

**Case study****SURVEY ON AWARENESS OF OPTIMUM
PHYSICAL ACTIVITY IN ADULTS OF
CHANDIGARH, PANCHKULA AND
MOHALI****Shaurya Deep Bajwa*, Sarvesh Bassi**

Grewal Eye Institute, Chandigarh, India

Correspondence**Shaurya Deep Bajwa***

Grewal Eye Institute, Chandigarh, India

✉ shauryadeepsinghbajwa@gmail.com**Keywords**

Physical activity, Chandigarh, adults, Questionnaire

Received

05/09/2019

Reviewed

10/09/2019

Revised/ Accepted

15/09/201

Refer This Article

Shaurya Deep Bajwa, Sarvesh Bassi, 2019. Survey on awareness of optimum physical activity in adults of Chandigarh, Panchkula and Mohali. Journal of medical pharmaceutical and allied sciences, V 8 - I 5, Pages - 2338 – 2346. Doi: <https://doi.org/10.55522/jmpas.V8I5.870>.

ABSTRACT

Interventions and awareness drives to promote physical activity have had limited outcomes. Most of the time people are unaware that the routine they are following is unhealthy and they need to do something about it. Regularly participating in physical activities can have various well known benefits. The purpose of this study is to assess the physical activity awareness among adults of Chandigarh tricity. This is a survey based study of up to 6 months. Questionnaire was prepared to conduct the survey and 102 participants were included in this study. Out of the 102 participants, 51 (50%) took part in leisure-time physical activity. Higher proportion of females (63%) were physically inactive than males (41%). Participants who were in service were more involved in physical activity (67%), while students showed lowest levels of participation (25%). Major barriers faced were lack of interest (40.3%), lack of time (48%), lack of motivation (47%), and study/work overload (41.2%). We found statistically significant association between physical activity participation and gender along with occupation.

INTRODUCTION

In recent times, physical activity and dietary patterns have showed a major change in India. This trend is more demonstrable in the urban setting where industrialization and global influences are more prevalent. Increased usage of processed foods along with decrease in physical activity has led to various chronic lifestyle diseases among young adults.[1]

Good diet and regular physical activity can contribute to a healthier lifestyle. Poor diet as well as less/lack of physical activity may result in poor health outcomes.[2] There are few studies in India on knowledge of physical activity in general population. The accessible literature on physical activity focuses on specific populations, such as patients with diabetes, individuals with hypertension, athletes or students.[3,4,5] Annually around 38 million people die all over the world due to Non-communicable diseases (NCDs).

Common type of NCDs are chronic respiratory diseases, cancers, diabetes and cardiovascular diseases. There is a growing prevalence of NCDs across developed and developing nations worldwide which has entrenched people in poverty due to catastrophic expenditures for treatment. Physical activity can be defined as any bodily movement that results in energy expenditure.[6] According to WHO, 23 % of the population is physically inactive globally. According to a report published by the WHO, physical inactivity causes around 3.2 million deaths each year with a 20-30% increased risk of all-cause mortality in individuals.[7] WHO has given

recommended levels of physical activity in adults.[8] A number of studies have been done on physical activity and its prevalence in India and abroad. Two large STEPS surveys were done in India in 2003–2005 and 2007–2008 which included both rural and urban population.[9] In 2003, the prevalence of physical inactivity was 15.8% and in 2007, it was found to be 72.3%.

Overall female participants were more inactive than males and urban residents were more inactive than rural. Another study by Krishnan et al. was conducted to study the prevalence of NCD in rural population of Haryana using the same WHO STEP-wise tool.[10] Prevalence of inactivity was 34.2% and women were more inactive in all domains. Inactivity was observed more at leisure time (males- 85.2%, females- 97.3%), and less at transport (males - 18.8%, females- 45.7%). Multi-nationally, the World Health Survey (2002–2003), a 51 country study demonstrated that the prevalence of physical inactivity in India was 9.3% in men and 15.2% in women.[11]

A more recent study performed by Gupta et al. using cluster sampling in 6198 subjects from eleven cities across India highlighted that 38.8% of men and 46.1% of women were physically inactive.[12] The demographic and nutrition transition in India has also led to the emerging epidemic of non-communicable diseases in this country. In this context, there is limited information in India on dietary patterns, levels of physical activity and obesity among the residents. The aim of a study by Tripathy et al. was to study the urban and

rural differences in diet, physical activity and obesity in India.^[13] Rural females (19.1%) were found to be more engaged in vigorous activity in comparison to the urban females (6.3%).

