

## Why Do People Exercise? A Cross-Sectional Study in Buraydah, Saudi Arabia

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### ABSTRACT

**Objectives:** The aim of the study was to identify the exercise motivators among regularly exercising individuals and compare different motivators with their, age, gender, educational level, chronic disease and marital status.

**Methods:** An observational descriptive cross-sectional study which includes 385 participants, who are 18 years or older and exercising regularly for at least 1 month, interviewed from public walking tracks through a well-structured questionnaire. Data were analyzed using SPSS version 21.

**Results:** A total sample of 385 participants (60.5% were males and 39.5% were females). Age groups were from 18 – 30 years old (44.7%), (29.1%) were 31 – 40 years old, (16.1%) were 41 – 50 years old while (7.5%) were 51 – 60 old and only (2.6%) were more than 60 years old and found that the motivations of young participants (18-30 years) were “lose weight” and “fitness”, while the most motivations of older participants (51-60 years) were “treat/prevent chronic disease” and “fitness”. On the other hand, the most motivator for exercise among female was “lose weight”, while in male, they were motivated by “fitness”. We found that 68 (17.7%) of the participants were having chronic disease, 38 (50.0%) of them

were motivated to treat their chronic disease with p-value of <0.005.

**Conclusion:** We found that the most frequent overall motivating factor among regularly exercising individuals in Buraydah, Saudi Arabia was “fitness” followed by “lose weight” and a significant relationship between exercise motivators with demographic data and chronic disease.

**Key Words:** Exercise Motivators, Physical Activity, Prevention.

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### INTRODUCTION

Physical activity (PA) is defined as “any bodily movement produced by contractions of skeletal muscles that increases energy expenditure above the basal level”.<sup>1</sup> It has been recommended by The American Heart Association (AHA) that all healthy adults aged 18 to 65 years need moderate-intensity aerobic physical activity, exemplified by brisk walk and noticeably acceleration of the heart rate, for a minimum of 30 minutes on five days each week or vigorous-intensity aerobic physical activity, exemplified by jogging that result in rapid breathing and a substantial increase in heart rate, for a minimum of 20 minutes on three days each week.<sup>2</sup>

The prevalence of physical inactivity worldwide has tremendously increased<sup>3</sup> and is estimated to be 21.4%<sup>4</sup>; while in Saudi Arabia, a few number of studies among adults and children estimated the prevalence to range from 43% to as high as 99%.<sup>5</sup> On the other hand, a local study found that 19% of Saudi population in Riyadh were in regular exercise.<sup>1</sup> Physical activity has scientifically been proven that it improves quality of life, sleep and stress among all

age groups<sup>6</sup> and is considered as an important factor in minimizing the risk of developing non-communicable diseases such as obesity, cardiovascular diseases, diabetes, depression and certain cancers.<sup>7</sup>

Generally, participation in regular physical activity and the motivation for physical activity remains an important obstacle. The motivation level exceedingly varies among people, ranging from absence of any form of motivation to engage in physical activity to an inherited intrinsic motivation.<sup>8</sup> Self-determination theory (SDT) sets a framework for examining physical activity motivation. It includes amotivation, non-self-determined extrinsic motivation, self-determined extrinsic motivation, and intrinsic motivation.<sup>9</sup> Another framework is the stage-of-change where one is categorized by stage in relation to their health behavior, physical activity, and that the stage determines their current behavior and future intention of one’s behavior. The stages of physical activity behavior include precontemplation (no physical activity, and no intention to change), contemplation (no physical activity but some

intention to change), determination (there is physical activity but not meeting guidelines), willpower (there is physical activity meeting guidelines but less than 6 months), maintenance (there is physical activity meeting guidelines and more than 6 months).<sup>9</sup>

A study was done to describe the motivation for physical activity among South Asian population living in Canada, a random sample of 204 adult, the most motivators among male are prevention and minimizing of disease as well as watching others perform, while the most motivators among women are decreasing weight gain and looking like others.<sup>10</sup> Other studies stated that women are more likely to report higher level of non-self-determined extrinsic motives to body image and appearance.<sup>11</sup> While in a study involving 299 females and 164 males found that the motivation for exercise was decreasing weight are more in females compared to males.<sup>12</sup>

