

## Impact of Conflict on Physical Activity among Teenagers in Mosul City

Mayyadah Y. Mahmmod\*, Jawad K. Al-Diwan\*\*

\*AL-Khans-ah hospital , Nineveh Health Directorate , Mosul , \*\*Department of Community Medicine, College of Medicine, Baghdad University , Baghdad , Iraq  
Correspondence: Mayadaa271@gmail.com

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### ABSTRACT

**Background :** Physical inactivity regarded as one of the leading risk factors for global mortality through its effect on multiple chronic non-communicable diseases (NCD), which in turn responsible for disability adjusted life years lost DALY and premature death in addition to mental disorder and a substantial economic burden worldwide.

**Aim of study :** To estimate the prevalence of physical activity/ inactivity among teenagers in Mosul city/ Iraq in post conflict period (2017-2019).

**Patients & Methods :** Cross sectional study was conducted upon 600 teenagers aged (12-17) years of both sexes attending secondary schools of Mosul city. Data collected between October and December 2019, using special form of questionnaire (Physical Activity Questionnaire for Adolescent PAQ-A), the data was obtained directly by interview with the students themselves to confirm a detailed questionnaire form. Using (SPSS 25) statistical package for social science program to calculate the prevalence of physical inactivity among teenagers [The student was physically inactive when he spends less than 60 minute daily of moderate to vigorous physical activity and physically active when he spends 60 minute or more daily of moderate to vigorous physical activity]. The data was presented as frequencies and percentages. A statistical test; chi-square test was used to test for the presence or absence of significant association between dependent and independent variables. A p-value less than 0.05 were considered significant.

**Results :** A total of 600 teenagers had been included in the study, 472 (78%) were physically inactive.

**Conclusion :** The current study showed the prevalence of physical inactivity is high among teenagers, especially females.

**Recommendations :** the study recommends the following to minimize the spread of physical inactivity among teenagers in the city:

1. Creation of active environment as provide safe places, public green spaces and ensure time for students to be active at school.
2. Encouraging teenagers, especially females to adopt physical activity routine as a part of their healthy life style.
3. Enhance regular population surveillance system of physical activity across all ages.

**Keywords :** Post conflict period , Physical activity , Teenagers .

## تأثير الصراع على النشاط البدني بين المراهقين في مدينة الموصل

ميادة يوسف محمود\* ، جواد خالد الديوان\*\*  
\*مستشفى الخنساء التعليمي ، دائرة صحة نينوى ، الموصل ، \*\* قسم طب المجتمع ، كلية الطب ،  
جامعة بغداد ، بغداد ، العراق

### الخلاصة

**خلفية إدراج الدراسة :** يعد الخمول البدني أحد العوامل الرئيسية للوفيات من خلال تأثيره على العديد من الأمراض المزمنة، والتي بدورها مسؤولة عن التسبب بالإعاقة أو الوفاة المبكرة، هذا بالإضافة إلى الاضطراب النفسي والعبء الاقتصادي الكبير الذي يقع على المؤسسة الصحية في جميع أنحاء العالم .

**الهدف من الدراسة :** تقدير معدل انتشار الخمول البدني بين المراهقين في مدينة الموصل في فترة ما بعد الصراع (٢٠١٧-٢٠١٩).

**طريقة الدراسة :** تم إجراء دراسة مقطعية على ٦٠٠ مراهق تتراوح أعمارهم (١٢-١٧) سنة من كلا الجنسين الملتحقين بالمدارس الثانوية في مدينة الموصل. البيانات التي تم جمعها بين أكتوبر وديسمبر ٢٠١٩ ، باستخدام نموذج خاص من الاستبيان (استبيان النشاط البدني للمراهقين, PAQ-A) وتم الحصول على البيانات من الطلاب بصورة مباشرة. ثم باستخدام برنامج (SPSS 25) الحزمة الإحصائية للعلوم الاجتماعية لحساب معدل انتشار الخمول البدني بين المراهقين (يعتبر الطالب غير نشيط بدنيًا عندما يقضي أقل من ٦٠ دقيقة يوميًا في نشاط بدني متوسط إلى قوى الشدة ونشط بدنيًا عندما يقضي ٦٠ دقيقة أو أكثر يوميًا في نشاط بدني متوسط إلى قوى الشدة) ، كانت البيانات موجودة بالترتيب والنسبة المئوية. ثم استخدام chi-square لاختبار وجود أو عدم وجود ارتباط كبير بين المتغيرات ثم اعتبار مستوى قيمة P الأقل من ٠.٠٥ مهما.

