity: Utilizing guidelines to promote health among pregnant women. Journal of Pregnancy and Reproduction. 2017;Volume 1(2): 1-3.

5. WHO. Global recommendation of physical activity for health. 2010.

6. WHO. recommendation on counselling on healthy eating and physical activity during pregnancy.http://apps.who.int/iris/bitstream/10665/250796/8/9789241549912-websupplement-eng.pdf?ua=1. 12 March 2018.

7. Downs DS, Chasan-Taber L, Evenson KR, Leiferman J, Yeo S. Physical activity and pregnancy: past and present evidence and future recommendations. Research quarterly for exercise and sport. 2012;83(4):485-502.

8. Whitaker KM, Wilcox S, Liu J, Blair SN, Pate RR. Pregnant women's perceptions of weight gain, physical activity, and nutrition using Theory of Planned Behavior constructs. Journal of behavioral medicine. 2016;39(1):41-54.

9. Makinde O, Adeyemo F, Ogundele B. Perception of pregnant mothers attending antenatal clinic on usefulness of prenatal exercise in Osogbo, Osun state, Nigeria. 2014.

10. Artal R, O'Toole M. Exercise during pregnancy and the postpartum period. Clin Obstet Gyncol. 2017;46(2):496-9.

11. Price BB, Amini SB, Kappeler K. Exercise in pregnancy: effect on fitness and obstetric outcomes—a randomized trial. Medicine & Science in Sports & Exercise. 2012;44(12):2263-9.

12. WHO U, UNFPA, World Bank. WHO, UNICEF, UNFPA, World Bank Group, and United Nations Population Division Trends in Maternal Mortality: 1990 to 2015 Geneva: World Health Organization, 2015. Population and Development Review. 2015;42(4):726-.

13. Hjorth MF, Kloster S, Girma T, Faurholt-Jepsen D, Andersen G, Kæstel P, et al. Level and intensity of objectively assessed physical activity among pregnant women from urban Ethiopia. BMC pregnancy and childbirth. 2012;12(1):154.

14. ICF. CSACEa. Ethiopian Demographic And Health Survey :key indicator report. Addis Ababa, Ethiopia, and Rockville, Maryland, USA. CSA and ICF. 2016.
15. WHO. Strategies towards ending preventable maternal mortality (EPMM). 2015.
16. Tobias DK, Zhang C, Van Dam RM, Bowers K, Hu FB. Physical activity before and during pregnancy and risk of gestational diabetes mellitus. Diabetes care. 2011;34(1):223-9.
17. Hod M, Kapur A, Sacks DA, Hadar E, Agarwal M, Di Renzo GC, et al. The International Federation of Gynecology and Obstetrics (FIGO) Initiative on gestational diabetes mellitus: A pragmatic guide for diagnosis, management, and care. International Journal of Gynecology & Obstetrics. 2015;131(S3).
18. Domenjoz I, Kayser B, Boulvain M. Effect of physical activity during pregnancy on mode of delivery. American journal of obstetrics and gynecology. 2014;211(4):401. e1-. e11.
19. Mottola MF, McLaughlin R. Exercise and pregnancy: Canadian guidelines for health care professionals. WellSpring. 2011;22(4):1-5.
20. Mukona D, Munjanja SP, Zvinavashe M, Stray-Pederson B. Physical activity in pregnant women in Africa: A systematic review. International Journal of Nursing and Midwifery. 2016;8(4):28-34.
21. Maruf FA, Chianakwana C, Hanif S. Perception, Knowledge, and Attitude Toward Physical Activity Behavior: Implications for Participation Among Pregnant Women. Journal of Women's Health Physical Therapy. 2017;41(3):145-53.
22. Mbada CE, Adebayo OE, Adeyemi AB, Arije OO, Dada OO, Akinwande OA, et al. Knowledge and attitude of Nigerian pregnant women towards antenatal exercise: a cross-sectional survey. ISRN obstetrics and gynecology. 2014;2014.
23. Leiferman J, Gutilla M, Paulson J, Pivarnik J. Antenatal physical activity counseling among healthcare providers. Open Journal of Obstetrics and Gynecology. 2012;2(4).
24. Santo EC, Forbes PW, Oken E, Belfort MB. Determinants of physical activity frequency and provider advice during pregnancy. BMC pregnancy and childbirth. 2017;17(1):286.
25. Wang C, Zhu W, Wei Y, Feng H, Su R, Yang H. Exercise intervention during pregnancy can be used to manage weight gain and improve pregnancy outcomes in women with gestational diabetes mellitus. BMC pregnancy and childbirth. 2015;15(1):255.

