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Research Article

PHYSICAL ACTIVITY AND EXERCISE AMONG THE ELDERLY POPULATION: KNOWLEDGE, ATTITUDE AND PRACTICE IN EASTERN PROVINCE, SAUDI ARABIA 2018-2019

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Abstract:

Introduction: Physical activity (PA) is an important component of good health while physical inactivity has been associated with increased morbidity and it is identified as the fourth leading risk factor for global mortality causing an estimated 3.2 million deaths globally. Association between regular physical exercise and the lowering of several other risk factors for cardiovascular diseases is now evident and the high prevalence of physical inactivity among Saudi elderly is a major health concern.

Aim and objectives: This study aim was to describe physical activity knowledge, attitudes, and practices (KAP) of the elderly in the eastern province and the barrier related to it so as to improve patient health.

Subjects & Methodology: This is a cross-sectional study on 380 randomly selected elderly in the eastern province using validated questionnaire to collect data and were encoded analyzed using SPSS version 21.

Results: The participants had good knowledge, positive attitude regarding physical activity and (76.9%) took part in some form of physical activity like walking.

Multivariate analysis showed that age, education, being not smoker chronic health problems, were significantly associated with physical activity practice.

The most common barrier not to do physical activity and exercise was feeling pain or fatigue

Conclusion: Our study concluded that The participants had a good general knowledge of the influence of physical activity on quality of life. Most participants took part in some form of physical activity (walking).

Age, education, being not smoker and chronic health problems, were significantly associated with physical activity. Feeling pain or fatigue was the most common barrier to do physical activity and exercise. Future research could concentrate on training health care workers to promote exercise participation in an achievable way for an elderly population.

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INTRODUCTION:

Physical activity (PA) is an important component of good health and is inversely related morbidity and mortality. Physical inactivity has been identified as the fourth leading risk factor for global mortality causing an estimated 3.2 million deaths globally [1]. It is defined as any bodily movement produced by skeletal muscles that result in energy expenditure [2]. Physical activity in daily life can be categorized into occupational, sports, conditioning, household, or other activities. Exercise is a subset of physical activity that is planned, structured, and repetitive and has as a final or an intermediate objective the improvement or maintenance of physical fitness [2]. Regular physical activity builds healthy bones and muscles, improves muscular strength and endurance, reduces the risk for developing chronic disease. [3, 4] The impact of physical activity improves self-esteem and reduces stress and anxiety [5]. It has been scientifically proven that regular physical activity among all age groups has physical and mental benefits. Improvement of life quality, sleep, and stress management are some of the physical benefits; the enhancement of social relationships is a mental benefit [6]. Scientific evidence has established an association between regular physical exercise and the lowering of several other risk factors for cardiovascular disease, including blood lipid levels, resting blood pressure among persons with borderline hypertension, overweight, glucose tolerance and insulin sensitivity [7, 8]. Physical inactivity is one of the most important risk factors for developing chronic diseases and increasing morbidity and mortality [9]. Preliminary data show that a lack of physical activity is one of the ten leading global causes of death and disability, with an increased risk of cardiovascular disease, diabetes, obesity, colon cancer, high blood pressure, osteoporosis, depression, and anxiety [10].

It has been reported that (9%) of premature deaths in 2008 worldwide were associated with inactivity [11]. It was clear from the available evidence that physical inactivity is becoming more prevalent in the Saudi population of different ages and both sexes. Physical inactivity in Saudi Arabia (SA) is considered a major public health issue. According to the WHO Diabetes Country Profile 2016, 58.5% of the Saudi adult population (52.1% of males and 67.7% of females) did not meet the international physical activity (PA) recommended levels [12]. In another study, the prevalence of physical inactivity was found to be 66.6% for the overall Saudi Arabia population (60.1% for men and 72.9% for women), however, it was found that 16.8% of the population engaged in a

moderate level of PA and 16.6% engaged in a high level of PA [13].

According to WHO, elderly adults, those aged 60 or above, make an important contribution to society as a family member, volunteers and as an active participant in the workforce. The world's population is aging rapidly. The WHO said that between 2015 and 2050, the proportion of the world's elderly adults is estimated to almost double from about 12% to 22%. In absolute terms, this is an expected increase from 900 million to 2 billion people over the age of 60. Elderly people face special physical and mental health challenges which need to be recognized [14]. A general misconception of modern culture is to accept that old age is a time for relaxation and that physical activity is unnecessary or even harmful. Another misconception, namely that only continuous vigorous exercise will benefit health, has set an unattainable goal for the elderly [15]. Boyette et al. [6] identified certain characteristics that would influence exercise behavior in the elderly. Using an expert panel, they identified biomedical status, past exercise participation, and education as the most important factors when initiating exercise participation among the elderly [16].

