THE KNOWLEDGE AND ATTITUDE OF URBAN PREGNANT WOMEN TOWARDS PRE-BIRTH PHYSICAL ACTIVITY IN THE CASE OF SELECTED HOSPITALS IN HARAR AND DIRE DAWA CITIES, ETHIOPIA

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BY

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THE KNOWLEDGE AND ATTITUDE OF URBAN PREGNANT WOMEN TOWARDS PRE-BIRTH PHYSICAL ACTIVITY IN THE CASE OF SELECTED HOSPITALS IN HARAR AND DIRE DAWA CITIES, ETHIOPIA

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I hereby certify that I have read and evaluated this thesis entitled **"The Knowledge And Attitude Of Urban Pregnant Women Towards Pre-Birth Physical Activity In The Case Of Selected Hospitals In Harar And Dire Dawa Cities, Ethiopia".**Prepared by Selamawit Eriso Erigicho. I recommend that it can be submitted as fulfilling the thesis requirement.

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As a member of the board of examiners of the MSc Thesis Open Defense Examination, I certify that I have read and evaluated the thesis prepared by Selamawit Eriso and examined the candidate. I recommend that the thesis be accepted as fulfilling the Thesis requirements for the Degree of Master of Science in Sport Medicine.

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DEDICATION

This work is dedicated to my Almighty God in heaven!

STATEMENT OF THE AUTHOR

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BIOGRAPHICAL SKETCH

The Author was born in Gimbichu Hadiya Zone, in SNNPR 1991 from her father, Eriso Erigicho and her mother, Belayinesh Damo. She completed her Primary, junior and secondary Education at Gimbichu School, Hadiya Zone, Soro woreda. After successfully passing the Ethiopian Higher Education Entrance Examination (EHEEE), she joined Dilla University and graduated in 2011 with BSc degree in the field of Sport Science. After her graduation, she was employed as officer in Hadiya Zone Soro woreda Sport office and in 2015 she joined Haramaya University to persue her Poste graduate in Sport Medicine program.

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ACRONYMS AND ABBREVIATIONS

ACOG	American College of Obstetrics and Gynecology
ASOG	American Society for Obstetrics and Gynecology
ANC	Antenatal Care
CSA	Central Statistical Agency
CVD	Cardiovascular Disease
DHHS	Department of Health and Human Services
SNNPR	Southern Nations, Nationalities and People's Region
SPSS	Statistical Package for Social Science
U.S	United States
WHO	World Health Organization

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THE KNOWLEDGE AND ATTITUDE OF URBAN PREGNANT WOMEN TOWARDS PRE-BIRTH PHYSICAL ACTIVITY IN THE CASE OF SELECTED HOSPITALS IN HARAR AND DIRE DAWA CITIES, ETHIOPIA

ABSTRACT

Aproper physical activity regimen during antenatal care helps the mother have a safe pregnancy and delivery. For healthy pregnant and postpartum women, the guidelines recommend at least 150 minutes per week of moderate-intensity aerobic activity.The objective of the study was to assess the Knowledge and attitude of pregnant women towards pre- birth physical activity, in the case of selected hospitals in Harar and Dire Dawa cities, Ethiopia. A self-administerd questionnaire was developed from previous Review of Related Literatures. A sample of 240 pregnant women who met the study criteria were explained about the study. The respondents are selected by random sampling techniqueas the pregnant women come until the sample size for each hospital is fulfilled. After obtaining theire informed Concent the Knowledge and Atittude quetionnnarie were given to pregnant women in English, Amharic and Somali language depending on their preference. Across sectional study using quantitative methods was conducted at selected Harar and Dire Dawa cities selected hospitals, From Harar, Hiwot Fana, Jagula and Police, from Dire Dawa, Dilchora, Yemariyam Worki and Bilal. The agecategories of 18-45 years were recruited. Data was entered and analyzed by SPSS version 20. Frequencies and percentages were taken out as part of descriptive statics. The majority of the women reported 45.8% (n= 110) second trimester.The respondent's knowledge towards physical activity 82.9 % (n=199) of our study participants were aware of physical activity.More than 45% (n=109) participants in this study agreed that Physical activity have appositive role in antenatal care. The results suggest that the pregnant woman's knowledge and attitude towards pre birth physical activity is favorable. The majority of the respondents agreed that Physical activity have appositive role in antenatal care. The study underscores the need for interaction of sport professionals with other health professionals in order to ensure that the pre birth physical activity performed by pregnant women has importance for our Mathers and sisters.

Key Words: Attitude, Knowledge, Physical Activity, Prgnancy

1. INTRODUCTION

This section is intended to provide the background for this study, statement of the problem, research questions and research objectives. Moreover, it presents other sections such as scope and Significance of the study of this thesis.

1.1. Background of the study

Maintaining a physically active lifestyle throughout pregnancy has been associated with a number of important health benefits, including the prevention or treatment of gestational diabetes; increased energy; improved mood and posture; increased muscle tone, strength and endurance; reduced back pain, constipation, bloating, and swelling; and improved sleep (American Congress of Obstetricians and Gynecologists,2009); (Melzer *et al*., 2010). In addition to these benefits to them other, a growing body of evidence suggests that maternal physical activity may also decrease the risk of obesity and insulin resistance in the early life of her child Huang *et al*.,(2007); Schack-Nielsen and Michaelsen, (2007); Oken, (2009).

Engagement in physical exercise in pregnancy is restricted by safety concerns, doubt about usefulness, and limited individualized guidelines. This study was to assess knowledge of (Harar and Dire Dawa Cities) pregnant women towards pre birth physical activity. Despite such benefits, studies have consistently shown a significant decline in physical activity and exercise during pregnancy Schmidt *et al*., (2006); Borodulin*et al*., (2008); Fell *et al*., (2009); Even son & Wen, (2010). In addition, women report feeling tired, uncomfortable especially late in pregnancy Duncombe*et al*., (2009); Evensonet*et al*., (2009); Haastad, *et al*., (2009).

Only 23% of pregnant women meet the minimum daily exercise recommendations of the American Congress of Obstetricians and Gynecologists American Congress of Obstetricians and Gynecologists, (2009); Fell *et al*., (2009). This is not only an American health issue, and seems to be a greater problem among rural women. Researchers have identified a number of factors associated with lower levels of physical activity during pregnancy, including lack of education from health professionals about specific benefits or

safe modes of exercise Several studies have explored aspects of physical activity, attitudes, intentions, and health benefits among women Hausenblas*et al*., (2008); O'Toole *et al*., (2008); Chasan-Taberet *et al*., (2009). Others have suggested that perceptions of self efficacy related to physical activity are especially important in the consideration of perceived benefits and risks Cramp & Bray, (2009; 2011).

The U.S. Department of Health and Human Services issued physical activity guidelines for Americans. For healthy pregnant and postpartum women, the guidelines recommend at least 150 minutes per week of moderate-intensity aerobic activity (that is equivalent to brisk walking). This activity should be spread throughout the week and adjusted as medically indicated. The guidelines advise that pregnant women who habitually engage in vigorous-intensity aerobic activity (that is the equivalent of running or jogging) or who are highly active "can continue physical activity during pregnancy and the postpartum period, provided that they remain healthy and discuss with their health care provider how and when activity should be adjusted over time" (DHHS; 2008). The World Health Organization and the American College of Sports Medicine have issued evidence-based recommendations indicating that the beneficial effects of exercise in most adults are indisputable and that the benefits far outweigh the risks (WHO; 2010 & ACSM; 2011).

1.2. Statement of the problem

Regular physical activity has long been regarded as an important component of a healthy lifestyle. Recently, this impression has been reinforced by new scientific evidence linking regular physical activity to a wide array of physical and mental health benefits. Despite this evidence and the public's apparent acceptance of the importance of physical activity, most adults in country remain essentially sedentary especially pregnant women. If our sedentary society is to change to one that is more physically active, health organizations and educational institutionslike Haramaya university must communicate to the public about the amounts and types of physical activity that are needed to prevent disease and promote health. These organizations and institutions, providers of health services, communities, and individuals must also implement effective strategies that promote the adoption of physically active, lifestyles.

In Ethiopia our mothers and sisters have wrong perception towards physical activity during pregnancy. They believe that movement can harm their fetus, due to this they prefer more of sedentary life than moving here and there, but the fact is that women who exercise usually have a better pregnancy. Often, they tolerate the stress and pain of labor better and sometimes they don't require as many meds during labor, or can even get away with taking no meds at all. Stretching exercise can be particularly useful for later ease in labor and delivery.With regular exercise during pregnancy, women also recuperate faster after the birth of the baby, whether they have a normal delivery. Obviously, an additional benefit is not gaining as much weight during pregnancy.

Few researchers have examined such issues among specific populations, such as women who live in urban communities. Study rationale and aims given the documented benefits of maintaining a physically active lifestyle throughout pregnancy, a better understanding of the factors that may influence exercise participation during banner describe self-reported levels of exercise, self efficacy, and the perceived benefits and knowledge of safe exercise participation during pregnancy among a sample of Harer and Dire Dawa City women.Several studies explore aspects of Physical activity, attitudes, intentions and health benefits for pregnant woman in different developed countries but it isn't worked in developing countries like Ethiopia.

Therefore the intention of this study is to see the gap of the Knowledge of pregnant women about pre- birth physical activity and the researcher was try to answer the following research questions.

1. What is the Knowledge of pregnant women about pre-birth physical activity?
2. What is the attitude of pregnant women towards pre-birth physical activity?

1.3. Scope of the study

This study was cover pregnant women from some selected Hospitals of Harar (Hiwot fana, Jegula, Police) and Dire Dawa (Dilchora Hospital, Bilal and Yemariamwork). The main purpose of this study was to assess the Knowledge and attitude of pregnant women towards

pre- birth physical activity.Therefore, in this study, not all aspects of physical activity were discussed, but specific areas during pregnancy were focused.

1.4.Significance of the study

Pregnancy comes with its share of annoying complaints. But the more you exercise during pregnancy, the less you'll find to complain about. The objective of this study is to assess the knowledge of pregnant women towards pre birth physical activity. Therefore, the results of this study have a lot of significant for the subject of the study that is the pregnant women to other member of their family. This is because, the result was try to identify important misunderstandings of pregnant women, our sisters and mothers on physical activities advantage for themselves as well as for their fetus in the womb. It is also increase knowledge about the use of pre birth physical activities of pregnant women. During the investigation the participant was develop the understanding of the advantage of exercise during and after pregnancy and encouraged to lead active life style.The results of this study generate upto date information which was help for Harar and Dire Dawa Cities, Oromia Zonal and Regional Hospitals, Sport office and also it serves as an input for health education program undertaken by Sport commission organizations so as to keep the pregnant and delivered mothers being aware of the consequence of during pregnancy physical activity. It will also open a door for further investigation for other researchers.

1.5. Objective of the study

1.5.1. General objective

To assess the Knowledge and attitude of urban pregnant women towards pre- birth physical activity on selected hospitals in Harar and Dire Dawa Cities

1.5.2. Specific Objectives

- To find out the level of Knowledge of the pregnant women towards pre- birth physical activity
- To assess the level of attitude of pregnant women towards pre-birth physical activity

2. REVIEW OF RELATED LITERATURE

The researcher would like to stress that most of literatures discussed here are the research results are conducted in the developed world. However, since it is global and cross cutting issue, the researcher findings and suggestions could be appropriate references in the situation.

Concept of pregnancy

Pregnancy is a state that exists when a mature female misses her monthly menstruation in a normal condition. The fertilized ovum becomes firmly implanted in the uterine wall. The ovaries stimulate pituitary hormones. When this happens; the griffin follicles degenerate. In preparation to receiving ovum as a result of conception the woman becomes pregnant and menstruation will stop till after birth. Ross and Wilson, (2002).

Pregnancy is also referred as a locus from conception to birth, which brings changes on effect of oestrogen and progesterone. These changes enable the woman to nurture her foetus, prepare her body for production of labour, develop her breasts and lay down stores of fat to provide calories for the production of breast milk during puerperium Thomas, 1990. Pregnancy is the state of having an implanted embryo in the uterus until such a time that it is terminated by spontaneous or electiveabortion or delivery. It implies the presence of a developing offspring in the uterus Bennett and Brown, (1990).

Pregnancy is the beginning of new life. It starts with the inception of the embryo in the uterus and continues through the development of thefoetusand finally ends at birth. Pregnancy has a positive influence on the female organism, both physically and psychologically Thomas, (1990) and Emuveyan,(2002). Pregnancy is the period when great changes occur in the physiology and in attitude of the female to give the foetus the nutrients required for growth, and subsequent location. Isidro and Herminie, (2004) and Jones,(1992).