26. Evenson KR, Barakat R, Brown WJ, Dargent-Molina P, Haruna M, Mikkelsen EM, et al. Guidelines for physical activity during pregnancy: comparisons from around the world. American journal of lifestyle medicine. 2014;8(2):102-21.
27. Ribeiro CP, Milanez H. Knowledge, attitude and practice of women in Campinas, São Paulo, Brazil with respect to physical exercise in pregnancy: a descriptive study. Reproductive health. 2011;8(1):31.
28. Nascimento SL, Surita FG, Godoy AC, Kasawara KT, Morais SS. Physical activity patterns and factors related to exercise during pregnancy: a cross sectional study,Brasil. PloS one. 2015;10(6):e0128953.
29. Wijesiriwardana W, Gunawardena N. Knowledge, attitudes and practices regarding antenatal exercises among pregnant mothers attending De Soyza Maternity Hospital Colombo. Sri Lanka Journal of Obstetrics and Gynaecology. 2016;37(4).
30 .Sujindra E, Bupathy A, Suganya A, Praveena R. Knowledge, attitude, and practice of exercise during pregnancy among antenatal mothers. International Journal of Educational and Psychological Researches. 2015;1(3):234.
31. Kumar V. Knowledge, Perception, and Attitude of Pregnant Women Towards the Role of Physical Therapy in Antenatal Care-A Cross Sectional Study. Online Journal of Health and Allied Sciences. 2016;14(4).
32. Harrison AL, Taylor NF, Shields N, Frawley HC. Attitudes, barriers and enablers to physical activity in pregnant women: a systematic review. Journal of physiotherapy. 2018;64(1):24-32.
33. Gaston A, Cramp A. Exercise during pregnancy: a review of patterns and determinants. Journal of Science and Medicine in Sport. 2011;14(4):299-305.
34. Mbada CE. Practice and Pattern of Antenatal and Postnatal Exercise among Nigerian Women: A Cross-Sectional Study<1111.pdf>. International Journal of Women's Health and Reproduction Sciences. April 2015;3(2).
35. Nkhata LA, Munalula-Nkandu E, Shula H. The Knowledge, Attitudes and Practices towards Exercise among Women Attending Antenatal Care at the University Teaching Hospital in Lusaka, Zambia. Journal of Scientific Research and Reports 2014; 3 (15) 1986-1992 DOI: 109734/JSRR/2014.10693.

36. Centeral Staticsal Agency(CSA) GoE. Ethiopia population and hausing census. Addis Ababa,Ethiopia: Centeral Statical Agency(Ethiopia),United nation population fund (UNPF), 2007.

10. ANNEXES

ANNEX I– Information Sheet

ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

SCHOOL OF NURSING AND MIDWIFERY

Here, I the undersigned, at Addis Ababa University College of Health Science, Department of Nursing and Midwifery, currently I will be undertaking research on a topic entitled Assessment of knowledge, attitude , practices towards antenatal exercise and its associated factor among pregnant women who are attending antenatal care at selected health centers in Kirkos sub city, Addis Ababa, Ethiopia. For this study, you will be selected as a participant and before getting your assent or permission of your participation, you need to know all necessary information related to the study. Thus, this information will be detailed as;

Objective: To assess knowledge, attitude, practices towards antenatal exercise and its associated factor among pregnant women who are attending antenatal care at selected health centers in Kirkose subcity.Addis Ababa, Ethiopia.

Significance of the study: The research finding can be an input for concerned policy makers in decision making process around antenatal exercise. And also it serves as an input in the health education program by different organizations so as to keep the community being aware of the importance of physical exercise during pregnancy,

Participants to be included: All pregnant mothers who are attending in the antenatal care and who are voluntary to participate in the study included.

Confidentiality: All information you give will be kept confidential and won't be accessible to any third party. Your name won't be registered on the question sheet so that you will not be identified.

Risks and Benefits of the study : The study will be carried out by interviewer administered questionnaire. The procedure doesn't bear any physical or psychological trauma. Furthermore, you will not be forced to respond to the information you do not know. No payment for your participation in the study but participating in the study and giving your information to questions asked will have great input in efforts to improve health of pregnant and delivered mother‟s

Assent: Your participation in the study will be totally based on your willingness. You have the right not to participate from the beginning, or stop any time after starting participation. You will not be forced to respond to the question you do not know and you can ask any question whenever you like.

Name of principal investigator (PI): Beyene Tadesse Date:_____
Signature_____ **Address of PI:** Mobile: +251919782245

E- Mail: beyeneta7@gmail.com

Data Collector Name _____Date _____ Signature _____
Supervisor Name _____Date _____ Signature _____

.

