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Life-style factors and health related quality of life among young adult males

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Abstract

Background: The valid and appropriate indicator of public health, which has been highly acknowledged is the health related quality of life (HRQOL). However there is scarcity of data regarding the life-style factors and HRQOL among the young adult males. The aim of the present study was to explore the association of HRQOL with the various life-style factors.

Methods: A cross sectional study was conducted to investigate the HRQOL of 750 college going adult male's using simple random sampling method. Independent samples t-test, one way ANOVA and multiple stepwise regression were used to analyze the life-style factors which influence the HRQOL among young adults.

Results: There were significant differences between the life-style factors such as smoking, screen based media, having breakfast, sleeping time and daily life physical activity and among the physical component summary (PCS), mental component summary (MCS) and total health scores (THS) as shown by the univariate analysis ($P < 0.005$). Multiple stepwise regression showed that there were significant differences between HRQOL and the various life-style patterns ($p < 0.005$).

Conclusion: In the present study using SF-36 instrument and IPAQ long form, we assessed the relationship between HRQOL and life-style factors which include daily life physical activity, smoking, screen based media, having breakfast and sleep time. The results indicate that life-style factors affect the HRQOL among the young adults.

Keywords: HRQOL, SF-36, IPAQ, lifestyle, young adult males

1. Introduction

Health has been defined as a state of complete mental, physical and social-wellbeing and not merely the absence of disease or infirmity by the WHO [1]. It is rightly said that the wealth of a nation resides in the health of its citizens. No doubt modernization and technological advancements have raised our standard of living but at the same time offers a sedentary life style which is destroying the good conditions of a human body [2]. However the standard of living should not be confused with the quality of life. Quality of life is a general well-being of individuals and societies whereas standard of living is primarily based on economic conditions. Quality of life is defined by the WHO as the living conditions associated with the standards, expectations, corresponding goals and concerns of each individual under various cultural and social set-ups [3, 4]. The quality of life is mainly measured by using the rating scales. The Medical Outcomes Short Form health survey (SF-36) instrument is a widely used generic HRQOL consisting of 36 questions. The SF-36 instrument measures health in eight dimensions; physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional and mental health [5]. HRQOL is defined as the overall impact of a medical condition on the physical, mental and social well-being of an individual [6]. Research of recent time has a goal to test the strategies so as to improve the HRQOL in general population, such as increased physical activity. Although there is scarcity of data on HRQOL from physical activity interventions especially on adults [7].

Doing physical activity on a regular basis is an important factor for the prevention of non-communicable diseases (NCD's) [8] such as coronary artery disease (CAD) cancers, diabetes and stroke of various types. Physical activity provides both physiological as well as psychological benefits to individuals of various age groups [9]. Walking, moderate and vigorous activities during house hold works, transportation and leisure time pursuits contribute

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to better levels of body weight and fitness as well [10]. Research shows that physical activity like walking during transportation reduces the risk of mortality caused by stroke and NCD's [11, 12].

Several aspects of quality of life are associated with the regular physical activity and this association has been consistently reported in the literature [13, 14, 15]. However there is limited evidence available about the relationship between life style factors and physical activity intensity with specific dimensions of HRQOL among adult males. The present study assessed the association between DLPA, lifestyle factors and HRQOL. In this study we aimed to explore the self-reported HRQOL among young adult males using the SF-36 instrument; association between DLPA and HRQOL and the impact of life style factors such smoking, use of SBM, having breakfast and sleep time on HRQOL. The information gathered on the issue can provide important information for researchers, health care professionals, educational administrators and policy makers to provide appropriate interventions for the improvement of HRQOL among young male adults.

2. Materials and Methods

A cross sectional survey of a random sample of young male adults selected from five different regions (viz. Pulwama, Shopian, Srinagar, Ganderbal and Baramulla) of the Kashmir valley of Jammu & Kashmir state was conducted. Young adult males in the present study refer to those who were pursuing their Bachelor's Degree in five different Government Degree Colleges. These five regions represent typical levels in respect of the regions geographical distribution which is South, Central and North Kashmir. These five regions represent the characteristics of different types. Therefore the survey of young adult males from these regions could well represent the HRQOL and DLPA cum life style of young adult males of Kashmir. A total of 750 adults were selected for this study through simple random sampling method, with an average of 150 samples from each college. However only 516 samples were used for the statistical analysis because the data obtained from 54 samples were not complete (Questionnaire left incomplete) and 82 samples does not meet the inclusion criteria. However 98 samples from the target sample size does not respond at all. The inclusion criteria for the study was Physical Activity Readiness Questionnaire (PARQ) framed by the American College of Sports Medicine (ACSM). For the present study the age of adult males ranged between 18-25 years which was confirmed from the admission registers of the respective colleges.