Most of these changes occur before the foetal needs arise .This is because the tropoblast is a highly active tissue removing substances from the maternal blood, converting some and elaborating others, returning some such as oestrogen and progesterone into the women's blood and passing others such as protein and vitamins to the foetus. All the chemicals necessary for this activity are derived from the maternal blood and to enable adequate quantity to reach the placental bed, a quiescence of the metabolism occurs with a delay in the exchange between maternal blood and tissues chamberlain, (1996). Pregnancy is a time of emotional, attitudinal and physical changes during which the various systems of the body are fashioned for the role they will have to fulfil in supporting and eventually expelling the foetus Baile, (1974).The woman's psychological state and attitudes are also affected by hormonal changes Thomson, (1990).

Pregnancy is an ideal time for behavior modification and for adopting a healthy lifestyle because of increased motivation and frequent access to medical supervision. Patients are more likely to control weight, increase physical activity, and improve their diet if their physician recommends that they do so Nawaz H, Adams ML, and Katz DL (2000). Motivational counseling tools such as the Five A's (Ask, Advise, Assess, Assist, and Arrange), originally developed for smoking cessation, have been used successfully for diet and exercise counseling. Obstetrician–gynecologists and other obstetric care providers can consider adopting the Five A's approach for women with uncomplicated pregnancies who have no contraindications to exercise. Warning signs to Discontinue Exercise While pregnant; the blood comes from uterus, Regular painful contractions, Amniotic fluid leakage, Dyspnea before exertion, Dizziness, Headache chest pain, Muscle Weakness affecting balance, Calf pain or Swelling. (Royal College of Obstetricians and Gynecologists. 2006).

Guidelines for physical activity in pregnancy a number of guidelines have been developed for physical activity in pregnant women. There are guidelines from the American College of Obstetricians and Gynecologists (ACOG, 2002), the society of exercise physiology. In support of these guidelines the South Africa Sports Medicine

Association came up with a position statement on Exercise in pregnancy Barsky et al., (2012).

The principles of exercise prescription for pregnant women do not differ from those for the general population (DHHS; 2008). A thorough clinical evaluation should be conducted before recommending an exercise program to ensure that a patient does not have medical reasons to avoid exercise. An exercise program that leads to an eventual goal of 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.

2.1. Physical Activity Knowledge Status

In Nigeriaa cross sectional survey done by Mbada et al. (2014), to assess knowledge and attitude of Nigerian pregnant women towards antenatal exercise findings revealed that 37% respondents had knowledge of pelvic floor exercise, muscle strengthening exercise 51.3%, back care exercise 51.3% and relaxation and breathing exercise 59.8% as types of antenatal exercise in pregnancy. These findings underscore the importance of education to promote other forms of exercise that can be done without cost in these resources limited setting to promote wellbeing. According to the South African Sports medicine position statement on exercise in pregnancy, exercises such as jogging/ running, hiking, low impact aerobics and dancing are some of the safe exercises that can be done in pregnancy Barsky et al., (2012).

In a survey conducted by Adeniyi et al. (2014) to assess physical activity and energy expenditure in Ibadan pregnant women, about half 222(49.0%), Knowledge of contraindi- cations is very vital to promote safety of the mother and fetus during pregnancy. In terms of attitude to exercise, only 16% had a negative attitude towards exercise in pregnancy. This gives health care providers an opportunity to utilize exercise as an adjunctive therapy to many health conditions, including gestational diabetes. However safety issues need to be observed to ensure that optimum benefits are reaped from the exercise. in pregnancy Barsky et al., (2012).

In South Africa Brunette et al. (2012).conducts an epidemiological study of physical activity patterns and weight gain in physically active and sedentary pregnant women in Tshwane, South Africa. Of the 78 women who participated, 30.8, 53.9 and 16.7% were classified as relatively inactive, active and very active respectively. In terms of weight gain, 45.5% gained weight within the recommended range, 28.6% gained weight that was below the recommended range while 26.0% gained weight above the recommended range. There was no association, however between the trimester and the level of physical activity. However it has been found in literature that physical activity declines as the pregnancy progresses. These findings could however be due to the small study sample and the cross sectional nature of the design. Physical activity in this study effectively controlled weight gain during pregnancy.

Another study was carried out in South Africa by Muzigaba et al. (2014), to explore the perceived role and influencers of physical activity among pregnant women from low socioeconomic status communities. In terms of physical activity, about 44% reported that they were currently not physically active and of the 56% who reported engaging in physical activity, 44% did light physical activity and 12% did moderate physical activity. All participants were generally aware of physical activity in pregnancy and recognized the importance of being healthy during pregnancy. They mentioned, together with physical activity, good nutrition, safe sex and avoidance of alcohol and tobacco products as healthy lifestyle behaviours. Brunette et al. (2012).

Appropriate exercises during pregnancy have proved to be beneficial to many expectant mothers, though how much and what kind of exercises varies from person to person.Clark AM. (2005). Reports indicate that exercise during pregnancy can improve women's psychological wellbeing, reduce gestational weight gain, back pain, length of labour, decrease caesarean section rates and reduce recovery times Clark AM. (2005), Wang TW, Apgar BS. (1998).

Attitudes towards exercise vary and reduction in exercise levels during pregnancy is common with concerns being strongest amongst those who had miscarriages or problem

conceiving Paisley TS, Joy EA, Price RJ. (2003). Further, rates of physical activity differ by race and ethnicity in a number of ways and personal or cultural values influence the pregnant women's physical activity behaviors. Most participants 93% (n=279) attached positive attitudes towards exercise and seeking medical advice on exercise during pregnancy. Reasons for seeking medical advice included knowing the right exercise to do 56% (n=168) and proper exercise positions 19% (n=57).Nkhata et al.; (1989).

Physical activity engaged in by pregnant women Hjorth et al., (2012); Adeniyi et al., (2014). Pregnant women may feel safer and comfortable doing household activities that are outdoor activities Adeniyi et al., (2014). This is consistent with a study conducted in South Africa whose findings revealed that some women did not feel safe in their neighbourhoods Muzigaba et al., (2014). Low income pregnant women might not afford outsourcing housekeeping services Adeniyi et al., (2014).

However, household activities may not be adequate to achieve recommended physical activity level Adeniyi et al., (2014). Aerobic exercise is recommended to maintain cardiovascular fitness and help prevent chronic diseases Nascimento et al., (2012). Large muscle groups should be involved in exercise such as when walking or jogging, stationery bicycle, treadmill, swimming, water aerobics, aerobic dance or low impact aerobics (RCOG, 2006). Whatever choice of activity a woman makes, it necessary to find a modality of exercise which they stick to over time while avoiding exercises that increase risk of falling and abdominal traumas (RCOG, 2006).

It is very important for pregnant women to be able to measure the intensity of exercise if they are to benefit from it. Ratings of perception exertion can be used to assure an ideal intensity of exertion using a scale rating from 6 to 20 with an ideal target zone for pregnant women of 12 to 14 somewhat hard Artal et al., (2003). However in low income settings these resources might not be available and the "talk test" can be done to confirm that intensity of exercise is adequate and women are not overexerting. The "talk test" enables exercising at comfortable intensity that allows one to keep up a conversation (RCOG, 2006).

In another study done on health Irish pregnant women only 21.55 women met the current recommendations for exercise in pregnancy Walsh et al., (2011). Physical activity tended to decrease as pregnancy progressed in the African studies reviewed Hjorth et al.,(2012), Adeniyi et al., (2014). The risk of being sedentary increase with advancing pregnancy probably because most women are careful to avoid injuries to themselves and the unborn baby and that there is a general distortion of body frame with a backward sway that makes it difficult to perform physical activity Adeniyi et al., (2014). Even studies conducted in developed countries have reported a declining physical activity level with advancing pregnancy Guelinckx et al., (2010); Hayes et al., (2012). These findings might mean that low levels of physical activity are prevalent in both developing countries and there is need to promote physical activity even in developing countries.

2.2. Knowledge and Attitude

In Zimbabwe April (2016),Only one study by Mbada et al. (2014). looked at knowledge and attitude towards physical activity in pregnancy. Findings revealed that participants had some knowledge about types of exercise and some benefits and contraindications to antenatal exercise. 47.6% had below average knowledge, 5.82% had average know- ledge while 46.6% had good knowledge of antenatal exercises. Almost half of the participants had below average knowledge. This in itself might be a barrier to performance of physical activity during pregnancy. It also might result in women engaging in activities that increase risk of harm both to the pregnant woman and the unborn baby.

It is necessary therefore, to give proper education concerning physical activity in pregnant considering its numerous benefits among which are prevention and control of gestational diabetes. Though 47.6% had below average knowledge of physical activity in pregnancy in this study, only 15.8% had a negative attitude towards physical activity in pregnancy. These findings might underscore the influence of lack of knowledge on exercise in pregnancy because even some of those that had a positive attitude towards exercise in pregnancy. Adeniyi et al., (2014).

Although recommended level of physical activity is beneficial, it may not be perceived as appropriate or feasible. Maintaining or increasing physical activity in pregnancy is difficult even in the absence of medical or obstetric complications. Though there is little information on activity levels in pregnancy McParlin et al., 2010, studies have consistently identified social isolation, safety concerns and cultural norms as barriers to physical activity among an ethnic group of pregnant women Chasan-Taber, 2012. In the study conducted by Muzigaba et al. (2014). A descriptive cross-sectional study was conducted among 110 pregnant mothers Obstetrics and Gynecology December Colombo(2015).

Across-sectional study was conducted Ministry of Health; (2010). The fact that only about half of the pregnant mothers (51.8 %, n=57) had been recommended for antenatal exercises during the current pregnancy as found in the present study conducted in a leading maternal hospital in the country is a concern. Adding on to the situation, the assessment of knowledge revealed that only 27.3% (n=30) of pregnant mothers possessed a 'Good/Excellent' overall knowledge on antenatal exercises and the level of knowledge was not associated with having been recommended antenatal exercises. Emanating from these findings it was not surprising that only 15 (13.6%) among the study population were practicing antenatal exercises according to the recommended frequency. These findings should be used to advocate with service providers to take measures to rectify the situation.

The fact that a great majority of pregnant mothers (n=93, 84.5%) had 'somewhat favorable' or 'favourable' attitudes towards antenatal exercises indicates the potential success of such an initiative should be highlighted in the advocacy efforts. Similar to the findings of the present study, a study in Nigeria, among 189 of pregnant women also found that a majority demonstrated inadequate knowledge (47.6%, n=89) but had positive attitude towards antenatal exercises the present its baseline assessment prior to the intervention Bangalore (2007).

A cross -sectional study, a convenience sample of one hundred and six pregnant women were enrolled from the rosters of KMC hospitals, Mangalore from December (2014) to Febuary (2015). The participants who were presenting themselves for regular antenatal check-ups in the Department of Obstetrics and Gynecology were selected on the basis of normal pregnancy. They were aged between 18 - 40 years in any trimester and were able to understand and read either English or Kannada. The sample size was calculated with the anticipated level of knowledge of pregnant women at 50%, 20% relative precision, 90% confidence interval and 10% non-response error.

Most of the respondents agreed that exercise in pregnancy would lead to reduction in risk of back pain (75.9%), prevention of excess weight gain (69.1%), and increased ability to cope with labour and delivery (69.6). On the other hand, lower extremities swelling (31.8%), extreme weight gain or loss (30.7%), and back pain (28.5%) during pregnancy were mostly considered as contraindications to exercise during pregnancy. The summative knowledge score revealed that 47.6% of the respondents had below average knowledge and 5.82% had average knowledge, while 46.6% had good knowledge of antenatal exercises. Chidozie E. Mbada et al., (2014).

Knowledge of safe exercises, consistent with findings of Mudd and associates Mudd*et al*., (2009). Although recent research is just beginning to identify a link between mothers'behaviors and childhood obesity, the results of this study found that nearly one-half (47.6%) of the sample did notunderstand that a mother who is overweight is more likely to have a child who is eventually obese.Regarding awareness of safety precautions for exercise during pregnancy, participants showed little awareness ofsome risks or knowledge of safe exercises, consistent with findings of Mudd and associates Mudd *et al*., (2009).

The women reported they should not engage in strength training, such as lifting weights during pregnancy, and over threefourthsof the women reported that they should decrease exercise during the last two trimesters of pregnancy. Although studies suggest a general

decline in physical activityevels throughout pregnancy, continued physical activityacross trimesters is encouraged according to United Statesnational guidelines (ACOG, 2009). Supporting previous work Cramp & Bray, (2009).