The knowledge of physical activity guidelines is limited in various countries—there is poor knowledge of physical activity in the UK (18%), England (15%) and India (9.3%) [17, 18, 19]. However, there were no available data to know how many adults have a good knowledge of physical activity minimum requirements.

Background

Many studies were done in physical activity and exercise locally and internationally regarding KAP and barrier to physical activity in young and middle age and elderly population and they conclude that many of the subjects know about physical activity and exercise and have positive attitude but only around half of them were physically active. The study also assesses physical inactivity and concludes that more than half of the subject were physically inactive and the top reported barrier was time limitation. [8-14]

The authors are interested in studying and learning about KAP related to physical activity and exercise and barrier related to it because of the limitation of studies in the eastern province.

SUBJECTS & METHODS**Study design, setting and period:**

The study is a cross-sectional prospective study which was carried out in King Fahad Specialist Hospital (KFSH) in Dammam city and 2 different primary health care center (PHCC) in Qatif city from the period of April to May 2019.

Study subjects

Inclusion criteria

60 year or more both gender Saudi and non-Saudi population

Exclusion criteria

People below 60-year-old.

Data variables

Dependent

Knowledge, attitude, practice (KAP)

Independent

Physical activity, demographic characteristic

Sample size:

Our sample size included 380 of elderly population including both females and males. The following sample size equation was used:

$$n = \frac{z^2 p (1-p)}{E^2}$$

Where, Z confidence level \rightarrow (95%) =1.96,
P=prevalence \rightarrow WHO=50 %(.5)

1-p =.5, E= correlation factor (maximum error allowed) =.05, $N = \frac{1.96^2 (.5) (.5)}{0.05^2} = 385$

Around 385 people totally, 128 people from each center.

Measurement tool

English questionnaire design by the principal investigator that was translated to Arabic by an expert that including the socio-demographic data, anthropometry, health problems, question-related to KAP and barrier for physical activity practice [7-16].

Sample technique

Simple random sampling

Data management plan

The study protocol was approved by the research center in KFSH in Dammam, KSA.

The method was started with a pilot study conducted for validation of the questionnaires created by the principal investigator done from 18th November 2018 until 11th of December 2018.

The total number of participants was 20 selected randomly from KFSH in Dammam city in the Physical Therapy section in the screening room using an interview questionnaire. The questions were found acceptable and were understood by all participants.

Also, a reliability test was done using Cronbach's Alpha=.721 proving that the pilot study was highly reliable and the Questionnaires were valid. Modifications on the questionnaire were carried out.

Then we proceed with the actual study started from 3rd of April 2019 to the 9th of May 2019 done by the principal investigator or one of the research team in the chronic disease clinic in PHCC or screening room in KFSH with interview questionnaire.

The total number was 380 participants who were interviewed and complete the questioner. Around 6 more people were interviewed but were discarded because they refused or could not complete the interview.

Consent for participation was obtained orally. The purpose of the study was explained to all patients, who were assured that their participation was voluntary, they could quit at any time, and that information would be kept confidentially and if they refused to participate, their health care would not be affected.

The Participants were interviewed by the principal investigator and the research team in hard copy in the Arabic language.

Attached data was revised immediately after documentation. Each participant was handling educational material (brochure about active and healthy aging) and date candy and bottle of water as gift to show appreciation to their time.

Data were collected and verified by hand then coded before entry.

Data computerization:

Collected data were computerized using statistical Package for Social Sciences (SPSS) version 21 to test reliability done by the principal investigator.

Reliability test was conducted using Cronbach alpha test was found significant equal 0.701 mean that the data was reliable.

Frequency table was drawn to explore the finding. descriptive statistic was performed. Percentages were given for qualitative variable and mean were given for quantitative variable.

The total score was computed for KAP as a dependent variable.

Linear regression analysis was done for KAP as dependent variable verse demographic characteristic as an independent variable.

RESULTS:

It was seen that the majority of participants (78.2%) were from Qatif city and (48.7%) were from Qudiah PHC. Nationality (98.9%) was Saudi. Employment: (61.3%) was a housewife. The marital status of participants was married (68.9%).