In regards to natural motivators, a study conducted in Norway of 2168 participants compared exercise in natural environment with gym- and sport-based exercise. They found that the reason why people exercise in natural environment is to become convenient followed by experiencing the nature. While gym- and sport-based exercise report that the motives are physical health and sociability.<sup>13</sup>

Educational status might influence on the motivator of physical activity where a study was done on Brazilian adults to describe the motives for physical activity and found that the health and fitness are the most important motives among educated participants.<sup>14</sup>

An observational study of 255 participants found that the engagement in exercise among young adults was for interpersonal motives, while middle age is for body-related motivates and psychological motives.<sup>15</sup>

In the presenting study, we aim to identify what motivate people to exercise and this identification would help us to use these motivators to arouse and energize physically inactive individuals to minimize the risk of developing serious morbid diseases.

**METHODOLOGY**

The study was approved by Institutional Review Board (IRB) of Qassim Ethical Committee. An observational descriptive cross-sectional study which was held at nine walking tracks in Buraydah city, Saudi Arabia between 25th of April to 25th of May 2018. The study involved 385 participants interviewed in the walking tracks of Buraydah city selected by convenient sampling with a verbal consent taken from every participants which includes Saudi, both genders, older than 18 years and only regularly exercising individuals for at least one month or more duration. The study aimed to determine the motivators for regularly exercising individuals in Buraydah city and compare different motivators by gender, age, educational level, chronic disease and marital status. We interviewed with the participants using a well-structured questionnaire that inquire different domains: demographic data (age, gender, occupation, income, educational level, marital status), exercise behaviours, health status, motivation factors and the preferred type of attraction in the walking track. We asked an open-ended question about the single most important motivating factor for exercise and we grouped their answers into different categories plus rating other preformed motivators by strongly agree, agree, neutral, disagree and strongly disagree scale.

According to General Authority of Statistics in Saudi Arabia (2012) that the total population of Saudi people who lives in Buraydah city

is 466349 and nearly (23%) 108000 of them were exercising regularly once a week according to General Sports Authority 2018 screening program. Based upon these statistics the sample size is estimated with confidence interval of 95% and a margin of error 5%, calculated as follow:

$$\begin{aligned} \text{Sample size} &= (Z\text{-score})^2 * SD^2 * (1-SD) / (\text{margin of error})^2 \\ &= ((1.96)^2 * 0.5 * (1-0.5)) / (0.05)^2 \\ &= (3.8416 * 0.25) / 0.0025 \\ &= 0.9604 / 0.0025 \\ &= 384.16 \end{aligned}$$

The data analysis performed by using Statistical Packages for Social Sciences (SPSS) version 21 where both descriptive and inferential statistics had been conducted. P-value of  $\leq 0.05$  had been accepted as significance level for all statistical tests. All categorical variables presented in tables had been summarized as counts and proportions (%). In the relationships tables presented at table 4, chi square test had been applied where p-values had been presented as well which indicates whether the association is statistically significant.

**Table 1: Descriptive Analysis for Socio-demographic characteristics**

Study Variables	N (%) (n=385)
<b>Age group in years</b>	
• 18 – 30 years old	172 (44.7%)
• 31 – 40 years old	112 (29.1%)
• 41 – 50 years old	62 (16.1%)
• 51 – 60 years old	29 (07.5%)
• >60 years old	10 (02.6%)
<b>Gender</b>	
• Male	233 (60.5%)
• Female	152 (39.5%)
<b>Occupation</b>	
• No occupation	160 (17.1%)
• Education sector	100 (26.0%)
• Free business	23 (06.0%)
• Health sector	42 (10.9%)
• Private sector	38 (09.9%)
• Retired	22 (05.7%)
<b>Educational level</b>	
• Illiterate	06 (01.6%)
• Primary school	13 (03.4%)
• Secondary school	24 (06.2%)
• High school	127 (33.0%)
• Diploma	30 (07.8%)
• Bachelor	164 (42.6%)
• Master or doctorate	21 (05.5%)
<b>Monthly income in SAR</b>	
• No income	66 (17.1%)
• <3,000	61 (15.8%)
• 3,000 – 10,000	85 (22.1%)
• >10,000	91 (23.6%)
• Undeclared	82 (21.3%)
<b>Marital Status</b>	
• Single	147 (38.2%)
• Married	231 (60.0%)
• Divorced	05 (01.3%)
• Widowed	02 (0.5%)