2.1 Measurement tools

A questionnaire survey was conducted during April-November 2015. The questionnaire involved two parts. The first part included IPAQ and some general lifestyle factors. However the sample selected for the study were college going

students, hence the Part I of the IPAQ which is job related physical activity was not taken into consideration. The second part was the HRQOL measurement scale; the SF-36. DLPA was assessed by using the long version of IPAQ. The metabolic equivalents (MET) values were used for measurement. Based on the guidelines for data processing and analysis of the IPAQ the subjects were divided into three groups viz. low level physical activity group (LLPAG means ≥ 600 MET minutes/week which equals to ≥ 150 minutes of moderate activity per week), medium level physical activity group (MLPAG means 601 – 3000 MET minutes/week which equals to 151-750 minutes of moderate activity per week) and high level physical activity group (HLPAG means <3001 MET minutes/week which equals to <751 minutes of moderate activity per week). The part first of the questionnaire also included the life-style factors which are smoking, sleep time, having breakfast and time spent on SBM (SBM).

SF-36 is an instrument containing 36 items which measure the health in 8 dimensions by using a multi-item scale. The eight items are physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional and mental health. These 8 scales were scored from 0 (worst possible health status measured by the questionnaire) to 100 (best possible health status) and the scoring was done with the help of Quality Metrics Health Outcome scoring software version 4.5. The SF-36 is a reliable and validated instrument for the measurement of HRQOL.

2.2 Statistical analysis

The collected data was treated statistically by using the SPSS for windows version 20. The statistical description of frequencies, percentages mean and standard deviation were used for life style parameters. After calculating the descriptive statistics Independent samples t-test and One Way ANOVA was used to assess the group differences with respect to their statistical significance. Additionally multivariate step wise regression was performed to assess the impact of DLPA, smoking, sleep time, time spent on SBM and taking breakfast on HRQOL.

3. Results

3.1 Demographic characteristics of the participants

Total 750 participants were randomly selected and 652 (86.95%) responded to the study. Among them 516 (79.15%) samples were included in the data analysis. Table 1 shows that 119 (23.1%) were 18 years of age, 116 (22.5%) were 19 years of age, 83 (16.1%) were 20 years of age, 27 (5.2%) were 21 years of age, 34 (6.6%) were 23 years of age, 26 (5%) were 24 years of age and 28 (5.4%) were of 25 years age. The table further shows the frequency of the samples based on the DLPA, Smoking, taking breakfast, SBM and sleep time.

Table 1: Frequency distribution of adult males demographical and lifestyle characteristics (N=516)

Factor	Groups	N	%	Factor	Groups	N	%
Age	18	119	23.1%	Taking breakfast	Never	32	6.2%
	19	116	22.5%		Sometimes	112	21.7%
	20	83	16.1%		Often	54	10.5%
	21	83	16.1%		Everyday	318	61.6%
	22	27	5.2%		Total	516	100.0%
	23	34	6.6%	Screen Based Media	Below 1 Hour	96	18.6%
	24	26	5.0%		Below 2 Hours	165	32%
	25	28	5.4%		Below 3 Hours	120	23.3%

Daily Life Physical Activity	Total	516	100.0%	Sleep time	Below 4 Hours	83	16.1%
	Llpag	34	6.6%		More Than 5 Hours	52	10.1%
	Mlpag	154	29.8%		Total	516	100.0%
	Hlpag	328	63.6%		Below 4 Hours	14	2.7%
	Total	516	100.0%		Below 6 Hours	97	18.8%
Smokin g	Smoker	93	18.0%	Below 8 Hours	224	43.4%	
	Non-Smoker	423	82.0%	More Than 8 Hours	136	26.4%	
	Total	516	100.0%	More Than 10 Hours	45	8.7%	

3.2 HRQOL of young college going adult males

Table 2 shows the scores of HRQOL among young college going adult males. The PCS has a mean value of 54.97 with

standard deviation of 5.48, MCS has a mean value of 49.84 with SD of 9.72 and THS has the mean value of 52.39 and SD 6.14.

Table 2: Hrqol of Young Adult Males

Scale	Mean	SD
Physical Component Summary	54.9716	5.48399
Physical Functioning	54.3066	4.51445
Role Playing	50.8864	8.14457
Bodily Pain	56.4756	8.39315
General Health	52.4822	9.27754
Mental Component Summary	49.8312	9.72956
Vitality	57.0142	9.94134
Social Functioning	49.4701	9.34240
Role Emotional	48.7060	9.74218
Mental Health	51.3399	10.86453
Total Health Score	52.3968	6.14548

3.3 Univariate Analysis

Association between life-style factors and HRQOL is shown in table 3. The table shows significant differences ($P < 0.05$) between life-style factors and both PCS and MCS of HRQOL. The smoking group had lower scores than non-smoking group. The scores of the adults who were classified as LLPAG were significantly lower than those of other two groups (MLPAG & HLPAG) and a similar trend was found in the scores who never ate breakfast than those of other groups. The group in which the young adults used less than 4 hours a day on SBM had significantly higher values of PSC & MCS as compared to the group who used more than 5 hours a day for SBM. The group in which the young adults had more than 10 hours of sleep or less than 4 hours of sleep had significantly lower values of PCS & MCS as compared to the

groups who had more than 6 hours and less than 10 hours of sleep a day.