The majority (75%) were a non-smoker
Most participants (65.3%) were female
Age range from 60 years until 103 years with an average of 68.46 years
Standard deviation(SD) was 7.88 minimum 60 maximum 103 (fig. 1)

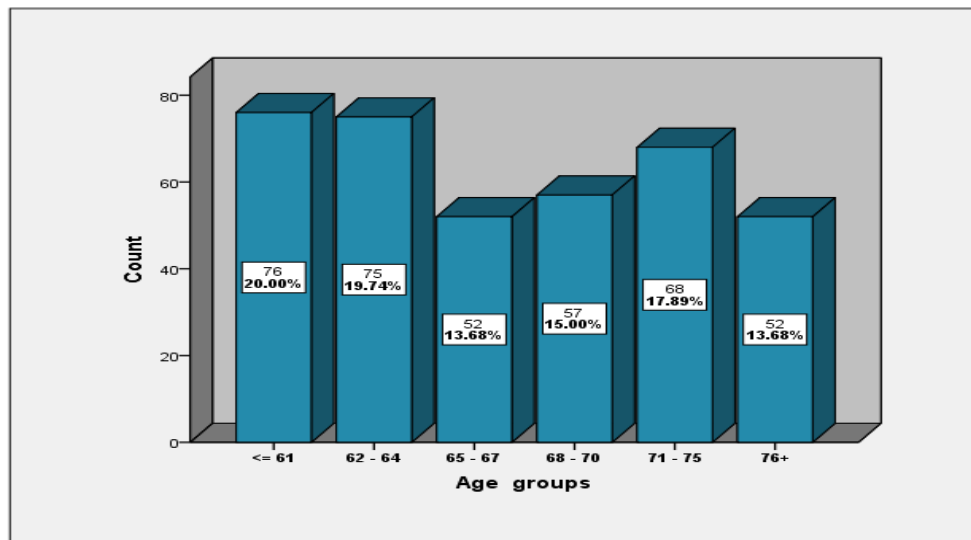


Figure (1) column bar graphs showing the distribution by age groups

Body mass index (BMI): the highest category was normal weight (35%), followed by (30.79%) were overweight. The majority (53.9%) had no education followed by primary school (29.2%)
The participants suffered mainly from hypertension (55.3%), OA (51.6%), visual impairment (41.2%) (fig 2)

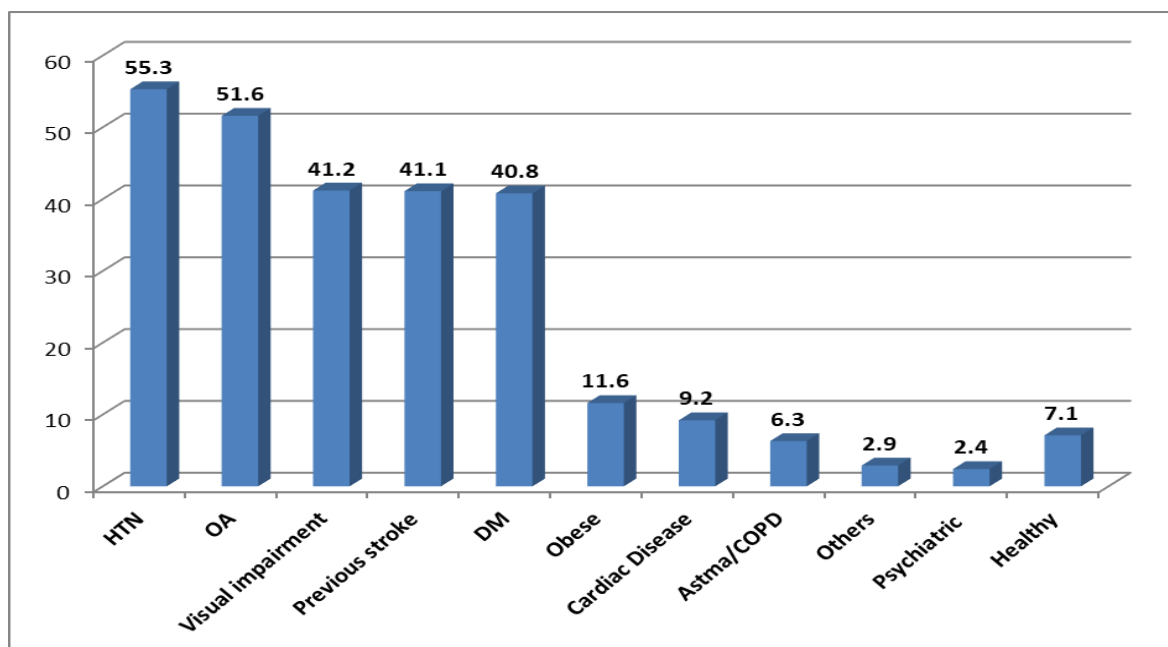


Figure (2) column bar graphs show the distribution by health status.

