characteristics, main facilitators and barriers to participation in physical activity during pregnancy in Iran

Najmeh Shojaeian
Motor Development
Assistant professor
Azad University of Bojnourd
Iran

PROGRAM SPINAKER
Fundusze Europejskie Wiedza Edukacja Rozwój
Rzeczpospolita Polska
NAWA
Unia Europejska Europejski Fundusz Społeczny

Iran

Iran, and also called **Persia**, is a country located in Western Asia.

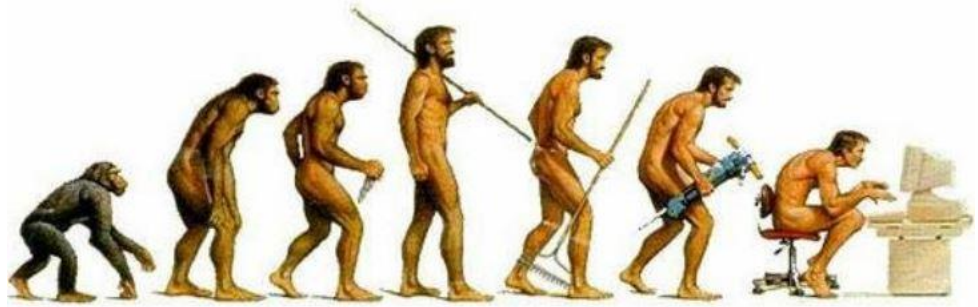
17th-largest country.

17th-most populous country

the second-largest country in the Middle East.

Physical Activity Among Iranian People

- Insufficient physical activity (IPA) is a significant public health issue associated with a wide range of non-communicable diseases .



- A higher level of physical activity ⇒ lower occurrence and mortality of infectious diseases

- The Global Burden of Disease (GBD): ↑ low physical activity (0.2% during three decades).

Sedentary Behavior

IPA was responsible for 4.4% and 1.9% of deaths and disability-adjusted life-years (DALYs) attributable to non-communicable diseases (NCDs) in 2019 in Iran, respectively.

The overall age-standardized prevalence of sedentary behaviors was 50.82% in both sexes in Iran.

By sex, 49.42% of males and 51.95% of females had an age-standardized prevalence of sedentary lifestyle in daily life.

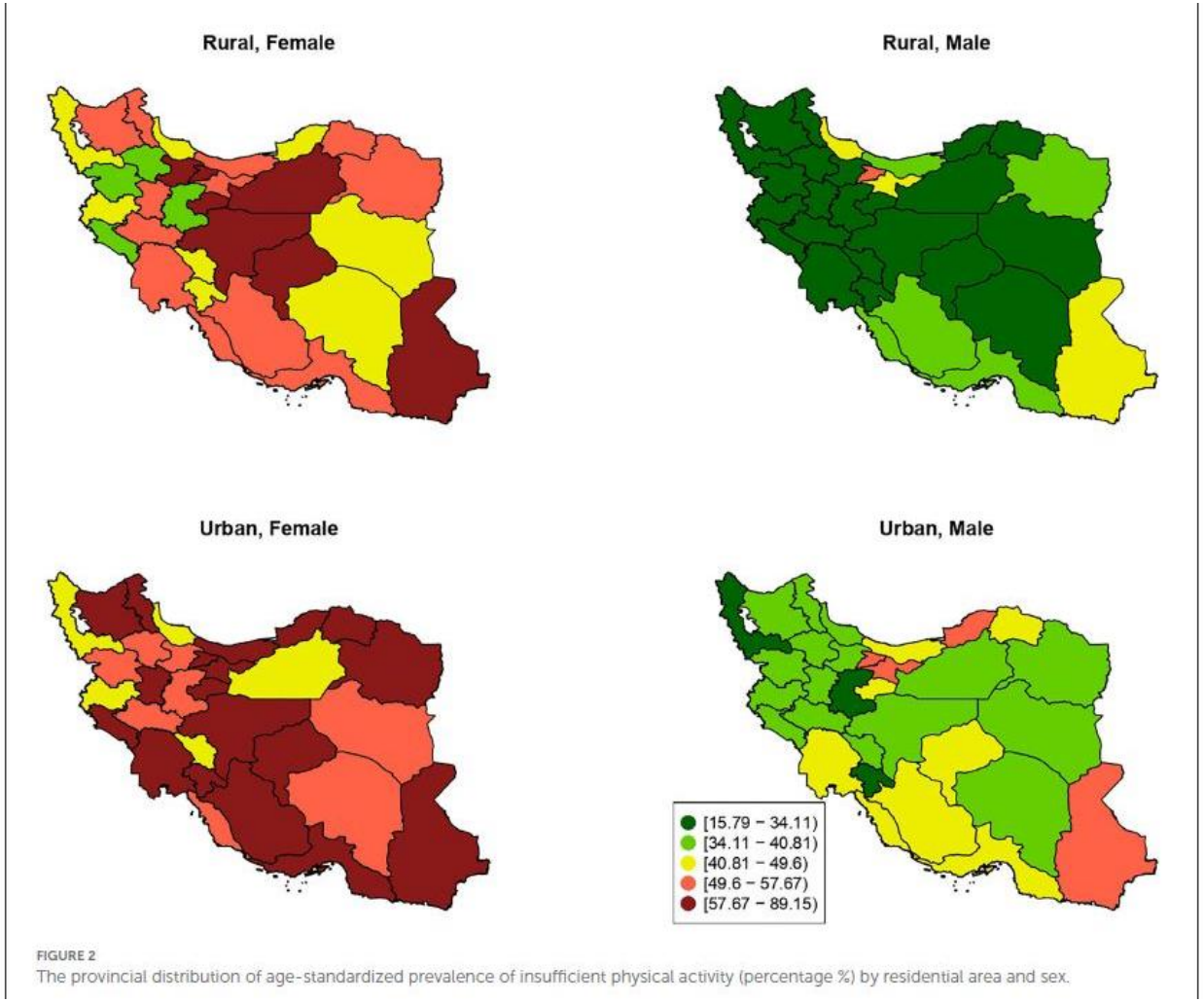


FIGURE 2
The provincial distribution of age-standardized prevalence of insufficient physical activity (percentage %) by residential area and sex.