Earlier studies conducted in Africa have generally generated evidence that women in low-income countries have a high physical workload that is sustained during pregnancy (Benefice and Cames, (1999); Roberts et al., (1982); Spurr et al., (1996); Lawrence and Whitehead, 1988). This high physical workload was believed to contribute to the high incidence of low birth weight (Rao et al., 2003). However, there are only a few published studies on physical activity among pregnant women in low-income countries, and most have based on questionnaires Hjorth et al., (2012).

There is ample and consistent evidence that promoting physical activity in women of reproductive age may be a promising approach for the prevention of excessive weight gain, gestational diabetes mellitus and subsequent complications suffered by children born from pregnancies affected by gestational diabetes mellitus Ferraro et al., (2011). At least 30 min of moderate activity or 8000 steps/day equivalent to approximately 7.5 MET-h/wk are recommended for beneficial results McParllin et al., (2010).

In a meta-analysis conducted by Dugas et al. (2011) it was suggested that women from developing countries perform similar amounts of physical activity as women from developed countries when assessed by doubled labelled water raising questions about actual physical workload. However, these data provide no insight into the patterns of physical activity. Thus, there is a need for more studies with objective methods for assessing physical activity among pregnant women in low-income countries. The objective of this literature review, therefore, is to assess the patterns of physical activity in pregnant women in Africa.

Historically, pregnancy was regarded as a state of confinement. More recently,

however, research has demonstrated many potential health benefits of aerobic and strength-conditioning exercise in pregnancy and the postpartum period. It is now considered safe, and even advisable, for otherwise healthy pregnant women to initiate or continue an active lifestyle during pregnancy.

Many anatomical and physiological changes take place during pregnancy and while there is no evidence to suggest that exercise in pregnancy is associated with any maternal of fetal adverse outcomes, it is prudent to adjust exercise regimes where necessary to avoid potential harm. Contact sports as well as sports associated with a risk of falling should be avoided. Brisk walking, stationery cycling, and swimming are examples of aerobics exercises that are recommended in pregnancy.

It is advisable for all pregnant women wishing to pursue exercise in pregnancy to be screened for contra- indications and risk factors, for subsequent recommen- dations to be made on an individual basis. It is useful to classify pregnant women into sedentary, recreational and competitive athlete, as this will help guide the intensity of exercise. All women should be aware of warning symptoms that may develop during physical activity, and advised to stop the exercise and seek medical advice should they occur. Exercise forms only one component of a healthy lifestyle. A nutritious diet, adequate hydration, and abstinence from smoking, alcohol and illicit drugs are crucial in maintaining optimal health during pregnancy Horak and Osman, (2012).

Lack of exercise during pregnancy might result in loss of muscular and cardiovascular fitness, excessive maternal weight gain with a raised risk of GDM, varicose veins, dyspnea, lower back pain and poor psychological adjustment (Royal College of Obstetricians and gynecologists - (RCOG, 2006). An initial approach to becoming more physically active could be to encourage women to incorporate unstructured physical activity into daily living, both before and during pregnancy. Giving women an appropriate exercise prescription can encourage them to participate in physical activity Colberg et al., (2013).

2.3. Exercise During Pregnancy

Exercise and physical fitness have dramatically gained in popularity over the past several years, and have assumed important roles in the lives of many women. Physical activity and reproduction are normal parts of life, and for normal healthy women, combining regular exerciseand pregnancy appears to benefit both mother and baby in many ways. Thus, a healthy woman with a normal pregnancy may either continue her regular exercise regimen, or begin a new exercise program. The American College of Obstetrics and Gynecology (ACOG), as well as the American Society for Obstetrics and Gynecology (ASOG), recommend that normally healthy pregnant women may continue an already-established exercise regimen.

Pregnancy is a normal physiological state characterized by growth of both mother and fetus. From conception onward, the fetus develops into a baby, and the mother experiences both physical and psychological growth. All mothers want the best possible health for themselves and their babies, but some women and physicians are concerned that regular maternal physical activity during pregnancy may cause miscarriage, premature delivery, poor fetal growth, or musculoskeletal injury. For normal pregnancies, these concerns have not been substantiated. Indeed, participation in regular weight-bearing exercise has been shown to improve maternal fitness, restrict weight gain without compromising fetal growth, and hasten postpartum recovery.(ACOG Gynaecol obstet 1994).

In addition, the psychological benefits of exercise are undeniable, and should be nurtured by all who care for pregnant women. During the first trimester, major physiological changes are taking place, even though maternal body changes are few. During low-level exercise, blood pressure and pulse responses are not dramatically different from those in the non-pregnant woman, but fatigue may be noticed earlier during exercise. As early pregnancy progresses, blood volume expands and the uterus continues to enlarge Gynaecolobstet (1994).

2.4. Type of physical activity and intensity

Household activities consistently emerged as the major form of physical activity engaged

in by pregnant women Hjorth et al., (2012); Adeniyi et al., (2014). Pregnant women may feel safer and comfortable doing household activities that are outdoor activities Adeniyi et al., (2014). This is consistent with a study conducted in South Africa whose findings revealed that some women did not feel safe in their neighbourhoods. Muzigaba et al., (2014).

Low income pregnant women might not afford outsourcing housekeeping services Adeniyi et al., (2014). However, household activities may not be adequate to achieve recommended physical activity level Adeniyi et al., (2014). Aerobic exercise is recommended to maintain cardiovascular fitness and help prevent chronic diseases Nascimento et al., (2012).

Large muscle groups should be involved in exercise such as when walking or jogging, stationery bicycle, treadmill, swimming, water aerobics, aerobic dance or low impact aerobics (RCOG, 2006). Whatever choice of activity a woman makes, it necessary to find a modality of exercise which they stick to over time while avoiding exercises that increase risk of falling and abdominal traumas (RCOG, 2006).

It is very important for pregnant women to be able to measure the intensity of exercise if they are to benefit from it. Ratings of perception exertion can be used to assure an ideal intensity of exertion using a scale rating from 6 to 20 with an ideal target zone for pregnant women of 12 to 14 (somewhat hard) Artal et al., (2003).

2.5. Level of Physical Activity

The level of physical activity reported in the studies from Africa was low Adeniyi et al., (2014); Hjorth et al., (2012). However women in low income countries are generally considered to have a high physical workload that is sustained throughout pregnancy. There are a few published studies on physical activity among pregnant women in low income countries and most are based on questionnaires. In a meta-analysis of doubly labelled water studies conducted by Dugas et al. (2011).

To assess energy expenditure in adults living in developing compared with industrialized countries findings revealed that women from developing countries have similar physical activity levels to those from developed countries.It could therefore be a misconception that women from developing countries have high levels of physical activity considering that physical activity in the studies was measured using the most objective method. Low levels of physical activity have also been reported in the developed world. A study conducted in the United States reported that only 15% of women engaged in physical activity at the recommended level Evenson et al., (2004).

2.6. Process of Engagement in Physical Activity

The process of participating in physical activity during pregnancy engendered responses relating to personal concerns and bodily changes experienced across trimesters. These responses were influenced by each of the above categories and included personal awareness of risk, feeling better, recognition that a change was needed, and an in Creasing pregnant body size. This process of engagement in physical activity across pregnancy can be described using three phases: uncertainty, engagement, and compromise. These three phases do not coincide with the trimesters but with changes or experiences that were meaningful to women, such as having confidence to increase activity, being reassured about the baby's health after an ultrasound, or modifying types of activity in relation Journal of Midwifery & Women's Health. Derbyshire E, Davies G, Costarelli V, Dettmar P. Habitual (2008).

2.7. Benefits of Physical Activity

The physical health benefits of physical activity are clear. They include lower blood pressure and cholesterol and maintenance of a health weight. Some other examples of benefits include improved mental health and wellbeing, social engagement. ,Jewson, et al.,(2008). Enhanced sleep De Castro et al., 2008.and reduced risk of fractures Stessman et.,(2008). several studies reveal that, sports and regular physical activities have beneficial effects on physical, well-being, mental health, and social affections of humans(Jewson et al., (2008); De Castro et al.,(2008). The physical health benefits of physical.

As stated by Jewson, et al., (2008). Regular physical activity plays a significant role in improving moods and subsequent meant health has been shown to relieve symptoms of depression. These benefits can be experienced by those with a diagnosed mental illness as well as the general population. The mental health benefits of physical activity frequently motivate those who are already physical activity to maintain their routines. The benefits of physical activity on mental health can be achieved eve in the absence of fitness gains Bailey et al., (2008). This may be due to factors including increased social engagement and increased exposure to sunlight De Castro et al., (2008).

Social engagement is another key benefit of physical activity, and for women this often motivates continued participation in physical activity Jewson, E. et al., (2008). Regular group exercise is found to be a means of social support, especially for older women Martin and Cann, (2005). Improved quality of sleep is related to women's participation in physical activity and it is an important marker of quality of life. Niemen, et al., (2005). reported that, people, who are physically fit fall asleep faster, sleep better and are less tired during the day. Furthermore, a study conducted by Laiz et al., (2008) showed that, women who participate in regular physical activity sleep more and experience a better quality of sleep than women who are sedentary.

2.8. Counseling on Physical Activity During Pregnancy

Women who were not previously physically active should gradually begin with a short exercise session three times a week. Then, a gradual increase can be made to 30–45 minutes, three times a week, supplemented with virtually daily physical activity for 30 minutes in total. Aerobic exercise: With regard to aerobic exercise, normal recommendations can be followed as long as one avoids excessively every woman is unique and an individual assessment is needed based on the current condition status and the type of physical activity, intensity, duration and frequency. A reasonable objective should be to strive for retained fitness during pregnancy, but not to strive for peak performance. Every exercise session should include a warm-up and a wind-down180 physical activity in the prevention and treatment of disease phase. (Artal R, O'Toole M. Br J 2003).

Pregnant high body temperature (see above) in the first three months. Pregnant women should exercise in light clothing and remember to drink fluids during and after exercising. Activities of a high intensity in a warm and humid climate should be avoided Gynecol (2003). All activities that include rhythmic and dynamic exertion with major muscle group sare recommended, such as brisk walks, Nordic walking, jogging, cycling, aerobics, step-up training, callisthenics and dance. Swimming is also an excellent activity. Aquarobics is suitable for women with pelvic and back problems.

Since the heart rate is elevated during pregnancy, the pulse level is not always a good way of measuring the intensity of an exercise session. Instead, the recommendation is to assess the physical strain with either a so-called talk test or with Borg's Rating of Perceived Exertion (RPE) scale. A talk test is based on the exercise session's intensity not being greater than what permits normal conversation. Borg's scale measures subjective exertion between 6 and 20. The recommended level during pregnancy is 12–14, in other words somewhat hard ACSM's Guidelines for Exercise Testing and Prescription. Williams & Wilkins; (2006).

Strength training**:** Strength training during pregnancy should focus on the pelvic floor muscles and the back and abdominal muscles, but training of the lower and upper extremities can advantageously be included. Since there is a risk of vena cava compression, in other words that the venous reflux to the heart is obstructed by the growing uterus, which can lead to an elevated risk of a reduced stroke volume and a drop in blood pressure, it is recommended that strength exercises for the abdomen be done sitting, lying on one's side or standing after the 16th week of pregnancy (20). In general, 7–8 exercises are recommended for the body's most important muscle groups, with 8–12 repetitions in three sets ACSM's Guidelines for Exercise Testing and Prescription. (Lippincott Williams & Wilkins; 2006).

Pregnant women should avoid such high loads that the strain reflex arises. Many have problems to "find" the pelvic floor muscles when exercising and in such a case it may be appropriate to contact a physiotherapist to check that the exercises are done correctly before

the birth. After the birth, it may be even more difficult depending on what damage has been done to the muscles, supportive tissues and potential nerve damage. Consequently, it is always an advantage to have learned the technique ahead of time. For beginners, it is also important to learn the right technique for the general strength exercises. The physiotherapist can provide advice on both technique and the scope of the exercises.

Flexibility training:Due to generally increased flexibility during pregnancy, it is important to ensure that stretching and extension exercises are done with a certain degree of caution, so that imbalances do not arise. The muscle groups that have been used in the aerobic and strength training should be extended/ stretched, but specific flexibility exercises are not necessary. In general, stretching and flexibility training aims to retain normal joint flexibility. The exercises should be done at a relaxed pace and the extended position should be maintained for 10–30 seconds. The training should be done at least 2–3 times a week (ACSM's Guidelines for Exercise Testing and Prescription. (Lippincott Williams & Wilkins; 2006. Co AS; 2004). Flexibility training for the untrained can advantageously be done under the guidance of an instructor.