The participants' general knowledge of physical activity was good, (67.4%) said that exercise benefit general wellbeing, Majority (79%) said that exercise increase bone mineral density but only (22.4%) know the recommended way to do exercise.

The majority (53%) agree that they need doctor examination before the start of the exercise program (fig 3)

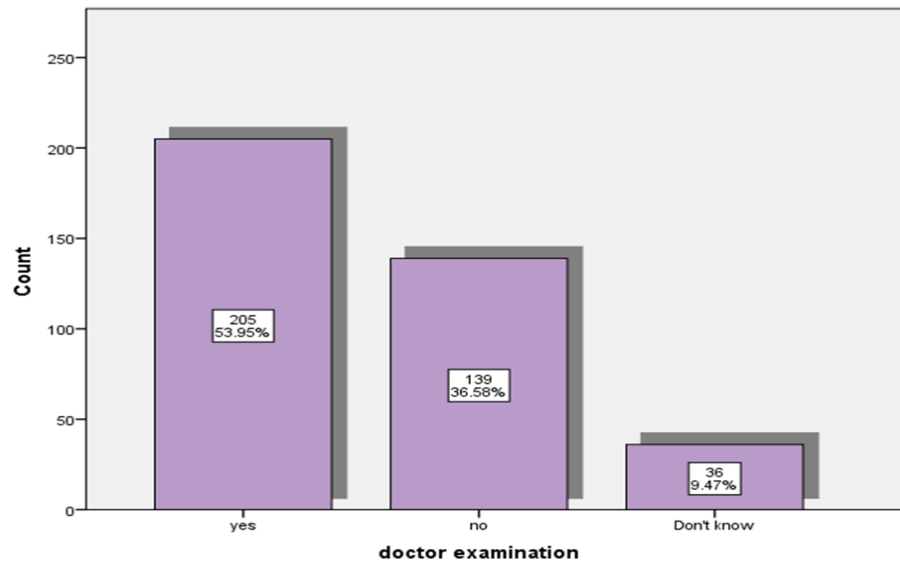


Figure (3) column bar graphs show the distribution by doctor examination.

Regarding the attitude, the majority (69.5%) enjoyed doing exercise.

The majority (65%) said they feel not getting enough exercise (fig 4)

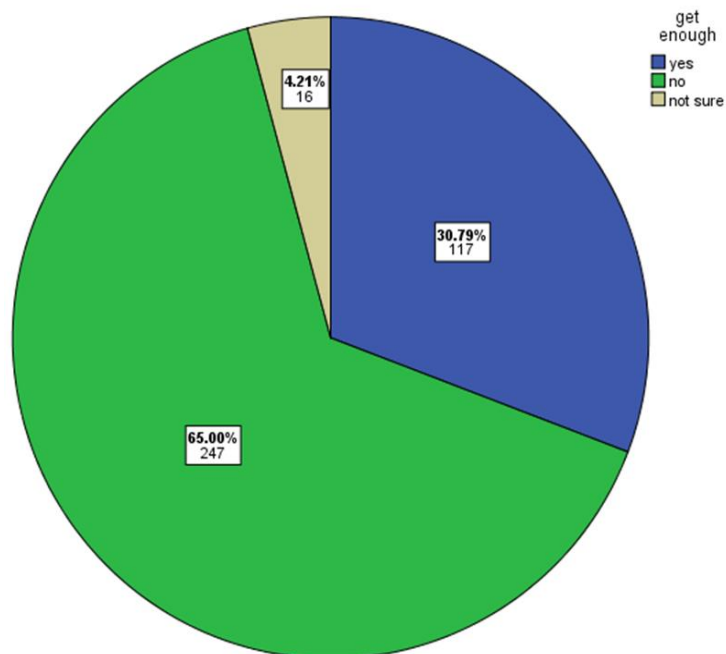


Figure (4) pie graphs show the distribution by feeling getting enough exercise.

Most participants (52.4%) felt that they had not received enough information about physical activity from their doctor

The Majority (41%) said that walking or using a treadmill was the exercise that they consider.

