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Evaluation of the quality of life among undergraduates of Faculty of Allied Health Sciences, University of Peradeniya

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Abstract

Introduction: Quality of life (QoL) is gaining importance as an important tool to assess the health situations.This current study was carried out to evaluate the quality of life among undergraduates of Faculty of Allied Health Sciences, University of Peradeniya.

Materials and Methods: This was a cross sectional study. Data was collected through a self-administered questionnaire and total of 231 students responded. WHO-QOL BREF was used as the study instrument.

Results: The mean total QoL value was shown that the students were presented with a 'moderate quality of life (neither dissatisfied nor satisfied)'. Among four domains of QoL, physical health, psychological and environment domains has scored average of 3, which indicated that the students were 'moderate (neither dissatisfied nor satisfied)'. Social relationship domain has scored 4, indicating that students were 'satisfied' about their social relationships. There were statistically significant difference ($p<0.05$) found in 4^{th} year with 2^{nd} year and 1^{st} year in physical health domain, environment domain and total QoL. Another statistically significant difference was found in between 4^{th} year and 2^{nd} year in the domains of psychological and social relationships.

Discussion and conclusion: The students of faculty of Allied Health Sciences were presented with a moderate quality of life. Having a satisfactory quality of life may influence their academic performances. Therefore, it is recommended to participate in leisure activities, sports and other extra-curricular activities to maintain or upsurge their QoL levels.

Keywords: Quality of life, University, Undergraduates, QoL domains

INTRODUCTION

Quality of life (QoL) is gaining importance as an important tool to assess the health situations. A sense of wellbeing, social functioning and emotions, are all related to quality of life. In recent years there has been a broadening in focus in the measurement of health beyond traditional health indicators such as mortality and morbidity and quality of life has turned into an important outcome in clinical and interventional studies (Fairclough, 2002). The World Health

Organization (WHO) has defined 'QoL' as 'an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns' (WHOQOL Group, 1996).Quality of life is a global measure, broader than health status, inherently subjective and pertains to all aspects of life important to the person (Harrison et al, 1996; Molzahn and Page, 2006). There was evidence that dissatisfaction with environment, psychological and/or social domains may impact physical health and well-being in individuals (Guite et al, 2006; Silva et al, 2012). Medical field is one such stressful environment which can decrease the QoL of medical and allied health sciences undergraduates. Faculty of Allied Health Sciences (FAHS), University of Peradeniyaoffers six different health care professional degrees which produces future health care providers. Therefore, FAHS was selected to carry out the study as the students of this faculty have a variety of activities during their undergraduate life such as lectures, practical, clinical placement, field visits, extracurricular activities etc. and it may have a correlation with their quality of life.

MATERIALS AND METHODS

For this questionnaire based cross-sectional study, Six hundred and fifty three (653) registered students were taken as the study population and calculated study sample was 243. Students who were presented with recent fractures, any injuries, long-term illnesses like asthma etc. were excluded. Study year(Batch - 4^{th} year, 3^{rd} year, 2^{nd} year, 1^{st} year), degree program (Medical Laboratory Sciences-MLS, Pharmacy-PCY, Physiotherapy-PHY, Radiography/ Radiotherapy-RAD, Nursing-NUR), sex (male, female) and body mass index – BMI category (underweight, normal weight, pre-obesity, obesity class I, obesity class II, obesity class III) were taken as the independent variables.