Males showed high levels of activity in both the settings. Physical activity is an individual choice but the amount of physical activity a person does is influenced by different factors. A cross-sectional study by Sugathan et al. was conducted to estimate the behavioral risk factors for NCDs among adults and to assess their biosocial correlates.^[14] It was seen that young subjects (30-34 years) were more inactive (24.7%) than the old (65-74 years) (18.9%), and the skilled workers (28.5%) and professionals (32.0%) were more inactive than the unskilled ones (12.3%).

This difference may be attributed to the fact that skilled professionals often spend most part of their day in their offices performing sitting jobs, while the unskilled ones perform more of physical work during their working hours. The objective of a study was to assess the physical activity patterns in India as part of the Indian Council of Medical Research-India Diabetes (ICMR-INDIAB) study.^[15] Phase 1 of this study was conducted in four regions of India- Tamilnadu, Maharashtra, Jharkhand and Chandigarh. It reported that highest prevalence of physical inactivity was found in Chandigarh (66.8%). In Chandigarh, the prevalence of physical inactivity was higher in urban residents as compared to the rural (73.2% vs. 64.4%; $p < 0.001$) and among females compared to males. Age, gender, sedentary lifestyle and physical inactivity are some

risk factors for metabolic syndrome as stated in a study by Ravikaran et al.^[16]

It was conducted in 2010 on 2227 subjects aged 20 years and it was found that 61.3% of the study subjects were inactive, showing a high prevalence of metabolic syndrome. In recent years, the prevalence of hypertension has increased manifolds. As shown by Ahlawat et al. in their study, the prevalence of hypertension in adults has almost doubled over the past 30 years in Chandigarh.

They stated that unfavorable change in prevalence of hypertension, physical activity and body fat makes the population highly vulnerable to cardiovascular morbidity and mortality. A study undertaken by Walia et al, had the objective to determine the prevalence of cardiovascular risk factors among urban adults in Chandigarh.^[17] The most prevalent cardiovascular risk factors in the age group of 20-29 years was sedentary lifestyle (63%), while for subjects 40 years and above, it was overweight/obesity (59-85%). Overall, it was observed that 61% of the subjects in the study followed sedentary lifestyle. They suggested that there is a need for targeting the population as early as those at 30 years of age, so that the occurrence of cardiovascular risk factors can be reduced.

The high burden of sedentary activity has to be tackled by educating the population about the increase in physical activity in the daily routine so that it helps them for a longer life. Gaining an insight to the knowledge and perception of the

population regarding physical activity is important so as to design interventions more effectively.

AIM

To understand and study the awareness of optimum physical activity in adult residents of Chandigarh tricity.

OBJECTIVE

- The objective of this study is to assess the knowledge, beliefs and barriers of physical activity among adult residents of Chandigarh tricity.
- Suggest remedial measures to the participants who do not indulge in physical activities.

METHODOLOGY

The objective of the study was to analyze the awareness of optimum levels of physical activity among adults of Chandigarh tricity. The questionnaire developed on Google Forms was distributed to 105 people, out of which 102 took part, while 3 did not respond. Consent was taken from the participants prior to their participation. Their response was recorded online and a Microsoft Excel sheet was created of the respective responses.

Data collection

Based on the specific objectives, the questionnaire was developed by using some of the questions from the Exercise Benefits/Barriers Scale by Sechrist.^[19] The questionnaire was made up of open-ended and closed-ended questions. Data collection was done between July 2018 and December 2018.

Statistical Analysis

The quantitative data was coded in Microsoft Excel for data analysis. Frequencies and means were computed for all the numerical data. Various percentages of the responses were calculated and descriptive statistics was applied.

Chi-square test of independence was used to determine the relationship between the various demographic variables of the participants (gender, marital status, occupational status, educational qualification) and their responses (yes and no) to whether they took part in leisure time physical activity or not. $p < 0.05$ was considered statistically significant.

RESULTS

There were total 102 participants in the study comprising of general public from different educational backgrounds and age groups. As the study involved general public so maximum response for participation came from age group (18-35 years) which was 36.3% of the total respondents.

Majority of respondents were males (59.8%) whereas there were only 40.2% female respondents. Out of 61 male respondents, 36 (59%) took part in leisure time physical activity, while 25 (41%) did not, showing that majority of the males were aware of the benefits of optimum physical activity. Out of 41 females respondents, just 15 (36.6%) took part, while 26 (63.4%) did not take part in any physical activity, showing that majority of females are physically inactive in Chandigarh tricity.

