

Exercise in pregnancy and postpartum

Current situation, barriers, and facilitators in Ethiopian context



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Learning objective

After this class the participant will:

1. Define the physical activity and exercise
2. Understand the benefit of physical activity and exercise for pregnant mother and their child
3. Describe the barriers, and facilitator of physical activity for pregnant and postpartum women
4. Understand the current situation of physical activity on Ethiopian pregnant women.



Exercise in pregnancy and postpartum

Is pregnancy opportunity or a barrier for engaging in exercise?

Exercise in pregnancy and postpartum women

- Physical activity and exercise promotes health benefits in all phases of life including pregnancy and postpartum period.
- However, some modification to exercise routines may be necessary for pregnancy because of normal anatomical and physiological changes and fetal requirement.
- They have substantial benefits for women with uncomplicated pregnancies and with comorbidities/complications.
- Ante and postnatal exercise have become a fundamental aspect of women's lives and an important constituent of antenatal care.

Exercise in pregnancy and postpartum women

Common terminology

- Physical activity is defined as any bodily movement produced by the contraction of skeletal muscles in all stages of life, maintain and improves cardiorespiratory fitness, reduces the risk of comorbidity, and results in greater longevity.
- Exercise is a physical activity consisting of a structured, planned, and repetitive bodily movements done to improve one or more components of physical fitness, is an essential elements of a healthy lifestyle.

(American College of Sport Medicine, ACSM, 2018)

WHICH EXERCISES ARE GOOD DURING PREGNANCY

Pregnancy EXERCISE & YOGA

Pregnancy STRETCHES

#6 of 9

Pregnancy EXERCISE with BALL #5 of 5

Pregnancy STRETCH

Pregnancy EXERCISE with BALL

Pregnancy EXERCISE & YOGA

Pregnancy STRETCHES

#2 of 9

Pregnancy STRETCH

Pregnancy EXERCISE with BALL

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Examples of Exercises That Have Been Extensively Studied in Pregnancy and Found to Be Safe and Beneficial

- Walking
- Stationary cycling
- Aerobic exercises
- Dancing
- Resistance exercises (eg, using weights, elastic bands)
- Stretching exercises
- Hydrotherapy, water aerobics

Modified from Berghella V, Saccone G. Exercise in pregnancy! Am J Obstet Gynecol 2017;216:335–7.

Benefits of Physical activity (PA)

- The benefits of exercise during pregnancy are numerous.
- Physical activity has substantial benefits for pregnant and postpartum women for the prevention/minimize the complication and to treat comorbidity and complications.
- The benefits of physical activity during pregnancy include improved physical fitness, reduced risk of excessive weight gain, reduced risk of pre-eclampsia and pre-term birth, reduced low back pain, improved sleep, reduced anxiety and depressive symptoms, and improved health perception and self-reported body image.
- Physical activity assists with weight control and reduces the risk of GDM in obese pregnant women.

Benefits of Exercise in Pregnancy

Higher incidence of:

- Vaginal delivery

Lower incidence of:

- Excessive gestational weight gain
- Gestational diabetes mellitus
- Gestational hypertensive disorders*
- Preterm birth
- Cesarean birth
- Lower birth weight

*Defined as gestational hypertension or preeclampsia

Modified from Berghella V, Saccone G. Exercise in pregnancy! Am J Obstet Gynecol 2017;216:335–7.



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Benefits of Physical Activity during Pregnancy and Postpartum: An Umbrella Review

Loretta DiPietro¹, Kelly R. Evenson², Bonny Bloodgood³, Kyle Sprow⁴, Richard P. Troiano⁴, Katrina L. Piercy⁵, Alison Vaux-Bjerke⁵, and Kenneth E. Powell⁶ 2018 Physical Activity Guidelines Advisory Committee^{*}



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What is known about PA in the researches



- Physical activity participation in pregnancy is associated with better outcomes for mother and fetus.
- Physical activity is generally considered safe for both the pregnant woman and the fetus;
- Women face significant barriers to participating in require physical activity needed for the healthy pregnancy.





ACOG

The American College of
Obstetricians and Gynecologists

ACOG COMMITTEE OPINION

Number 804

(Replaces Committee Opinion Number 650, December 2015)

Committee on Obstetric Practice

This Committee Opinion was developed by the Committee on Obstetric Practice with the assistance of committee members Meredith L. Birsner, MD; and Cynthia Gyamfi-Bannerman, MD, MSc.

Physical Activity and Exercise During Pregnancy and the Postpartum Period

Exercise in the postpartum period

- Several studies indicate that women's level of participation in exercise programs diminishes after childbirth, frequently leading to overweight and obesity.
- The postpartum period is an opportune time for healthcare provider and exercise professional to recommend and reinforce a healthy lifestyle.