frontiers | Frontiers in Public Health

TYPE Original Research
PUBLISHED 04 January 2023
DOI 10.3389/fpubh.2022.1036219

OPEN ACCESS

EDITED BY
Wanich Suksatan,
Chulabhorn Royal Academy, Thailand

Physical activity pattern in Iran: Findings from STEPS 2021

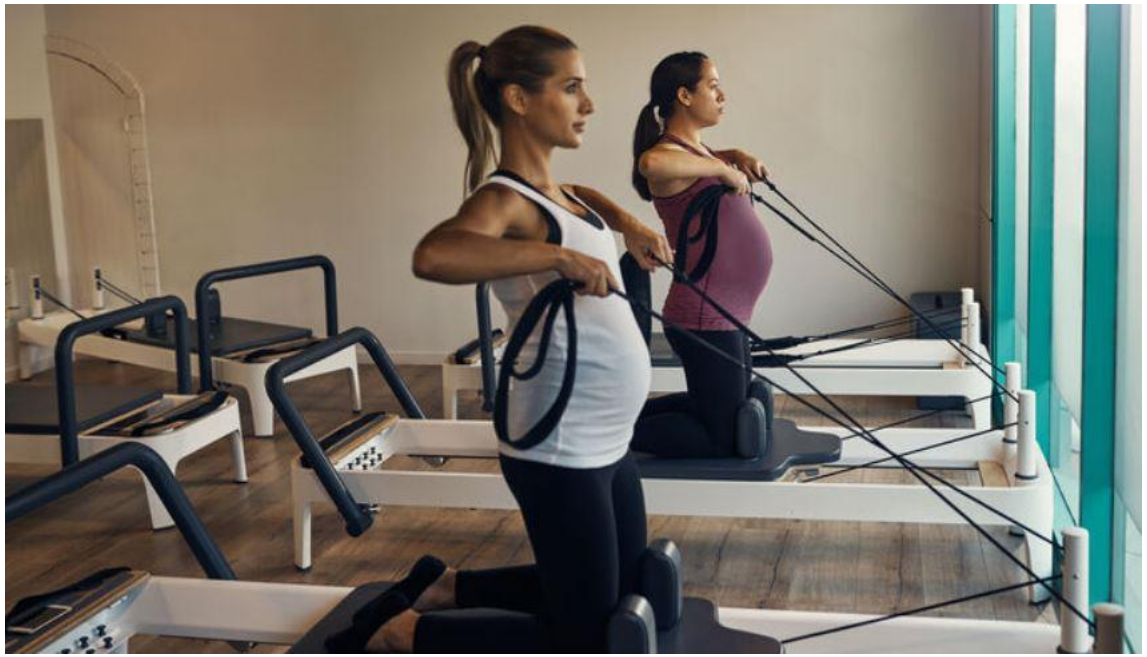
Seyed Aria Nejadghaderi[1,2†], Naser Ahmadi[1†],

Covid-19 pandemic and IPA level

Females and Elderly population

Pregnancy is a life- changing event that can alter individuals' physical activity (PA)

What about pregnancy ?



In Iran:
70% of pregnant women did not have any physical activity
98% had poor physical activities.

First trimester: **52%** =Inactive.

In the second trimester, **70%** of them did not engaged in PA at all.

Consequences the engagement in PA

the PA can prevent the several mother and infants complications.

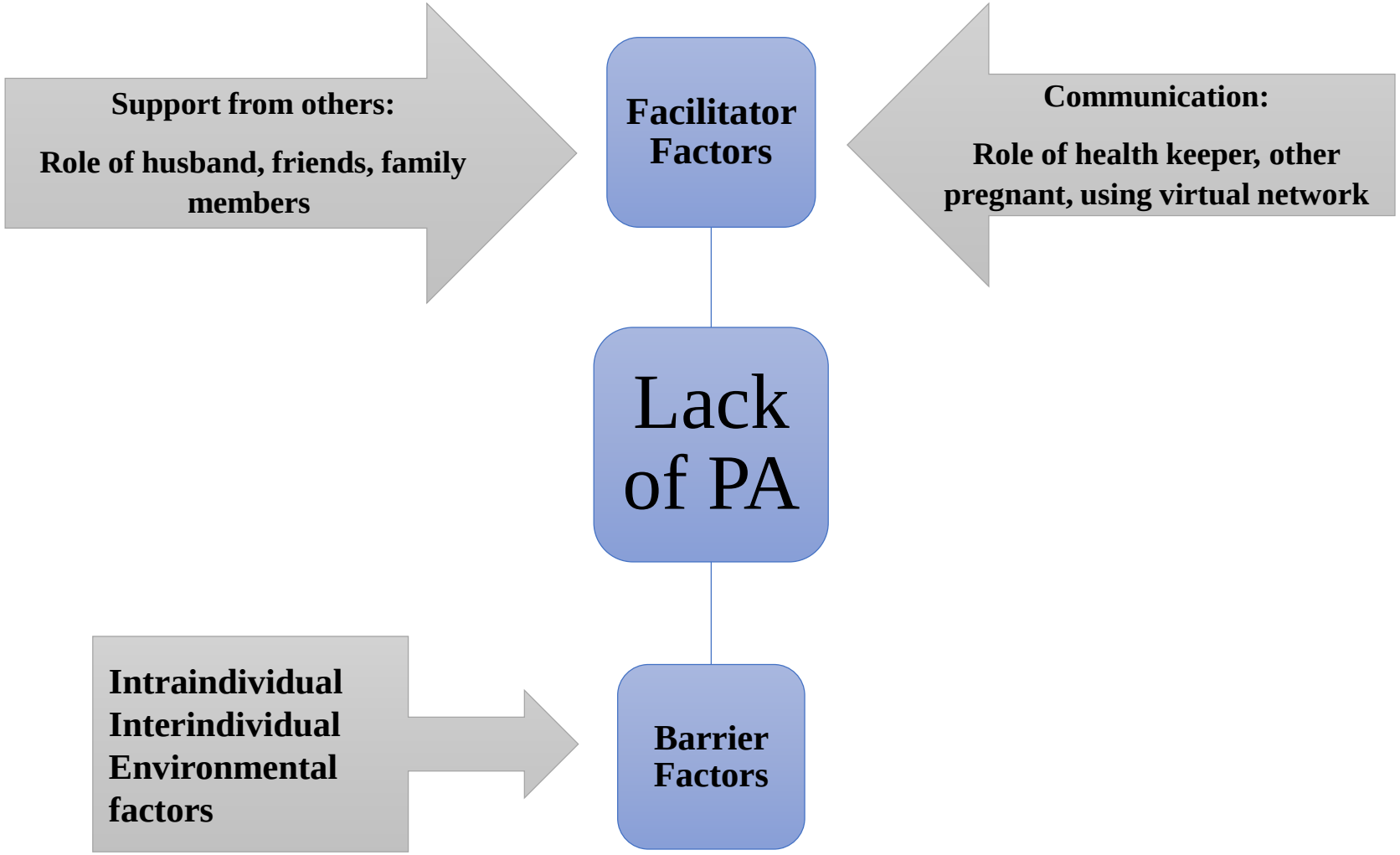
↓ gestational diabetes, hypertension, depression