2.9. Summary and Implication

To Summarize the reviewed literatures; the evidence from many studies also shows that Knowledge and attitude towards physical activity in pregnancy, Findings revealed that participants had some knowledge about types of exercise and some benefits and contraindications to antenatal exercise. 47.6% had below average knowledge, 5.82% had average know- ledge while 46.6% had good knowledge of antenatal exercises. Almost half of the participants had below average knowledge Mbada et al. (2014).

In Zimbabwe April 2016. Only one study by Mbada et al. (2014). looked at knowledge and attitude towards physical activity in pregnancy. Findings revealed that participants had some knowledge about types of exercise and some benefits and contraindications to antenatal exercise. 47.6% had below average knowledge, 5.82% had average know- ledge while 46.6% had good knowledge of antenatal exercises.

Almost half of the participants had below average knowledge.

In South Africaconducts an epidemiological study of physical activity patterns and weight gain in physically active and sedentary pregnant women in Tshwane, South Africa. Of the 78 women who participated, 30.8, 53.9 and 16.7% were classified as relatively inactive, active and very active respectively. In terms of weight gain, 45.5% gained weight within the recommended range, 28.6% gained weight that was below the recommended range while 26.0% gained weight above the recommended range. There was no association, however between the trimester and the level of physical activity. Brunette et al. (2012).

Antenatal Exercise: A Cross-Sectional Survey, Nigeria in April (2014) Respondents had knowledge of pelvic floor exercise (37.0%), muscle strengthening exercise (51.3%), back care exercise (51.3%), and relaxation and breathing exercise (59.8%), respectively, as types of antenatal exercise. However, swimming (21.7%) and cycling (20.6%) were the least known types of exercises in pregnancy. shows the knowledge of respondents' on benefits of and contraindications to antenatal exercises.

The U.S. Department of Health and Human Services issued physical activity guidelines for Americans. For healthy pregnant and postpartum women, the guidelines recommend at least 150 minutes per week of moderate-intensity aerobic activity (that is equivalent to brisk walking). This activity should be spread throughout the week and adjusted as medically indicated. The guidelines advise that pregnant women who habitually engage in vigorous-intensity aerobic activity (that is the equivalent of running or jogging) or who are highly active "can continue physical activity during pregnancy and the postpartum period, provided that they remain healthy and discuss with their health care provider how and when activity should be adjusted over time" (DHHS; 2008).

The World Health Organization and the American College of Sports Medicine have issued evidence-based recommendations indicating that the beneficial effects of exercise in most adults are indisputable and that the benefits far outweigh the risks (WHO; 2010 et al., ACSM; 2011).

Pregnancy is the beginning of new life. It starts with the inception of the embryo in the uterus and continues through the development of the foetus and finally ends at birth. Pregnancy has a positive influence on the female organism, both physically and psychologically Thomas, (1990) and Emuveyan,(2002). Pregnancy is the period when great changes occur in the physiology.

3. METHODS AND MATERIALS

The concern in this chapter is to present details of the research design, Source of data Source population, Inclusion and Exclusion criteria,Sample Size Determination, Sampling Procedure/ Technique, . Data Collection Methods,Data Collectors,Data Collection tools,Data Collection Procedure, Data Collection Instrument, Variables, Operational definition,Scoring Procedure,Data quality control, Method of data analysis and Ethical consideration.

3.1 Description of the study area

The survey study was conducted at Harar and Dire Dawa cities Selected Hospitals.

Harar city is located in the Eastern part of Ethiopia 527km away from Addis Ababa, the capital city, and found on a hilltop in the eastern extension of the Ethiopian Highlands.The experimental site is located at 42º 07’05’’`E longitude and 9º 18’49’’ N latitude and at an altitude 1917m above sea level in the Eastern Ethiopia (2016 Government of Ethiopia). Based on the 2007E.C. Census conducted by the Central Statistical Agency of Ethiopia (CSA), Harar has a total population of 183,415, of whom 92,316 were men and 91,099 women.

Dire Dawa is city in Hararge region, Ethiopia. It is a commercial and industrial center located on the Addis Ababa–Djibouti railroad Dire Dawa was founded in 1902 when the railroad from Djibouti reached the area, and its growth has resulted largely from trade brought by the railroad. Geographically Dire Dawa is located about 515 kilo meters from the capital city of the Ethiopia Addis Ababa in the Eastern part of the county and about 47 kilo meter from the Harare city. Based on the 2007 census conducted by the Central Statistical Agency of Ethiopia (CSA), Dire Dawa has a population of 341,834of whom 171,461 are men and 170,461women and 233,224 or 68.23% of the population are urban.

The mean annual temperature of Dire Dawa is about 25.40C. The average maximum temperature of Dire Dawa is 31.40C, while its average minimum temperature is about 18.20C. Specifically Dire Dawa is found in eastern Ethiopia at ($9^0$36'N latitude and $41^0$52' longitude) (2016 Government of Ethiopia). Map of the study site are on page 72 and 73.

3.2 Research Design

Cross-sectional research designs were employed in the study. These studies were used quantitative types of data, because this method is appropriate to obtain current and relevant information from a relatively large number of respondents (Cress well, 2003). Furthermore, the methods help to identify opinions, suggestions and comments pertaining to the issue under this study.

3.3 Source of Data

Primary data were used in this study. The research was obtaining primary source of data by collecting a data through questionnaire. The secondary data was collected from different written materials like journals, prior researches, published books and other documented materials.

3.4 Source of Population

The source of population was all urban pregnant women **(**one up to third trimester**)** attending Antenatal care in Harar and Dire Dawa selected hospitals during the study period.

3.5 Study Population

The study population was pregnant women attending ANC in Harar and Dire Dawa hospitals during the study period.The subjects were from different age, Occupation, level of education, different family size, different monthly income and differentGestational Status. The selection depends on their interest to participate.

3.6 Inclusion and Exclusion Criteria

Inclusion

- Mothers who were mentally and physically capable of being interviewed and those who were volunteer to participate in the study.
- Pregnant woman attending antenatal care

Exclusion criteria

- Pregnant woman seriously sick

3.7. SampleSize Determination

Regarding the sample size from Harer and Dire Dawa city, 240 respondents was randomly selected from Hospitals. The maximum number of respondents was determined by using a formula developed by Yamane (1969).

$n = \frac{N}{1+N(e)^2}$ Where: n=is the sample size for the research use N = is the population size (total number of respondents in the selected Hospitals) e =is the level of precision.

Out of the total population, 240 sample respondents was used in this study where **Total population (N) =600,** the average monthly attendance of pregnan woman (personal communication with heads of Antenatal clinics in the hospitals). The level of precision (e) = 0.05. So, that sample size (n) of this study will be 240 Harar and Dire Dawa city's pregnant woman.

3.8. Sampling Procedure/ Technique

Hospitals

Harar — DireDawa

Hiwot fana, Jagula, Police Hospital — Dilchora, Yemariyam work, Bilal

120	100	80
(20%) 48	(17%) 41	(13%) 31

140	90	70
(23%) 55	(15%) 36	(12%) 29

The total population, 600

Out of the total population, 240

From Harar and Dire Dawa citiespurposely selected hospitals, the respondents are selected by randomsampling techniqueas the pregnant women come until the sample size for each hospital is fulfilled. By collaborating with ANC care workers getting the respondents in a formal way from the hospitals.

3.9. Data Collection Methods

First the investigator asks the selected hospital's head to get a permission of conducting the study in the hospital. After getting permission, official contact was made with ANC care workers to explain about the study procedures and data collection methods. To meet the objective of the study the questionnaire was prepared in English and translated to Amharic, Afan Oromo and Somali languages for the purpose of clarity and to make easily understandable by respondents.

3.9.1 Data Collectors

Regarding the procedure of data collection, the investigator was assign two Nurses data collectors. Hence, the two nurses data collectors was trained on how to health care and collect data through questionnaires. Face to face interview with pregnant women was conducted in the antenatal care unit of the hospital. Finally, the Hospital in questionnaires was collected by nurses' data collectors. However, interview document analysis and observation was carrying out by the investigator.

3.9.2. Data Collection Tools

3.9.2.1. Questionnaire

A self-administerd questionnaire was developed from previous related literatures. The researchers was be used questionnaires as the main data gathering instrument, because it is easier to handle and simpler for respondents to answer with in short period of time. Besides, it allows respondents to respond to questions confidentially and enables the researchers to used representative samples as the source of data to avoid exposing and biases. Hence, as the major data collection tool. Questionnaires were employed with intension of securing pertinent information for the study. In this study, questionnaires were used to collect information from pregnant woman.

Scoring Likert Scale

The first section of the questionnaire consisted of items asking during pregnancy physical activity perception about 7 items with 5 point ranging scale from 1= strongly disagree, 2= disagree, 3= undecided, 4= agree, 5= strongly agree. The higher score agree, strongly agree shows positive attitude and the lower score associates undecided, disagree, and strongly disagree with negative attitude. Items measuring pregnant women knowledge towards physical activity was 7 with 2 point ranging scale, 1=Yes and 2= No. The higher score shows positive Perception and the lower score associates with negative perception.

3.9.3. Data Collection Procedure

All data collectors were oriented for two days on data collection process based on the guide that was developed by principal investigator for data collectors and clarifying how to interview the questionnaire. They were allowed to fill the questionnaire and later discussion was made in all contents of the format. Additionally, they were trained on their responsibilities for describing the purpose of the study, giving orientation, telling clients the importance of honest and sincere reply, on responding to questions. The principal investigator and the coordinator strictly follow the overall activities for each activity on daily base to ensure the completeness of questionnaire, to give further clarification and support for data collectors.

3.10. Data Collection Instrument

The instrument that the researcher was for data collection was a self-administerd questionnaire. All of this was designed based on different previous studies relevant to the research questions and problem of the study.

3.11. Variables (Dependent, Independent)

Dependent Variable,

Knowledge

Attitudes

Independent Variable:

Age**,**

Educational status,

Occupation of Pregnant Women

Monthly income,

Family Size

Gestational status

3.12. Operational definition

In this section the following oprational terms were used

- **Attitude:** A settled way of thinking or feeling about something, afeeling or emotion toward a fact or state.
- **Knowledge:** is a familiarity, awareness or understanding of someone or something, such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering, or learning.
- **Physical activity:**is any body movement that works your muscles and requires more energy than resting**.**
- **Pregnancy:**is the term used to describe the period in which a woman carries a fetus inside of her.
- **Trimester:** one of the three periods of approximately 3 months into which pregnancy is divided. The first trimester includes the time from the first day of the last menstrual period to the end of 12 weeks. The second trimester, closer to 4 months in length than 3, extends from the twelfth to the twenty-eighth week of gestation. The third trimester begins at the twenty-eighth week and extends to the time of delivery.

3.13. Data Quality Control

First the investigator was informing ANC workers about the study, give training data collectors and pre test questioner. To assure the quality of the study uses pre test study to check the questioner of the research. Furthermore the data collected from the respondent was making sure the completeness of the data. Pilot study checking the validity and reliability of the collection instruments before providing to the actual study subject was a core function of research to assure the quality of the data. It should be tested by giving it to a sample of individuals drown from the population whom the investigator plans to select respondents from Harar Tekilala hospital. The pilot test was conducted to secure the items closed in the instruments with the objective of the checking items closed in the instruments

could enable the investigator to gather relevant information. Besides, the purpose of pilot testing was to make the necessary amendments so as to correct confusing and vague questions also to examine the quality or appropriateness of the prepared instruments. The data collected in pilot methed was analyzed with split-half method to know reliability.

3.15. Method of Data Analysis

All collected data was prepared for analysis, all collected data was coded and arranged for analysis. Quantitative approaches was used to find-out and eventually led to generalize understanding of pregnant women's participation of physical activity. data analysis refers to method by which the collect data through one or more of data collecting instruments was properly edit and then organize in the forms of tables and analyze by Frequencies percentages were taken out as part of descriptive statistics. The data collected from the Hospital was tabulated organize and systematically formed. All data analysis activities was carried-out using; statistical package for social science (SPSS) version 20.

3.16. Ethical Consideration

This study was approval from the institutional Health Research Ethics Review Committee (IHRERC) of the College of Health and Medical Sciences, Haramaya University.

Confidentiality: The information that we was provided was kept confidential. There was no information that was identifying the participants in particular. The findings of the study were general for the study community was not reflecting anything particular of individual persons.

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

Rights: Participation for this study is fully voluntary. The participants have the right to declare to participate or not in this study. If they decide to participate, they have the right to withdraw from the study at any time and this was not label them for any loss of benefits which they otherwise are entitled.They do not have to answer any question that they do not

want to answer.Informed, Voluntary, written and signed consent was obtained from the participants.

