

## “AWARENESS OF EXERCISE DEFICIT DISORDER IN THE YOUNG ADULT POPULATION –AN OBSERVATIONAL STUDY”

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### Abstract:

#### Background

The reduced level of moderate physical activity which is consistent with long term health and wellbeing is term as exercise deficit disorder. Physical inactivity is becoming important risk factor for global mortality. This study will help us to find the Awareness of Excise deficit disorder and Awareness of the causes which are leading to it. This study also we are at finding knowledge regarding the preventive measures of exercise deficit disorder.

**Methods:** This study design was and observational study with sample size of 385. Study populations of age group 18-25 years were included. A self-administered questionnaire was distributed to all the subject's results were calculated in percentile format. The data collected using the questionnaire consisted of four parts; demographic data, personal information regarding exercise, knowledge regarding awareness of exercise deficit disorder and its preventive measures.

**Results:** 96% of participants out of 385 were aware that, physical activity has beneficial effect on heath. Awareness about EDD is lacking in almost 41% of population. Almost 90% participants were interested to know more about EDD. After scoring of questionnaire, we got to know that no participant was totally unaware about the physical exercise and its effect; nut just 68% participants had adequate knowledge about it.

**Conclusion:** This study has demonstrated fair level of awareness of exercise deficit disorder amongst young adult population but to prevent EDD awareness need to be adequate.

**Keywords:** exercise deficit disorder, physical inactivity, lack of physical exercise, Awareness of exercise deficit disorder

### Introduction:

Exercise deficit disorder is related to the youth population who do not accumulate the required minimum of 60 minutes of daily moderate to vigorous physical activity at least 5 days a week<sup>1, 2</sup>. The reduced level of moderate physical activity that are consistent with long term health and well-being is defined as Exercise deficit disorder<sup>2, 3</sup>. The world health organization (WHO) has identified physical inactivity as the fourth important risk factor for global mortality<sup>1</sup>.

A recent study in United States shows that, Exercise Deficit Disorder becomes a global pandemic. It was affecting large number of youth population due to physical inactivity<sup>3, 4</sup>. Exercise deficit disorder is growing health concern & can affect large number of populations all over world<sup>4, 6</sup>. Physical inactivity is due to the impact of a sedentary lifestyle during childhood & adolescence on lifelong pathological process example, diabetes & cardiovascular disease<sup>4, 5</sup>. Physical inactivity leads to many morbid conditions including but not limits to diabetes, hypertension coronary disease ex. Overweight & obesity<sup>5, 7, 8</sup>.

The barriers young people identified with relation to self for physical activity were feeling of discomfort and self-consciousness about bodies (young women only), lack of confidence and competence, lack of motivation and

inertia, preference for other activities and lack of knowledge about benefits of physical activity. As there are no specific signs, symptoms & test to diagnose exercise deficit disorder as they are often used to identify disease or disorder<sup>9,10,11</sup>.

Despite rise in youth with exercise deficit disorder they may be readily recognized as they often don't show any symptom associated with the adverse health condition such as obesity & diabetes but further with progression of exercise deficit disorder may show<sup>10, 12</sup>.

If exercise deficit disorder is not treated & corrected in right time, it can lead to serious permanent damage and result into increase risk of cardiovascular and metabolic disease. Also, it decreases child emotional, cognitive wellbeing and decrease fundamental movement skills<sup>9,13</sup>.

Presently less research is being done on exercise deficit disorder so there is lack of literature, thus this study will help us to gain knowledge regarding this condition and its awareness among the young adult population.

**Materials and Methodology:**

A Cross sectional web based virtual study was conducted on study population, both male and females of age group 18-25 years from different college students of Aurangabad region by convenient sampling method. Total 18 month time duration was required for formatting and analysis of data during this study. Total 385 participants between aged group 18 to 25 were recruited from different colleges in Aurangabad region. An explanation on study was given through email as a communication media because of COVID-19 pandemic guidelines of lockdown ensuring them for privacy of identity. Study procedure and aim was explained to the participants and informed consent was obtained from each individual prior to filling of self administered questionnaire and only those who are willing to participate are able to complete the form submission. As this study is web based virtual, there was no one to one interview conducted. There were no drop-out in these study. The awareness was evaluated using percentile format.

**Study materials-** A self-administrated questionnaire was prepared; Total 25 questions are prepared on ordinal scale in yes (1) or No (0) response. The questionnaire was pilot tested for its validity and its reliability by a panel of expertise and it was modified based upon feedback received from the final version of the questionnaire, it was then distributed to all participants via Google Form link.