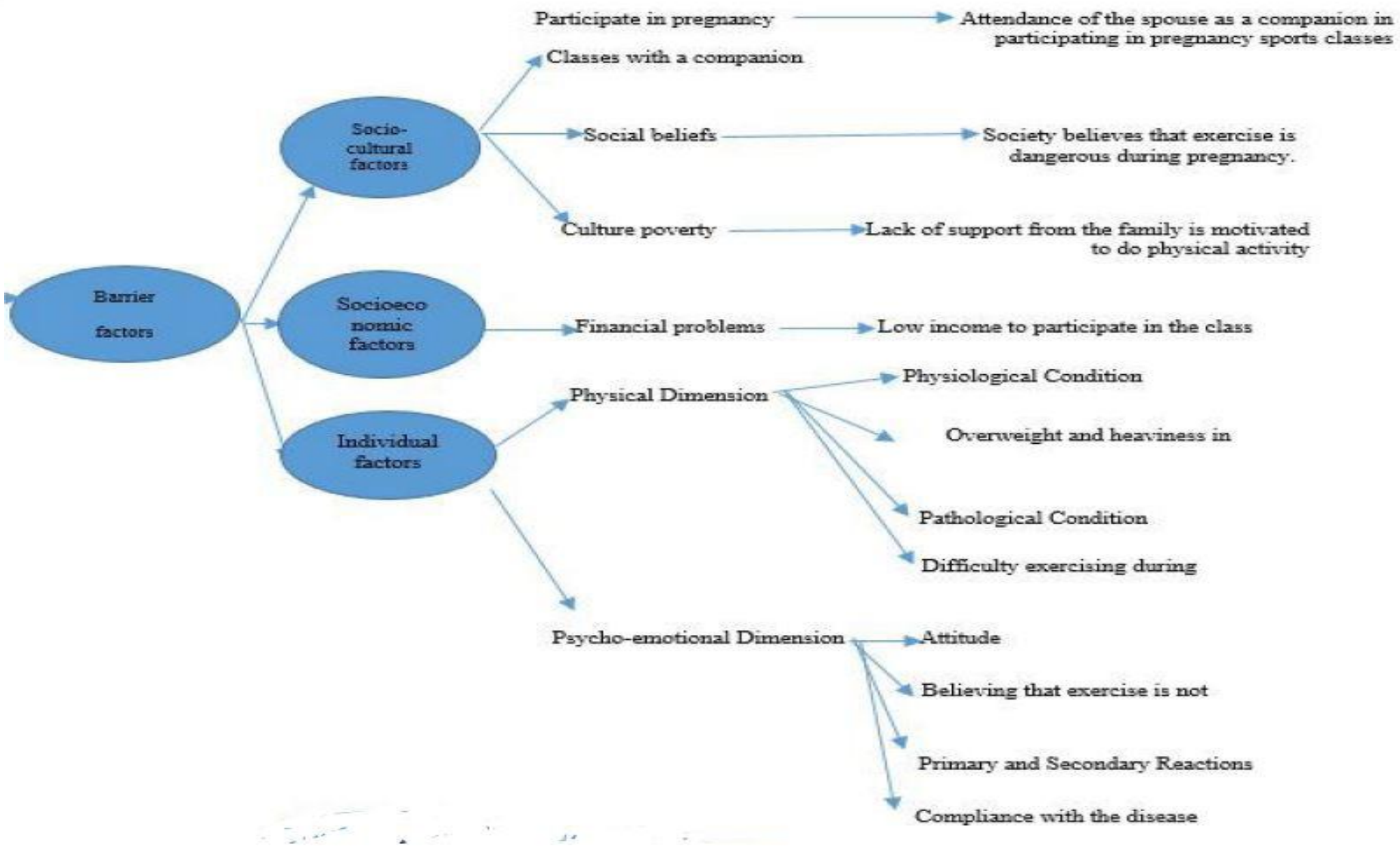
↑ neonatal birth weight, quality of life, motor and social skills

Unia Europejska
ropejski Fundusz Społeczny

Considering these outcomes and the effect of physical activity during pregnancy upon birth and after that, it would be advantageous for every woman to engage in some form of physical activity.

So, why do they decrease their PA levels in pregnancy?


Support from others:
Role of husband, friends, family members
Facilitator Factors
Communication:
Role of health keeper, other pregnant, using virtual network
Lack of PA
Intraindividual
Interindividual
Environmental factors
Barrier Factors


Barrier factors
Socio-cultural factors
Socioeconomic factors
Individual factors
Participate in pregnancy
Attendance of the spouse as a companion in participating in pregnancy sports classes
Classes with a companion
Social beliefs
Society believes that exercise is dangerous during pregnancy.
Culture poverty
Lack of support from the family is motivated to do physical activity
Financial problems
Low income to participate in the class
Physical Dimension
Physiological Condition
Overweight and heaviness in
Pathological Condition
Difficulty exercising during
Psycho-emotional Dimension
Attitude
Believing that exercise is not
Primary and Secondary Reactions
Compliance with the disease

intrapersonal factors

Life enhancement

physical performance

psychological outlook

physical exertion

lack of PA due to health status

Australian Journal of Basic and Applied Sciences, 4(9): 4468-4472, 2010
ISSN 1991-8178

Trend of Exercise and believes about it in women's that referred to health center of Iran University

[1]S.Esmaelzadeh saeyeh, M.S. [2]S.Taavoni. [3]Z.Ahmadi. [4]H.Haghani

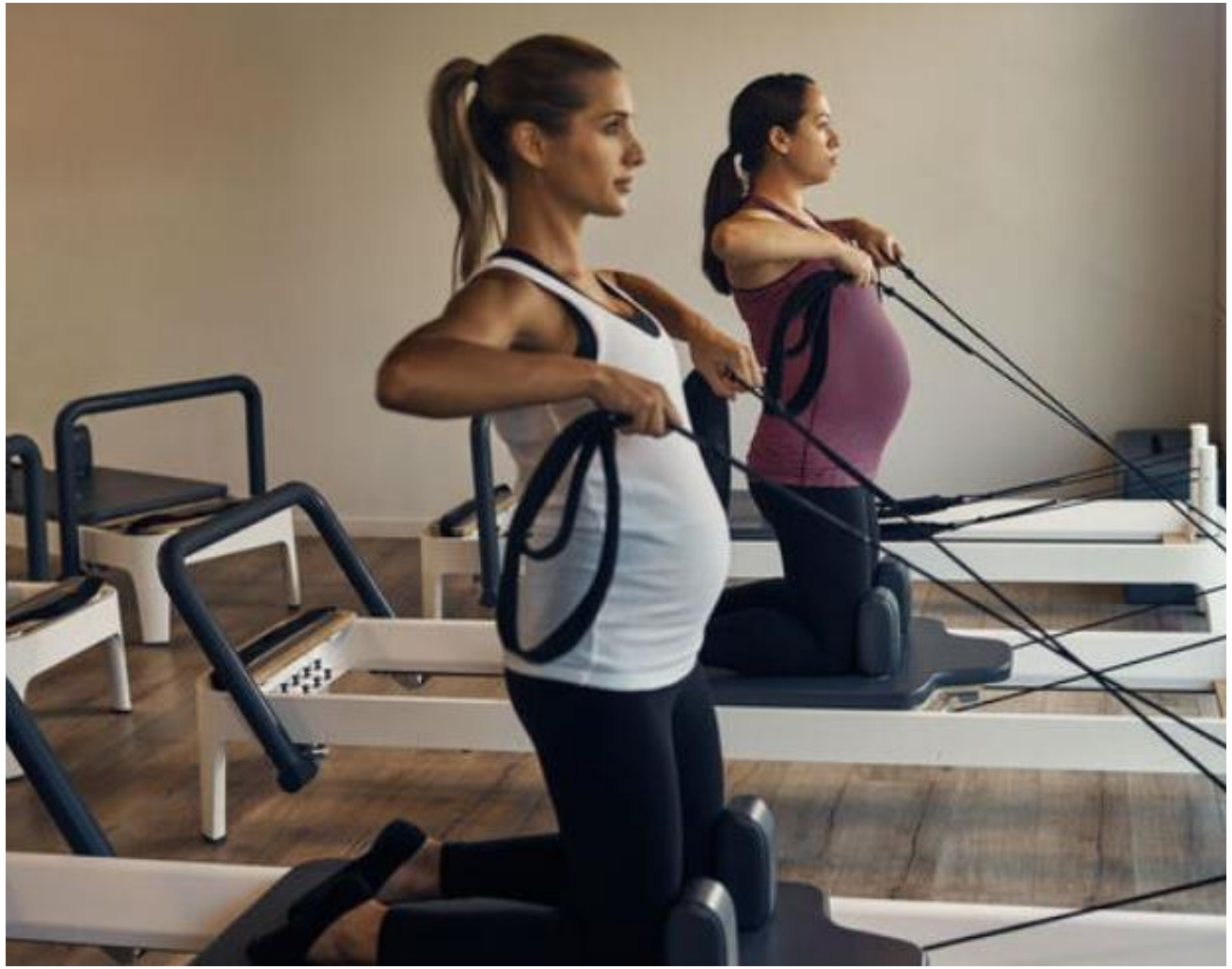
- Knowledge and awareness
- Beliefs
- Morphological and physiological changes
- Mood
- Demographic and obstetrical history

interpersonal factors:

Social interaction

Encouragements by family members and individuals around them', 'necessity to have efficient trainers respecting morals', 'life responsibilities and obligations

Cultural and religious beliefs prevailing within the society



Research | Open Access | Published: 21 February 2022

The barriers and facilitators of Iranian men's involvement in perinatal care: a qualitative study

Sepideh Hajian, Nahid Mehran, Masoumeh Simbar & Hamid Alavi Majd

Reproductive Health **19**, Article number: 48 (2022) | Cite this article

Role of men
Family support
Role of other pregnant women
Health care providers
Lack of child care support

Constraints	Individual factors	Emotional-social immaturity
		Lack of awareness and knowledge
		High-risk spouse behaviors
		Misunderstanding between couples
	Organizational factors	Human resource constraints
		Allocated budget constraints
		Improper physical structure
	Socio-economic factors	Economic insecurity
		Lifestyle changes compared to past
		Changing roles
	Legislative factors	Defect in existing rules
		Lack of supportive rules
		Lack of integrated enforcement of relevant rules

Environment

physical factors

‘organizational and structural factors associated with sports’ environment

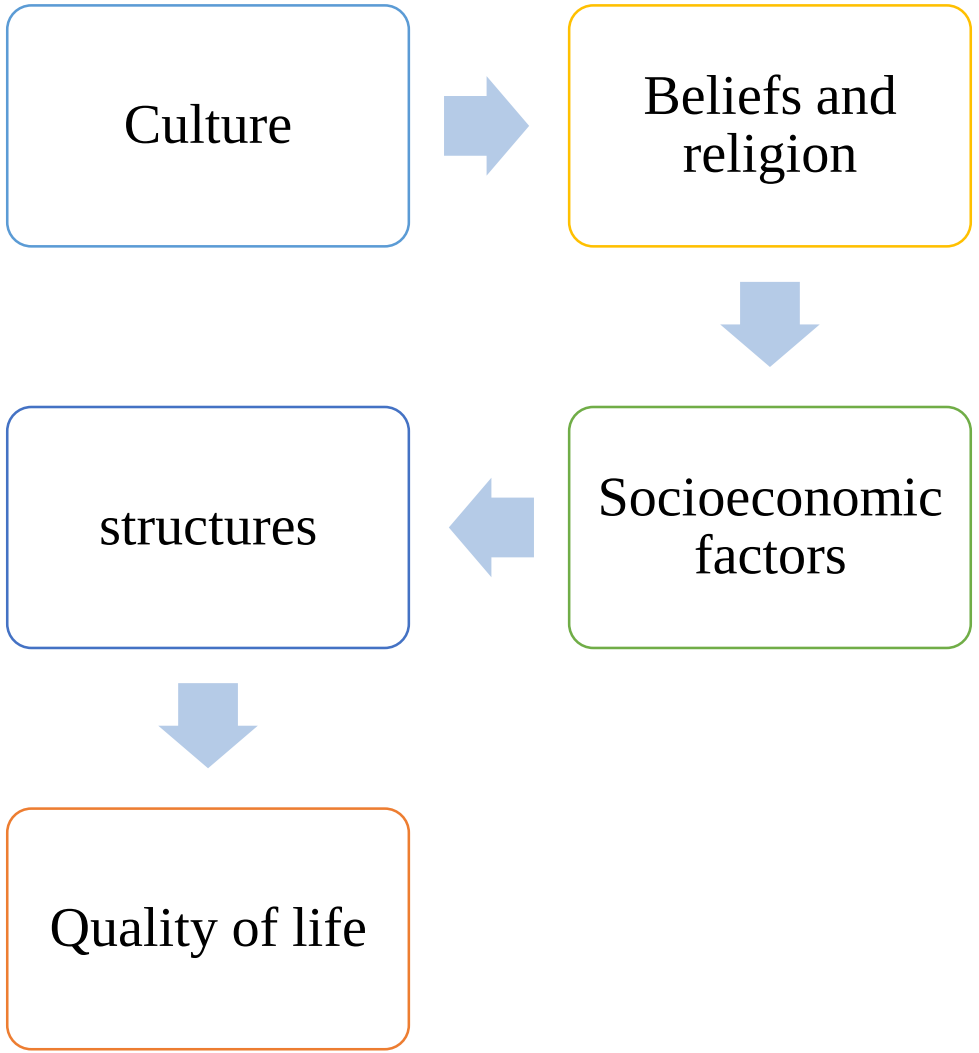
Original Article

Relationship between physical activity and quality of life in pregnant women

Parvin Bahadoran[1], Soheila Mohamadirizi[2]

Table 3: Frequency distribution of the studied pregnant women based on the levels of four dimensions of quality of life

Dimensions of quality of life	*n* (%)			
	Physical	Mental	Social	Environmental
Poor	9 (2.4)	19 (5)	1 (0.3)	13 (3.4)
Medium	193 (50.8)	187 (49.2)	160 (42.1)	220 (57.9)
Good	178 (46.3)	174 (45.8)	219 (57.6)	147 (38.7)



Open access Original research

BMJ Open Sport & Exercise Medicine

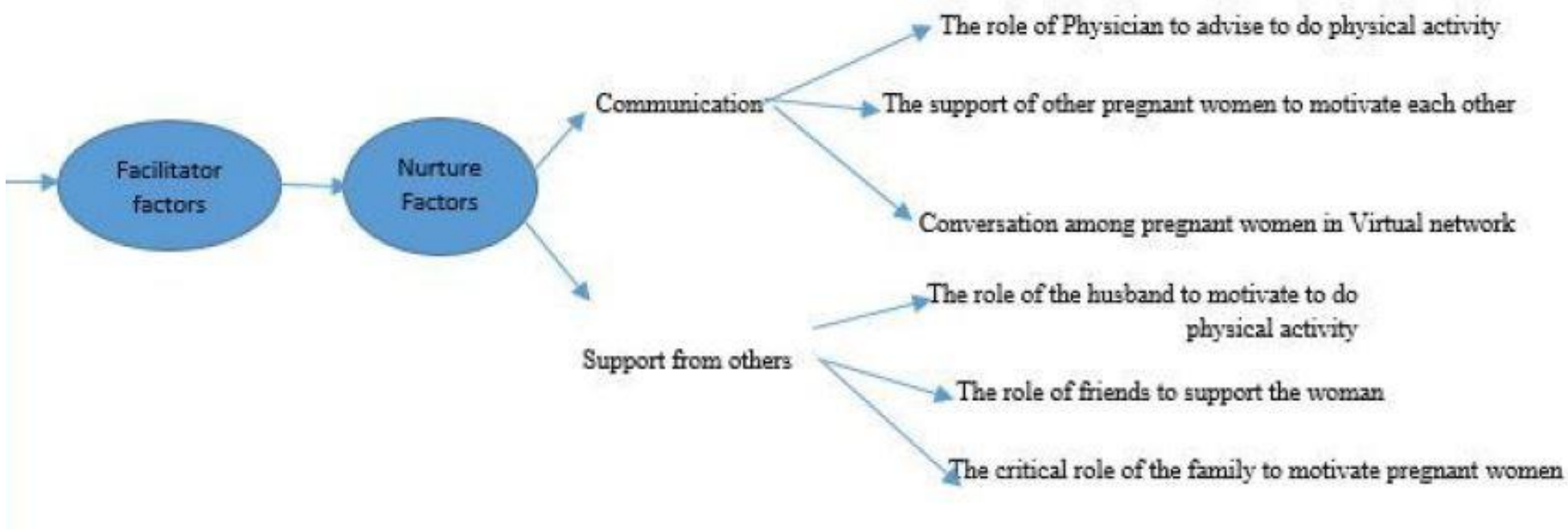
Exploring the intensity, barriers and correlates of physical activity In Iranian pregnant women: a cross-sectional study