**النتائج :** من مجموع ٦٠٠ مراهق شملتهم الدراسة، نسبة الخمول البدني كانت (٧٨.٧٪).

**الاستنتاج :** أظهرت الدراسة أن معدل انتشار الخمول البدني مرتفع بين المراهقين ، وخاصة بين الإناث.

**التوصيات :** أوصت الدراسة بما يلي للحد من انتشار الخمول البدني بين المراهقين في المدينة:

١. تعزيز النشاط البدني من خلال خلق بيئة ملائمة مثل توفير أماكن آمنة ، المساحات العامة الخضراء ، وضمان الوقت الكافي للطلاب ليكون نشيط في المدرسة.
٢. تشجيع المراهقين وخصوصا الإناث على اتباع النشاط البدني كجزء من روتين حياتهم الصحية.
٣. تعزيز المراقبة المنتظمة للنشاط البدني لجميع الأعمار.

**الكلمات المفتاحية :** فترة ما بعد الصراع ، النشاط البدني ، المراهقين .

## INTRODUCTION

Post conflict period; is the period immediately after a conflict is over (as natural disaster, serious accidents, terrorist acts, wars /combats, displacement, rape or other violent personal assault) which obviously has a wide ranging consequences for individual physically, mentally and socially and to the society as whole, because they are most likely adjuster their behaviors, planning and strategies to post conflict setting, as well as economic recovery<sup>1,2</sup>.

It's worthy to mention that Major Depression Disorders (MDD) and post-traumatic stress disorder (PTSD) were the most common psychological complications of general population reported as an impact of war and conflict<sup>3</sup>.

Physical activity act as primordial and primary prevention to non-communicable diseases<sup>4</sup>, may be as effective intervention as psychotherapy alone for protection and improving symptoms of common mental health problems in children and teenagers<sup>5-7</sup>, as well as stress management by reducing the risk of developing anxiety/depression disorders<sup>8</sup>.

Physical inactivity means lack of sufficient level of physical activity; in other ward not meet the World Health Organization recommendation for physical activity guideline which is for their age not less than 60 minute of moderate to vigorous physical activity daily.<sup>9,10</sup>

## AIM OF STUDY

To estimate the prevalence of physical activity/ inactivity among teenagers in Mosul city/ Iraq in post conflict period (2017-2019).

## PATIENTS AND METHODS

Official Permission: obtained from

1. Iraqi Ministry of education (772, 18/9/2019).
2. Directorate of education of Nineveh Governorate (61743, 26/9/2019).

**Study Setting and Period:** The present study was conducted in Mosul city, the center of Nineveh Governorate /Iraq, a major city in northern Iraq and one of the oldest cities in the world. The data collected from October to end of December 2019.

**Study Design:** Cross sectional study design.

**Target Population:** Teenagers aged (12-17 years old) of both sexes, attending secondary schools.

**Study Sample:** Multistage random sampling technique was used, start from Nineveh Governorate/ Iraq - Mosul city as first stage and left side of the city was selected randomly as second stage. Then randomly 20 secondary schools were selected (10 for male and 10 for females). A 30 student were selected randomly from each school.

**Data Collection:** Pilot study was carried out during first week of data collection from 20 students to test up the validity and reliability of the study. Data was collected by using special questionnaire form (Physical Activity Questionnaire for Adolescent PAQ-A), with adequate reliability and a reasonable validity for assessing physical activity <sup>11</sup>. A detailed of the forms was explained to the participants to make it easy to fill the questionnaire. Response rate was 100%.

**Data Analysis:** Data analysis was performing using statistical package for social science (SPSS 25) program to calculate the prevalence of physical inactivity among teenagers based on World Health Organization (WHO) defined cutoff point <sup>12</sup> [The student was physically inactive when he spends less than 60 minute daily of moderate to vigorous physical activity].

The student was physically active when he spends 60 minute or more daily of moderate to vigorous physical activity].

Descriptive statistics were presented as frequencies, percentages for categorical variables and mean±SD for continuous variables. Chi-square test was used to test the presence or absence of significant association between dependent and independent variables. A level of P- value less than 0.05 was considered statistically significant.