ANNEXES II: Consent Form

ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

SCHOOL OF NURSING AND MIDWIFERY

Good morning/afternoon. My name is _____ and I am working _____. We are studying on knowledge, attitude, practice to wards antenatal exercise and its associated factor among pregnant women who are attending antenatal care on behalf of Beyene Tadesse ,who is post graduate student at Addis Ababa University, college of health science, Department of Nursing and midwifery. I would like you to respond to only if you wish to do so. I assure you that the information you provide are will be kept confidential. Your name will be not written on the questionnaire to ensure your confidentiality. Make sure that, there should be no harm caused because you are involved in this study. You have full right to decline to the interview partly or totally. In case you consent for the interview, I need you to provide me your honest answer to the questions you want to respond as this would help us to come up with genuine conclusions and recommendations that would potentially help Ministry of Health of Ethiopia and health facilities improve these services

Consent

I have fully understood its contents and I have agreed to participate in this research project.

Yes----------

No----------

Thank you for giving us your consent.

NAME OF DATA COLLECTER---------- SIGN----------DATE----------

Annex III: Questionnaire

Instruction: Circle the code number given parallel to the answer you choose and for Questions that you give direct answer, write the answer in the space provided.

Part I: Questions related Socio demographic characteristics

Serial no	**Characteristic's**	**Alternative responses**	**skip**
Q.101	What is your age?	_____years	
Q.102	What is your religion?	Orthodox----------1 protestant----------2 Catholic----------3 Muslim ----------4 Others specify_____99	
Q.103	What is your current marital status?	Single----------1 married----------2 Divorced----------3 Separated----------4 Widowed----------5 Cohabiting ----------6	
Q.104	What is your educational level?	Illiterate ----------1 Reading and writing-----2 Elementary--------3 High School --------4 College or university----5	
Q.105	What is occupational background?	Employed in governmental sectors----------1 House wife----------2 Private business /trader-3 Employed in NGO----4	
Q.106	What is your income level per a month?	_____ET Birr	

Part two: Obstetrical history

Q.107	How many times in total you became pregnant?	one---------1 2 – 4----------2 Above 4-------3	
Q.108	How many times in total you gave birth?	None----------1 1----------2 ≥2----------3	
Q.109	How many children do you have?	No child----------1 1-2 children---------2 >2children and above---3	
Q.110	Have you ever had history of miscarriage?	Yes---------1 No----------2	
Q.111	What is gestational age status in completed months?	<4months-------1 4-6months------2 7-9months------3	

Part three: Question related to awareness of different type of antenatal exercise

Serial no	**Questions**	**Alternative responses**	**Skip to**
Q. 201	Have you ever done physical exercise before becoming pregnant?	Yes----------1 No----------2	
Q.202	Have you ever heard about antenatal exercises?	Yes----------1 No----------2	
Q.203	If the answer for Q203 is yes, What types of antenatal exercises you heard or aware from the following? (possible more than one answer).	Walking ----------1 Aerobics ----------2 Relaxation /Breathing ---3 Pelvic Floor Exercises--4 Back Care Exercises----5 Ankle and toe exercise---6	

Q. 204.	If your answer for Q 204 is yes, where did you learn (got the information) about it?	Health care provider---1 Mass media----------2 Family or friend ----------3 Book----------4 internet ----------5 Other specify ----------6	

Part three: questions concerning knowledge towards Benefit and contra indication of antenatal exercise.

Instruction :If the statement is **correct** circle **Yes , incorrect** circle **No** and if you are unsure circle **I don't know**

Serial no	Questions	Alternative answers
Q301.	Exercise during pregnancy reduces risk of back pain.	Yes----------1 No----------2 I don't know----------3
Q.302	Exercise Prevents excessive weight gain during pregnancy	Yes----------1 No----------2 I don't know---------3
Q.303	Exercise Increased energy and stamina during pregnancy	Yes----------1 No----------2 I don't know---------3
Q.304	Exercise can help cope with labor and delivery pain	Yes----------1 No----------2 I don't know--------3
Q.305	Exercise during pregnancy can reduces risk of gestational diabetes.	Yes----------1 No----------2 I don't know--------3
Q.306	Exercised can decrease high blood pressure during pregnancy.	Yes----------1 No----------2 I don't know---------3
Q.307	Exercise helps more rapid postnatal recovery.	Yes----------1

		No----------2 I don't know---------3
Q.308	Exercise prevents antenatal and postnatal depression.	Yes----------1 No----------2 I don't know---------3
Q.309	Exercise benefits general health and development of the baby.	Yes----------1 No----------2 I don't know---------3
Q.310	When there is vaginal bleeding during pregnancy it is contraindicated to do exercise.	Yes----------1 No----------2 I don't know---------3
Q.311	Uterine contractions is one of the contraindication to do exercise during pregnancy.	Yes----------1 No----------2 I don't know---------3
Q.312	Chest pain during pregnancy is contraindicated to do exercise during pregnancy.	Yes----------1 No----------2 I don't know---------3
Q.3013	Difficulty of breathing during pregnancy is contraindication to do exercise during pregnancy.	Yes----------1 No----------2 I don't know---------3
Q. 3014	Premature labour during pregnancy is contraindicated to do exercise during pregnancy.	Yes----------1 No----------2 I don't know---------3
Q.3015	Poorly controlled type 1 Diabetic during pregnancy is contraindicated to do exercise during pregnancy	Yes----------1 No----------2 I don't know---------3
Q.3016	Dizziness during pregnancy is contraindicated to do exercise during pregnancy.	Yes----------1 No----------2 I don't know---------3