Katayon Ahmadi,[1] Leila Amiri-Farahani ,[1] Shima Haghani,[2] Seyedeh Batool Hasanpoor-Azghady,[1] Sally Pezaro[3]

Table 1 Scores of pregnant women's PA barriers and its constructs (n=300)

Constructs of PA barriers	Average score ±SD	Average % of total score ±SD
The total score	30.72±5.81	45.43±14.9
Time expenditure	6.85±1.62	42.77±18.04
Physical exertion physical exertion	4.73±1.32	45.50±22.08
Family discouragement	5.04±1.49	50.72±24.99
Exercise milieu	14.09±2.91	44.98±16.21

PA, physical activity.


Facilitator factors
Nurture Factors
Communication
The role of Physician to advise to do physical activity
The support of other pregnant women to motivate each other
Conversation among pregnant women in Virtual network
Support from others
The role of the husband to motivate to do physical activity
The role of friends to support the woman
The critical role of the family to motivate pregnant women

Open access Original research

BMJ Open Sport & Exercise Medicine

Exploring the intensity, barriers and correlates of physical activity In Iranian pregnant women: a cross-sectional study

Katayon Ahmadi,[1] Leila Amiri-Farahani ,[1] Shima Haghani,[2] Seyedeh Batool Hasanpoor-Azghady,[1] Sally Pezaro[3]

PA ⟺ religion and culture

- Suitable place (for example due to the Hijab restriction)
- Financial Support
- Adequate equipment
- To increase awareness and/or knowledge about PA benefits

Comparing the effect of group training and telemedicine on exercise during pregnancy: An application of the health belief model

Zahra Sheibani Matin[1], Samira Khayat[2], Ali Navidian[2], Hamed Fanaei[2]

- the HBM was introduced as a suitable method to increase exercise during pregnancy. Both group training and telemedicine groups were able to improve the scores of all HBM constructs and the level of exercise among pregnant women.

E-learning and Electronic communication

Fundusze Europejskie Wiedza Edukacja Rozwój
Rzeczpospolita Polska
NAWA
Unia Europejska Europejski Fundusz Społeczny

Explaining the concept of self-care in Iranian pregnant women: A qualitative study

Rahimparvar et al, 2021

According to the results of this study, to improve self-care behaviors in pregnant women, it is necessary to pay attention to the facilitators of self-care and try to remove barriers by the health system, and establish effective communication between health care providers and pregnant mothers.

Table 2
Categories and Sub-categories extracted from qualitative interviews

Categories	Sub-categories
Comprehensive care	Physical care
	Sexual care
	Psychological care
	Spiritual care
Barriers to care	Economic barriers
	Socio-cultural barriers
	Barriers related to the health care system
Care facilitators	Social support
	Effective use of social networks
	Maternal characteristics
	The Positive performance of the health system

Table 2
The theme, sub-themes, and codes of the facilitators, barriers, and structural factors

Themes	Sub-Themes	Secondary Codes
Facilitators		
Nurture factors	Communication	• The role of the physician to advise to do physical activity • The support of other pregnant women to motivate each other to do physical activity • Conversation among pregnant women in the virtual network
	Support from others	• The role of the husband to motivate to do physical activity during pregnancy • The purpose of friends to support the woman • The critical role of the family to motivate pregnant women
Barriers		
Socio-cultural factors	Participate in pregnancy class with a companion	• Attendance of the spouse as a companion in participating in pregnancy sports classes • Having other women in the pregnancy class motivates me to attend pregnancy classes. • Having a dedicated sports instructor motivates me to take pregnancy classes.
	Social beliefs	• Society believes that exercise is dangerous during pregnancy and harmful to the fetus. • Public opinion on the dangers of pregnancy exercise for the fetus. • Lack of community approval for pregnant women to be active during pregnancy.
	Culture of poverty	• Lack of support from the family's motivation to do physical activity during pregnancy. • Weak family culture to encourage pregnant women to exercise • Lack of correct view of the usefulness of pregnant women during pregnancy to have a healthy child.

Themes	Sub-Themes		Secondary Codes
Socioeconomic factors	Financial problems		• Low income to participate in the classes. • Expensive pregnancy exercise classes • Lack of price stability due to economic sanctions
Individual factors	Physical Dimension	Physiological Condition	• Overweight and heaviness in pregnancy • Difficulty breathing during pregnancy • Physiological changes in the body during pregnancy
		Pathological Condition	• Difficulty exercising during pregnancy • Physical problems due to pregnancy • Having an underlying disease and fear of getting worse
	Psycho-emotional Dimension	Attitude	• Believing that exercise is not useful during pregnancy. • Believing that obesity does not affect fetal health. • Believing that exercise is dangerous in pregnancy for mother and fetus.
		Primary and Secondary Reactions	• Compliance with the disease • Inability to adapt to pregnancy changes • Uncontrolled diseases caused by pregnancy
	Spiritual Dimension		• Negative thinking • Fear of harm to the fetus • Stress due to lack of support from pregnant women • Lack of confidence in having the ability to do exercise
Structural factors			

Lack of awareness and misinformation, accessibility obstacles, and economic problems are the most physical activity barriers during pregnancy. Being among other pregnant women and the physicians‘ recommendations are the most facilitators of physical activity during pregnancy.

Themes	Sub-Themes	Secondary Codes
Environmental factors	Equipment	• Lack of sports space to participate in classes • Lack of sports place to participate in classes • Lack of proper facilities in the exercise class for pregnant women • Lack of proper placards to inform the community
Organizational factors	Possibilities in health centers	• Lack of professional staff in health-treatment centers • Lack of sufficient information among health center staff • Lack of a specialist in health centers for training • Lack of suitable places in health centers for holding pregnancy sports classes

uare 2021; https://www.researchsquare.com/article/rs-144610/v1

Part2: The effects of maternal active lifestyle on the offspring's development (motor, cognitive and socio-emotional development in infancy)

- The physiologic processes of pregnancy and childbirth can determine the future well-being of mothers and children. Unhealthy habits during pregnancy increases the risk of disease and delays in both the mother and the fetus.

- The effect of maternal health behaviour on children's development is one of the interesting and important subject in recent years.

- physical activities in pregnancy:
- Increase in BDNF (Brain-Derived Neurotrophic Factor) in neonates, which can help improve objective diagnostic memory, short-term memory and spatial learning; as well as increased neurogenesis.
- Also, changes in maternal hormone levels including growth hormone (GH) and intrauterine growth factor-1 (IGF-1) consistently affect the function of the hypothalamus-pituitary-adrenal axis, limbic system, the prefrontal cortex, and autonomic nervous system in the offspring.