**Table 2: Participants' Exercise behavior**

Study variables	N (%) (n=385)
<b>Duration of exercise</b>	
• 1 - <3 months	133 (34.5%)
• 3 – 6 months	57 (14.8%)
• >6 months	195 (50.6%)
<b>Frequency of exercise</b>	
• Daily	101 (26.2%)
• 4 – 6 times per week	112 (29.1%)
• 2 – 3 times per week	106 (27.5%)
• Weekly	66 (17.1%)
<b>Time spent per exercise</b>	
• <30 minutes	87 (22.6%)
• 30 – 59 minutes	185 (48.1%)
• 1 – 2 hours	106 (27.5%)
• >2 hours	07 (01.8%)
<b>How did you reach walking track?</b>	
• By car	337 (87.5%)
• Walking	48 (12.5%)
<b>Exercise preference</b>	
• Single	231 (60.0%)
• Accompanied	154 (40.0%)

**Table 3: Participants' Health Status**

Study variables	N (%) (n=385)
<b>Chronic disease</b>	
• Yes	68 (17.7%)
• No	317 (82.3%)
<b>Type of chronic disease</b>	
• Diabetes Mellitus	25 (36.8%)
• Hypertension	16 (23.5%)
• Dyslipidemia	12 (17.6%)
• DM and HTN	08 (11.8%)
• DM and Dyslipidemia	04 (05.9%)
• HTN and Dyslipidemia	03 (04.4%)
<b>Smoking</b>	
• Yes	55 (14.3%)
• No	330 (85.7%)

**RESULTS**

Table 1 presented the socio demographic characteristics of participants. Numbers and percentages were used to summarize all categorical variables of three hundred and eighty-five participants who were voluntarily enrolled in this study.

Table 2 shows participants' exercise behavior where numbers and percentages were used to presents all categorical variables of 385 participants. Half of the participants (50.6%) were doing exercise for more than 6 months. Regarding the frequency of exercise, the majority of participants 112 (29.1%) had 4 – 6 times per week with duration of 30 – 59 minutes. We found that 337 (87.5%) used their cars to reach walking track while 48 (12.5%) preferred walking to reach walking track. More than a half of the participants prefer to exercise alone in the walking tracks with 231 (60.0%) on the other hand, 154 (40.0%) of them prefer an accompany in the walking track.

In the table 3 it presented the health status of 385 participants. 68 (17.7%) of the participants were having chronic disease. Among those participants with chronic disease, 36.8% of them were having Diabetes Mellitus (DM), 23.5 percent were having hypertension (HTN), 17.6 percent were having dyslipidemia, 11.8 percent were having both DM and HTN, 5.9 percent were having both DM and dyslipidemia and 4.4 percent were having both HTN and dyslipidemia. Few of them were smoker with 55 (14.3%) and 330 (85.7%) were non-smoker.

Figure 1 shows the distribution of exercise motivator, based on the result it shows, 131 (34.0%) were inspired to maintain fitness, 124 (32.2%) were motivated to lose weight, 76 (19.7%) were encouraged to changed routine and 25 (06.5%) were swayed to improved appearance

Figure 2 elaborated the preferred type of attraction in walking tracks by the participants. Based on their preference, it was revealed that 74 percent of them likes green grass, 64.4 percent likes large walking tracks, 58.5 percent likes that the walking track to be near the house, 54.3 percent like trees, 38.8 percent likes more people in the walking the track, 19.4 percent likes children playground facilities, 18 percent likes fountain and 13.1 percent likes sport facilities.