We observed higher participation from 18-35 years of age group (54.1%), while the lowest participation was seen among 35-55 years of age group (46.9%), most of whom stated lack of motivation and time along with study work overload as the major barriers. The 35-55 years of age group is where a person is at peak of his/her career and burdened with social and family responsibilities.

Table 1: Demographic details of the participants

Demographics		Frequency (%)
Age (years)	18-35	37 (36.3%)
	35-55	32 (31.4%)
	55-65	33 (32.4%)
Gender	Males	61 (59.8%)
	Females	41 (40.2%)
Marital status	Married	71 (69.6%)
	Unmarried	31 (30.4%)
Occupation	Self-employed	22 (21.6%)
	Service	54 (52.9%)
	Housewives	14 (13.7%)
	Students	12 (11.8%)
Educational Qualification	Doctorate	3
	Post graduate	38
	Graduate	55
	12 th	3
	10 th	1
	Diploma	2

Thus they are not able to devote much time to leisure time activities. Furthermore, it was observed that among housewives, only 14% took part in physical activities. Most of them were in 55-65 age group and were graduates. It was observed that participants who were in service were more involved in physical activity (66.7%), while students demonstrated lowest levels of physical activity, only 25% being physically active. Among the self-employed respondents, only 45.5% participated in leisure time physical activity, while 54.5% did not take part.

Among the participants who performed work while sitting, 60% performed physical activity, while those who performed work while standing, 46.7% performed physical activity, showing that while the type of work at the workplace becomes physically exhausting, people are not able to perform or devote time towards physical activity. Those who worked for 5-7 hours per day and 7-8 hours per day showed higher participation in physical activity (62% and 65% respectively), while for those who work for 9 hours or more, only 52% participated.

This means those who are working for longer hours perform less physical activity. Out of the rest 48% who did not perform any activity, most of them thought it took too much time from their social activities, or it tired them. Other major barriers stated by them were lack of interest, time and motivation, or even study/work overload.

Most of these people knew the benefits of physical activities while answering the same question, still due to the stated barriers and constraints; they were unable to participate in such activities. Vast majority (91%) of the participants thought that promotion of physical activity is important and 93.1% believed that regular physical activity can help treat various diseases and disorder conditions, still just 50% of the participants took part in it.

Major barriers to physical activity [Table 2] were lack of interest (40.3%), lack of time (48%), lack of motivation (47%), study/work overload (41.2%) and availability of video games, TV, computers and other indoor facilities (40.2%). 37.2% and 38.2% of the participants thought that physical activities took too much time for their family and social responsibilities [Table 3].

Majority of the participants believed that physical activities improve their endurance in performing daily activities (85.3%) and strengthen their bones (86.3%). 91.2% of the participants thought that it helped them to improve mental health and made them more alert mentally [Table 4]. Despite agreeing with most of the perceived benefits of physical activity, just 60.8% of the total no. of participants believed that regular physical activity will help them to live longer.

Chi-square test of independence was applied to determine if there is a significant relationship between the various demographic variables of the participants (gender, marital status, occupational status, educational qualification) and their responses (yes and no) to whether they took part in leisure time physical activity or not. Statistically significant relationship was observed between physical activity and gender (chi-square statistic= 4.9, P value= .043) along with physical activity and occupational status (chi-square statistic 16.3, P value .0009) of the participants in the study. $p < 0.05$ was considered statistically significant.

DISCUSSION

This qualitative study analysis produced many interesting results. It highlighted many issues identified by the participants with socio-ecological components that influence their physical activity participation. This research adds to the limited evidence regarding perception and barriers to physical activity. We recommend that physical activity should be promoted through a combination of interventions and processes that address barriers at various socio-ecological levels.

It includes sensitizing society, improving information strategies within sector/city sports activities, providing cheaper and/or more flexible facilities for all, and including these activities into the curriculum of students. The results of this study can be considered a first step towards the development of tailored and effective program aiming to improve physical activity level of the society as a whole. It showed that majority of the people are aware of the benefits of physical activity and that slight majority participate in it.

We observed statistically significant association between participation in physical activity and gender along with occupation of the participants. Females and students being least active should be encouraged to perform more physical activities through social and educational programs. Time and work overload being the main constraint for them, educating them about managing time efficiently in order to obtain the best out of their day is crucial.