Ministry of Science, Research and Technology
Sport Sciences Research Institute of Iran

JOURNAL OF EXERCISE AND HEALTH SCIENCE

Does Maternal Exercise Program During Pregnancy Affect Infants Development? A Randomized Controlled Trial

Document Type : Original Article

Authors

Najmeh-Alsadat Shojaeian [1]; Masoumeh Shojaei [2]; Abdollah Ghasemi [3]; Frances Glascoe [4]

[1] Department of Physical Education and Sport Sciences, Bojnourd Branch, Islamic Azad University, Bojnourd, Iran

[2] Faculty of Physical Education and Sport Sciences, Alzahra University, Tehran, Iran

[3] Department of Physical Education and Sport Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran

[4] Department of Pediatrics, Division of Child Development, Vanderbilt University, Nashville, TN, USA

10.22089/JEHS.2022.9075.1029

Volume 1, Issue 3
June 2021

Files

XML

- Participants: 40 pregnant women
- Experimental group: receiving the SEP intervention.
- The SEP included moderate-intensity walking (60-75% of the maximal heart rate). During 10 minutes of walking, the heart rate of the participants at different times was checked through the carotid pulse, and the exercise intensity was examined by Talk Test.
- Next, 20 minutes of massage, relaxation and flexibility training were performed.
- Our main tools were Ages and Stages Questionnaire and Peabody Developmental Motor Scales which assessed the 6 subscales .

- The results demonstrated that there was significant difference between gross motor skills and personal-social skills among EG and CG. Overall, the results indicate that the SEP may affect the developmental skills in offspring.

- Child development depends on multiple factors in the complex relationship between genetic potential and the environment.

It is evident that good prenatal care are fundamental factors for the biological health of the infant and act as protective for motor delay.

- There are several hypotheses on how maternal physical activity before and during pregnancy affects infant neuromotor development and cognitive skills.

❑maternal immune activation

❑PA affects neurodevelopment in infants

❑maternal activity may stimulate fetal sensory systems

- The results of this research support that exercise during pregnancy is a safe and beneficial nonpharmaceutical intervention for promoting the infants' developmental skills in a long run.

The lifestyle of pregnant women during COVID-19 and its side effects on maternal and neonatal consequences

The outbreak of COVID-19 has had a huge impact on all areas of society; changing working patterns, restricting movement and social interactions, and increasing caring responsibilities and home schooling. For pregnant women it resulted in reduced face-to-face antenatal appointments, including exposure to general health information/advice routinely displayed in clinics and discussions with staff and peers. Pregnant women have experienced increased fear and anxiety about catching the virus whilst pregnant in case of harm to their baby and themselves.

Pregnancy is a precious time in a woman's life during which she may feel more vulnerable.

- Pregnant women and new mothers are a unique population, with particular mental and physical healthcare needs who are also particularly vulnerable to issues such as domestic violence.
- Finally, the impact of the COVID-19 pandemic is likely to be context-specific, and differ depending on a variety of country-specific factors.
- A global pandemic is likely to only reveal its consequences after significant time passes, and literature published before or immediately after policies are implemented may not capture all relevant outcomes.

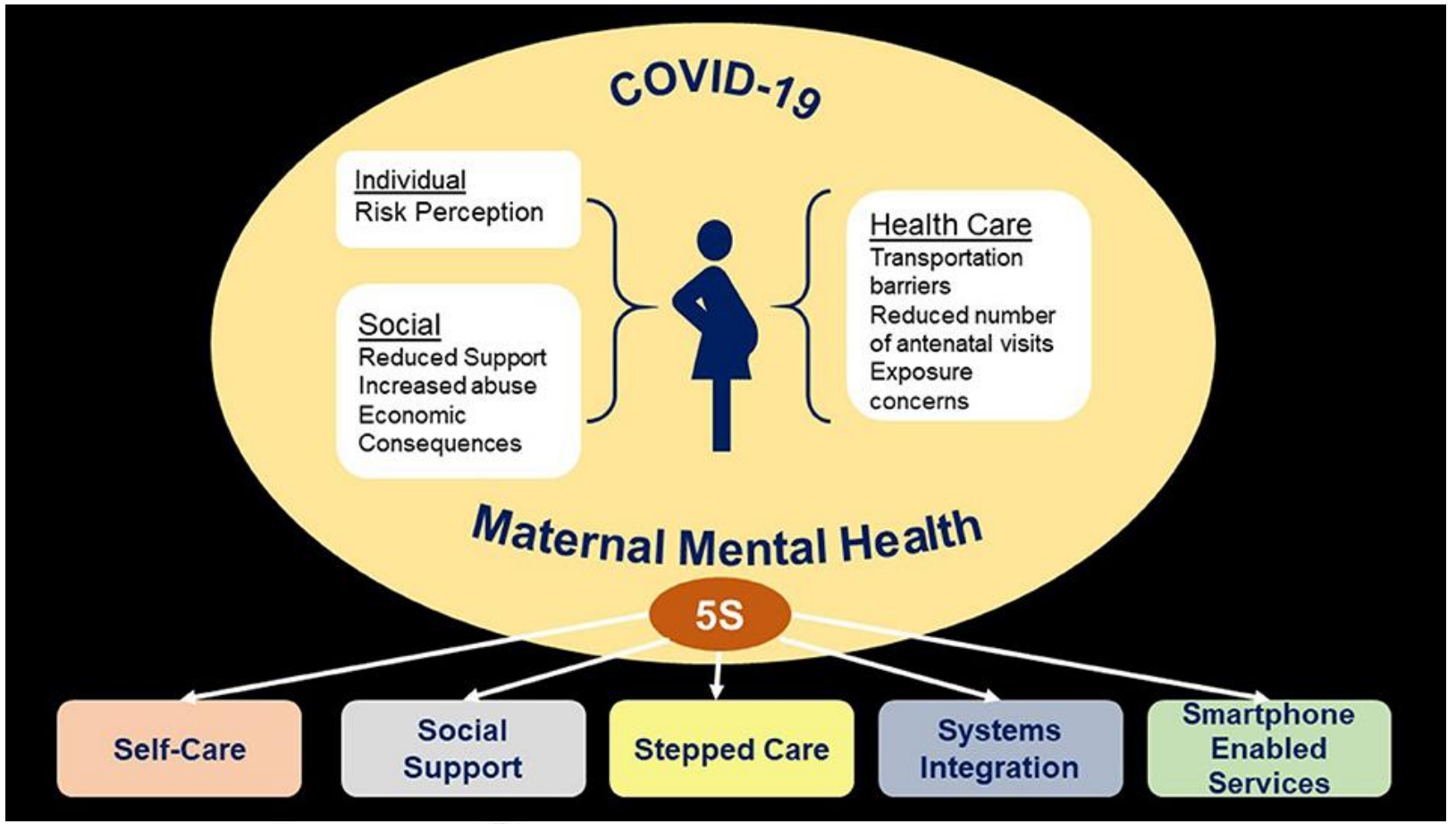
Direct effects on pregnancy

- During pregnancy, people undergo significant physiologic and immunologic alterations to support and protect the developing fetus. These changes can increase the risk of infection with respiratory viruses for pregnant individuals and their fetuses. Thus, pregnant individuals and their children may be at heightened risk for infection with SARS-CoV-2.