**Figure 1: Distribution of Exercise motivator**

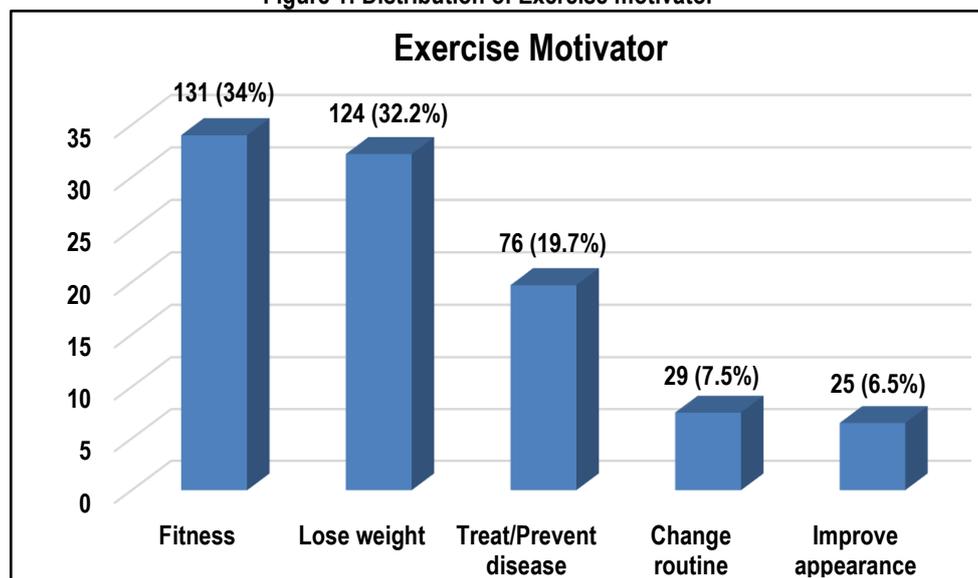


Figure 2: Distribution of type of attraction

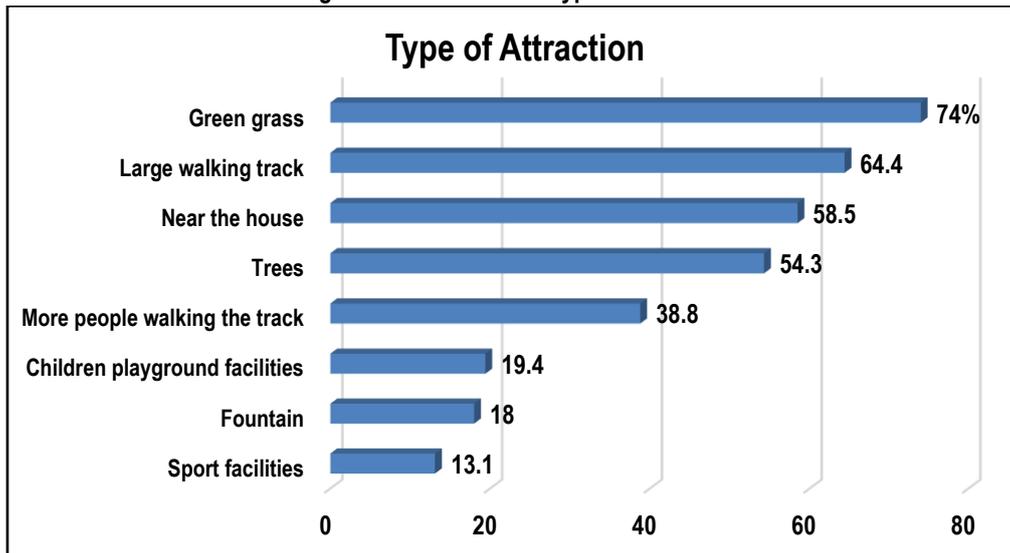


Table 4: Perception about preformed Exercise motivators (n=385)

Statement	Strongly Agree N (%)	Agree N (%)	Neutral N (%)	Disagree N (%)	Strongly Disagree N (%)
1. To get optimal weight	231 (60.0%)	92 (23.9%)	30 (07.8%)	18 (04.7%)	14 (03.6%)
2. To treat chronic disease *	50 (73.5%)	15 (22.1%)	02 (02.9%)	01 (01.5%)	0
3. To improve mood	204 (53.0%)	119 (30.9%)	20 (05.2%)	12 (03.1%)	30 (07.8%)
4. To compete other	48 (12.5%)	49 (12.7%)	53 (13.8%)	92 (23.9%)	143 (37.1%)
5. To get married soon	20 (05.2%)	38 (09.9%)	56 (14.5%)	79 (20.5%)	192 (49.9%)
6. To stay healthy	284 (73.8%)	89 (23.1%)	04 (01.0%)	05 (01.3%)	03 (0.8%)
7. To reduce anxiety	192 (49.9%)	118 (30.6%)	28 (07.3%)	19 (04.9%)	28 (07.3%)
8. To improve fitness	249 (64.7%)	109 (28.3%)	18 (04.7%)	03 (0.8%)	06 (01.6%)
9. Change routine	123 (31.9%)	115 (29.9%)	62 (16.1%)	38 (09.9%)	47 (12.2%)
10. Physician advised	97 (25.2%)	50 (13.0%)	45 (11.7%)	84 (21.8%)	109 (28.3%)
11. To escape daily task	25 (06.5%)	33 (08.6%)	62 (16.1%)	100 (26.0%)	165 (42.9%)
12. To achieve job requirement	07 (01.8%)	05 (01.3%)	60 (15.6%)	92 (23.9%)	221 (57.4%)
13. To quit smoking *	24 (43.6%)	08 (14.5%)	08 (14.5%)	01 (01.8%)	14 (25.5%)