Regarding the practice: Majority (43%) did light housework at home and the majority (53.4%) uses a car for transportation. (fig 5)

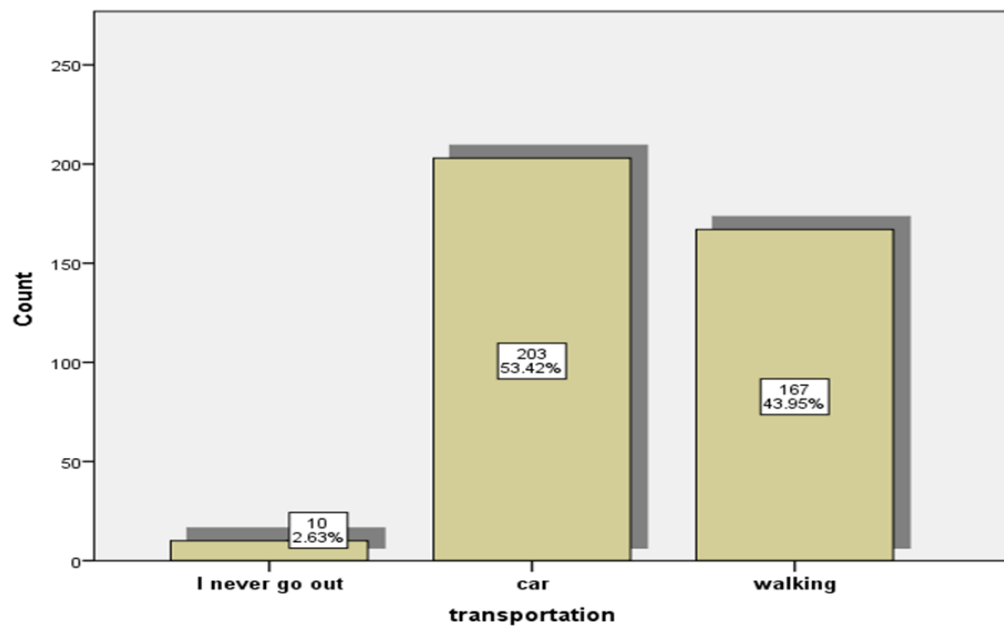


Figure (5) column bar graphs show the distribution by transportation.

The majority (60%) do exercise 3 or 4 times per week. (fig 6)

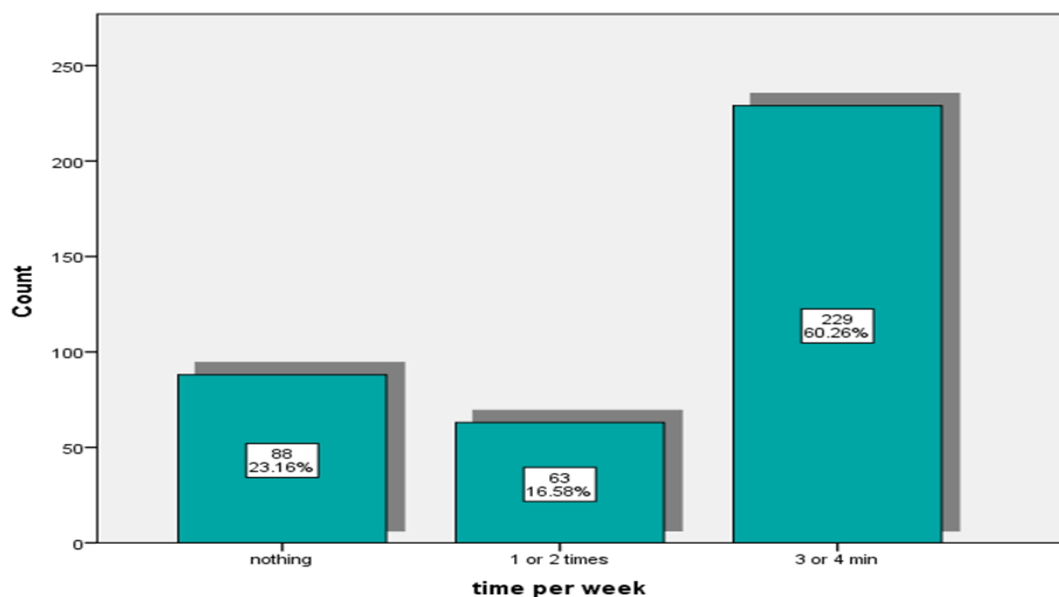


Figure (6) column bar graphs show the distribution by time per week.

The Majority (46.6%) their character of exercise is moderate

The Majority (33.7%) take 10 minutes for exercise, (31.6%) 15 to 20 minutes.