4. RESULTS AND DISCUSSIONS

In this chapter, the results of the study are presented and discussed in detail to address the objectives of the research. The research was aimed to assess the physical activity back ground of pregnant women. The first part of this chapter deals with the personal information of the participants whilst the second section deals with the analysis of the findings of the study in line with basic research question.

4.1 The Demographic characteristics of the Respondents

The socio demographic characteristics of respondents are presented in Table 1.

Table 1: Socio-Demographic Characteristics of participants (n=240)

Variable	Frequency	Percent
Age		
18-25	98	40.8
26-30	100	41.7
31-40	40	16.7
41-45	2	.8
Level of Education		
Illiterate	45	18.8
Primary	33	13.8
Secondary	54	22.5
College	108	45.0
Total	240	100
Occupation of Pregnant Women		
House Wife	50	20.8
Student	55	22.9
Selfemployed	47	19.6
Formal emPloyment	88	36.7
Total	240	100.0
Family Size		
1	43	17.9
2	59	24.6
3	69	28.8

4	54	22.5
5 and above	15	6.3
Monthly Incomee		
<1000	56	23.3
1000-1500	42	17.5
2000-2500	39	16.3
2500-3000	32	13.3
3000 and above	46	19.2
Total	240	100.0
Gestational Status of Pregnant women		
First trimester	45	18.8
Second trimester	110	45.8
Third trimester	85	35.4
Total	240	100

The demographic characteristics of 240 participants are displayed in Table 1. Most of the mothers were in the age category of 40.8 % (n=18-25), 41.7% (n=26-30), 16.7% (n= 31-40) and .8% (n=41-45) years. Most participants 41.7% (n=100) had attained college level of education 45.0% (n= 108) and A great majority 36.7% (n=88) of the respondents was formal employment.A majority of the pregnant mothers 28.8% (n=69) are having living children. A majority of the respondents monthly income <1000per month 23.3% (n=56). Participants were primarily in the second or third trimester of Pregnancy, The majority of the women reported 45.8% (n= 110) third trimester. Knowledge of the benefits antenatal physical activity and this was not influenced by maternal sociodemographic characteristics.

Table 2: Knowledge of participants towards physical activity during pregnancy

Variables	Responses	Frequency	Percentage
Aware of physical activity	Yes	199	82.9
	No	41	17.1
Aware of antenatal physical activity	Yes	182	75.8
	No	58	24.2
Where did you learn about it	Family/ friend	23	9.6
	Media	18	7.5
	Health care centers	143	59.6
Currently participating in physical activity to pregnancy purpose	Yes	172	71.7
	No	68	28.3
Type of physical activity during pregnancy time	Waking	100	41.7
	waking and sit ups	62	25.8
	Breathing exercises and sit ups	8	3.3
	leg raising	2	.8
Physical activity during pregnancy safe for all women	Yes	155	64.6
	No	85	35.4

Awareness of different types of Antenatal physical activity	Yes		No		Not sure	
	N	%	N	%	N	%
Aerobics	131	54.6	26	10.8	56	23.3
Back care physical activity	7	2.9	4	1.7	3	1.3
Abdominal physical activity	2	.8	1	.4	2	.8
Pelvic floor physical activity	2	.8	1	.4	1	.4
Relaxation/Breathing physical activity	3	1.3	0	0	3	1.3

The set of questions was designed to check the respondent's knowledge towards physical activity 82.9 % (n=199) of our study participants were aware of physical activity and 75.8% (n=182) of the respondents were aware of physical activity in antenatal care. Health care centers 59.6% (n=143 were the main source for their information about antenatal

physical activity. 71.7% (n=172) A great majority of the respondents currently participating during pregnancy physical activity. 41.7% (n=100) A great majority pregnant mother were aware of Walking was the most common type of physical activity. 64.6% (n=155) Most participants were aware of Physical activity during pregnancy is safe.

The respondents had a knowledge of aerobics 54.6%(n=131), back care exercises (7%), abdominal exercises (2%), pelvic floor exercises (2%), relaxation and breathing exercise (3%), respectively, as types of antenatal physical activity. From our study we concluded that 80% of the respondents were aware of physical activity. However, few pregnant women reported that they were not aware or not sure about the different type of antenatal physical activity available.

In other study Nigeria 2014. Respondents had knowledge of pelvic floor exercise (37.0%), muscle strengthening exercise (51.3%), back care exercise (51.3%), and relaxation and breathing exercise (59.8%), respectively, as types of antenatal exercise. However, swimming (21.7%) and cycling (20.6%) were the least known types of exercises in pregnancy. shows the knowledge of respondents' on benefits of and contraindications to antenatal exercises. Mbada et al., 2014.

Knowledge of safe exercises, consistent with findings of Mudd and associates Mudd*et al*., 2009. Although recent research is just beginning to identify a link between mothers'behaviors and childhood obesity, the results of this study found that nearly one-half (47.6%) of the sample did notunderstand that a mother who is overweight is more likely to have a child who is eventually obese.Regarding awareness of safety precautions for exercise during pregnancy, participants showed little awareness ofsome risks or knowledge of safe exercises, consistent with findings of Mudd and associates Mudd *et al*., 2009.

In Zimbabwe (2016), Only one study by Mbada et al. (2014) looked at knowledge and attitude towards physical activity in pregnancy. Findings revealed that participants had some knowledge about types of exercise and some benefits and

contraindications to antenatal exercise. 47.6% had below average knowledge, 5.82% had average know- ledge while 46.6% had good knowledge of antenatal exercises.With regard to Attitude of the physical activity in antenatal care

Appropriate exercises during pregnancy have proved to be beneficial to many expectant mothers, though how much and what kind of exercises varies from person to person Clark AM. (2005). Reports indicate that exercise during pregnancy can improve women's psychological wellbeing, reduce gestational weight gain, back pain, length of labour, decrease caesarean section rates and reduce recovery times Wang TW, Apgar BS. 1998.

Furthermore, babies born seem to be calmer, are leaner, more intelligent with improved neurological and mental development. Also, children of women who continued to exercise through pregnancy had significantly higher scores on oral language and general intelligence tests Rice PL, Fort IL, 1991; Reich C1987. Exercise in pregnancy is safe for both mother and foetus in most cases however, majority of women are less active during pregnancy and little is known about how to support exercises during this period.

Most of the respondents agreed that exercise in pregnancy would lead to reduction in the risk of back pain (75%), prevention of excess weight gain (69.1%) and increased ability to copewith labour and delivery. Though this is quite true, there are a lot of benefits of exercise that, if made known to pregnant women, will help to promote a good attitude towards exercise in pregnancy and willingness to engage in exercise. Benefits such as prevention or control of gestational diabetes and eclampsia and a general feeling of well-being need to be emphasized. On contraindi- cations of exercise, swelling of lower extremities (31.8%), extreme weight gain or loss (30.7%) and back pain (28.5%) were mentioned. There are quite a number of contraindications to exercise in pregnancy such as restrictive lung disease, incompetent cervix and preterm labour Barsky et al., 2012.

Table 3: Attitude of participants towards physical activity during pregnancy

Variables	Responses	Frequency	Percent
Physical activity have appositive role in antenatal care	Strongly Disagree	3	1.3
	Disagree	3	1.3
	Partially Agree	35	14.6
	Agree	90	37.5
	Strongly Agree	109	45.4
It is important to perform physical activity under the guidance of health care professionals	Disagree	6	2.5
	partially Agree	15	6.3
	Agree	97	40.4
	Strongly Agree	122	50.8
Physical activity can reduce pregnancy related complications	Strongly Disagree	4	1.7
	Disagree	4	1.7
	Partially Agree	56	23.3
	Agree	102	42.5
	Strongly Agree	74	30.8
Physical activity helps post-delivery recovery	Strongly Disagree	3	1.3
	Disagree	4	1.7
	partially Agree	57	23.8
	Agree	107	44.6
	Strongly Agree	69	28.8
Exercising helps you get back to your shape	Strongly Disagree	4	1.7
	Disagree	4	1.7
	Partially Agree	68	28.3
	Agree	103	42.9
	Strongly Agree	61	25.4
Physical activity important to maintaining good health	Strongly Disagree	1	.4
	Disagree	4	1.7
	Partially Agree	35	14.6
	Agree	105	43.8
	Strongly Agree	95	39.6
Recommend physical activity during pregnancy	Strongly Disagree	1	.4
	Disagree	3	1.3
	Partially Agree	18	7.5
	Agree	99	41.3
	Strongly Agree	119	49.6

With regard to Attitude of the physical activity in antenatal care, more than 45% (n=109) participants in this study agreed that Physical activity have appositive role in antenatal care, 50.8% (n=122) A majority of the pregnant mothersagreed that physical activity in pregnancy important to perform under the guidance of health care professionals, more than 42.5% (n=102) participants in this study agreed that antenatal physical activity can reduce pregnancy related complications, 44.6% (n=107) most of the respondents agreed that Physical activity helps post-delivery recovery, 42.9% (n=103) majority of the pregnant mothers agreed that exercising helps you get back to your shape, 43.8% (n=105) more participants agreed that Physical activity important to maintaining good health, and 49.6% (n=119) A great majority of the respondents were aware of recommend physical activity during pregnancy.

According to Barsky et al., 2012.Most of the respondents agreed that exercise in pregnancy would lead to reduction in the risk of back pain (75%), prevention of excess weight gain (69.1%) and increased ability to copewith labour and delivery. Though this is quite true, there are a lot of benefits of exercise that, if made known to pregnant women, will help to promote a good attitude towards exercise in pregnancy and willingness to engage in exercise. Benefits such as prevention or control of gestational diabetes and eclampsia and a general feeling of well-being need to be emphasized. On contraindi- cations of exercise, swelling of lower extremities (31.8%), extreme weight gain or loss (30.7%) and back pain (28.5%) were mentioned. There are quite a number of contraindications to exercise in pregnancy such as restrictive lung disease, incompetent cervix and preterm labour.

The physical health benefits of physical activity are clear. They include lower blood pressure and cholesterol and maintenance of a health weight. Some other examples of benefits include improved mental health and wellbeing, social engagement, Jewson, et al., 2008. Enhanced sleep De Castro et al., 2008. and reduced risk of fractures Stessman et.,2008. Several studies reveal that, sports and regular physical activities have beneficial effects on physical, well-being, mental health, and social affections of humans(Jewson et al., 2008; De Castro et al.,2008. The physical health benefits of physical.

Jewson, et al., 2008. Regular physical activity plays a significant role in improving moods and subsequent meant health has been shown to relieve symptoms of depression. These benefits can be experienced by those with a diagnosed mental illness as well as the general population. The mental health benefits of physical activity frequently motivate those who are already physical activity to maintain their routines. The benefits of physical activity on mental health can be achieved eve in the absence of fitness gains Bailey et al., 2008. This may be due to factors including increased social engagement and increased exposure to sunlight De Castro et al., 2008.

According to In South Africa conducts an epidemiological study of physical activity patterns and weight gain in physically active and sedentary pregnant women in Tshwane, South Africa. Of the 78 women who participated, 30.8, 53.9 and 16.7% were classified as relatively inactive, active and very active respectively. In terms of weight gain, 45.5% gained weight within the recommended range, 28.6% gained weight that was below the recommended range while 26.0% gained weight above the recommended range. There was no association, however between the trimester and the level of physical activity. Brunette et al. 2012.

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Under this chapter, the overall summary of the major findings, conclusion and recommendation forwarded by the researcher are presented consecutively.

5.1. Summary

The main purpose of this study was to assess the Knowledge and attitude of pregnant women towards pre- birth physical activity, in the case of selected hospitals in Harar and Dire Dawa cities, Ethiopia.Physical activity is a very important aspect of good health. Exercise is very important irrespective of age and especially important for pregnant women as it helps them overcome pregnancy related complications and maintain good physical fitness.Exercise during pregnancy not only healps in maintaining musculoskeletal fitness but also healps in controlling weight, maintaining blood glucose, to cope with various psychological and labour, strengthening muscles for labour and improves blood circulation. Wolfe LA, 2003.

So in order to attain the objectives, the following basic research questions were raised and answered in the couse of the study.

1. What is the Knowledge of pregnant women about pre-birth physical activity?
2. What is the attitude of pregnant women towards pre-birth physical activity?

To deal with those questions a cross sectional methods was employed. The main instruments of data collection were a self-administerd questionnaire was developed from previous Literatures. After obtaining theire informed Concent the Knowledge and Atittude quetionnnarie were given to pregnant women English, Amharic and Somali depending on their language preference. The questionnaire includes basic Socio-Demographic Characteristics of participants, Knowledge of participants towards physical activity during pregnancy and Attitude of participants towards physical activity during pregnancy.