\* Excluded not applicable cases. Answered by chronic disease and/or smokers participants.

We applied chi-square test at tables 5,6 and 7 to determine the relationship between exercise motivator and participants' socio demographic, exercise behaviors and health characteristics with p-values which indicates whether the relationship is statistically significant. These tables compare the five predictors of exercise motivators; fitness, treat/prevent disease, lose weight improve appearance and change routine against each socio demographic, health and exercise characteristics. Age group in 18 – 30 years old were more motivated to do exercise compared to other age group. Analysis revealed that age group in years shows positive association with the exercise motivator ( $p < 0.001$ ). Regarding gender, males were predominantly physically active more than females with the exception of lose weight and the result shows gender is strongly associated with exercise motivator ( $p < 0.001$ ). As expected, participants without occupation demonstrated their best interest in physical exercise among 4 predictors with the exception of fitness where education sector were slightly higher than the other categories. It was revealed that occupation shows significant relationship ( $p < 0.001$ ). Educational level shows positively associated with exercise motivation where bachelor

shows physically active in fitness and treat/prevent disease while diploma demonstrated active exercise motivator on lose weight, improve appearance and change routine. For monthly income, those participants who earns 3,000 – 10,000 SAR were more exercise motivated compared to other monthly earners among the 3 predictors with the exclusion of those participants who earned more than 10,000 where they motivated in fitness and those participants who earns less than 3,000 where they motivated in change routine. It was also revealed that monthly income is statistically significant ( $p < 0.001$ ). Married participants were more interested in fitness and treat/prevent disease while single participants were slight higher in lose weight, improve appearance and change routine. Marital status also shows significant relationship ( $p < 0.001$ ). Those participants who were doing exercise for more than 6 months were exhibited activeness in fitness, treat/prevent disease and improve appearance while those participants whose doing exercise for 1 month to less than 3 months were more interested in losing weight and change routine. Chi-square test revealed that duration of exercise shows significant difference ( $p < 0.001$ ). Moreover, participants whose

doing exercise daily were physically active in treat/prevent disease, improve appearance and change routine while fitness were liked by participants whose doing exercise 2 -3 and 4 – 6 times per week, and change routine were related to those participants whose doing exercise weekly. Frequency of exercise illustrates strong relationship with the exercise motivators (p=0.015). Time spent per exercise shows a significant association with the exercise motivator (p=0.002) where majority of participants in 30 – 59 minutes of exercise were physically motivated among 4 exercise motivators with the exception of improve appearance where the group of participants in 1 – 2 hours' exercise preferred this type of exercise motivator. Interestingly, those participants who reached walking track by car

were predominantly high among all exercise motivator, however this variable shows no significant relationship with the outcome variable (p=0.237). Participants who exercise alone were higher in all four predictors with the exception of change routine where participants with accompany were slightly higher than the latter. It was also revealed that exercise preference has strong association with the exercise motivator (p=0.011). A strong relationship was identified between chronic disease status and exercise motivator (p<0.001) where those participants without diseases were significantly physically active than those participants with chronic disease. Smokers were significantly less motivated to do exercise than those non-smokers and it shows no significant relationship in the outcome interest.