WHO Quality of Life – BREF Questionnaire was taken as the study instrument. It consisted of 26 questions. The first two questions (Q1 and Q2) were analyzed separately. They pertain to the general self-perception of the respondents' quality of life and health. The remaining 24 questions were assessed four aspects of the quality of life (physical – seven questions, psychological – six questions, social – three questions and environmental – eight questions). The respondents were asked to mark their answers using a five level rating scale (from one to five points). (Skevington et al, 2004)

Informed written consent was obtained from the students who were willing to participate in this study. Only 231 answered questionnaires were collected giving a rate of participation of 95%. Students were in the age range of 21 to 35 years and consisted of both girls and boys (83 males-35.9%, 148 females-64.1%). Study sample consisted of 57-4^{th} (final) year, 54-3^{rd} year, 55-2^{nd} year and 65-1^{st} year students. They were; 37-MLS, 37-PCY, 46-PHY, 54-RAD, 57-NUR students. Among the total sample of the students according to BMI categories, it was identified that 43-underweight, 151-normal weight, 19-pre-obese, 2-obesity class I and 2-obesity class II students. In the analysis, confidence level was set to 95% in all the tests. Therefore, statistical significant level was taken as 5% ($p<0.05$) to identify statistically significant difference between means/proportions of the variables.

Mean value for quality of life for each strata (for domains and total QoL) was calculated. Analysis of variance (*ANOVA*) and post – hoc tests were used to determine whether there were any statistically significant differences between the means strata for the independent variables of study level, degree program and BMI category as they had more than two variables in each group.

Independent sample t-test was used for independent variable of sex as it has two variables, male and female.

RESULTS

Analysis of total sample of the students have illustrated a score of 3.4(3) for physical health and psychological domains, 3.7(4) for social relationships and 3.1(3) for environment domain. It has revealed that they have neither dissatisfied nor satisfied (moderate) physical health, psychological status and environment while having satisfactory social relationships. Total QoL was scored as 3.3(3) which indicating that the students of the Faculty of Allied Health Sciences were presented with a 'moderate quality of life'.

Study year

All 4th year students were presented with all higher scores for each domain and total QoL, where it was indicated as 3.7(4) for physical health, 3.6(4) for psychological, 3.8(4) for social relationships, 3.3(3) for environment domains and 3.5(4) for total QoL. Therefore, statistically it was found that they were satisfied with their total QoL and physical health, psychological, social relationships domains and moderate about their environment. As a result of the ANOVA test, a statistically significant variance was found ($p<0.05$) in physical health, psychological, environment domains and in total QoL. There was a statistically significant difference ($p<0.05$) found in means of physical health domain, environment domain and total QoL in between 4th year with 2nd year and 4th year with 1st year. Another statistically significant difference was found in between 4th year and 2nd year in the means of psychological and social relationships domains (Table 1).

Degree program

Nursing undergraduates has shown the highest score for social relationships domain where the other highest scores were occupied by the physiotherapy students. Nursing students were satisfied with their relationships with a score of 3.8(4) and physiotherapy students were satisfied with their physical health (3.6) and psychological status (3.5) where they were moderate on their environment (3.3) and total QoL with a score of 3.4. There was a statistically significant variance found ($p<0.05$) in the mean of environment domain, but there was no statistically significant difference found in the mean values in between different degree programs (Table 2).

Sex

Between males and females, males were presented with higher scores for physical health (3.5), psychological status (3.4) and environment (3.2) compared with females. In the social relationship domain and total QoL, both sex have shown the similar scores of 3.7 and 3.3 respectively. The social relationship domain has indicated as 'satisfactory' and others were 'moderate'. There were no any statistically significant difference found between the mean values of males and females (Table 3).

BMI category

Students who belonged to the pre-obesity BMI category have shown the highest scores for physical health (3.6), psychological (3.6), environment (3.3) domains and total QoL (3.5). The pre-obesity students were moderate (neither dissatisfied nor satisfied) on environment and satisfactory about other domains. The highest score of 4 of social relationships domain was presented with obesity class I students. There was no statistically significant difference found in the means of QoL domains and total QoL according to BMI categories (Table 4).