This study assessed the knowledge, and attitude of pregnant women in Harar and Dire Dawa Cities with respect to the role of physical activity in antenatal care. A total of

240 participants in any trimester having a mean age category of 18-45 years were recruited. The women in our study sample were found to have a positive attitude towards physical activity during antenatal care and also perceived that antenatal exercises reduce pregnancy- related complications and ensure a safe delivery.

Across sectional study using quantitative methods was conducted at selected Harar and Dire Dawa cities selected hospitals on pregnant women in all trimester attending Antenatal care.Participants in any trimester having age category of 18-45 years were recruited. Data was entered and analyzed by SPSS version 20. Frequencies and percentages were taken out as part of descriptive statics.

5.2. Conclusions

This study has certain limitations that need to be taken into account when considering the study and its contribution. But the level of knowledge and attitude of pregnant women towards pre-birth physical activity, so based on the major findings of the current study the following conclutions were drawn.

- The results suggest that the pregnant Harar and Dire Dawa cities woman'swere good knowledge of antenatal physical activity

- Most participants were positive in attitude and were favorable towards physical activity they still believed that it was more important to rest and relax during pregnancy.

- Smilarly, respondents agreed that Physical activity have appositive role in antenatal care.

- In fact, few pregnant women reported that they were not aware or not sure about the different type of antenatal physical activity.

5.3. Recommendations

The following recommendations were made on the basis of the findings of this study: By considering the result, discussions and the finding of the research, it is important to state the following points as a recommendation to investigate more on the assessed the knowledge, perception and attitude of pregnant women in Harar and Dire Dawa Cities.

- Pregnant mothers should be encouraged to walk around some little distances at home as a form of exercise.

- The study also indicated that positive role played by health education programmes in motivating pregnant women to engage actively in physical activities.

- Further these implemented measures should be analyzed for their impact on pregnancy in both pre and postnatal outcome.

- The study underscores the need for interaction of sport professionals with other health professionals in order to ensure that the pre birth physical activity performed by pregnant womenhas importance for our mothers' and sisters.

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7. APPENDICES

Appendix A

Personal Information

The purpose of this questionnaire is to investigate theKnowledge and attitude towards pre birth physical activity, so you are kindly requested to give the right answer you think, since it contributes for the study. I promise you that this research is made for Health purpose only and all information you provide us will be kept confidential.

Instructions

- Please write brief answer in the following questions.
- Thank you in advance for your cooperation.

Direction; 1 Personal Information

Please provide your responses by write on the apace provide.

Appendix Table 1: Personal Information

Name of hospital_____

1.	Age (years)	
2.	level of education	
3.	Occupation	
4.	Monthly income(birr)of the family	
5.	Gestational status	
6.	Family size	

AppendixB

Knowledge questionnaires

Direction: Please read the following items carefully and Circle the response about Knowledge of participants towards physical activity, Antenatal class

1. Do you know physical activity?

   A, Yes B, No

2. Do you know antenatal physical activity?

   Yes No

3. If yes, where did you learn about it?

   A, family/friend B, Media, C, Health care centers,

D, At Antenatal class E, other.

4. Do you currently participating in physical activity to pregnancy purpose?

   A YES B. NO

5. If your answer for Q4 is yes, what type of physical activity during pregnancy time?

   A. waking

   B. waking and sit ups

   C. Bireathing exercises and sit ups

   D. Leg raising

6. Is physical activity during pregnancy safe for all women?

   A. Yes B. No

7. Awareness of different types of Antenatal physical activity

Aerobics, Yes No Not sure

Back care physical activity, Yes No Not sure

Abdominal physical activity, Yes No Not sure

pelvic floor physical activity, Yes No Not sure

Relaxation/ Breathing physical activity Yes No Not sure

AppendixC

Attitude questionnaires

Direction: Items **1-7** in the table below are accompanied with five options. Strongly Disagree, Disagree,Partially Agree, Agree and Strongly Agree. Respond to these items by putting tick mark (√) in the appropriate box.

Keys: - 5= strongly Agree, 4= Agree 3= Partially Agree, 2= Disagree 1= strongly Disagree

No	Item	5	4	3	2	1
1	Does physical activity have appositive role in antenatal care					
2	Is it important to perform physical activity under the guidance of health care professionals					
3	Do you feel physical activity can reduce pregnancy related complications					
4	Do you feel physical activity helps in post- delivery recovery					
5	Do you feel the exercising helps you get back to your shape					
6	Do you feel physical activity important to maintaining good health					
7	Do you recommend physical activity during pregnancy					
Thanks for your coopration and time						

Appendix D

ክፍልአንድግላዊመረጃ

የዚመጠይቅዋናአላማ፡እርጉዝእናቶችቅድመወልድበአካልእንቅስቃሴላይያላቸውግንዛቤእናአመለካከትእንዲጨምርማድረግ

መመሪያ፡- የሚከተሉትንግላዊመረጃአንብቤውእንዳስፈላግነቱመሙላትይኖርቦታል፡፡

1.	እድሜ (አመተምህረት)	
2.	የትምህርትደረጃ	
3.	ሥራ	
4.	ወራዊገብ(በብር) የቤተሰቡ	
5.	የእረግዝናወቅት	
6.	የቤተሰብብዛት	

ክፍልሁለት፡ግንዛቤንለማወቅየተዘጋጀመጠይቆች

የሚከተሉትንመጠይቆችበማክበብ

1. ለአካልብቃትእንቅስቃሴግንዛቤአለ

ሀ. አዎ

ለ. አይደለም

2. በረግዝናወቅትለምሰሩየአካልብቃትእንቅስቃሴዎች ላይ ግንዛቤአሎት

ሀ. አዎ

ለ. አይደለም

3. አዎከሆነመልሶይህንትምህረትየወሰዱትየትነው
   ሀ. በቤተሰብ/በጉአደኛ
   ለ. በቴሌቭዥንመስኮት
   ሐ. በጤናጥበቃ
   መ. በርግዝናወቅት
   ሠ. በሌላ
4. በዝወቅትበርግዝናምክንያትየአካልብቃትእንቅስቃሴንበመስራትላይይገኛሉ
   ሀ. አዎ
   ለ. አይደለም

5. አዎከሆነመልሶምንአይነትየአካልብቃትእንቅስቃሴያደርጉነበርበርግዝናዎቅት
   ሀ. መራመድ
   ለ. መራመድ እና መቀመጥ
   ሐ. የመተንፈስ እንቅስቃሴዎች እና መቀመጥ
   መ. እግር ማንቀሳቀስ
6. በርግዝናወቅትየምሰሩየአካልበቃትእንቅስቃሴዎችለሁሉምእናቶችጥሩነው
   ሀ. አዎ
   ለ. አይደለም
7. በርግዝናወቅትበምሰሩበተለያዩየአካልብቃትእንቅስቃሴዎችላይግንዛቤመፍጠር

በሙዝቃየታጀበየሰውነትማነልመሻአዎአይደለምአርገጠኛአይደለሁም

ለጀርባ የምያግዝየአካልብቃትእንቅስቃሴአዎአይደለምአርገጠኛአይደለሁም

ለሆድየምየግዝየአካልብቃትእንቅስቃሴአዎአይደለምአርገጠኛአይደለሁም

ዳሌ አካባቢ የምሰሩየአካልብቃትእንቅስቃሴአዎአይደለምአርገጠኛአይደለሁም

ክፍልሦስት፡አመለካከትንለማወቅየተዘጋጀመጠይቆች

እራስንየመግለፅወይምፍላጎትንያለምንምፍራሃትየመናገርመጠንማሳያ፡፡

ስለዚህአንቺምከዚህበታችከተዘረዘሩትጥያቄዎችእኔምምንያህልይገልፀኛልየሚለውንበመምረጥየሄንንምልክትበመስ

ጫውላይካሉትአማራጮችመካከልበአንዱላይመልሽ፡፡

5. በጣምእስማማለሁ4.እስማማለሁ 3. ለመናገርይከብደኛል 2. አልስማማም 1. በጣምአልስማማም

ተ.ቁ	ጥያቄ	መልስመስጫ				
		1	2	3	4	5
1	በእረግዝናወቅትየአካልብቃትእንቅስቃሴንማድረግጠቃምነው					
2	የአካልብቃትእንቅስቃሴንበጤናባለሙያታግዞመስራትጥሩነው					
3	የአካልብቃትእንቅስቃሴንማድረግከእረግዝናጋርተያያዥለሆኑችግሮችምይረዳል					
4	የአካልብቃትእንቅስቃሴንማድረግከወልድ በኃላላለውግዜይጠቅማል					
5	በእረግዝናወቅትየምደረጉየአካልእንቅስቃሴዎችከእረግዝናበኃላላለውተከለሰውነትይረዳል					
6	የአካልእንክስቃሴማድረግጤናንለመጠበቅይረዳል					
7	የአካልእንክስቃሴማድረግበረግዝናግዜይመከራል					
ጊዜዎን ወስደው መጠይቁን ስለሞሉ አመሰግናለሁ						

Appendix E

Odeefannoo Dabalataa D

Odeefannoo dabalataa I

Gaffii Qorannoo dubartoota Ulfaa

Kaayyoo gaaffii kanaa sochiiwwan qaama da’umasa dura godhamuu qaban hubachiisuu fi fedhii qixa kanaan jiru qorachuuf waan ta’eef deebii sirrii dha jettanii yaaddan akka nuuf kennitan kabajaan isin gaafanna. Qorannoon Kun waa’e eeguumsa fayyaa tiif qofa Kan ooluu fi yaadnii nuuf kennitan guutummaan gutuutii Kan kabajamuu fi iciitiin kaan kanbaajamu isin hubachiifinaa.

Qajeelcha 1ffaa

- ✓ Gaaffiwwan ibsa barbaadaniif debbii ifa ta’e jecha gabaabaan nuuf barreessa.
- ✓ Deeggarsa nuuf kennitaniif dursinee isin galateeffanna.

Lakk .1.Seenaa dhuunfaa keessaniif debii keessan mallattoo (√) sanduuqa kenname kessatti barreessuun agarsiisaa.Gabatee 1ffaa armaan gadii keessa gaaffiwwan waa'ee eenyumma keessanii gaafataniif deebii kennaa.

1.Umrii	
2. Bakka jireenyaa	
3.Sadarkaa barumsaa	
4.hojii piroofeeshinaalaa	
5.Galii ji'aa (qar]	
6. Baay'ina maatii	

Appendix F

Qajeelcha

Gaafilee armaan gadii hubaanoo isiin sochii qamaa irraati qabdan hubachuu waan barbadnuuf debii siiridha jeetaani yadaan fillannowaan isiini dhiyatan keessa filachuun itii marra.Kuttaa daúmssan duura.

1. Sochiiwwan qaama dubartoota ulfaa nii beekta?

A. Eyye B. lakkii

2. Yeroo ulfaa sochii qaama taasisuurrati hubbaanoo nii qabdaa?
   A. Eyyee B. lakkii
3. Deebiin keessan lakk 2 ffaa ''eyyee'' yoo taaeé beekumsa (hubbaanoo) issaa essaa argaate?
   A. hiriiyaa/maatii B. midiiyaa (meshaalee sab-qunaamtiwaan)
   C. dabataa fayyaa (keela fayyaa) d.kutaa hordofii daúumsan duura keessatii
   E.kaan biraa

4. Amaan taana sochii qamaa, fayyaa ulfaa kessaanif jeetanii hojacha (dalaga) jiirtu?

A.Eyyee B.Lakkii

5. Deebiin keessan lakk 4 ffaa "eyyee" kaan jedhu yoo ta'e sochii akkamii raawwatu?

A. Jiimnaastiika

B. Deemsa ykn tarkaantii
C. Tapha kubbaa milaa ykn tapha kubbaa sanduuqa.
D. Hunduumaa

Sochiiwwan qaama dubarraa ulfaa hundaaf nii barbaachiisa?

A. Eyyee B. lakkii

6. Hubaannoo akkaakuwaan sochii qamaa da'uumsaan duraa hojataamanii irraati qabdan

Sochii Eroobiksii	eyyee	lakkii	hinbeeku
Sochii fayyaa dugdaa keetiif	eyyee	lakkii	hinbeeku
Sochii fayyaa garaa keetiif	eyyee	lakkii	hinbeeku
Sochii fayyaa mudhii	eyyee	lakkii	hinbeeku
Sochii fayyaa qaama hargaansuufi	eyyee	lakkii	hinbeeku

Appendix G

Gaafillee ilaalcha madaaluu

Qajeelcha

Gabaateen armaan gadii fillanowaan Shan qaba.Baay'een mormaa, naan mormaa, xiqoon itii waali gaala, waliin gaala, baay'een itii waali gala.Debii kessaan fillaanowaan kana keesa nuu filaadhu.