Part four:Question concerning attitude of towards physical exercise during pregnancy

Q.No.	Questions	Alternative answers	
Q.401	Do you think physical exercise during pregnancy is necessary?	Yes----------1 No----------2 I don't know---------3	
Q.402	Do you feel physical exercise during pregnancy is risky to the fetus?	Yes----------1 No----------2 I don't know---------3	
Q.403	Does antenatal exercise suit with our culture?	Yes----------1 No----------2 I don't know---------3	
Q.404	Do you belief pregnant women should perform exercise under the guidance of health care professionals?	Yes----------1 No----------2 I don't know---------3	
Q.405	Do you feel antenatal exercise can reduce pregnancy-related complications?	Yes----------1 No----------2 I don't know---------3	
Q.406	Do you feel exercise during pregnancy helps in post-delivery recovery?	Yes----------1 No----------2 I don't know---------3	
Q.407	Do you feel the exercising helps you get back to your shape	Yes----------1 No----------2 I don't know---------3	
Q. 408	Do you feel exercise regimen should vary from one pregnant woman to another?	Yes----------1 No----------2 I don't know---------3	

Part seven :Question concerning Practice towards physical exercise during pregnancy

Seriel no	**Question**	**Alternative responses**	**skip**
Q.501	Do you practice antenatal exercise in the current pregnancy?	Yes ----------1 No----------2	If **no** skip to Q507
Q.502.	What type of exercise you exercised now? (it is Possible more than one answer)	Walking ----------1 Aerobics----------2 Relaxation and breathing exercise ----------3 Ankle and toe raising ------4 Pelvic floor exercise--------6	
Q503	Who advised (guided)you to do antenatal exercise during the present pregnancy?	Health care provider---1 Self----------2 Other person -------3	
Q.504	How many times per week you exercised	≤Two times/week ----------1 ≥ three times/week--------2	
Q.505	For how many minute you exercised per session?	<20 mnt ----------1 ≥20mnt----------2	
Q.506	**why you don't exercise currently during this pregnancy? (you can circle more than)**	**1**.I don't have information **2**.My health professional hasn't advised to me to do exercise **3.** Exercise will harm the baby **4.** Lack of time **5.** Exercise will harm me **6.** I feel tired when I exercise **7.**I am not in good health 8.other specify----------	

Thank you for you participation!!!

ANNEX II - የመረጃ ወረቀት

የአዲስ አበባ ዩኒቨርሲቲ

የጤና ሳይንስ ኮሌጅ

የነርሲንግና ሚድዋይፈሪ ትምህርት ቤት

ይህ መጠይቅ የተዘጋጀው በቂርቆስ ክፍለ ከተማ አዲስ አበባ፣ ኢትዮጵያ፣ የቅድመ ወሊድ እንክብካቤ የሚከታተሉ ነፍሰ ጡር ሴቶች ስለ ቅድመ ወሊድ የአካል እንቅስቃሴ መስራትና ተያያዥ ምክንያቶቹ ያላቸውን እውቀት፣ አመለካከትና እንቅስቃሴ የዳሰሳ ጥናት ለማድረግ ነው፡፡በዚህ ጥናት ውስጥ እንደ ተሳታፊ ተመረጡዋል የእርስዎን ተሳትፎ ወይም ፈቃድዎን ከማግኘትዎ በፊት ከትምህርቱ ጋር የተያያዙ ሁሉንም አስፈላጊ መረጃዎች ማወቅ አለብዎት. ስለሆነም ይህ መረጃ በሚከተለው ዝርዝር ይቀርባል.

የጥናቱ ዓላማ፡ በቂርቆስ ክፍለ ከተማ የቅድመ ወሊድ እንክብካቤ የሚከታተሉ ነፍሰ ጡር ሴቶች ስለ ቅድመ ወሊድ የአካል እንቅስቃሴ መስራትና ተያያዥ ምክንያቶቹ ያላቸውን እውቀት፣ አመለካከትና እንቅስቃሴ የዳሰሳ ጥናት ለማድረግ ነው፡፡

የጥናቱ ጠቀሜታ-የምርመራ ግኝቶች በተለመደው ቅድመ ወሊድ የአካል እንቅስቃሴ ዙሪያ በሚደረጉ የውሳኔ ሰጪ ሂደቶች ለሚመለከታቸው የፖሊሲ አውጪዎች ግብዓት ሊሆን ይችላል. በተጨማሪም በእርግዝና ወቅት አካላዊ እንቅስቃሴን አስፈላጊነት በማወቅ ማህበረሰቡ በጤና ትምህርት መርሃ ግብሩ ውስጥ እንደ ግብዓት ሆኖ ያገለግላል.