**Table 5: Relationship between exercise motivator and participants' socio demographic data:**

Study Variables	Fitness N (%)	Treat/Prevent Disease N (%)	Lose weight N (%)	Improve appearance N (%)	Change routine N (%)	P-value §
<b>Age group in years</b>						
• 18 – 30 years old	50 (38.2%)	20 (26.3%)	69 (55.6%)	14 (56.0%)	19 (65.5%)	<0.001 **
• 31 – 40 years old	45 (34.4%)	17 (22.4%)	39 (31.5%)	08 (32.0%)	03 (10.3%)	
• 41 – 50 years old	22 (16.8%)	19 (25.0%)	12 (09.7%)	03 (12.0%)	06 (20.7%)	
• 51 – 60 years old	11 (08.4%)	15 (19.7%)	03 (02.4%)	0	0	
• >60 years old	03 (02.3%)	05 (06.6%)	01 (0.8%)	0	01 (03.4%)	
<b>Gender</b>						
• Male	96 (73.3%)	46 (60.5%)	54 (43.5%)	19 (76.0%)	18 (62.1%)	<0.001 **
• Female	35 (26.7%)	30 (39.5%)	70 (56.5%)	06 (24.0%)	11 (37.9%)	
<b>Occupation</b>						
• No occupation	43 (32.8%)	28 (36.8%)	62 (50.0%)	10 (40.0%)	17 (58.6%)	0.001 **
• Education sector	47 (35.9%)	22 (28.9%)	22 (17.7%)	05 (20.0%)	04 (13.8%)	
• Free business	09 (06.9%)	01 (01.3%)	10 (08.1%)	01 (04.0%)	02 (06.9%)	
• Health sector	13 (09.9%)	10 (13.2%)	09 (07.3%)	07 (28.0%)	03 (10.3%)	
• Private sector	11 (08.4%)	05 (06.6%)	18 (14.5%)	02 (08.0%)	02 (06.9%)	
• Retired	08 (06.1%)	10 (13.2%)	03 (02.4%)	0	01 (03.4%)	
<b>Educational level</b>						
• Primary school or below	01 (0.8%)	03 (03.9%)	02 (01.6%)	0	0	0.005 **
• Secondary school	01 (0.8%)	04 (05.3%)	05 (04.0%)	0	03 (10.3%)	
• High school	36 (27.5%)	15 (19.7%)	06 (04.8%)	01 (04.0%)	02 (06.9%)	
• Diploma	09 (06.9%)	07 (09.2%)	55 (44.4%)	10 (40.0%)	11 (37.9%)	
• Bachelor	70 (53.4%)	32 (42.1%)	06 (04.8%)	04 (16.0%)	04 (13.8%)	
• Master/Doctorate	09 (06.9%)	05 (06.6%)	46 (37.1%)	08 (32.0%)	01 (03.4%)	
<b>Monthly income (SAR)</b>						
• No income	19 (14.5%)	14 (18.4%)	21 (16.9%)	05 (20.0%)	07 (24.1%)	<0.001 **
• <3,000	19 (14.5%)	11 (14.5%)	20 (16.1%)	03 (12.0%)	08 (27.6%)	
• 3,000 – 10,000	28 (21.4%)	23 (30.3%)	21 (16.9%)	08 (32.0%)	05 (17.2%)	
• >10,000	49 (37.4%)	19 (25.0%)	17 (13.7%)	02 (08.0%)	04 (13.8%)	
• Undeclared	16 (12.2%)	09 (11.8%)	45 (36.3%)	07 (28.0%)	05 (17.2%)	
<b>Marital Status</b>						
• Single	39 (29.8%)	17 (22.4%)	62 (50.0%)	13 (52.0%)	16 (55.2%)	0.001 **
• Married	89 (67.9%)	58 (76.3%)	59 (47.6%)	12 (48.0%)	13 (44.8%)	
• Divorced/Widowed	03 (02.3%)	01 (01.3%)	03 (02.4%)	0	0	

§P-value has been calculated using chi-square test. \*\*Significant at p≤0.05 level.