5= baay'een itii waali gala 4= waliin gaala 3= xiqoon itii waali gaala, 2= naan mormaa 1= Baay'eenmormaa.

No		5	4	3	2	1
1	Sochiin qaama yeroo ulfaa barbachiisadha,					
2	Sochii qaama gargaarsa ogeesatiin dalaguun barbachisaadha					
3	Sochii qaama dalaguun (hojachuun) rakkoo ulfaa waliin waal qabatee dhufuu nii hirdhiisa (hambiissa).					
4	Sochii qaama dalaguun(hojachuun) ergaa deese booda naa gargaara					

	jetee yaada.					
5	Sochii qaama dalaguun (hojachuun) gara bocaa qaama duraatii deebisuuf nii gargara jetee yadaa.					
6	Sochii qaama daalaguun fayyaa keenya eguufi nii fayadaa jettee yaada					
7	Dubarootnii biroo sochii qaama yeroo ulfaatii akka dalagaani (hojataanii) nii gorsiita.					

Lifaaqyada

Lifaaqyo

Wargaliyaya in ka qaybqaate kasta uu leeyahay xaquud uu kaga bixi karo ka qaybqaadashada daraasaadka

1.	Da’da(sandaka)	
2.	Gobtukunolyahy	
3.	Heerka waxbaroshada	
4.	Xirfada	
5.	Kharashk billaha	
6.	Qoysks weynaan	

Lifaaqyo

Waxa kale oo la igu wargaliyaya in ka qaybqaate kasta uu leeyahay xaquud uu kaga bixi karo ka qaybqaadashada daraasaadka

1. Maka arqabtaa dhaqdha qaaqajidhkaaga.

A. Haa B. may

2. Ma kawarqabtaa dhaqdhaqaaqa jidkaaga dhalmada kahor

A. Haa B. May

3. Haa hadaad tidhi, xagee bdkabaratay

A. Qoyskalasxabta B. warbahita C. goobana limaadka

D. At Antenatal class E. other.

4. Miyadkaqaybgasha waxkale hadda dhaqdaaqa jdhka ujeedada nurka.

A. Haa B. may

5. Hadee tahay jawtada suasha suddexad hadwmxy nooca dhaqdhaqaaqa jidhkaxiliga uurka, aadsamayso

A. Jimcsi B. Toostid C. Kubbad cag D. Dhammaan

6. Dhaqdaqaaqa jidhka xilig a uurka ammaan miyu u yahay dumarka odhan?

A. Haa B. may

7. Wacyiga kaladuwan dhaqaaqa jidh ka dhal madakahor

dhaqdha qaaqajidhkaaga	Haa	May	Mahubo
xagee bdkabaratay	Haa	May	Mahubo
dhaqdhaqaaqa jidkaaga dhalmada kahor	Haa	May	Mahubo
Ma kawarqabtaa dhaqdhaqaaqa	Haa	May	Mahubo

Lifaaqyada

Lifaaqyo

haa	Ujeedada	**5**	**4**	**3**	**2**	**1**
1	Dhaqdaqaaqa jidhka xilig a uurka ammaan miyu u yahay dumarka odhan					
2	Ma kawarqabtaa dhaqdhaqaaqa jidkaaga dhalmada kahor					
3	Maka arqabtaa dhaqdha qaaqajidhkaaga					
4	Miyadkaqaybgasha waxkale hadda dhaqdaaqa jdhka ujeedada nurka.					
5	Hadee tahay jawtada suasha suddexad hadwmxy					
6	nooca dhaqdhaqaaqa jidhkaxiliga uurka, aadsamayso					
7	jidhka xilig a uurka ammaan miyu u yahay dumarka odhan					

APPENDIXH
INFORMATION SHEET AND

INFORMED VOLUNTARY CONSENT FORM FOR HEADS OF INSTITUTIONS

My name is (SelamawitEriso) I am working as a Prencipal Investgeter for the study being conducted in this community by (knowledge and attitude of urban pregnant women towards pre-birth physical activity in the case of Harer and Dire Dawa city, Ethiopia I kindly request you attention to explain you about the study and your institution being selected as the study setting.

The study/project title:

The knowledge and attitude of urban pregnant women towards pre-birth physical activity in the case of Harer and Dire Dawa city, Ethiopia.

Purpose/aim of the study:

This study will cover pregnant women from some selected Hospitals of Harer(Hiwot fana,Jegula,Police) and Dire Dawa (Dilchora Hospital, Bilal and Yemariamwork). The aim of this study will assess the physical activity back ground of pregnant women. Therefore, in this study, not all aspects of physical activity will be discussed, but specific areas during pregnancy will be focused. This Thesis is submitted in partial fulfillment of the requirement for masters in Sport Medcine degree at the Haramaya University.

Procedure and duration:

I will be collected data using structured Questionnaire .Then basic questions will prepared in English and translates to local language accordingly for the purpose of clarity and to make easily understandable by respondents.

Risks and benefits:

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

Confidentiality:

The information that we will be provided will be kept confidential. There will be no information that will identify the participants in particular. The findings of the study will be

general for the study community will not reflect anything particular of individual persons. The questionnaire will be coded to exclude showing names.

Rights:

Participation for this study is fully voluntary. The participants have the right to declare to participate or not in this study. If they decide to participate, they have the right to withdraw from the study at any time and this will not label them for any loss of benefits which they otherwise are entitled. They do not have to answer any question that they do not want to answer.

Contact address:

If there are any questions or enquires any time about the study or the procedures, pleas contact:

- Principal investigator: Mrs. Selamawit Eriso
- Adders: Haramaya Email: selameriso@gmail.com
- Mobile number: 0916881740.
- Institutional Health Research Ethics Review Committee (IHERC) using office phone: +2514-66-07-08 or P.O.Box: 235, Harar, Ethiopia. .
- Wogene Waltanigus (PhD) phone number :- 0923670360 Email: Wegu4025@gmail.com
- Desta Eniyew (PhD) Phone 0938310940, Email: destaenyew@yaho.com

Declaration of informed consent:

I have read the participant information sheet. I have clearly understood the purpose of the research, the risks and benefits, issues of confidentiality, the rights of participating and the contact address for any queries. I have been given the opportunity to ask questions for things that may have been unclear. I was informed that participants have the right to withdraw from the study at any time or not to answer any question that they do not want. I am also informed that the Hospital if any misdeeds and unethical procedures are observed during the data collection pross in the hospital's premises. There for, I declare my voluntary consent on behalf of_____ hospital management to allow this study to be conducted in the hospital with my (initials).

Name and signature of head of the hospital: _____Name and signature of data Collector:_____

APPENDIXI
PARTICIPANT INFORMATION SHEET AND
INFORMED VOLUNTARY CONSENT FORM FOR PARTICIPANT

Introduction

Good morning /good afternoon /and welcome my name is----------I am working as data collector for the study being conducted in this hospita by mrs. Selamina Eriso who is a graduate students of Haramaya University.. I kindly request you to lend me your attention to explain you about the purpose of the study.

Study title: The knowledge and attitude of urban pregnant women towards pre-birth physical activity in the case of Harer and Dire Dawa city, Ethiopia.

Purpose of the study: The purpose of this study is to assess the physical activity back ground of pregnant women. Therefore, in this study, not all aspects of physical activity will be discussed, but specific areas during pregnancy will be focused.

Procedure and duration

I will be interviewing you using a questionnaire to provide me with pertinent data that is helpful for the study. There are 20 quetions to answer where I will fill the questionnaire by interviewing you. The interview will take about 20 minutes, so I kindly request you to spare me this time for the interview.

Risks and benefit of the study

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

Confidentiality

The information that we will be provided will be kept confidential. There will be no information that will identify the participants in particular. The findings of the study will be general for the study community will not reflect anything particular of individual persons. The questionnaire will be coded to exclude showing names.

Rights

Participation in this study is fully voluntary. You have the right to declare not to participate in this study. But, if you decide to participate first, you have the right to with draw from the study at any time and this will not harm you and the questionnaire will be coded to exclude showing names.

Contact address:

If there are any questions or enquires any time about the study or the procedures, please contact and speak to:

Principal investigator: Mrs. Selamawit Eriso

Adders: Haramaya

Mobile number: 0916881740.

Institutional Health Research Ethics Review Committee (IHERC) using office phone: +2514-66-07-08 or P.O.Box: 235, Harar, Ethiopia.

Wogene Waltanigus (PhD) phone number :- 0923670360 Email: Wegu4025@gmail.com

Desta Eniyew (PhD) Phone 0938310940, Email: destaenyew@yaho.com

Declaration of informed voluntary Consent:

I have read/was read to me this consent form or participant information. I have clearly understood the purpose of the research, the procedure, risks and benefits, issues of confidentiality rights of participating and contact address for any queries. I have given the opportunity to ask questions for things that may have been unclear. I was informed that I have the right to with draw from the study at any time; therefore I declare my voluntary consent to participate in this study with my signature.

Participants Name and Signature_____date_____/___/_2017

Interviewers name _____ signature _____ date ___/___/2017

Appendix J

በፍቃደኝነትላይየተመሰረተበጥናትውስጥየመሳተፍየመረጃቅጽ

ስሜ-

_____ይባላል፡፡በሐረርእናድሬዳዋከተማበምገኙስድስትሆስፒታሎችላ ይየእርጉዝእናቶችቅድመወልድበአካልእንቅስቃሴላይያላቸውግንዛቤእናአመለካከት፣በሚል ርእስላይበሐረማያዩኒቨርሲቲ የሁለተኛዲግሪተማሪስሆንየመመረቂያጥናቴንእየሰራሁእገኛለሁ፡፡

ስለዚህየጥናቱንማብራሪያእናእርስዎተሳታፊሰለሆኑስለጥናቱበጥሞናእንዲከታተሉኝእጠይቃለሁ፡፡

የጥናቱርእስ፡የእርጉዝእናቶችቅድመወልድበአካልእንቅስቃሴላይያላቸውግንዛቤእናአመለካከትበተመረጡሆስፒታሎችበ ሐረርና እናድሬዳዋከተማዎችይላል፡፡

የጥናቱዓላማ፡

የዝጥናትዓላማእረጉዝእናቶችቅድመወልድእንቅስቃሴላይያላቸውንግንዛቤለማወቅየምደረግዳሰሳጥናትነው፡፡

የጥናቱቅደምተከተተልናቆይታ

ይህጥናትእርጉዝእናቶችቅድመወልድአካልእንቅስቃሴላይያላቸውግንዛቤእናአመለካከታቸውንለማወቅበማዘጋጀመጠይቆ ችላይየተመሰረተይሆናል፡፡

ጥቅምናጉዳት

በዚህጥናትውስጥሲሳተፉጉዳቱእጅግበጣምትንሽነው፡፡እሱም፤ይህንመጠይቆችበምሞሉሰዓትአድአንድመጠይቆቹንያለ መረዳትናትንሽግራመጋባትያጋጥሞትይችላልጥቅሙግንግንዛቤማድረግነው፡፡

ሚስጥርጠባቂነት

ከእስዎየሚገኘውመረጃሁሉበሚስጥርየሚጠበቀይሆናል፡፡ከተሳታፊየሚገኘውመረጃሁሉሳይለያይበሚስጢርይያዛል፡፡ሁ ሉምመረጃበሚስጢርቁጥር(ኮድ) ይመዘገባል፤የማንምስምአይታወቅም፡፡

መብት

በዚህጥናትውስጥመሳተፍመብትነው፡፡በጥናቱላይአለመሳተፍከፈለጉመብትዎስለሆነመተውይችላሉ፡፡

የመገናኛመንገዶች

ጥያቄናበጥናቱውስጥሲሳተፉችግርካጋጠመዎትበሚከተሉትቁጥሮችያግኙን፡፡

- ዶክተር ወገኔ ዋልተንጉስ ስልክቁጥር፡0923670360
- ዶክተር ደስታ እንየው ስልክቁጥር፡0938310940
- ሰላማዊትኤርሶስልክቁጥር፡ 0916881740
- በጤናናህክምናሳይንስኮሌጅ 0254660708

የተሳታፊነትውል፡

ከላይየተጻፈውንመረጃሁሉአንብቤያለሁ/ተነቦልኛል፡፡ስለዚህየጥናቱአላማ፤ጥቅምናጉዳት፤ሚስጥርጠባቂነት፤መብትናየመገናኛመንገዶችሁሉአውቄያለሁ፡፡ያልገባኝነገርካለየምረዳበትመንገድእድልአግኝቻለሁ፡፡ስለዚህበፍቃደኝነትበዚህጥናትውስጥእንደምሳተፍበፊረማዬአረጋግጣለሁ፡፡

የተሳታፊውስምናፊረማ _____

የመረጃሰብሳቢውስምናፊረማ _____

Appendix K

Waraqaa Odeeffannoo Fi Unka Hermatotta Fedhii Qabanii Dhaabbilee Adda Addaarraa

Maqaan koo _____ jedhama. Magaalota Hararii fi Dirre Dawaatti, Qorannoo beekumsaa fi ilaalcha dubartoota ulfaa ulfaa naannoo magaalaa sosochii qaamaa da'umsa duraa irratti sassabduu odeeffannoo ta'een hojjechaa jiraa. Qorataankoo adda dureen, **Selamawit Eriso** yoo ta'u, CNCS jalatti, muummee Saayinsii Ispoortiitiin digirii isaanii 3ffaa, mooraa Haramaya Universiitiitti hojjechaa jiruu.