ምስጢራዊነት: የሚሰጡት መረጃ በምስጢር የሚጠበቅ እና ለማናቸውንም ሶስተኛ ወገኖች ተደራሽ አይደለም. በጥያቄ ወረቀትዎ ላይ ስምዎ በምርጫው ውስጥ አይታወቅም.

የጥናቱ አደጋዎች ጥቅሞች፡ ጥናቱ የሚካሄደው በቃለ መጠይቅ አድራጊ መጠይቅ ነው. ሂደቱ ምንም ዓይነት አካላዊ ወይም ስነ ልቦናዊ የጉዳት ለውም. በተጨማሪም, ላያውቁት መረጃ ምላሽ እንዲሰጡ አይገደዱም. በጥናቱ ውስጥ ለመሳተፍዎ ምንም ክፍያ የለም, ነገር ግን በጥናቱ ላይ መሳተፍ እና ጥያቄዎ ለተጠየቁ ጥያቄዎች መረጃዎን እርግዝና እና የእናቶችን ጤና ለማሻሻል ጥረቶች ከፍተኛ አስተዋፅኦ ይኖራቸዋል.

ማረጋገጫ: በጥናቱ ላይ ያለዎት ተሳትፎ በፈቃደኝነትዎ ሙሉ በሙሉ የተመሰረተ ይሆናል. ከመጀመሪያው ላይ ላለመሳተፍ መብት አለዎት, ተሳትፎ ካለዎት በኋላ በማንኛውም ጊዜ ይቆማል. ለሚያውቁት ጥያቄ ምላሽ እንዲሰጡ አይገደዱም እና ማንኛውንም ጥያቄ በሚፈልጉበት ጊዜ መጠየቅ ይችላሉ.

የዋና ተቆጣጣሪ ስም (ፒኢ) ስም: - በየነ ታደሰ ቀኑ: _____ ፊርማ _____ :

አድራሻ: +251919782245 ኢ-ሜይል: beyeneta7@gmail.com

የውሂብ ሰብሳቢ ስም _____ ቀናት _____ ፊርማ _____

ተቆጣጣሪ ስም _____Date _____ ፊርማ _____

የስምምነት ማስገንዘቢያ ቅጽ

የአዲስ አበባ ዩኒቨርሲቲ

የጤና ሳይንስ ኮሌጅ

የነርሲንግና ሚድዋይፈሪ ትምህርት ቤት

እንደምን አደሩ/አረፈዱ፡፡ ስሜ ---------- ሲሆን የምሰራው በ---------- ነው፡፡

የቅድመ ወሊድ እንክብካቤ የሚከታተሉ ነፍሰ ጡር ሴቶች ስለ ቅድመ ወሊድ የአካል እንቅስቃሴ መስራትና ተያያዥ ምክንያቶቹ ያላቸውን እውቀት፣ አመለካከትና እንቅስቃሴ በተመለከተ ጥናት በዴህረ-ምረቃ ተማሪ በሆኑት አቶ በየነ ታደሰ በሚደረገው ጥናት መረጃ በማሰባሰብ ሊይ እገኛልሁ፡፡እርሶ ሇዚህ ጥናት እንዱሳተፉ የተመረጡት በእጣ ነው፡ ፡ጥናቱ የሚካሄዯዉ በቃለ መጠይቅ ሲሆን የሚሰጡኝ መረጃዎች በሙለ ምስጥራዊታቸዉ በሚገባ የተጠበቀናምላሽዎን የሚሰጡን ፍቃደኛ እስከሆኑ ድረስ ብቻ ነው፡፡ የሚሰጡን መረጃ በሚስጥር የሚያዝ መሆኑን አረጋግጥልዎታለሁ፡፡ የእርስዎን ማንነት በሚስጥር ለመጠበቅ ሲባል ስምዎ በመጠይቅ ቅጹ ላይ አይጻፍም፡፡ እርስዎ በዚህ ጥናት ላይ በመሳተፍዎ የተነሳ ምንም ጉዳት እንደማይፈጠርብዎ እርግጠኛ ይሁኑ፡፡ በቃለ መጠይቁ ላይ በከፊልም ይሁን ሙሉ በሙሉ አለመሳተፍ የሚችሉ ሲሆን ቃለ መጠይቁ የሚወስደው ጊዜ 15 ደቂቃዎች ነው፡፡ በቃለ መጠይቁ ላይ ለመሳተፍ ፍቃደኛ ከሆኑ የሚሰጧቸው ምላሾች ለኢትዮጵያ የጤና ጥበቃ ሚኒስቴር እና የጤና አገልግሎት መስጫዎች ማሻሻያ የሚግዙ ትክክለኛ ድምዳሜዎችና አስተያየቶች ላይ ለመድረስ አስፈላጊ በመሆኑ እባክዎ መመለስ ለሚፈልጓቸው ጥያቄዎች ትክክለኛ ምላሾችዎን ይስጡን፡፡