The Majority (69.5%) do exercise outside or in the park. The Majority (52%) do exercise alone

Regarding the type of exercise Majority (63.3%) did not do any type of exercise (Fig.7)

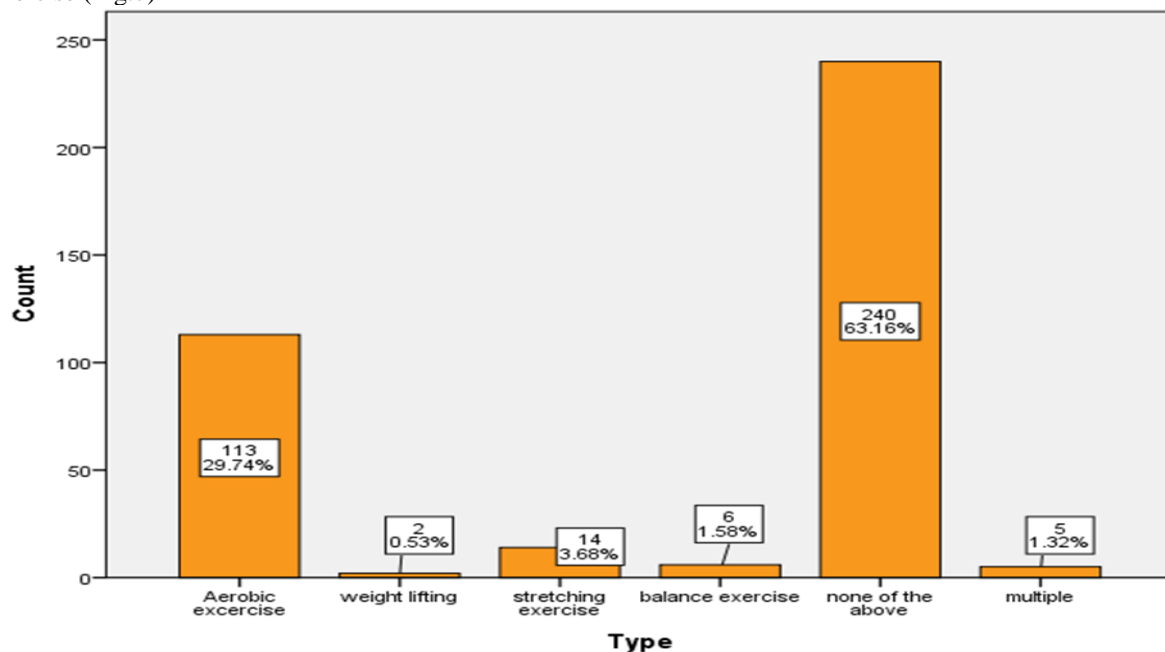


Figure (7) column bar graphs show the distribution by type.

Barrier: Majority (52.1%) find the barrier to do physical activity and exercise is feeling pain or fatigue followed by chronic health diseases (31.1%), insufficient time (27.1%) and least barrier to doing physical activity and exercise is being obese (2.1%) and (2.6%) of the participants found no identifying barrier to do physical activity and exercise. Other barriers to do physical activity mention by the participants in addition to the barriers mentioned in the questioner were lack of interest and laziness. They mentioned also that family reason and far distance from the desired place was a reason not to do physical activity or exercise. (fig 8)