Schools and colleges should compulsorily dedicate few hours per week to sports, exercise and other such activities to ensure active participation of all the enrolled students. Sharing of responsibilities by rest of the family members to reduce the burden on the females of the house along with encouragement can aid them to indulge in more physical activities. Moreover, a motivated mindset along with time management can help people make the best out of their day and attain good health with regular leisure time physical activities. Lifestyle changes which include physical activity, monitoring diet and quitting smoking and alcohol, have been recommended to be the major steps in decreasing the burden and the people can only be aware of this if the information is disseminated to them.

Although majority of the participants were educated and were aware that promotion of physical activity is important, still we need to increase the willingness in people to perform physical activity in order to attain overall well-being. This study revealed that although people may have adequate knowledge regarding the benefits of physical activity, still the barriers need to be removed on personal and society level.

Table 2 Barriers to physical activity

Perceived barrier	Agree	Disagree	Neutral
Lack of interest	41(40.3%)	53(51.9%)	8(7.8%)
Lack of time	49(48%)	40(39.2%)	13(12.8%)
Lack of physical education	23(22.5%)	69(67.7%)	10(9.8%)
Lack of motivation	48(47%)	41(40.2%)	13(12.8%)
Study/work overload	42(41.2%)	46(45.1%)	14(13.7%)
video games, TV, computers and other indoor facilities	41(40.2%)	48(47%)	13(12.8%)
Expensive exercise facilities	20(19.6%)	76(74.5%)	6(5.9%)
Inaccessibility of exercise facilities	25(24.5%)	68(66.7%)	9(8.8%)
watching sports to participating in them	18(17.6%)	76(74.6%)	8(7.8%)
Exercise schedules not for me	21(20.6%)	76(74.5%)	5(4.9%)
Colleagues tease me if in physical activities	21(20.6%)	70(68.6%)	11(10.8%)
I enjoy doing physical activities	61(59.8%)	11(10.8%)	30(29.4%)

Table 3. Beliefs to physical activity in adults.

Beliefs	Agree	Disagree	Neutral
Physical Activities take too much of my time to perform my academic work	6(5.9%)	87(85.3%)	9(8.8%)
Physical Activities takes too much time for my family responsibilities	38(37.2%)	49(48.0%)	15(14.8%)
Physical Activities takes too much time for my social activities	39(38.2%)	53(52%)	10(9.8%)
Physical Activity tires me	31(30.4%)	56(54.9%)	15(14.7%)
Physical Activity is hard for me	21(20.6%)	66(64.7%)	15(14.7%)
Places for me to exercise or perform physical activity are too far away	16(15.7%)	83(81.4%)	3(2.9%)
There are too few places for me to exercise or perform physical activities	18(17.6%)	80(78.5%)	4(3.9%)
It costs too much to exercise	17(16.6%)	78(76.5%)	7(6.9%)
I don't know the benefits of engaging in physical activity	7(6.9%)	95(93.1%)	0
Do you think promotion of physical activity is important	90(88.3%)	8(7.8%)	4(3.9%)

Table 4 Knowledge and perceived benefits of physical activity.

Perceived benefit	Agree	Disagree	Neutral
Physical activities improves my endurance in performing my daily activities	87 (85.3%)	4 (3.9%)	11 (10.8%)
Physical activities make my mood better in general	81 (79.4%)	7 (6.9%)	14 (13.7%)
Physical activities help me feel less fatigued	69 (67.6%)	12 (11.8%)	21 (20.6%)
Physical activities make my muscles feel stronger	79 (77.4%)	7 (6.9%)	16 (15.7%)
Physical activities give me a sense of personal accomplishment	80 (78.4%)	9 (8.8%)	13 (12.8%)
Physical activities improve my mental health and make me more alert mentally	93 (91.2%)	2 (1.9%)	7 (6.9%)
Physical activities help to strengthen my bones	88 (86.3%)	4 (3.9%)	10 (9.8%)
Physical activities will keep me from having high blood pressure	85 (83.3%)	5 (4.9%)	12 (11.8%)
Physical activities improves functioning of my cardiovascular system and the prevention of heart attacks	92 (90.3%)	1 (0.9%)	9 (8.8%)

Physical activity help me sleep better at night	76 (74.6%)	13 (12.7%)	13 (12.7%)
I will live longer if I engage in physical activities	62 (60.8%)	22 (21.6%)	18 (17.6%)
Physical activity allows me to carry out normal activities without getting tired	88 (86.2%)	7 (6.9%)	7 (6.9%)
Physical activity makes my body look good	90 (88.3%)	3 (2.9%)	9 (8.8%)

CONCLUSION

The participants believed that promotion of physical activity was important, but lack of time and motivation were the main barriers to physical activity. The participants expressed their knowledge on the issue that physical activity is important in the prevention of conditions like arthritis, depression, diabetes, heart disease, hypertension, cholesterol, back pain, obesity and osteoporosis.