የመጠይቁን ሙሉ ይዘቶች ተገንዝቤ በዚህ የምርምር ጥናት ፕሮጀክት ላይ ለመሳተፍ ፍቃደኛ ሆኛለሁ፡፡

አዎ ----------

አይደለም ----------

ፍቃደኛ ስለሆኑ እናመሰግናለን

የዳታ ሰብሳቢው ስም ---------- ፊርማ ---------- ቀን ----------

ኮድ_____ የተሳታፊ ፊርማ_____ የቤት ቁጥር_____ ስልክ ቁጥር_____

መመሪያ፡ ከሚመርጡት መልስ እና ቀጥተኛ መልስ ከሚሰጡባቸው ጥያቄዎች ትይዩ የሚገኘውን ቁጥር ያክብቡ፣ መልስዎን በተሰጠው ቦታ ላይ ይጻፉ፡፡

<u>ክፍል 1፡ በቂርቆስ ክፍለ ከተማ የተመረጡ የጤና ጣቢያዎች ውስጥ የቅድመ ወሊድ ክትትል ከሚደረግላቸው ነፍሰ ጡር እናቶች መካከል ስለ ማህበራዊ ስነ ህዝባዊ ባህሪያት ለተመለከቱ ጥያቄዎች ምላሽ ሰጪዎች</u>

ተ/ቁ	ጥያቄ	አማራጭ ምላሾች	ይለፉ
ጥ. 101	እድሜዎ ስንት ነው?	_____አመት	
ጥ. 102	የምን ሀይማኖት ተከታይ ነዎት?	ኦርቶዶክስ -------1 ፕሮቴስታንት ----2 ካቶሊክ----------3 ሙስሊም--------4 ሌላ (ይግለጹ) _____	
ጥ. 103	የጋብቻ ሁኔታዎ ምንድን ነው?	ያላገባች ----------1 ያገባች----------2 የፈታች----------3 የተለያየች----------4 ባል የሞተባት -------5 አብራ የምትኖር-----6	
ጥ. 104	የትምህርት ደረጃዎ ምንድን ነው?	ያልተማረች----------1 ማንበብና መጻፍ የምትችል--------2 አንደኛ ደረጃ ----------3 ሁለተኛ ደረጃ ያጠናቀቀች ----------4 ኮሌጅ ወይም ዩኒቨርሲቲ ----------5	
ጥ. 105	ስራዎ ምንድን ነው?	የመንግስት ሰራተኛ ----------1 የቤት እመቤት ----------2 የግል ስራ ----------3 በግል ተቀጣሪ--------4 ሌላ ካለ ይጥቀሱ_____	
ጥ. 106	ወርሀዊ ገቢዎ ምን ያህል ብር ነው?	_____ETB	

<u>ክፍል 2፡ የወሊድ ታሪክ መረጃ</u>

ጥ. 107	በጠቅላላው ምን ያህል ጊዜ አርግዘዋል ?	አንድ ----------1 2-4----------2 ከ4 በላይ ----------3	
ጥ. 108	በጠቅላላው ስንት ልጆች ወልደዋል?	አልወለድኩም ------ 1 1----------2 ≥ 2 ----------3	
ጥ. 109	ምን ያክል ልጆች በ ሂወት አልዎት?	ምንም ----------1 1-2 ልጅ ----------2 2 እና ከዚያ በላይ ----3	
ጥ.1110	ወሊድ ተጨናግፎቦዎት ያውቃል?	አዎ ----------1 አያውቅም ----------2	
ጥ.111	እርግዝናዎ ስንት ወር ይሆነዋል ?	< 4 ወራት ----------1 4-6 ወራት ----------2 7-9 ወራት ----------3	