3.4 Multiple step-wise linear regression analysis

The score of SF-36 instrument was used as dependent variable and the life-style factors as independent variable. To analyze the life-style factors that affect the young adult males HRQOL, multiple step-wise linear regression analysis was conducted. The analysis shows that there was a significant difference among PCS, MCS and THS between life-style factors such as smoking, SBM, having breakfast, sleeping time and DLPA in THS, having breakfast, DLPA, SBM and smoking in PCS and smoking, SBM, sleeping time and having breakfast in MCS ($P < 0.05$) see table 4.

Table 3: Association of life-style factors with the PCS, MCS and THS of the HRQOL.

Factors	Groups	Health Related Quality of life					
		PCS Score		MCS score		TH Score	
		Mean	SD	Mean	SD	Mean	SD
Smoking	Smoker	52.90	5.94	44.05	10.77	48.22	7.39
	Non-smoker	55.42	5.27	51.10	9.01	53.31	5.43
	t	4.075		6.581		6.272	
	P	0.000		0.000		0.000	
DLPA	LLPAG	50.80	7.84	42.02	8.86	46.30	6.80
	MLPAG	54.69	5.91	49.74	9.12	52.15	5.86
	HLPAG	55.53	4.75	50.68	9.65	53.13	5.85
	F	12.230		12.758		20.688	
	P	0.000		0.000		0.000	
Taking breakfast	Never	48.70	8.65	40.50	12.38	44.53	8.13
	Sometimes	54.41	5.39	49.77	10.34	52.23	6.69
	Often	53.34	6.49	48.21	9.92	51.27	6.08
	Everyday	56.07	4.30	51.06	8.60	53.43	5.04
	F	22.763		12.825		23.932	
	P	0.000		0.000		0.000	
SBM	>1 hour	55.93	4.11	52.30	7.81	54.23	4.58
	>2 hours	55.35	5.30	50.96	9.61	53.02	6.04
	>3 hours	55.33	5.31	50.62	9.56	53.05	6.01
	>4 hours	54.09	5.96	47.92	8.67	51.38	5.26
	<5 hours	52.53	6.99	42.89	11.76	47.10	7.54

	F	4.261		10.427		14.494	
	p	0.002		0.000		0.000	
Sleeping time	>4 hours	54.45	4.93	49.26	11.93	51.92	7.43
	>6 hours	55.45	5.48	52.49	8.42	54.35	4.98
	>8 hours	55.40	5.00	50.06	9.03	52.70	5.53
	<8 hours	54.90	5.36	50.31	9.57	52.39	6.13
	<10 hours	52.12	7.35	41.63	11.44	46.81	7.70
	F	3.372		10.682		13.040	
p	0.006		0.000		0.000		

4. Discussions

The present study investigates the relationship between life-style factors and HRQOL among a sample of young adult males. The results of the study explored that life-style factors such as smoking, SBM, having breakfast, sleeping time and DLPA have a strong association with the HRQOL of young adults, which means personal habits have an impact on quality of life. Personal living habits can either be good or bad such as smoking, a bad living habit is a major factor causing a decline in HRQOL. The HRQOL decreases in those who are smoking cigarettes frequently and the decline in quality of life is more in those who smoke heavily and for higher durations [16,17]. Smoking is a great threat to human life, and 11% of the total world population dies because of cardiovascular diseases induced by smoking [18]. In this study, the total smoking rate among young college male adults is 18%. Therefore smoking can cause harm to the young adults. The more smoking, the greater damage there is to adult’s health and lowers the HRQOL score.

Inactivity has been linked to obesity among adolescents [19, 20]. Various studies have shown that television viewing, computer use and videogame playing may disrupt the body’s energy balance [21, 22]. Excessive use of computer and sedentariness have an adverse effect on health [23]. Several studies have shown that frequent use of SBM is related to health outcomes, which are related to HRQOL such as reduced psychological well-being [24] and poorer physical health [25]. The present study observed a strong inverse relationship between SBM use and HRQOL among male adults. These findings are in consistent with the studies showing that SBM could be an independent health risk. [24, 25]. The relationship between SBM use among adolescents are not straight forward [26, 27] and association between SBM and health correlates are even less well understood [24]. The findings of this study emphasize to researchers the importance of evaluating SBM use when inquiring about HRQOL. The findings could also contribute for health interventions focused on promoting physical health and reducing the SBM use among adults. Poor eating habits