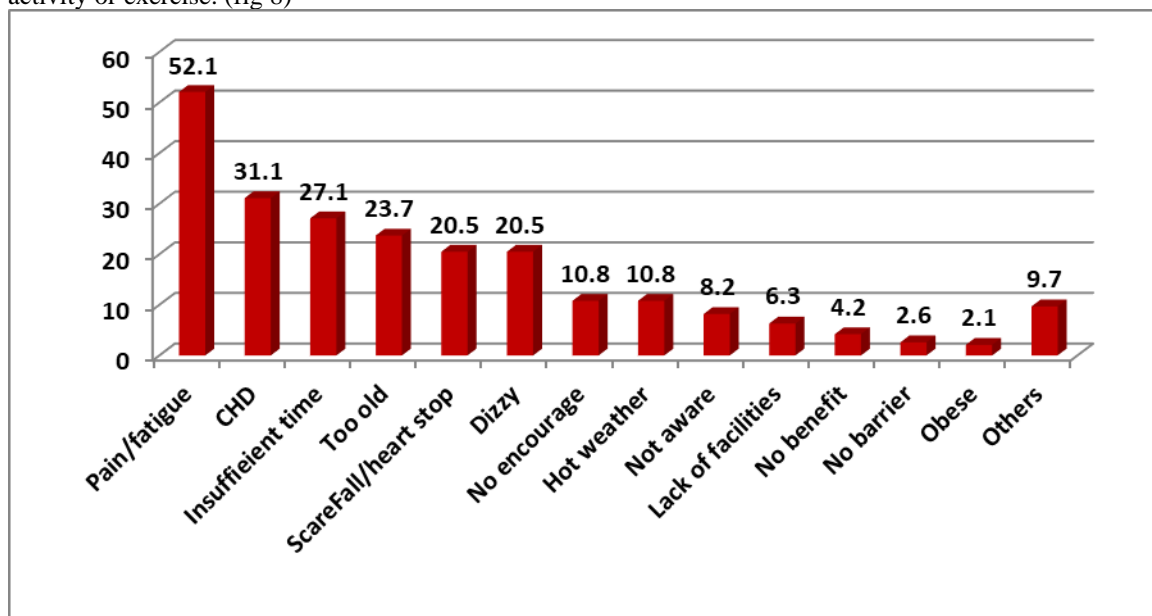


Figure (8) column bar graphs show the distribution of the barrier

The Knowledge score

Regression analysis (ANOVA) done the result was;

Correlation coefficient (R)=0.244, F=3.376, probability level (p)=0.002

Meaning that the overall effect of independent variables on knowledge score was highly significant, p=.002

a. Dependent Variable: Knowledge score

B. independent Variable: Smoking, Employment, Age, Health Status, Marital Status, Education, Gender

Independent variables	P-value
Gender	>.05
Age	.003
Smoking	>.05
Employment	>.05
Education	.058
Marital status	>.05
Health status	>.05

Age was the most significant (.003); education is not significant but very close to (.058) that means the more the bigger the age the more knowledge

The Attitude score

Regression analysis (ANOVA) done the result was

R=0.207, F=2.376, p=0.022

Meaning that the overall effect of independent variables on attitude score was Significant = .022

a. Dependent Variable: attitude score

B. independent variable: Smoking, Employment, Age, Health Status, Marital Status, Education, and Gender

Independent variable	P-value
Smoking	.018
Employment	>.05
Age	.010
Health Status	>.05
Marital Status	>.05
Education	>.05
Gender	>.05

Most significant with age (.010) and smoking (.018)

Attitude increase with bigger age and not smoking

Practice score

Regression analysis (ANOVA) done the result was

R=0.188, F=1.942, p=0.062

Meaning that the overall effect of independent variables on practice score was not significant but very close to p=0.062

a. Dependent Variable: practice score

B independent variable: Smoking, Employment, Age, Health Status, Marital Status, Education, and Gender

Independent variable	P-value
Smoking	>.05
Employment	>.05
Age	>.05
Health Status	.016
Marital Status	>.05
Education	>.05
Gender	>.05

Health status was significant (.016)

Meaning that practice increase in person who has less or no health condition.

DISCUSSION:

Our study included 380 randomly selected elderly in the eastern province who were interviewed and complete the questioner. The study aimed to was to describe physical activity knowledge, attitudes, and practices (KAP) of the elderly in the eastern province and the barrier related to it so as to improve patient health. Our study found that the participants had good knowledge, (67.4%) said that exercise benefit general wellbeing, the majority (79%) said that exercise increase bone mineral density but only (22.4%) know the recommended way to do exercise. The majority (53%) agree that they need doctor examination before the start of exercise program.

Regarding the attitude there was positive attitude regarding physical activity, the majority (69.5%) enjoyed doing exercise, (76.9%) took part in some form of physical activity like walking and (65%) said they feel not getting enough exercise. Most participants (52.4%) felt that they had not received enough information about physical activity from their doctor and (41%) said that walking or using treadmill was the exercise that they consider.

As regards the practice; (43%) of patricians did light housework at home and more than half (53.4%) uses car for transportation. The majority of subjects (60%) do exercise 3 or 4 times per week, (33.7%) take 10 minutes for exercise, (31.6%) 15 to 20 minutes.

According to type of exercise; We found that the majority of cases (63.3%) did not do any type of exercise followed by 29.7% do aerobic exercise, other types like stretch exercise, balance exercise and weight lifting reported by low percentages.

A review of 15 qualitative and 29 quantitative studies on barriers and motivators to general PA among older adults indicated that health concerns were the most prominent factor influencing PA engagement [20]. Apart from health impediments and motivators, other prominent factors associated with general PA have included fear of injury or pain, self-motivation, lack of time, enjoyment of PA, social support, neighborhood conditions, weather, expense, accessibility and convenience of classes and facilities, and characteristics related to self-efficacy, such as confidence, expectations, perceived support, and affective responses related to PA [20, 21,22]. In accordance to this our study found that majority (52.1%) of participants found the barrier not to do physical activity and exercise is feeling pain or fatigue followed by chronic health diseases (31.1%), insufficient time (27.1%) and the least barrier not to do physical activity and exercise is being obese

(2.1%) and (2.6%) of the participants found no identifying barrier to do physical activity and exercise.

