

Physical Activity and its Association with Depression and Quality of life Among the Community-Dwelling Elderly Population-an Observational Study

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ABSTRACT

Objectives: The objective of this article was to understand the physical activity, perception, and barriers of physical activity and their association with depression and quality of life among the community-dwelling elderly population.

Materials and methods: It was an observational study where male and female subjects above 60 years of age constitute the study population. The Source of data was from the Bahadarpur and Waghodia communities of Vadodara. Data were collected by using various questionnaires. Global Physical Activity Questionnaire (GPAQ), self-drafted questionnaire on perception and barriers of physical activity questionnaire for elderly, 5-Items geriatric depression scale and 12 items short form health survey.

Statistical analysis: Statistical analysis was done by using descriptive statistics. The non-parametric test *chi-squared* test was used to assess the linear relationship between various pairs of the variable. Spearman's correlation coefficient test was used for significant association among various variables.

Results: The total no. of participants in the study was 347. According to GPAQ, only 36% of the participants were physically active and 64% of the participants were physically inactive. There was a significant association found between GPAQ, GDS, Perception, and barrier of physical activity.

Conclusion: 86% of the total participant had a positive perception about physical activity in aging. However, 64% of participants were physically inactive and 36% were physically active based on WHO recommendation. The physically inactive group was more sedentary, depressed, had poor mental health, poor physical health, had more percentage of co-morbidities and barriers to physical activity.

Keywords: Perception and physical activity; Physical activity and elderly population; Physical activity and barriers; Depression and physical activity in elderly; Physical activity and quality of life of elderly

INTRODUCTION

With the increase in life expectancy and advancement of the health care facilities, the share of the aging population is going to rise [1]. According to World Health Organization (WHO) elderly population are recommended to do a minimum of 150-minutes of moderate intensity or 75 minutes of vigorous-intensity aerobic activity or their equivalent combination per week [2]. Regular physical activity is safe for healthy and frail older people. It decreases the risk of developing major cardiovascular and metabolic disease, obesity, falls, cognitive impairments, osteoporosis, and muscular weakness [3]. In their

study on elderly people residing in the old age home of Vadodara revealed that the majority of the elderly people were suffering from health problems associated with aging. Our unpublished data on the physical activity of the community-dwelling elderly population showed that only 36% of the participants were physically active according to the Global Physical Activity Questionnaire (GPAQ). Barriers to physical activity could be in the form of internal as well as external barriers. Internal barriers include poor health, lack of interest, lack of motivation, lack of energy, and lack of self-efficacy while external barriers include lack of resources, lack of social support, and lack of time. Decreased physical activity may influence the

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mental status as well as the quality of life of the elderly population [4,5].

Thus, this article aimed to understand the physical activity, perception, and barriers of physical activity and their association with depression and quality of life among the community-dwelling elderly population.

LITERATURE REVIEW

This study was approved by Sumandeep Vidyapeeth institutional ethics committee. It was an observational study where male and female subjects above 60 years of age constitute the study population. The source of data was from the Bahadarpur and Waghodia communities of Vadodara. After obtaining ethical approval, permission to conduct the study was sought from the Sarpanch of Bahadarpur village and the primary health center of Waghodia village. Once the permission is obtained, door to door survey was undertaken to identify and screen the participants based on our inclusion criteria. Required informed consent was obtained and the participant information sheet was explained to the participants. Data were collected by using various questionnaires Global Physical Activity Questionnaire (GPAQ), self-drafted questionnaire on perception and barriers of physical activity questionnaire for elderly, 5 items geriatric depression scale and 12 items short form health survey.

The global physical activity questionnaire was developed by the World Health Organization (WHO). It collects information on physical activity participation in three domains (settings) like activity at work, travels to and from places, recreational activities as well as sedentary behavior [6].