and irregular lifestyle is closely related to the decline of HRQOL. In the present study some young adults had no breakfast or rarely did so and the proportion of those having breakfast daily was 61.6%. The phenomenon of irregular diet and no breakfast among adults is a serious issue. These results are in line with the findings of previous study [28]. As a basic human need, food intake affects peoples HRQOL [29]. A hungry body may easily lead to dizziness, physical and mental deficiencies, palpitation and so on. Cross sectional and longitudinal studies have shown that regularly skipping the breakfast is associated with greater BMI among all age groups [30, 31, 32] and it can be said that BMI is a good indicator of one’s general health. Taking breakfast on a regular basis is the healthy material guarantee. However the adult males should change bad eating habits, have no food on time and pay attention to a reasonable nutrition as well. Low quality of sleep may affect the immune system, the ability to function and social activities and may have an impact on physical and mental health in HRQOL [33]. Sleep time is closely related to HRQOL [34]. Having a good sleep is important to general health. Physiologically all the body’s vital functions are slowed down, completely at rest so as to recover and accumulate the body’s energy. Sleeping less than 6 hours a day is linked to the occurrence of many diseases and people who sleep more than 8 hours a day show less illness [35]. The present study showed that sleep quality i.e. sleeping for 8-10 hours a day had higher scores of HRQOL as compared to those who sleep less than 6 hours or more than 10 hours per day. This finding is in consistent with the other previous studies [28, 35, 36]. Having sleep for a good time not only maintains the normal physiological functioning of the body but also protects the normal metabolic activities. People having inadequate sleep time may get many negative manifestations such as sleep deprivation, physical discomfort and negative emotions which leads to decline of HRQOL [28]. Therefore young adults should manage the life-style in a manner to ensure adequate sleeping time.

Table 4: Association between the lifestyle factors and HRQOL (Multivariate analysis N= 516)

Scales	Life-style factors	B	SE	β	t	p	95% CI	
THS	Smoke	3.365	.662	.211	5.083	.000	2.065	4.666
	SBM	-.946	.201	-.190	-4.698	.000	-1.342	-.551
	Breakfast	.925	.253	.151	3.654	.000	.428	1.422
	Sleeping	-.894	.268	-.136	-3.339	.001	-1.419	-.368
	DLPA	1.001	.415	.100	2.414	.016	.186	1.815
PCS	Breakfast	1.239	.239	.227	5.176	.000	.769	1.710
	DLPA	.972	.386	.109	2.517	.012	.213	1.732
	SBM	-.420	.190	-.094	-2.208	.028	-.793	-.046
	Smoke	1.238	.621	.087	1.994	.047	.018	2.458
MCS	Smoke	5.182	1.081	.205	4.793	.000	3.058	7.306
	SBM	-1.465	.330	-.186	-4.432	.000	-2.114	-.815
	Sleeping	-1.330	.434	-.128	-3.062	.002	-2.183	-.477
	Breakfast	1.009	.413	.104	2.447	.015	.199	1.820

The evidence regarding the healthy benefits of DLPA is overwhelming and continues to accumulate since ancient times [37, 38]. Regular physical activity has structured and beneficial functional effects on cardiovascular system [39]. Taking part in various types of physical activities can improve the HRQOL, is suggested by the findings of this study. Physical activity can reduce the risk of various heart diseases and ultimately overall mortality [28]. Physical activity influences the most structural components of the musculoskeletal system in a positive way [40] and muscular weakness is the prime factor for a decrease in general health [41]. Besides physiological benefits, DLPA have psychological benefits as well which include relaxation, increased social contact, promotion of positive mental health, psychological well-being and cognition functioning [42]. Physical fitness as a result of physical activity is loosely associated with good health [43]. These benefits of PA allow the physically active person to have physiological, functional, and psychological fitness and consequently higher HRQOL.

5. Conclusions

Despite several limitations like the indirect measurements of physical activity and the fact that the data are all self-reported the present study is the first to provide association of various life-style factors with the HRQOL among young adult males. Although there is need for further research in other parts of the country, all those concerned with the public health are urged to develop and implement effective strategies to increase physical activity and a suitable change in life-style factors so as to improve the HRQOL among young adults based on the findings of this study.

6. Abbreviations

HRQOL: Health Related Quality Of Life.

IPAQ: International Physical Activity Questionnaire.

PCS: Physical Component Summary.

PARQ: Physical Activity Readiness Questionnaire.

MCS: Mental Component Summary.

ACSM: American College of Sports Medicine.

THS: Total Health Scores.

MLPAG: Medium Level Physical Activity Group.

DLPA: Daily Life Physical Activity.

HLPA: High Level Physical Activity Group.

SBM: Screen Based Media.

LLPAG: Low Level Physical Activity Group.

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