What are the attitudes, barriers and enablers to physical activity perceived by pregnant women?

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PHYSIOTHERAPY

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Research

Attitudes, barriers and enablers to physical activity in pregnant women: a systematic review

Anne L Harrison^{a,b}, Nicholas F Taylor^{a,c}, Nora Shields^{a,d}, Helena C Frawley^{e,f}



Table 3

Content analysis summary of qualitative data on attitudes, barriers and enablers to physical activity during pregnancy from 28 studies (reported in 29 articles) that used qualitative methods.

Attitudes (15 studies)		Barriers (27 studies)		Enablers (21 studies)	
	n		n		n
Important		Intrapersonal		Intrapersonal	
Important/necessary	12	<i>Fatigue</i>	20	<i>Easier labour/delivery</i>	13
As important as diet in pregnancy	1	<i>Safety/fears</i>	20	<i>Maternal health and wellbeing</i>	12
Important for self and baby	1	<i>Pregnancy symptoms/discomforts</i>	19	<i>Weight control</i>	9
		<i>Lack of time</i>	17	<i>Ease pregnancy symptoms/discomforts</i>	7
		<i>Lack of motivation</i>	13	<i>Confidence/physical activity habit</i>	7
Beneficial		<i>Lack of confidence</i>	8	<i>Baby's health</i>	6
<i>Beneficial for women</i>		<i>Lack of knowledge</i>	4	<i>Appearance</i>	5
For healthy pregnancy	10				
Fitness and staying in shape	4	Interpersonal (social)		Interpersonal (social)	
For labour/birth	3	<i>Social support</i>		<i>Social support</i>	
Wellbeing/enjoyment	2	Lack support of family/friends/others	9	Support of partner	10
For pregnancy symptom relief	1	Lack support of partner	3	Support of family/friends/others	9
<i>Beneficial for baby</i>	4	Lack company	1	Socialisation with other pregnant women	5
		<i>Informational</i>		Company for walks	1
Safety		Lack physical activity information	2	<i>Informational</i>	
Need to modify physical activity in pregnancy	2	Conflicting advice	2	Advice from doctor	4
Walking considered best/safest	1	Lack of advice from professionals	2	Unambiguous advice	3
		Norms		Reassuring advice	3
		Social norms	2	<i>Social influence</i>	
		Cultural influence	1	Socialisation	4
		Responsibilities		Peer pressure	1
		Work commitments	7	<i>Responsibilities</i>	
		Childcare	5	Fewer commitments, more time	3
		Families	2	Childcare support	1
		Environmental		Environmental	
		<i>Access</i>		<i>Access</i>	
		Lack access to facilities/resources	11	Access to facilities/resources	9
		Lack safe place to be physically active	3	<i>Weather</i>	

Physical activity and exercise during pregnancy and postpartum in African context

RESEARCH ARTICLE

Open Access

Physical activity and exercise during pregnancy in Africa: a review of the literature



Uchenna Benedine Okafor^{1*} and Daniel Ter Goon²

- African pregnant women do not adhere to the recommendations for PA during pregnancy
- The level of participation in exercise during pregnancy are low and decline as the pregnancy progresses compared to the western world.
- Personal and environmental factors such as lack of time, lack of knowledge, inadequate information from healthcare providers, lack of exercise professional, feelings of tiredness and an absence of social support constituted the main barriers to PA during pregnancy.

Physical activity in pregnant women in Africa: A systematic review

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- In low and middle income countries (LMICs) most of physical activities is done during the performance of household activities which have an intensity below the recommended guidelines.
- Barriers influencing participation of physical activity in pregnancy were misconceptions about physical activity in pregnancy, lack of knowledge about which activities to undertake, lack of facilities at community and lack of time.

Types of physical activity participation

- The types of PA participation among pregnant women varied across studies and different geographical settings.
- Most studies reported that pregnant women engaged primarily in sedentary activities (sitting, household chores), walking, jogging, aerobics, floor exercises.
- Some studies reported pregnant women had little knowledge concerning the types and benefits of PA participation during pregnancy, but at the same time exhibited positive attitudes towards exercise.