The questionnaire regarding perception and barriers of physical activity in the community-dwelling elderly population had been drafted based on the available literature and was given to faculty members for face validity. The modification was done based on the remarks and the final draft was used for data collection. The self-drafted questionnaire contains 3 domains like perception regarding aging, physical activity in aging, and barriers to physical activity in aging. Each domain contains open and close-ended questions. In the perception domain of the self-drafted questionnaire, participants were asked three questions- "Do you think aging is the time when you should sit more and work less?" "Do you think age is an obstacle to physical exercise?" and "Do you think physical activity is necessary for healthy aging?" The participants had to choose one out of three options (Yes/No/Not certain). The perception of the participants was considered positive if they answer positively to at least two of the three questions and negative if they answer negatively to at least two of the three questions.

The 5 items Geriatric Depression Scale (GDS) was used as a screening tool for identifying depression in older adults. The 12-item Short-Form Health Survey (SF-12) was used to assess self-reported health. The Physical Health Component Score (PCS) is based on four subscales: physical functioning, role-physical, bodily pain, and general health. The Mental Health Component Score (MCS) is based on the vitality, social functioning, role-emotional, and mental health sub-scales.

Data were analyzed using descriptive statistics. The non-parametric test *chi-squared* test was used to assess the linear relationship between various pairs of the variable. Spearman's correlation coefficient test was used for significant association among various variables.

RESULTS

The total no. of participants in the study was 347. The mean age of the participant was 67.43 years with 159 (46%) males and 188 (54%) females. According to GPAQ, only 36% of the participants were physically active and 64% of the participants were physically inactive (participants with <600 MET score is categorized as physically inactive and participants with ≥ 600 MET score is categorized as physically active as per guidelines of GPAQ). There was a significant association found between GPAQ, GDS, perception, and barrier of physical activity. The Association of various variables.

DISCUSSION

This investigation was an endeavor to discover the physical activity of the local area staying older populace utilizing a GPAQ and self-drafted questionnaire and check whether there was any relationship or any association of physical activity with depression and quality of life. In the current examination, 36% of the old population (42% of grown-ups matured 60-69 years and 22% of grown-ups matured 70 years and more established) were discovered to be dormant as evaluated by the worldwide active work survey (GPAQ). Given the discernment space of our self-drafted survey, 20% of the members imagined that with the age, they ought to sit more and work less, and 30% of the members accepted that aging is an obstacle to physical activity. In general, there was a positive discernment regarding aging and physical activity.

In 2009 had interviewed elderly subjects aged 65 to 74 years and revealed that most of them described physical activity positively and wanted to get involved in age appropriate exercises. The major barrier to physical activity reported was pain. In the present study, 45% of the participants felt various barriers to physical activity. In the current investigation, 45% of the members felt different obstructions to active work.

Had also mentioned that over 80% of older people felt at least one barrier to physical activity that included insufficient time, lack of facilities, lack of money, poor health, fatigue, lack of interest, lack of company, lack of enjoyment, lack of knowledge, inclement weather, injury, joint pain and a perception of being too old [7]. However, barriers to physical activity reported in the present study were lack of mobility, aging, knee pain, lack of interest, fear of fall, difficulty in walking, fatigue, low back pain radiating to lower limb, breathlessness during walking, bad roads, joint pain, lower limb weakness, bad-weather, fracture, surgeries, chest-pain, vertigo, low vision, hearing impairment, and lack of company. In 2009 and in 2012 also described internal and external barriers to physical activity. Internal barriers were physical limitations, depressive symptoms, physical and emotional discomfort, loss of motivation, fear of falling, and ageism, and external barriers were affordability,

transportation, weather, cultural barriers, and lack of social support [8].