**Statistical analysis:**

Descriptive statistics was conducted to evaluate the responses obtain from the participants. The percentage of the responses for each question was automatically generated online. Then score obtained by each participant were graded as

Score	Interpretation
0-8	Inadequate knowledge about EDD
9-16	Fair knowledge
>16	Adequate knowledge

**Result:**

Out of total 385 participants, 68% of participants were female and 32% are males.

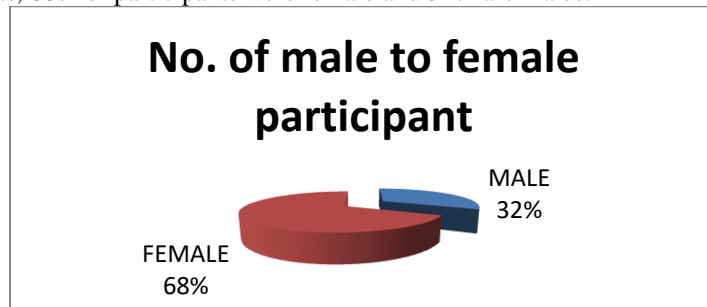


Figure 1 showing no. of male and female participants enrolled in this study.

**Table1. Shows response of 385 participants to check personal information related to exercise.**

Q.no	Question	Response in percentile	
		Yes	NO
1	Do you exercise regularly?	33.76	66.23
2	Do you think performing exercise regularly is important?	94.54	5.45
3	Do you exercise 6-8 hours per week?	29.87	70.12
4	Do you think you should exercise from health perspective?	96.10	3.89

From table 1, we can conclude that, majority of youngsters are aware about the importance of exercise in life 94.54% but still not able to perform regular exercise 66.23%. Very few participants of 29.87 % are following exercise schedule per week.

**Table2. Shows responses received from 385 participants to check knowledge about EDD.**

Q.no	Question	Response in percentile	
		Yes	NO
5	Have you heard about exercise deficit disorder?	41.55	58.44
6	Do you want to know more about exercise deficit disorder?	90.39	9.61
16	Did you come to know about exercise deficit disorder from any health professional?	34.80	65.19

Table 2 showed that, very few youngsters are aware about the term Exercise deficit disorder 41.55% and majority was didn't know about it. Almost 90.39% of participants were curious to know more about it while 9.61% of candidates didn't felt it important to know also.

**Table 3 shows possible cause of not doing physical exercise daily to cause EDD.**

Q.no	Question	Response in percentile	
		Yes	NO
7	Do you think lack of physical exercise is the cause of exercise deficit disorder?	92.46	7.53
8	Do you think technology dependence is the cause of lack of physical exercise?	81.82	18.18
9	Do you think obesity is the cause of lack of physical exercise	81.03	18.96
10	Do you think stress is the cause of lack of physical exercise?	76.88	23.12
11	Do you think having addictions like smoking, alcohol consumption, tobacco chewing is the cause of lack of physical exercise?	77.40	22.59
12	Do you think lack of sleep is the cause of lack of physical exercise?	83.63	16.36

13	Do you think lack of motivation is the cause of lack of physical exercise?	83.63	16.36
14	Do you think negative perception towards body is the cause of lack of physical exercise?	82.08	17.92
15	Do you think exercise deficit disorder is determined to a particular age group?	35.84	64.15
19	Do you think sitting job is the cause of lack of physical exercise?	41.03	58.96
20	Do you think that growth in sc-fi technology has made us technology dependent?	38.44	61.55
21	Do you think that stress at work is the cause of lack of physical exercise?	47.01	52.98

Table3 signifies the possible cause of EDD can be lack of physical exercise in 92.46% of youngsters. Other causes of lack of physical exercise responsible for EDD can be Technology dependence (81.82%), stress (76.88%), lack of motivation and sleep(83.63) and negative perception toward body (82.08%).

**Table4 shows the knowledge of participant regarding effect of EDD**

Q.no	Questions	Response in percentile	
		Yes	NO
17	Do you know that lack of physical exercise is harmful to our body?	49.09	50.91
18	Do you know that absence of exercise makes prone for disease like diabetes, hypertension, and obesity	42.86	57.14
22	Do you even come across lack of physical exercise and its consequences?	60.25	39.74

Table 4 suggested that, 50.91% population didn't felt lack of physical activity can be harmful to the body and diabetes, hypertension and obesity can be caused because of lack of exercises in 57.14% youngsters. Out of 385 participants almost 60.25 % population already is experiencing consequences of lack of physical exercise.