- Intrauterine transmission
- Labor and delivery
- Breastfeeding and infant contact
- Mental health

And for fetal

- Birth weight
- Preterm birth
- stillbirth


COVID-19
Individual
Risk Perception
Social
Reduced Support
Increased abuse
Economic
Consequences
Health Care
Transportation
barriers
Reduced number
of antenatal visits
Exposure
concerns
Maternal Mental Health
5S
Self-Care
Social
Support
Stepped Care
Systems
Integration
Smartphone
Enabled
Services

Generally, pregnant women with COVID-19 are not significantly different compared to other patients, and pregnant women with COVID-19 are not at a higher risk of developing critical pneumonia compared to non-pregnant women.

Although, there has been no sign of vertical infection in infants, but maternal infection can cause serious problems such as preterm labour and fetal distress.

So, what should we do?

Reasons for decline in physical activity levels

- fear of leaving the house due to COVID-19 (69%).
- lack of motivation (58%),
- advancing stage of pregnancy, (56%) and
- lack of energy (51%).

Face-to-face exercise program → virtual exercise program

PROGRAM SPINAKER
Fundusze Europejskie Wiedza Edukacja Rozwój
Rzeczpospolita Polska
NAWA
Unia Europejska Europejski Fundusz Społeczny

The most common maternal/ neonatal complications included fetal and respiratory distress, preterm delivery and mild infection in newborns.

PA and physical and mental condition and strong immune responses

Maternal and Neonatal Consequences Associated with COVID-19 and the Role of Physical Activity During this Period: A Descriptive Review

N. Shojaeian[1], M. Teymuri Kheravi[2], S. Sarhadi[3]

1.Assistant Professor, Department of Sports Sciences, Faculty of Humanities, Bojnourd Branch, Islamic Azad University, Bojnourd, Iran (Responsible Author)
2.Assistant Professor, Department of Sports Sciences, Faculty of Humanities, Bojnourd Branch, Islamic Azad University, Bojnourd, Iran.
3. PhD in Neuromuscular Sports Physiology, Department of Sports Physiology, Faculty of Physical Education and Sports Sciences, Tarbiat Dabir Shahid Rajaei University, Tehran, Iran

Received Date: 2020/06/27 **Accepted Date: 2020/10/18**

Abstract

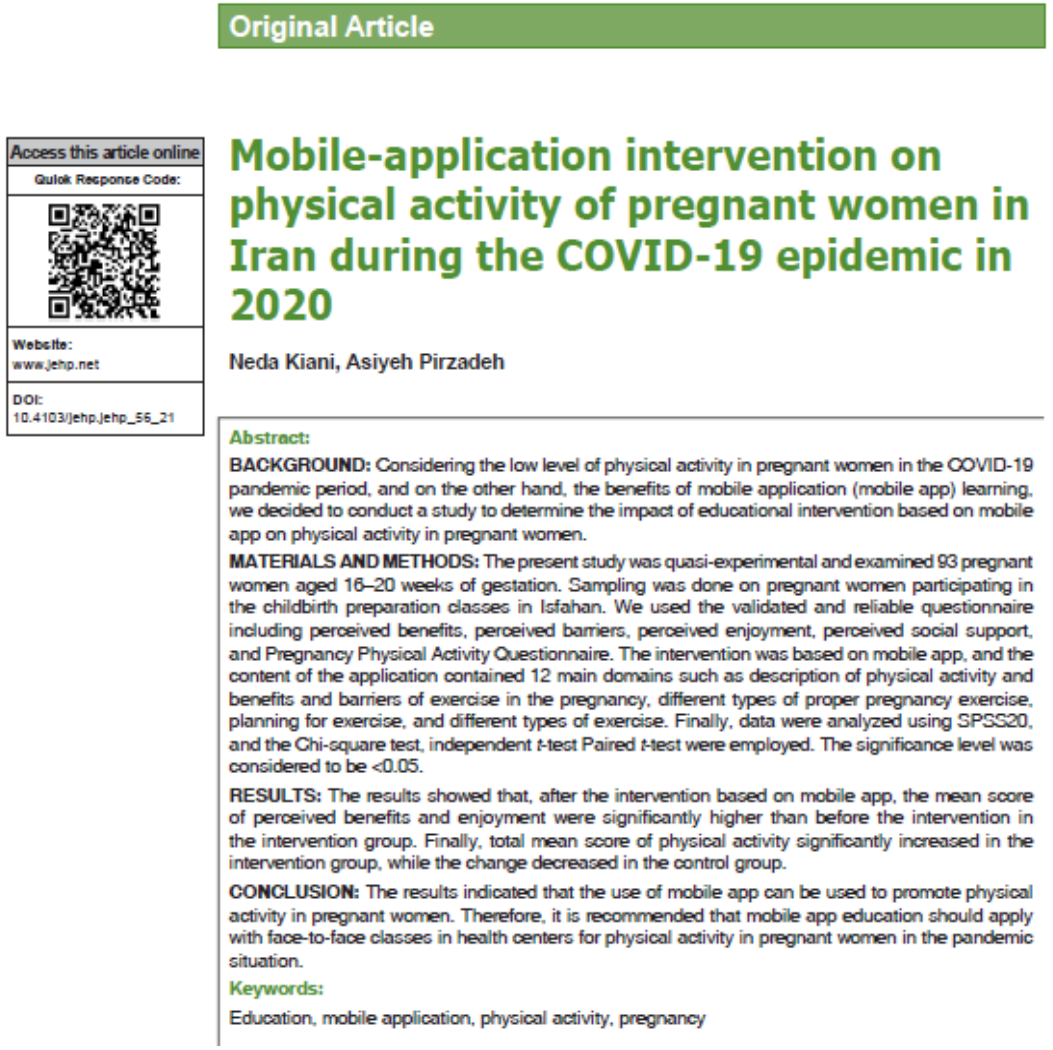
The global outbreak of Coronavirus 2019 has affected the routine life. The aim of study is to review the background of studies on the clinical symptoms and consequences of Covid-19 infection in pregnant women and their offspring, as well as the role of physical activity on the maternal health. In this survey, all articles in the different databases were searched and investigated by using keywords. The most common maternal/ neonatal complications included fetal and respiratory distress, preterm delivery and mild infection in newborns. Guidelines have recommended physical activity to improve physical and mental condition. Studies have shown that regular physical activity with the moderate intensity can lead to strong immune responses in pregnant women. Due to the limited information, it is necessary to monitor pregnant women and their infants for a long time and to examine the role of physical activity to improve the physical and mental condition.

Key words: COVID-19, Consequences of Pregnancy, Physical Activity

Use of Mobile Apps increased scores of perceived benefits, social support, and enjoyment

Improved the levels of physical activity in pregnant women

Facilitate learning and acquisition of physical activity skills and motivation to do them.



Original Article

Access this article online

Quick Response Code:

Website: www.jehp.net

DOI: 10.4103/jehp.jehp_56_21

Mobile-application intervention on physical activity of pregnant women in Iran during the COVID-19 epidemic in 2020

Neda Kiani, Asiyeh Pirzadeh

Abstract:

BACKGROUND: Considering the low level of physical activity in pregnant women in the COVID-19 pandemic period, and on the other hand, the benefits of mobile application (mobile app) learning, we decided to conduct a study to determine the impact of educational intervention based on mobile app on physical activity in pregnant women.