ክፍል 3፡ የቅድመ ወሊድ እንቅስቃሴዎች ግንዛቤ በተመለከቱ ጥያቄዎች

ተ/ቁ	ጥያቄ	አማራጭ ምላሾች	ይለፉ
ጥ.201	ከመጸነስዎ በፊት የአካል እንቅስቃሴ ሰርተው ያውቃሉ?	አዎ ----------1 አላውቅም ------2	
ጥ.202	ስለ ቅድመ ወሊድ የአካል እንቅስቃሴዎች ሰምተው ያውቃሉ?	አዎ ----------1 አላውቅም -------2	አላውቅም ከሆነ ወደ ጥ.301 ይለፉ
ጥ.203	ለጥ.203 መልስዎ አዎ ከሆነ ከሚከተሉት ውስጥ የትኞቹን የቅድመ ወሊድ የአካል እንቅስቃሴዎች ያውቃሉ ወይም ሰምተዋል? (ከአንድ በላይ መልስ ሊሰጡ ይችላሉ)	መራመድ/የእገር ጉዞ ማድረግላ(Walk) ----------1 ኤሮቢክስ ----------2 ማፍታታት/አየር መውሰድ----------3 የዳሌ ወለል እንቅስቃሴ---------- 4 በጀርባ እንቅስቃሴ ----------5 የጉልበትና እግር እንቅስቃሴ ---------6	
ጥ.204	ለጥ.204 መልስዎ አዎ ከሆነ ስለ እንቅስቃሴዎቹ ከየት ነው ተማሩት (መረጃው ያገኙት)?	ከጤና ባለሙያ ----------1 ከቤተሰብ ወይም ጓደኛ ----------2 ከመገናኛ ብዙሀን ----------3 ከኢንተረኔት----------4	

		ከመጽሀፍ ----------5 ሌላ ካለ ይግለጹ_____	

ክፍል 4፡ የቅድመ ወሊድ እንቅስቃሴዎች ጠቀሜታ ያለ እውቀት ለተመለከቱ ጥያቄዎች ምላሽ ሰጪዎች

መምርያ፡አረፍተ ነጉሩ **ትክክል** ከሆነ **አዎ** ያክብቡ፣ትክክል ካልሆነ **አይደለም** ያክብቡ ፣ **እርግጠኛ** ካልሆኑ **አላውቅም** ያክብቡ

ተ/ቁ	ጥያቄ	አማራጭ መልሶች
ጥ.301	በእርግዝና ወቅት የአካል እንቅስቃሴ መስራት የጀርባ ህመምን ይቀንሳል፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.302	በእርግዝና ወቅት የአካል እንቅስቃሴ መስራት ከመጠን በላይ የክብደት መጨመርን ይከላከላል፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.303	በእርግዝና ወቅት የአካል እንቅስቃሴ መስራት ጉልበትና ብርታትን ይጨምራል፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.304	የአካል እንቅስቃሴ መስራት በምጥና ወሊድ ወቅት የሚፈጠር ህመምን ይቀንሳል፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.305	በእርግዝና ወቅት የአካል እንቅስቃሴ መስራት በእርግዝና የሚከሰት የስኳር በሽታን ይከላከላል/ይቀንሳል ፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.306	በእርግዝና ወቅት የአካል እንቅስቃሴ መስራት ከፍተኛ ደም ግፊት እንዳይከሰተ ይካለከላል፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.307	የአካል እንቅስቃሴ መስራት ከወሊድ በኋላ ወዲያውኑ አቋምን ለማስተካከል ያግዛል፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.308	የአካል እንቅስቃሴ መስራት የቅድመ ወሊድና ድህረ ወሊድ ጭንቀትን ይከላከላል፡፡	አዎ ----------1 አይደለም ----------2

		አላውቅም ---------3
ጥ.309	የአካል እንቅስቃሴ መስራት ለጠቅላላ ጤንነትና ለህጻኑ እድገት ጠቀሜታዎች አሉት፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.310	በእርግዝና ወቅት ከማህፀን ደም መፍሰስ ሲያጋጥምዎ የአካል እንቅስቃሴ መስራት አይመከርም፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.311	በእርግዝና ወቅት የምጥ ሕመም ወይም የሆድ ቁርጠት ሲኖር የአካል እንቅስቃሴ መስራት የተከለከለ ነው፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.312	የደረት ህመም ሲኖር በእርግዝና ወቅት የአካል እንቅስቃሴ መስራት የተከለከለ ነው፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.313	የመተንፈስ ችግር ሲኖር በእርግዝና ወቅት የአካል እንቅስቃሴ መስራት አይመከርም፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.314	ያለ ጊዜው ምጥ ሲፈጠር በእርግዝና ወቅት የአካል እንቅስቃሴ መስራት አያስፈልግም	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.315	በአግባቡ ቁጥጥር ያልተደረገበት የስኳር በሽታ 1 ሲኖር በእርግዝና ወቅት የአካል እንቅስቃሴ መስራት የተከለከለ ነው፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.316	በእርግዝና ወቅት ራስ ማዞር ሲኖር የአካል እንቅስቃሴ መስራት አይመከርም፡፡	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3