Okafor, U. B., & Goon, D. T. (2019). Physical activity and exercise during pregnancy in Africa: a review of the literature. *BMC Pregnancy and Childbirth*, 20

Patterns, facilitators and barriers to physical activity among Nigerian pregnant women

 Chidozie Emmanuel Mbada,  Dolapo Adeola Ojo, Olabisi Aderonke Akinwande, Okechukwu Ernest Orji, Adebajo Babalola Adeyemi, Kikelomo Aboyowa Mbada, Esther Kikelomo Afolabi

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- Light to moderate intensity and household-related PA are common PA in African pregnant women
- Leisure-time PA, work/occupation, household, active transportation, and outdoor with household PA are the common type of PA performed by pregnant women.

Table 5: perceptions about physical activity, sources of information and perceived changes/factors in physical activity during pregnancy

Theme	Frequency	%
What is physical activity? (n=36)		
Correct response	26	73.0
Incorrect response	10	27.0
Types of physical activity identified (n=36)		
Leisure time	1	2.7
Work/occupation	8	22.0
Household	22	61.1
Active transportation	6	16.7
Outdoor	3	8.3
What are the ways pregnant women can be physically active? (n=22)		
Leisure time	8	36.4
Work/occupation	8	36.4
Household	11	50.0
Active transportation	4	18.2
Outdoor	0	0
Types of prenatal physical activity identified (n=36)		
Leisure time	3	8.3
Work/occupation	13	36.1
Household	18	50.0
Active transportation	6	16.7
Outdoor	1	2.7





Table 6: facilitators and barriers of physical activity in pregnant women			
Level	Descriptive themes	Frequency	Percentage
Facilitators in pregnant women			
Intrapersonal	Health	11	25.0
	Time consciousness	1	2.3
	Self determination	3	6.8
	Motivation	2	4.5
Interpersonal	Social support (family, friends etc)	13	29.5
	Financial stability	6	13.6
Availability of specialized health personnel and policy for physical activity		5	11.4
Good built environment/neighborhood		3	6.8
Facilitators and barriers of physical activity in pregnant women			
Intrapersonal	Pregnancy-related symptoms and limitations	8	33.3
	Time constraints	1	4.2
	Perceptions of already active	1	4.2
	Lack of motivation	5	20.8
	Mother-child safety concerns	1	4.2
Interpersonal	Lack of advice and information	3	12.5
	Lack of social support	2	8.3

Level of physical activity participation during pregnancy in Ethiopia

Research | [Open Access](#) | [Published: 09 June 2022](#)

Physical exercise and its associated factors among Ethiopian pregnant women: a cross-sectional study based on the theory of planned behavior

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[BMC Psychology](#) **10**, Article number: 146 (2022) | [Cite this article](#)

Physical activity and associated factors among pregnant women in Ethiopia: facility-based cross-sectional study

[Teklehaimanot Tekle Hailemariam](#) , [Yosef Sibhatu Gebregiorgis](#), [Berihu Fisseha Gebremeskel](#), [Tsiwaye Gebreyesus Haile](#) & [Theresa Monaco Spitznagle](#)

[BMC Pregnancy and Childbirth](#) **20**, Article number: 92 (2020) | [Cite this article](#)

Cont...

- Only 6.1% to 8.4% Ethiopian pregnant women met the international recommended guideline for PA during pregnancy.
- The types of PA participation among pregnant women varied across studies and different geographical settings however, household chores and brisk walking are the most commonly reported mode of exercise.
- Jogging, relaxation exercise, breathing exercise, ankle-toe exercises, pelvic floor exercise, aerobic, dancing and yoga are the types of antenatal exercises practiced by some of pregnant women.

Factors affecting physical activity participation/practice during

pregnancy

- Absence of specialised exercise trainer, lack of time , fear of miscarriage, don't like exercise, mis understanding, lack of finances, lack of knowledge and inadequate information from healthcare providers, feelings of tiredness and the absence of social support are factors affecting PA participation during pregnancy.
- Number of children, stage of pregnancy, gravidity and employment status had a significant influence the levels of physical activity during pregnancy.
- The common source of information about PA during pregnancy came from medical/health institutions, multimedia, friends/relatives, books/newspaper.

Knowledge about the benefit and contraindication of antenatal exercise

- About 40% of pregnant women have adequate knowledge on the benefit and contraindication of antenatal exercise.
- Among women had adequate knowledge, about 71%, 63.3%, and 51.6% correctly identified that ANEx can help enhance post-natal recovery, improve stamina, and prevent excessive weight gain respectively.
- Similarly, 22.6%, 23.5%, 24.9, and 32.4% of women knew that ANEx is beneficial in strengthening pelvic floor muscles, abdominal muscle strength, prevents postnatal depression, and gestational DM respectively.

adequate knowledge (which are possible contraindications) of an actual exercise/routine type among pregnant women attending ANC at University of Gondar comprehensive specialized Hospital (UoGCSH), Gondar, Ethiopia (n = 349).