**Table 6: Relationship between exercise motivators and exercise behaviors:**

Study Variables	Fitness N (%)	Treat/Prevent Disease N (%)	Lose weight N (%)	Improve appearance N (%)	Change routine N (%)	P-value §
<b>Duration of exercise</b>						
• 1 - <3 months	31 (23.7%)	19 (25.0%)	63 (50.8%)	04 (16.0%)	16 (55.2%)	<0.001 **
• 3 – 6 months	15 (11.5%)	10 (13.2%)	21 (16.9%)	06 (24.0%)	05 (17.2%)	
• >6 months	85 (64.9%)	47 (61.8%)	40 (32.3%)	15 (60.0%)	08 (27.6%)	
<b>Frequency of exercise</b>						
• Daily	27 (20.6%)	25 (32.9%)	34 (27.4%)	09 (36.0%)	06 (20.7%)	0.015 **
• 4 – 6 times per week	43 (32.8%)	23 (30.3%)	30 (24.2%)	10 (40.0%)	06 (20.7%)	
• 2 – 3 times per week	43 (32.8%)	20 (26.3%)	32 (25.8%)	05 (20.0%)	06 (20.7%)	
• Weekly	18 (13.7%)	08 (10.5%)	28 (22.6%)	01 (04.0%)	11 (37.9%)	
<b>Time spent per exercise</b>						
• <30 minutes	28 (21.4%)	17 (22.4%)	30 (24.2%)	02 (08.0%)	10 (34.5%)	0.002 **
• 30 – 59 minutes	68 (51.9%)	31 (40.8%)	62 (50.0%)	09 (36.0%)	15 (51.7%)	
• 1 – 2 hours	32 (24.4%)	28 (36.8%)	31 (25.0%)	11 (44.0%)	04 (13.8%)	
• >2 hours	03 (02.3%)	0	01 (0.8%)	03 (12.0%)	0	
<b>How did you reach walking track?</b>						
• By car	116(88.5%)	65 (85.5%)	113 (91.1%)	19 (76.0%)	24 (82.8%)	0.237
• Walking	15 (11.5%)	11 (14.5%)	11 (08.9%)	06 (24.0%)	05 (17.2%)	
<b>Exercise preference</b>						
• Single	81 (61.8%)	57 (75.0%)	65 (52.4%)	15 (60.0%)	13 (44.8%)	0.011 **
• Accompanied	50 (38.2%)	19 (25.0%)	59 (47.6%)	10 (40.0%)	16 (55.2%)	

**Table 7: Relationship between exercise motivator and health status characteristics:**

Study Variables	Fitness N (%)	Treat/Prevent Disease N (%)	Lose weight N (%)	Improve appearance N (%)	Change routine N (%)	P-value §
<b>Chronic disease</b>						
• Yes	15 (11.5%)	38 (50.0%)	12 (09.7%)	03 (12.0%)	0	<0.001 **
• No	116 (88.5%)	38 (50.0%)	112 (90.3%)	22 (88.0%)	29 (100%)	
<b>Smoking</b>						
• Yes	18 (13.7%)	12 (15.8%)	19 (15.3%)	03 (12.0%)	03 (10.3%)	0.944
• No	113 (86.3%)	64 (84.2%)	105 (84.7%)	22 (88.0%)	26 (89.7%)	

§P-value has been calculated using chi-square test.

**DISCUSSION**

This study demonstrates different exercise motivators and the relationship on its individual socio demographic factors along with health and exercise characteristics. In our paper, we identified five common exercise motivators such as fitness, lose weight, treat/prevent disease, change routine and improve appearance were majority of the participants had chosen fitness as their top exercise motivator with 34 percent. 32.2 percent selected lose weight, 19.7 percent picked treat/prevent disease, 7.5 percent indicated change routine and a relatively low percentage (6.5%) preferred improve appearance. We believe that this is the first paper to present this type of study findings where we measure these 5 indicators against each individual characteristic. Findings in our study shows, younger participants were physically active than the older group and the age group in years was statistically associated with the exercise motivators. Male was predominantly

active in exercise than female with gender shows positive relationship with the outcome variable. Unemployed, arrived by car, exercise alone, participants without chronic disease and non-smoker were all positively higher in 5 predictors in comparison to their counterparts. However, smoking and manner of reaching track shows negative relationship to exercise motivator. Educational level, monthly income, marital status, duration of exercise, frequency of exercise, time spends per exercise all these characteristics exemplified strong relationship on exercise motivator.