The occupation had a positive relationship with actual work as the individuals who were utilized and occupied with word-related exercises had higher active work levels and less inactive time [9]. Reported that gender has a strong correlation with physical activity prevalence as Females were found 2.2 times physically inactive than males due to reasons like family and social roles, psychological problems, and other health conditions. A German study also mentioned that older man involved in sporting activities while women were engaged in domestic work. In the current investigation female population was discovered to be idle than the male population as most of the guys were occupied with word-related exercises like cultivating, steers taking care of, earthenware, woodcutting, fitting, working in a homestead field for their business. In the US populace, 26% of men and 12% of ladies were occupied with standard actual work or exercise for at any rate 30 minutes every day and multiple times a week.¹⁰ We discovered comparative discoveries in the current investigation that 26% of guys and 10% of females were occupied with strolling for 30 minutes per day and 6-7 days of the week. A few examinations have detailed higher actual inertia among south Asian ladies because of individual obstructions like social limitations, family unit work restricting the time accessible to partake in active work, providing care obligations, absence of premium, absence of energy, absence of inspiration, being too worn out, not healthy and debilitation from the society. On the other hand, the majority of the female individuals from the current examination were housewives who were, by and large, busy with nuclear family tasks like cooking, cleaning, cleaning the floor, washing pieces of clothing, washing utensils, managing grandchildren, and family members, scrutinizing severe books, gazing at the TV serials, recounting mantras and chatting with mates. They were regardless, walking around 10-20 minutes for 3-7 days out of consistently aside from they were not related with any moderate or extraordinary center activities and was contributing more energy sitting approximately 337 minutes of the day. They even preferred vehicles for transportation essentially. Within the observational studies, depending on the operational definition of what comprised physical movement, members were inquired what exercises they were locked in. Strolling for joy or work out was the commonest shape of light physical activity. Other exercises included lifting light weights to 5 kg, attending to meet companions or relatives, cultivating, aiming to buy individual things. Any kind of relaxation time physical movement climbing, running, extending, vigorous exercise; playing tennis, badminton or golf, and military expressions. Moreover, members were too found saying exercises of routine day by day living like dressing, eating, utilizing latrine, washing, and prepping and instrumental exercises like utilizing the phone, light to overwhelming housework, planning suppers, shopping, and open-air transportation. In 2016 reported that females were more inactive than males in context to transport and recreational physical activity and they were spending more time sitting about on an average 228 minutes per day. One of the possible reasons for this sedentary lifestyle in females could be the gradual decline in their metabolic rate after the age of 35

years, as reported by in 2012 [10-13]. Sedentary behavior is defined as energy expenditure of ≤ 1.5 MET during any waking behavior like sitting or reclining posture. Inactive conduct is characterized as the energy use of ≤ 1.5 MET during any waking conduct like sitting or leaning back pose. More established grown-ups are the most stationary age bunch burning through 65%-80% of their wake time on inactive behaviors. In the current investigation 63% of members announced that they were spending more than 5-6 hours sitting while at the same time staring at the television, tuning in to the radio, reading the paper, perusing strict writing, performing supplication, reciting mantras, cleaving vegetables, talking with similar friends and dealing with their grandkids. Both physical disabilities and chronic disease increase with advancing years which restrict an elderly person to participate in daily activity, social engagement, leisure-time physical activity which make them sad, socially isolated, frustrated and unsatisfied with life, a burden to the family, and poor quality of life. Centre for Disease Control and Prevention (2012) and the Merck company foundation reported that 60% of adults over the age of 60 years had at least one chronic condition and another 50% live with two chronic conditions [14-17].

In the current examination among 222 inactive individuals, 133 (69%) had hypertension, 44 (20%) had diabetes and 174(78%) had musculoskeletal conditions. While among 125 unique individuals, 40 (32%) had hypertension, 13 (10%) had diabetes and 61 (49%) had musculoskeletal conditions. In Pakistan, had examined the relationship of real work and co-dismalness models and they declared that among 43 individuals with hypertension, 39 (90.7%) were truly inactive while only 4 (9.3%) were genuinely unique. Among 37 individuals with Diabetics, 35 (94.6%) were lethargic while 2 (5.4%) were genuinely unique. Among 40 individuals who were encountering joint aggravation, 38 (95%) were truly dormant and only 2 (5%) were active [18].