ANEx Characteristics	Response n (%)		
	Yes	I don't know	No
Reduces the risk of gestational diabetes	113(32.4)	171(49)	65(18.6)
Enhances energy and stamina ^b	221(63.3)	115(33)	13(3.7)
Strengthens the pelvic floor muscles ^b	79(22.6)	152(43.6)	118(33.8)
Reduces risk of perinatal and postnatal back pain	161(46.1)	173(49.3)	15(4.3)
Helps to cope with delivery pain ^b	157(45)	165(47.3)	27(7.7)
Reduces postnatal abdominal muscle weakness ^b	82(23.5)	124(35.5)	143(41)
Prevents excessive weight gain ^b	180(51.6)	150(43)	19(5.4)
Reduces risk of HTN ^b	139(39.8)	165(47.3)	45(12.9)
Enhances post-natal recovery	248(71)	90(25.8)	11(3.2)
Individualized exercises are safe and best ^b	182(52.1)	104(29.8)	64(18.1)
Reduces the risk of post-natal depression	87(24.9)	115(33)	147(42.1)
Chest pain during pregnancy	123(35.2)	145(41.5)	81(23.2)
Difficulty in breathing	139(39.8)	141(40.4)	69(19.8)
Abdominal pain during pregnancy	159(45.6)	121(34.7)	69(19.8)
Back pain during pregnancy	225(64.5)	54(15.4)	70(20.1)
Uncontrolled Type1 DM ^c	106(30.4)	164(47)	79(22.6)
Uncontrolled HTN during pregnancy ^c	152(43.6)	123(35.2)	74(21.2)
Uterine contractions ^c	150(43)	137(39.3)	62(17.7)
Vaginal bleeding	225(64.5)	38(10.9)	86(24.6)
Premature labor ^c	181(51.9)	93(26.6)	75(21.5)
Dizziness during pregnancy ^c	144(41.3)	88(25.2)	117(33.5)
Decreased foetus movement ^c	209(59.8)	66(18.9)	74(21.3)
Knowledge of ANEx (Summary index)			
Adequate knowledge	138 (39.5)		
Inadequate knowledge	211 (60.5)		

^bRelated to benefits and

^crelated to contraindication for ANEx.

Beliefs about and benefits of physical activity during pregnancy

- Nearly half of pregnant women have positive attitude about the benefit of physical activity.
- Studies reported that exercise prevents incontinence, decreases risk of preeclampsia, decreases risk of gestational diabetes , hypertension and excessive weight gain, decreases the risk of caesarean delivery , prevents preterm births and improves depressive symptoms

Table 3. Frequency of factors influencing negative attitude among the pregnant women attending ANC towards antenatal exercise, University of Gondar comprehensive specialized Hospital (UoGCSH), Ethiopia(n = 349).

Variable	n(%)
Attitude towards antenatal exercises	
Positive score (≥ 6.73)	193 (55.3)
Negative score (< 6.73)	156 (44.7)
Negative attitude towards antenatal exercise (n = 156)	
I think ANEx is essential	198(56.7)
I believe ANEx suits our culture	187(53.6)
I think ANEx doesn't harm my baby	171(49)
I believe ANEx will help me get back to shape	44(12.6)
I have a good family support	167(47.9)
I have enough time to do exercise	126(36.1)
I like to do exercises	125(35.8)
I think ANEx will prevent complications	227(65)
I believe ANEx with help rapid post-natal recovery	151(43.3)
I think if ANEx is individualized it is better	111(31.8)
I think ANEx will give an energetic feel	237(67.9)
I think ANEx should be done based on advice	96(27.5)

<https://doi.org/10.1371/journal.pone.0247533.t003>

Barriers to practice exercise during pregnancy

Barriers to practice of ANEx (n 241)*	
Is afraid that it may be harmful for foetus	163 (67.6)
Lack of time	127 (52.7)
Lack of information	91 (37.8)
Family member advice not to do	62 (25.7)
Feels uncomfortable	55 (22.8)
Lack of family support	34 (14.1)
Feels tired	28 (11.6)
Doesn't like exercising	14 (5.8)

*Difference in the frequency of pregnant women may reflect multiple responses.

<https://doi.org/10.1371/journal.pone.0247533.t004>

Quick Summary

- Pregnancy should be seen as an opportunity to embrace exercise routines.
- Physical activity and exercise promotes health benefits in all phases of life.
- Most of Ethiopian pregnant women don't meet the international recommended guideline for PA during pregnancy.
- Lack of specialised exercise trainer, intra and interpersonal factors are the main barriers for pregnant women to participate in exercise program.

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