MATERIALS AND METHODS: The present study was quasi-experimental and examined 93 pregnant women aged 16–20 weeks of gestation. Sampling was done on pregnant women participating in the childbirth preparation classes in Isfahan. We used the validated and reliable questionnaire including perceived benefits, perceived barriers, perceived enjoyment, perceived social support, and Pregnancy Physical Activity Questionnaire. The intervention was based on mobile app, and the content of the application contained 12 main domains such as description of physical activity and benefits and barriers of exercise in the pregnancy, different types of proper pregnancy exercise, planning for exercise, and different types of exercise. Finally, data were analyzed using SPSS20, and the Chi-square test, independent *t*-test Paired *t*-test were employed. The significance level was considered to be <0.05.

RESULTS: The results showed that, after the intervention based on mobile app, the mean score of perceived benefits and enjoyment were significantly higher than before the intervention in the intervention group. Finally, total mean score of physical activity significantly increased in the intervention group, while the change decreased in the control group.

CONCLUSION: The results indicated that the use of mobile app can be used to promote physical activity in pregnant women. Therefore, it is recommended that mobile app education should apply with face-to-face classes in health centers for physical activity in pregnant women in the pandemic situation.

Keywords:

Education, mobile application, physical activity, pregnancy

- **Under normal circumstances in Iran**, pregnancy exercises are performed by public health centres and public hospitals as part of childbirth preparation classes only for one or two sessions of brief practical training mainly in the second half of pregnancy.

- Since the COVID-19 pandemic, these classes have not been offered.
- Despite the existence of international and national guidelines in different countries, there are no guidelines in Iran on exercise during pregnancy.

World Health Organization 2020 guidelines on physical activity and sedentary behaviour
Recommendations for pregnant and postpartum women

- All women who are pregnant **without complications** should be encouraged to participate in exercises as part of a healthy lifestyle during their pregnancy.

- And all guidelines emphasize on this matter.

The physiological immune adaptations during pregnancy based on the PA:

Increase in the expression of anti-inflammatory cytokines

Immunological responses to the infection of the Covid-19 virus

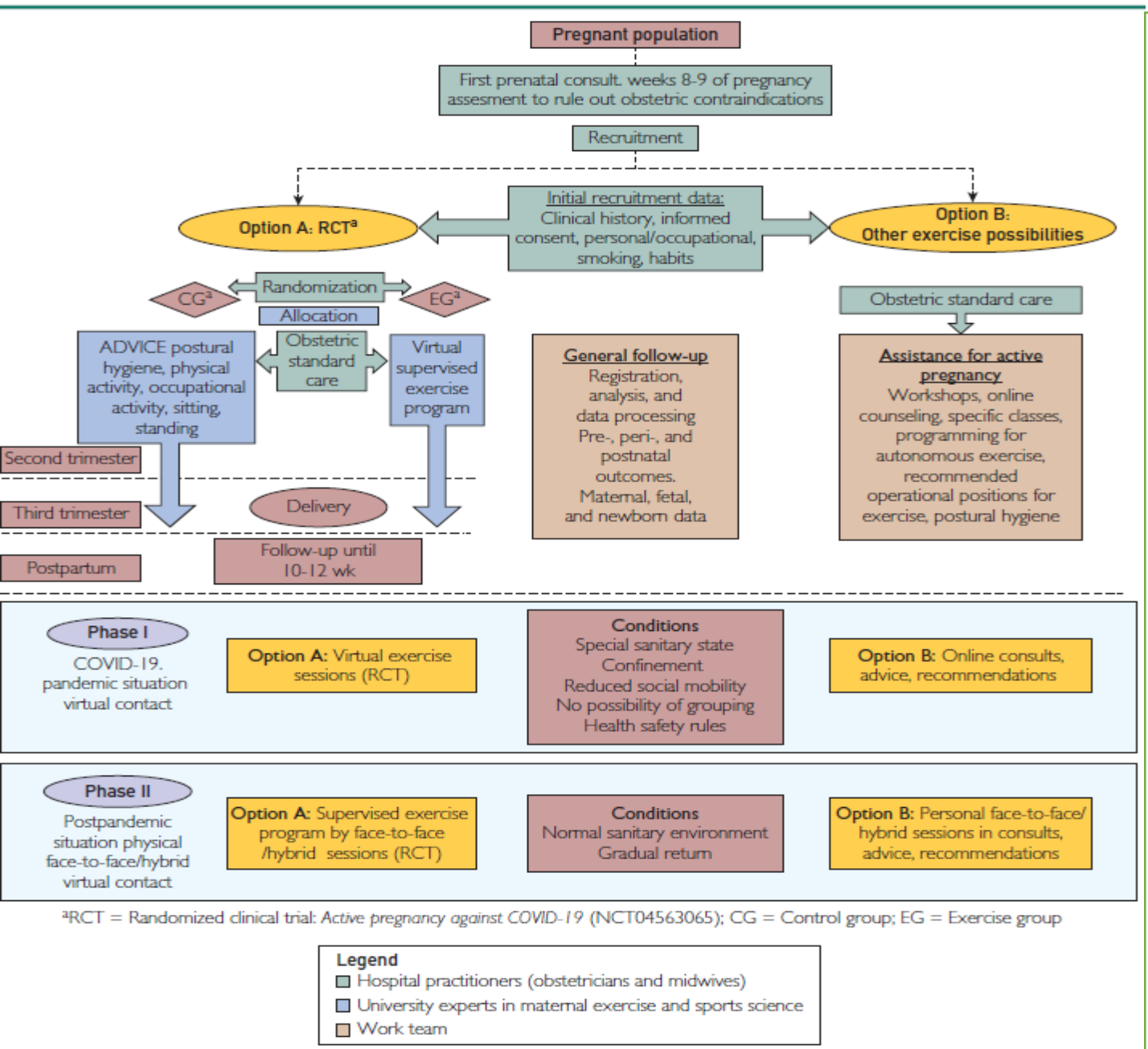


FIGURE. Flowchart illustrating the collaborative project between Hospital Severo Ochoa and Universidad Politécnica de Madrid. Phase I indicates coronavirus disease 2019 (COVID-19) restrictions with virtual contact, and phase II indicates a postpandemic hybrid model of physical face-to-face and virtual contact.

Exercise Throughout Pregnancy in a Hospital Setting: Looking Beyond COVID-19

1. The transfer of knowledge about the benefits of exercise for mothers, fetuses, and newborns is urgent.

2. The difficulty of access to supervised physical activity throughout pregnancy is problematic. To overcome this barrier, one option is to provide an exercise program within the hospital environment in which individuals access their obstetric follow-up.

3. The collaboration between the hospital (obstetric health care) and the university (experts in maternal exercise) is important so as to work as a cohesive team to provide optimal patient centered care, early in pregnancy, regarding physical activity and to provide a choice for volunteering for scientific research.

- The purpose of this brief report is to outline the importance of how a university and hospital can work together, especially in the coronavirus disease 2019 (COVID-19) climate.

- Exercise throughout pregnancy should be considered a **therapy** to improve quality of life.
- The best care requires a multidisciplinary team.
- However, the COVID-19 pandemic complicated exercise classes within the hospital, largely owing to obstetric protocols. These programs are currently offered virtually and allow participants to track their activity levels daily, providing motivation for them to remain active.

Thank you for your attention

Email: nshojaeian@yahoo.com

PROGRAM SPINAKER
Fundusze Europejskie Wiedza Edukacja Rozwój
Rzeczpospolita Polska
NAWA
Unia Europejska Europejski Fundusz Społeczny