Depression is found to be a commonest psychological problem within elderly persons and it influences about 15% of this particular age-group. In the current study, 19% of the physically inactive participants were found to be depressed. In 2016 reported that physically active older were having less depression as compared to their physically inactive peers [19]. Study of elderly women in Northern New Jersey reported that the higher the levels of physical activity, the lower were the self-reported depressive symptoms. Study from Brazil, Malaysia, and Nepal likewise detailed that local area abiding old having lower support in actual work because of versatility impedances and lower practical status shows more significant levels of sorrow contrasted with truly dynamic old. Less dynamic older have confined social communications. This deficiency of freedom and government-backed retirement may influence their psychological health [20].

Numerous examinations have announced that downturn was more normal in females, jobless, poor, monetarily reliant on others, living alone; ignorant older population. In the current investigation, out of the 347 populace, 72 members had sorrow. Among them, 66 (92%) were truly dormant and 6 (8%) were genuinely dynamic. Among 66 members who were dormant and discouraged, 17 (26%) were uneducated, 22 (36%) were resigned

and 46 (70%) were female members. Singh et al announced in their investigation that. 1% of the members matured 60 years and more seasoned felt disregarded, was miserable in their life, didn't take an interest in any friendly capacity, and were discovered to be home-bound. Additionally detailed in their examination that 24.8% of the member matured 60 years and more established were not having any friendly contact outside the home. In the current examination, 23% of the member had revealed no friendly interest and were home-bound. As described above, 64% of the participants were found physically inactive as per WHO recommendation in the present study. Self-perceived mental health status and mental component summary were also assessed by using the SF-12 health survey. In the inactive group, 40% had poor mental health and 56% had poor physical health. Mental health status either improved or showed less disintegration among consistent exercisers compared to sporadic exercisers as shown by the investigation of Taiwanese grown-ups, supporting the significance of consistency in active work for positive emotional well-being result as additionally exhibited for different parts like sadness and rest quality. In 2016 had likewise referenced that there is an applicable job of genuinely dynamic ways of life on the physical and emotional wellness of more established grown-ups. The potential explanations behind poor mental and actual wellbeing could be because of different persistent infections and obstructions to active work which may have caused constraints in their everyday movement investment, reliance on others, social disconnection, and home-bound. Chad K, et al., have done a comparative report on the local area abiding old populace of Canada in 2010 and announced a positive relationship of active work with physical and psychological wellness and revealed that stressors like retirement, the demise of a companion, diminished livelihoods, and changes in living courses of action may sting prosperity and that thusly affected on emotional well-being.

To sum up, in the current examination, 64% of the members were truly dormant according to the WHO proposal; however, they were associated with family unit errands and had a positive insight into physical activity. The potential purposes behind most of the members being truly dormant according to WHO suggestion could be that they didn't know about the advantages of physical activity in healthy aging and they assume that the exercises they are doing as a piece of their everyday exercises are adequate. The stationary conduct in the old advances the beginning stage of infirmity, infection, and delicacy. Local area authorities must improve actual work amid geriatrics. Notwithstanding this information, it is by all accounts moving work to re-establish everyday actual work at the local area level [21-27]. All medical care authorities ought to spur the patient to perform suggested moderate-force actual work instead of the customary prescriptive clinical protocol [28-32]. By noticing the insight and conviction of the members day by day active work probably recommended by family specialists as a feature of therapy. This study implies that housewives were associated with inadequate physical activity. This may be due to fact that their involvement in household chores left them with little time for physical activity. In India mainly in rural areas awareness

regarding recommended physical activity for the elderly population must be raised.

CONCLUSION

86% of the all-out member had a positive insight about physical activity in healthy aging. Be that as it may, 64% of members were latent and 36% were truly dynamic dependent on WHO suggestion. A higher commonness of actual idleness was found among females. The genuinely idle gathering was more inactive, discouraged, had poor psychological wellness, poor actual wellbeing. The level of co-morbidities like hypertension, diabetes, and musculoskeletal issues and obstructions was more in the Genuinely Inert gathering. Hindrances to active work were the absence of portability because of joint agony, absence of time, absence of premium, absence of organization, absence of family uphold, absence of information, absence of cash, chronic frailty, low vision, hearing impedance, the dread of fall, exhaustion, shortcoming, shortness of breath, chest torment, an impression of being old, awful streets, awful climate.

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