**Ethical Issue:** The written consent of students' parents prior to data collection was taken to facilitate the task.

The researcher explained the purpose and objective of the study, and the collected data will be used only for the stated research purpose, with a assuring them that the information will be kept strictly confidential and will not be used for other than research purposes. The subject was given the choice to participate or not without any reward or penalty.

**RESULT**

The study included six hundred teenagers with mean age of 16±2 years; Male teenagers in current study were equal to female teenagers (male to female ratio 1:1). (Table 1)

Table 1: Age and gender characteristics of studied teenagers / Mosul-2020

Age mean ± SD (16 ± 2 years)	No.=600	%
12 years	100	16.7
13 years	100	16.7
14 years	100	16.7
15 years	100	16.7
16 years	100	16.7
17 years	100	16.7
<b>Gender</b>		
Male	300	50.0
Female	300	50.0

The physical activity found done regularly by 128 (21.3%) teenagers and 472 (78.7%) teenagers found physically inactive. (Table 2)

Table 2: Physical activity of teenagers; Mosul-2020.

Physical activity	No.=600	%
Active	128	21.3
Inactive	472	78.7
Total	600	100.0

The association was a significant between increased age of teenagers and physical inactivity (p=0.017). Highly significant association was observed among female teenagers and physical inactivity (p=0.02) (Table 3)

Table 3: Distribution of demographic characteristics according to physical activity; Mosul-2020.

Demographic variable	Physically active (n=128)		Physically inactive (n=472)		P-value*
Age					0.017
12 years	14	14.0	86	86.0	
13 years	21	21.0	79	79.0	
14 years	28	28.0	72	72.0	
15 years	31	31.0	69	69.0	
16 years	18	18.0	82	82.0	
17 years	16	16.0	84	84.0	
Gender					0.000
Male	105	35.0	195	65.0	
Female	23	7.7	277	92.3	

\* Chi-square test has been used.

## DISCUSSION

The study revealed 78.7% are physically inactive. This might be attributed to the physical, social damage and feeling of insecure (fear from violence, terrorism and crime) in outdoor areas especially in post conflict period; several articles documented that scaling of violence in post conflict period<sup>13</sup>. Several environmental factors might discourage teenagers to participate in physical activity such as:<sup>14,15</sup>

- Terrorism, fear of violence or crime in outdoor areas.
- Lack of sidewalks, parks, sports and recreation facilities.
- Low air quality, pollution and high-density traffic.
- The wide use of technology of communication as well as motorized transport.

The high rate (78%) of inactivity might explain the lack of primary health care centers (PHCCs) participation of in physical health education to explain the benefits of physical activity especially for teenagers because most of them lack the motivation to be active and adapt sedentary life. Health education of physical activity is shown in media, however, it's not observed in general, because of loss attractiveness.

A positive impact for age on physical inactivity(p=0.01), is generally with the trend of sedentary life, loss of motivation, miss perceptual of maturity and self-esteem affect the teenagers, this is might be the effect of trans generation impacts of conflict.

Females were showing significant association with physical inactivity (p=0.0001),

Previous researches points to several possible explanations that boys practice physical activity because they are more likely to attend social gatherings outside home for physical activity and enjoy it. Girls have been shown to participate less in organized sport, the main reason was "sociocultural

Barriers" they may receive less social support to engage in physical activity, lack of confidence, embarrassment, less access to some public spaces, restrictions of mobility and less public life, this may render them more sedentary. Women seem to practice with the goal of either improvement of health because of a medical advice or aesthetic more frequently than men<sup>16,17</sup>.

This finding goes with a lot of studies asses' gender difference in physical activity, the closest is cross sectional study done on adolescents reported that physical activity of more than 60 min per day was predominately by boys rather than girls (30.8% vs. 10.5% respectively) which impact the risk of obesity<sup>18</sup>. Else found overall prevalence of physical inactivity was higher in women (27%) than in men (20%)<sup>19</sup>. Previous study in Mosul reported similar finding; boys were significantly spent more time in physical activity<sup>20</sup>.

## CONCLUSION

The prevalence of physical inactivity is very high among teenagers especially among females.

## RECOMMENDATIONS

The study recommends the following to minimize the spread of physical inactivity among teenagers in the city:

1. Creation of active environment as provide safe places, public green spaces and ensure time for students to be active at school.
2. Encouraging teenagers especially females to adopt physical activity routine as a part of their healthy life style.
3. Enhance regular population surveillance system of physical activity across all ages.

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