A group of researchers from Abha, Saudi Arabia published an article regarding risk factors for physical inactivity in Saudi Arabia.<sup>16</sup> In their findings, age group 30-44 years had the highest proportion of high physical activity (27%), compared with the younger and older age groups. Educational level was a significant variable related to grading of physical activity. Those who had

secondary/diploma levels of education had the highest proportion of high physical activity (13.3%), compared with participants with other levels of education. Occupation was a significant variable related to grading of physical activity. Those who are governmentally employed had the highest proportion of high physical activity (20.8%), compared with participants with other occupations. Marital status was a significant variable related to grading of physical activity. Those who were married had the highest proportion of high physical activity (13.8%), compared with single participants. Cigarette smoking was not a significant variable related to grading of physical activity. There was no difference between smokers and nonsmokers regarding their grade of physical activity. Monthly income was a significant variable related to grading of physical activity. Those who had a monthly income exceeding 10,000 SR had the highest proportion of high physical activity (22.2%), compared with participants with less monthly income. These study findings were somewhat different from our results, where younger age (18 – 30 years old) was more active in our study. Unlike the above study, our study exhibited significant association in age group, educational level, occupation, marital status and monthly income though in smoking status both of our projects displayed similar findings with negative association on physical activity. Another study published from Riyadh where an investigator assessed the level of physical activity of physician among resident training program.<sup>1</sup> He found out that high physical activity level was higher among male physicians compared to female physicians and the association was statistically significant whereas smoking history of the resident was not significantly associated with their physical activity. This study finding was symmetrical to our study reports although overall, our study provided more significant association than the previous mentioned paper. In Central Saudi Arabia, they reported that among socio demographic characteristics included in the test, gender was the only significant variable related to physical activity.<sup>6</sup> These study findings were significantly less than our study finding although this could be varied on the methodology part of each study. Another published study conducted in Riyadh shows, males were slightly higher in physical activity compared to females which shows not statistically significant.<sup>17</sup> They further reported that, younger age (18 – 29 years old), married, graduate degree, non-smoker and participants without chronic disease were also more active in physical exercise. However, their statistical tests show only smoking had indicated strong relationship. In our view, our study findings were in comparable to the above studies from central Saudi Arabia and it is attested from results section of our study.

A group of authors from Denmark, investigated how motives to exercise varied according to gender, age education, body mass index (BMI) and level of physical activity in a large population of physically active individuals.<sup>18</sup> According to their report, participants were motivated to exercise to get or stay fit, losing weight, unwinding, socializing and having fun. Among both men and women, a low activity level was positively associated with being motivated by weight loss and negatively associated with getting or staying fit compared to those with a moderate to vigorous physical activity level. These study findings were in congruent to our results where we identified exercise motivator in similar manner. Although they compared their findings among gender, nonetheless our report exhibited substantial data on its

association. In Germany, a group of investigators provided an insight about physical exercise in southern part of the country in an urban population.<sup>19</sup> They reported that, high physical exercise was significantly more prevalent among men compared with women. They further elaborated that, there was a strong association was identified between physical exercise and level of educational achievement. Meanwhile they failed to prove that smokers were significantly associated with physical exercise. These outputs were in parallel with our study results which demonstrated that we need to encourage women for regular exercise. Furthermore, Chinese researchers presented in their study that, older age and being unemployed (including retired and never employed) were positively associated with participation in exercise/sports.<sup>20</sup> They also observed that, women who had never been married were less likely to exercise regularly or to expend energy in daily activities and housework. Chronic disease history was positively associated with exercise/sports. They also could not prove the association between cigarette smoking and regular exercise. This study results were also in proportionate with our project findings. In general, many articles exhibited the same study outcome in terms of physical activity, exercise motivation and the likes. Our study findings which provide additional insights of this consortium will be in supplemental support from all of the articles who tackles this study discipline.

## CONCLUSION

This study identified a unique pattern on motivation to exercise such as physical fitness, treat/prevent disease, lose weight, improve appearance and change routine where majority of individuals find physical fitness as the best motivator to engage in physical exercise. The younger age was more physical fitness enthusiast compared to older age group however it has shown decrease of interest as the level of age increased. Male was predominantly physically active in exercise than female. Concerning this, the prospective of promoting physical exercise especially among women is highly encourage. Adults individual should devote an extra time to engage in physical activity to maintain healthy lifestyle living.

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