ክፍል 5፡ በእርግዝና ጊዜ ስለሚደረጉ የአካል እንቅስቃሴ ስለተመለከቱ የአመለካከት ጥያቄዎች

ተ/ቁ	ጥያቄ	አማራጭ መልሶች
ጥ.401	በእርግዝና ወቅት የአካል እንቅስቃሴ መስራት አስፈላጊ ነው ብለው ያምናሉ?	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.402	በእርግዝና ወቅት አካላዊ እንቅስቃሴ ማድረግ ህፃኑን ለአደጋ ያጋለልጣል ብለው ያምናሉ?	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ .403	የቅድመ ወሊድ የአካል እንቅስቃሴ ማድረግ ከባህላቸን ጋር ይስማማል ብለው ያስባሉ?	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ. 404	ነብሰጡር እናቶች በጤና ባለሙያዎች በመታገዝ የአካል ብቃት እንቅስቃሴ ማድረግ አለባቸው ብለው ያምናሉ??	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.405	የቅድመ ወሊድ የአካል እንቅስቃሴ ማድረግ ከእርግዝና ጋር የተዛመዱ ችግሮችን ሊቀንስ ይችላል በሎ ያስባሉ?	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.406	በእርግዝና ወቅት የአካል ብቃት እንቅስቃሴ ማድረግ ከድህረ ወሊድ በኋላ መልሶ ለማገገም ይረዳል ብለው ያስባሉ?	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.407	የቅድመ ወሊድ እንቅስቃሴዎች ማድረግ ወደ ቀደመው የሰውነት አቋም ወይም ቅርጽ እንደሚመልስ ይረዳናል ብለው ያምናሉ?	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3
ጥ.408	በእርግዝና ወቅት የሚደረግ የአካል እንቅስቃሴ ስልት ከአንድ እናት ሌላኛዋ እናት ይለያያል ብለው ያስባለሉ?	አዎ ----------1 አይደለም ----------2 አላውቅም ---------3

ክፍል 6፡ መካከል በነፍሰ ጡር እናቶች መሰራት ያለባቸው የአካል እንቅስቃሴዎችን ለተመለከቱ ጥያቄዎች ምላሽ ሰጪዎች

ተ/ቁ	ጥያቄ	አማራጭ መልሶች	ይለፉ
ጥ.501	በአሁኑ እርግዝናዎ ወቅት **የቅድመ ወሊድ** የአካል እንቅስቃሴዎች ይሰራሉ?	አዎ ----------1 አይደለም ----------2	አይደለም ከሆነ ወደ

			ጥ.506ይለፉ
ጥ.502	አሁን እየሰሩ ያሉት የትኞቹን የአካል እንቅስቃሴ አይነቶች ነው? (ከአንድ በላይ መልስ መስጠት ይችላሉ)	የእገር ጉዞ ማድረግ(Walk) ------1 ኤሮቢክስ ----------2 መፍታታትና አየር መውሰድ -----3 የዳሌ ወለል እንቀስቃሴ --------- 4 የጀርባ እንቅስቃሴ ----------6 ጉልበትና የእግር ጣቶችን እንቀስቃሴ--7	
ጥ.503	በአሁኑ እርግዛናዎ ወቅት የቅድመ ወሊድ የአካል እንቅስቃሴ እንዲሰሩ የመከርዎት (ያዘዙዎት) ማን ነው?	ከጤና ባለሞያ-------1 በራሴ ----------2 ሌላ ሰው ----------3	
ጥ.504	በሳምንት ምን ያህል ጊዜ የአካል እንቅስቃሴ ይሰራሉ?	≤ ሁለት ጊዜ/ሳምንት---------1 ≥ 3 ጊዜ/ሳምንት----------2	
ጥ.505	በአንድ የእንቅስቃሴ ክፍለ ጊዜ ለምን ያህል ደቂቃዎች የአካል እንቅስቃሴ ይሰራሉ?	< 20 ደቂቃ----------1 ≥ 20 ደቂቃ----------2	
ጥ.506	በአሁኑ እርግዝናዎ ወቅት የአካል እንቅስቃሴ የማይሰሩበት ምክንያት ምንድን ነው? (ከአንድ በላይ መልስ መክበብ ይችላሉ)	1. የጤና ባለሙያዬ የአካል እንቅስቃሴ እንድሰራ አልመከረኝም 2. ምምንም መረጃ/ግንዛቤ የለኝም 3. የአካል እንቅስቃሴ መስራት ለህጻኑ ጤና ጎጂ ነው 4. የጊዜ እጥረት 5. የአካል እንቅስቃሴ መስራት ለእኔ ጉዳት አለው 6. የአካል እንቅስቃሴ መስራት ይደክመኛል 7. በጥሩ የጤና ሁኔታ ላይ አልገኝም	

ስለ ተሳትፎዎ አመሰግናለሁ!!!