Almost half of the no. of participants occasionally participated in physical activities thereby indicating a positive attitude towards physical activity; however the other half of the participants who do not take part, still have knowledge of the benefits of physical activity in their life. This means that difference lies between being aware and actually performing physical activity. Thus there is need to encourage and motivate people to ensure good public health and prevention of non-communicable diseases.

REFERENCES

- Den Hartog AP, van Staveren WA, Brouwer ID, 2006. Food habits and consumption in developing countries: Manual for field studies. Wageningen Academic Pub. Doi: 10.3920/978-90-8686-667-0.
- Pandit-Agrawal D, Khadilkar A, Chiplonkar S, et al, 2018. Knowledge of nutrition and physical activity in apparently healthy Indian adults. *Public Health Nutr.* 21(9), Pages - 1743-1752. Doi: 10.1017/S13689800170042681.
- Ambigapathy R, Ambigapathy S, Ling HM, 2003. A knowledge, attitude and practice (KAP) study of diabetes mellitus among patients attending KlinikKesihatan Seri Manjung. *NCD Malaysia.* 2, Pages-6-16. DOI: 10.18203/2394-6040.ijcmph20183824
- Nazni P, Vimala S, 2010. Nutrition Knowledge, Attitude and Practice of College Sportsmen. *Asian Journal of Sports Medicine.* 1(2), Pages- 93-100. Doi: 10.5812/asjms.34866
- Hui SS, Hui GP, Xie YJ, 2014. Association between physical activity knowledge and levels of physical activity in Chinese adults with type 2 diabetes. *PloS one.* 9. Doi: 10.1371/journal.pone.0115098
- Caspersen CJ, Powell KE, Christenson GM, 1985. Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public Health Rep.* 100(2), Pages - 126-131.
- Alwan A, 2011. Global status report on non-communicable diseases 2010. World Health Organization.
- STEPS Country Reports [Internet]. World Health Organization. 2019. Available from: <http://www.who.int/chp/steps/reports/en/index.html>.
- Krishnan A, Shah B, Lal V, et al, 2008. Prevalence of risk factors for non-communicable disease in a rural area of

- Faridabad district of Haryana. *Indian Journal of Public Health*. 52, Pages-117-24.
10. Guthold R, Ono T, Strong KL, et al, 2008. Worldwide variability in physical inactivity: a 51-country survey. *American journal of preventive medicine*. 34, Pages-486-494. Doi:10.1016/j.amepre.2008.02.013
 11. Gupta R, Deedwania PC, Sharma K, et al, 2012. Association of educational, occupational and socioeconomic status with cardiovascular risk factors in Asian Indians: a cross-sectional study. *PLOS one*. 7(8), Pages-44098. Doi: 10.1371/journal.pone.0044098
 12. Tripathy JP, Thakur JS, Jeet G, et al, 2016. Urban rural differences in diet, physical activity and obesity in India: are we witnessing the great Indian equalization? Results from a cross-sectional survey. *BMC public health*. 16, 816. Doi: 10.1186/s12889-016-3489-8
 13. Sugathan TN, Soman CR, Sankaranarayanan K, 2008. Behavioural risk factors for non-communicable diseases among adults in Kerala, India. *Indian Journal of Medical Research*. 127.
 14. Anjana RM, Pradeepa R, Das AK, et al, 2014. Physical activity and inactivity patterns in India—results from the ICMR-INDIAB study (Phase-1). *International Journal of Behavioral Nutrition and Physical Activity*. 11, 26. Doi: 10.1186/1479-5868-11-26
 15. Ravikiran M, Bhansali A, Ravikumar P, et al, 2010. Prevalence and risk factors of metabolic syndrome among Asian Indians: a community survey. *Diabetes research and clinical practice*. 89 (2), pages-181-188. Doi: 10.1016/j.diabres.2010.03.010
 16. Ahlawat SK, Singh MM, Kumar R, et al, 2002. Time trends in the prevalence of hypertension and associated risk factors in Chandigarh. *Journal of the Indian Medical Association*. 100(9), Pages-547-552.
 17. Walia R, Bhansali A, Ravikiran M, et al, 2014. High prevalence of cardiovascular risk factors in Asian Indians: A community survey Chandigarh Urban Diabetes Study (CUDS). *The Indian journal of medical research*. 139(2), Pages-252-259.