Kanaafuu ibsa qorannichaa fi filatamuun dhaabbata keessaniif hayaataan akka na hordoftan isin gaafadhaa.

Mata duree qorannichaa ;

Beekumsaafi ilaalcha dubartoota ulfaa naannoo magaalaa, shaakala sosochii qaamaa da'umsa duraa irratti qaban, magaalota Hararii fi Dirre Dawaatti.

Kaayyoo Qorannichaa ;

Qorannoon kun dubartoota ulfaa Hospitaalota Harar(Hiwot Fana, Jegula, Police) fi Dirre Dawaatti(Dilchoora, Bilal fi Yemariam Warq) of jalatti haammata. Kaayyoon qorannoo kanaas, shaakala sosochii qaamaa dubartoota ulfaa ifa baasuudhaa.

Duraa duubaa fi turtii ;

Qorannoon kun qophii dhuunnfaa fi gaaffilee filatamoorraati hundaa'a. Gaaffileen murteessoo ta'an afaan Ingiiffaan qophaa'uun gara afaanota naannootti jijjiiramuu, warroota deebii kennaniif ifaafi hubbatamaa akka ta'utti.

Daangeffamaa fi Bu'aa ;

Daangaan qorannoo kanaa muraasa, sababni isaas dubartoonni ulfaa sochii qaamaa daqiiqaa 150 yoo hojjetan miidhaan isaanirra ga'u hin jiru.

Iccitummaa ;

Odeeffannoon nuti dhiyeessinu iccitiidhaan ta'a, odeeffannoon hirmaattota adda baasu hin jiru. Gaaffileen qophaa'anis koodiidhaan waan ta'aniif, maqaan nama tokkooyyuu hin mul'atu.

Mirga ;

Hirmaattummaan qorannoo kanaa fedhiidhaani. Hirmaachuu murteessanii, yoo barbaadan dhiisuu ni danda'u. Gaaffilee deebisuu hin barbaanne dhiisuu ni danda'u.

Karaalee Wal-quunnamtii ;

Gaaffii fi yaada qorannoo kanarratti qabdaniif, karaalee armaan gadii nu quunnamaa ;

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Walii galtee hirmaattotaa ;

Odeeffannoo waraqaa hirmaattotaa dubbisneerraa. Kanaafuu, kaayyoo

qorannichaa, daangaa fi faayidaa, dhimma iccitumaa, mirga hirmaattotaa fi karaalee wal quunnamtii hunda sirriitti hubadheera. Wantootaa naaf hin galles gaafachuuf carraa argadheera.Hirmaattonni mirga qorannaa kana keessaa ba'uufi gaaffi deebisuu hin barbaadne dhiisuu akka danda'an natty himameeraa. Kanaafuu, ani fedha kootiin qorannoon kun hospitaala_____ jedhaman keessatti akka geggeefamuuf eeyyamni haa kennamuufan jedha.

Maqaa fi mallattoo hoogganaa hospitaalaa ; _____ Maqaa fi mallatto odeeffannoo sassaabduu ; _____

Appendix L

Warqada Xogta Iyo La Socodasiinta Ma Suuliyiinta Machadyada (Heads Institutions) In Ay Si Mutadawacnimo Loo Ga Helo Xota Ay Hayaan

Magacaygu waa_____ u shaqaynaysa xog ururin ahaan daraasaadka laga samaynayo bulshda harar iyo diridhaba, ciwaanka daraasaadkuna yahay (Wacyigalinta iyo aragtida ku saabsan dumarka uurka leh ee magaalooyinkan inta aanay umulin xarakaadka ama dhaqdhaqaaqa jidhka (physical activity) ay sameeyaan). **Selamawit Eriso**wa maamulaha daraasaadka kana barta tacliinta MSc. (darajada sadaxaad ee waxbarasho ama doctor nimo) jaamacada haramaaya, kuliyada (Natural and computational science and sport science).

Sidaas ajligeed waxaan si naxariisle idiika codsanayaa in aad si niyadsami leh noogu sharaxdaa wixii ku saabsan daraasaadkan maadaama aan machadkiina u dooranay goobta daraasaadk.

Ciwaanka daraasaadka ama mashruuca

Wacyigalinta iyo aragtida ku saabsan dumarka uurka leh ee magaalooyinka Harar iyo diridhabe inta aanay umulin xarakaadka ama dhaqdhaqaaqa jidhka (physical activity) ee ay sameeyaa.

Ujeedada Daraasaadka

Waxa uu daraasaadkani wax ka tari doona qaarkamida cusbitaalada aan xulanay ee harar sida (hiwat faana, jegula, police) iyo diridhaba cusbitaaladeeda sida (Dilchora cusbitaal, bilaal iyo yemariyaamwarqi). Sidookale ujeedada daraasaadkani waa in la sahamiyo xarakaadka ama dhaqdhaqaaqa jidhka (physical activity) ee ay sameeyaan ama caadaystaan dumarka uurka leh. Sidaas darted, daraasaadkani maaha dhamaan qaybaha firfircoonida jidhka (physical activity) ayaynu ka wada xaajoondoona. Laakiin waxa aan diirada ku saaraynaa qayb gaar ah oo wakhtiga dumarku uurka leeyihiin.

Geedi socodka iyo mudada daraasaadk

Waxaan ururindoona su,aalo aan diyaariyay iyo kuwo la tijaabiyay. Su,aalaha muhiimka ah waxaan ku diyaarindoonaa English waxaana ku turjumi luuqada lagaga hadlo goobta daraasaadka aan samaynayo iyada oo loo eegayo bayaan ahaansheheeda iyo in ay sifudud u fahmikaraan ka qayb qaatayaasha daraasaadku.

Khatarta iyo faa iidada daraasadka

Khatarta daraasaadkani waa mid aad u yar. Inkasta oo wakhti xaadirkan aan la garanayn khataryta lidka ku ah dumarka uurka leh ee lala xidhiidhinayo in ay la kulmaan talooyinka hagaya ee ugu yaraan ah ilaa 150 daqiiqo ee awooda dhaxdhaxaadka firfircoonida jidhka ama jimicsi (physical activity) ee todobaad kasta.

Ilaalinta xogta

Warbixinta aad nasiisaan waan ilaalinaynaa sirteeda.Waxaa kale oo jiri doona in aan loo bixinayn xogta ka qaybqaatayashaa sigaar ah. Natijada daraasaadku waxa uu u noqondoonaa bulshada mid guud oo si gaar ah wax uuga sheegayn shaqsiyaad. Su,aalaha waxa loo samayn doonaa koodh (Code) aanu ku jirin magaca shaqsigu.

Xuxuuqda

Ka qaybqaatayaasha daraasaadku waxa ay sibuuxda u yihiin mutadawiciin.Ka qaybqaatayaashu waxa ay xaquuq u leeyihiin in ay ka qaybqaataan amaba diidikaraan ka qaybqaadashada daraasaadka.Hadii ay ka qaybqaataan daraasaadka waxa ay xaquuq u leeyihiin in ay ka bixi ka raan wakhtiga ay rabaan.Laguma dhaleecaynkaro amaba lalama xidhiidhinkaro waxii xumaada.Wayna diidi karaan su aasha ay rabaan inayna ka jawaabin.

Ciwaanada lagala xidhiidhayo

Hadii ay jirto wax su,aalo oo ku saabsan daraasaadka markasta fadlan waxaad nagala soo xidhiidhi kartaa ciwaanadan hoos ku qoran.

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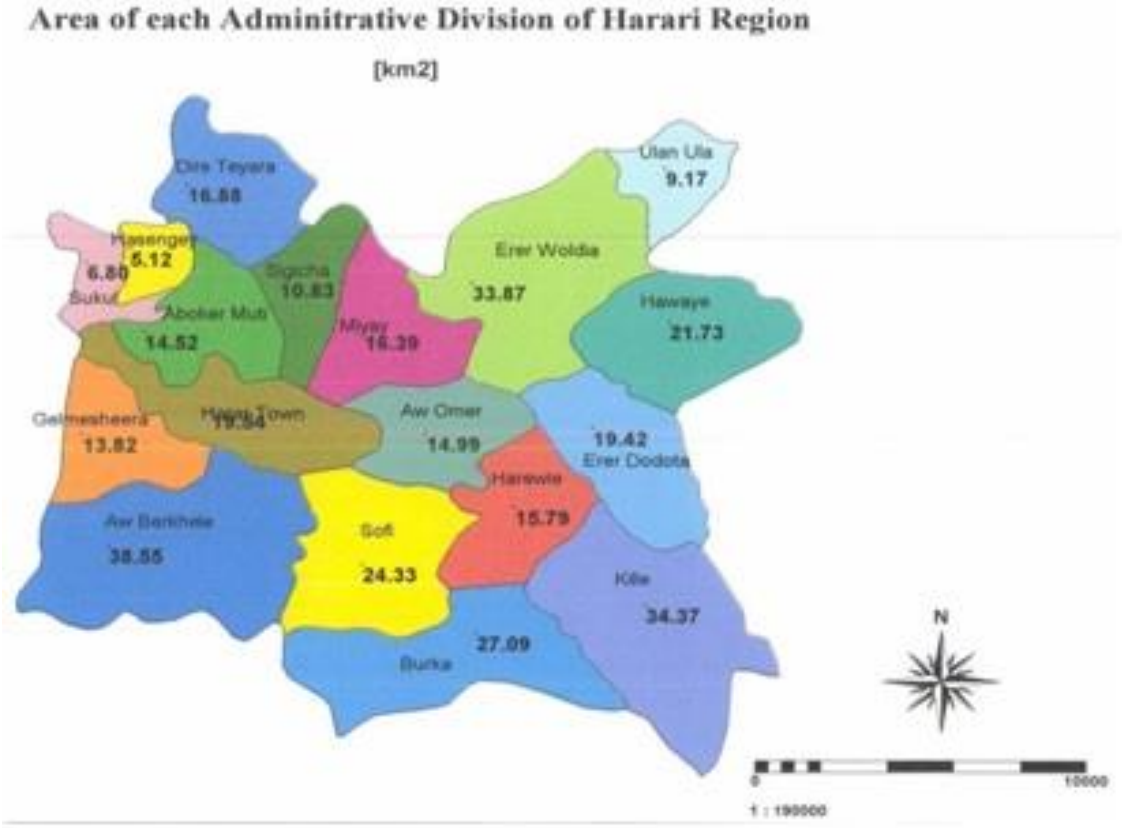
Shaacinta ogolaansha wargalineed Waan akhriyay warqada xogta ka qaybqaataha daraasaadka. Si cadna waan u fahmay ujeedada daraasaadka, khatarta iyo faa,iidada, ilaalihinta xogta, xuquuqda ka qaybqaadashada iyo ciwaanada lala xidhiidhayo hadii ay wax su,aalo jiraan.waxaa la isiiyaya fursad aan ku waydiinkaro su,aalaha sifiican aanan u fahmin. Waxa kale oo la igu wargaliyaya in ka qaybqaate kasta uu leeyahay xaquud uu kaga bixi karo ka qaybqaadashada daraasaadka wakhtigii uu doono ama uu diidi karo in uu ka jawaabo su,aalaha uuna rabin. Sidookale waxaa la igu wargaliyay in hadii aan cusbitaalka ku arko ficilxun ama hanaan anshax daro ah wakhtiga xog ururinta dhismaha cusbitaalka. Sidaas darted, waxaan shaca ka qaadaya in aan si mutadawacnimo ah u ogolaaday in daraasaadkan laga sameeyo cusbitaalada sida _____Oon anu ka ahay bilaw.

Magaca iyo sexeexa masuulka cusbitaalka_____

mnagaca iyo sexeexa xog ururiyaha_____

Figure in the Appendix

Figure 1.Map of study site of Harar City



Source: CSA 2014

Figure 2. Map of study site of Dire Dawa City

Source: CSA 2014