**Table 5. shows knowledge of participants to prevent EDD**

Q.no	Questions	Response in percentile	
		Yes	NO
23	Do you think we can prevent exercise deficit disorder and its complications?	89.35	10.64
24	Do you think regular exercise can prevent exercise deficit disorder?	96.62	3.37
25	Do you think awareness of exercise deficit disorder is necessary?	97.66	2.33

Table 5 suggested that, majority of participant 89.35 % were aware that EDD can be preventable, regular exercise can prevent this in 96.62% participant. To achieve this awareness of this disorder is necessary in 97.66% of participants

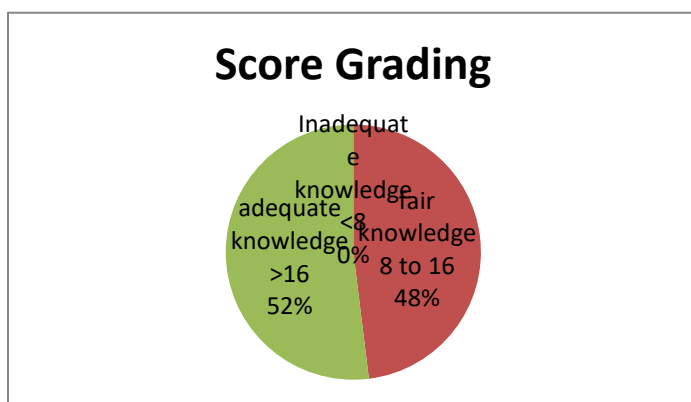


Figure 2: Grading of Participant on the basis of score they achieved.

From figure 2, we estimated that, no youngster is totally unaware about the physical activity benefit, effect and side effect. Almost 48% of participant achieved score between 8-16 and have fair knowledge about physical activity. 52% of participant carries adequate knowledge about physical activity and Exercise deficit disorder.

#### Discussion:

A cross sectional observation study conducted on online platform amongst the youngsters and college going student to check their knowledge about Exercise Deficit Syndrome, which is caused by the lack of physical exercise of moderate to severe intensity. We found various researches providing knowledge about side effect caused because of lack of physical activity like obesity, hypertension and diabetes in very early age. Now a days obesity, hypertension and diabetes are not just age dependent or genetic cause dependent problems. In present study we are aiming to check the awareness of Exercise Deficit Syndrome [EDD] amongst youngster. We also were estimating the possible cause for EDD amongst them and check awareness about effect and possibility of prevention.

In present study data obtained from result showed that 94.54% of youngsters are aware that regular exercise is important in life, out of which 29.87% of youngsters are carrying habit of regular exercise. Participants who are not exercising regularly provided that, technology dependence, stress at work place, lack of sleep, lack of motivation, growth in Sci-Fi technology and addiction to alcohol, tobacco are most common causes for their inability to perform regular exercise responsible for Exercise deficit syndrome to cause.

A study done by GREGORY D. MYER et al(2012) said that, lack of physical activity will started after the age of six years and possible cause for this is, spending more time on TV, Video games, Cell phones and computers<sup>13,14</sup>. Lack of interest and inability to do exercise comes gradually from this sedentary lifestyle child adopted during his/her childhood and become worsen in young age. This lack of physical exercise was further responsible for the causation of obesity and cardiovascular insufficiency as the age advanced<sup>14, 15, 16</sup>.

Present study also showed that, about 60% of participants faced the consequences of lack of exercise. Amongst 385 participants many of them are not aware about the side effect of Exercise deficit Disorder on health; neither had they heard this terminology from any physician. But yes, almost 90% of participants were curious to know about exercise Deficit Disorder, their effect, causes and prevention. From present study result we can also said that, Awareness about Exercise Deficit Disorder and regular physical activity are key prevention strategies. 97% of participants were agreed that awareness about EDD can prevent the further progression of this problem.

Researcher Avery D. Faigenbaum said that, Lack of physical activity at early age is responsible for the cardiovascular complication like hypertension, diabetes and obesity during adulthood<sup>1,13</sup>. At adulthood, this Exercise Deficit Disorder if remains undiagnosed can be responsible for lack of confidence, energy and motivation ultimately landing into the stress<sup>17, 18</sup>. And hence early diagnosis of this disorder by physician and exercise therapist is necessary to reduce the long term effect of this disorder. Prevention strategies they mentioned in their research were early detection and management with co-operation of exercise therapist<sup>19</sup>.

In this whole research, missing point and limitation was, we neglected the childhood status of participants which can be responsible factor of Exercise Deficit Disorder. In future studies that limitation can be fulfilled and long follow up studies can be to check the relation of Childhood Lack of physical exercise on adult's behavior.

#### Conclusion:

In our study we can conclude that, Exercise Deficit Disorder are going to be a common problem in adults of age 18-25 years, which can be responsible for their behavior pattern and sedentary lifestyle. The most common causes for the EDD were lack of motivation, lack of sleep, stress and addiction, which need to be modified in order to improve the behavior and adopt exercising lifestyle to reduce the consequences of Exercise Deficit Disorder in adult population.

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