Multivariate analysis showed that age, education, being not smoker chronic health problems, were significantly associated with physical activity.

In agreement to our results, in Makkah city in Kingdom of Saudi Arabia (KSA), another study revealed that Most of the subjects had appropriable knowledge about the importance of physical activity and risk factors of physical inactivity, the attitude of the subjects was positive among most of them toward regular physical exercise but, the level of practice was insufficient among most of the respondents regarding sports practice [23]. In South Africa, another study carried out among three hundred and ninety residents (65 years and older) reported that the participants had a good general knowledge of the influence of physical activity on life quality, but had less knowledge of the influence of exercise on cholesterol, diabetes, and hypertension. Most of the participants (80.5%) enjoyed exercising and 60% had a positive attitude towards exercise, (62.8%) of participants felt that they had not received enough information about physical activity from their doctor, few participants (3.8%) took part in prescribed exercise programmers and the majority expressed limited interest in all type of exercise which agree with our study [24]. Another study conducted in UK revealed that almost half (53%) of participants had good knowledge of physical activity guide [25]. However, another study conducted among 590 cases in Harar town, eastern Ethiopia reported that only 27% of participants had good knowledge of the physical activity guidelines this refer to very low knowledge of the physical activity [26]. In study conducted by Abozaid, approximately 54% of the participants were physically active and similar to our results multivariate analysis showed that age, occupation, chronic health problems, and fear of criticism were significantly associated with practicing physical activity [27].

Our study found that educated participants are more physically active compared to lower education levels. This is in accordance with Al-Refaee and Al-Hazzaa [28] and data from the USA National Health Interview survey.

Our study reported that the more the bigger the age the more knowledge was found. In Canada and Finland, similar curvilinear trends between physical activity and age were found. In Canada and Finland, older people may have enough time to exercise,

facilities are available, and the general cultural, and environmental factors are encouraging [29, 30].

Our study found that feeling pain or fatigue was ranked first among barriers against physical activity, followed by chronic health condition and lastly the being obese. On the other hand, Al-Refae and Al-Hazza found time constraint as the major factor contributing to inactivity, then lack of facility, followed by health conditions [28]. Also, they reported a curvilinear relationship between age and inactivity among Saudi patients in Riyadh, with the middle age group least active in addition to the hot environment, which is not encouraging for outdoor activities. Moreover, indoor physical activity clubs are relatively expensive and not available especially for female [28].

Explanation of our finding of the study concerning the participants' lack of medical knowledge could be due to insufficient communication between doctor and patient. Also, Saudi Arabian culture does not allow women to undertake outdoor physical activities, and related facilities for women are lacking. The majority of participants are ill people, this may reflect the reason behind not practicing exercises, and to the finding that most of the old participants may be retired or not working.

Some of the limitations of our study included we were unable to test the credibility of the participant's answers. Furthermore, recruiting the subjects from the hospital and chronic disease clinics only it limits the generalizability of the finding to the healthy elderly in the community. Short and limited time to complete the study is another limitation.

However, the current study is a trial to understand the pattern of physical activity and the barrier among patients attending either physical therapy clinic in Dammam city or chronic disease clinics in Qatif city, Saudi Arabia. It revealed that major efforts are required to encourage, facilitate, and educate our patients and the community as a whole regarding the ultimate importance of exercise and being physically active. There is an urgent need for a national strategy promoting active living and reducing sedentary behavior among the elderly in SA.

CONCLUSION:

Our study concluded that the participants had a good general knowledge of the influence of physical activity on quality of life.

Most participants took part in some form of physical activity (walking).

Multivariate analyses showed that age, education, being not smoker and chronic health problems, were significantly associated with physical activity. The most common barrier to do physical activity and exercise was feeling pain or fatigue.

In general, the participants had a positive attitude towards physical activity. This can be improved by motivation from health care workers, family members, friends and, the media.

Every exercise program has to be tailored to the individual through multidisciplinary teamwork. Health care workers must take this into account when giving exercising information to the elderly.

Elderly people who do not exercise because of a specific health problem may be motivated to exercise in a way that improves their quality of life.

Future research could concentrate on training health care workers to promote exercise participation in an achievable way for an elderly population.

Our study recommended the government to make governmental women's clubs and increase the number of walking tracks to give them the chance to practice more exercise.

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