*All mean QoL scores are rounded to the nearest integer to tally with 5-point Likert scale

Table 1: Mean and significance probability of different study year from ANOVA and post-hoc tests for QoL

		ANOVA	Post hoc tests	4th year	3rd year	2nd year	1st year	Mean*
p- values of four domains and total QoL	Physical health domain	0.003	4th year	-	0.172	0.022	0.002	3.7(4)
			3rd year	0.172	-	0.851	0.470	3.4(3)
			2nd year	0.022	0.851	-	0.926	3.3(3)
			1st year	0.002	0.470	0.429	-	3.3(3)
			Total mean					**3.4(3)**
	Psychological domain	0.029	4th year	-	0.313	0.015	0.429	3.6(4)
			3rd year	0.313	-	0.590	0.992	3.3(3)
			2nd year	0.015	0.590	-	0.386	3.2(3)
			1st year	0.429	0.992	0.386	-	3.4(3)
				Total mean				**3.4(3)**
	Social relationships domain	0.425	4th year	-	0.313	0.015	0.429	3.8(4)
			3rd year	0.313	-	0.590	0.992	3.6(4)
			2nd year	0.015	0.590	-	0.386	3.7(4)
			1st year	0.429	0.992	0.386	-	3.6(4)
				Total mean				**3.7(4)**
	Environment domain	0.004	4th year	-	0.152	0.003	0.031	3.3(3)
			3rd year	0.152	-	0.522	0.944	3.1(3)
			2nd year	0.003	0.522	-	0.828	3.0(3)
			1st year	0.031	0.944	0.828	-	3.1(3)
				Total mean				**3.1(3)**
	Total QoL	0.003	4th year	-	0.150	0.009	0.005	3.5(4)
			3rd year	0.150	-	0.733	0.669	3.3(3)
			2nd year	0.009	0.733	-	1.000	3.2(3)
			1st year	0.005	0.669	1.000	-	3.2(3)
				Total mean				**3.3(3)**

Table 2: Mean and significance probability of different degree programs from ANOVA and post-hoc tests for QoL

		ANOVA	Post hoc test	MLS	PCY	PHY	RAD	NUR	Mean*
p- values of four domains and total QoL	Physical health domain	0.088	MLS	-	0.535	0.146	0.688	1.000	3.3(3)
			PCY	0.535	-	0.958	0.996	0.574	3.5(4)
			PHY	0.146	0.958	-	0.774	0.137	3.6(4)
			RAD	0.688	0.996	0.744	-	0.736	3.4(3)
			NUR	1.000	0.574	0.137	0.736	-	3.3(3)
				Total mean					**3.4(3)**
	Psychological domain	0.319	MLS	-	1.000	0.566	0.829	1.000	3.3(3)
			PCY	1.000	-	0.685	0.910	0.997	3.3(3)
			PHY	0.566	0.685	-	0.985	0.357	3.5(4)
			RAD	0.829	0.910	0.985	-	0.653	3.4(3)
			NUR	1.000	0.997	0.357	0.635	-	3.3(3)
				Total mean					**3.4(3)**
	Social relationships domain	0.842	MLS	-	0.961	0.968	0.999	0.836	3.7(4)
			PCY	0.961	-	1.000	0.988	0.998	3.7(4)
			PHY	0.968	1.000	-	0.992	0.995	3.7(4)
			RAD	0.999	0.988	0.992	-	0.907	3.7(4)
			NUR	0.836	0.998	0.995	0.907	-	3.8(4)
				Total mean					**3.7(4)**
	Environment domain	0.033	MLS	-	0.539	0.058	0.350	0.996	3.0(3)
			PCY	0.539	-	0.816	1.000	0.676	3.2(3)
			PHY	0.058	0.816	-	0.850	0.073	3.3(3)
			RAD	0.350	1.000	0.850	-	0.460	3.2(3)
			NUR	0.996	0.676	0.073	0.460	-	3.0(3)
				Total mean					**3.1(3)**
	Total QoL	0.327	MLS	-	0.742	0.498	0.604	0.999	3.2(3)
			PCY	0.742	-	0.998	1.000	0.812	3.3(3)
			PHY	0.498	0.998	-	0.999	0.553	3.4(3)
			RAD	0.604	1.000	0.999	-	0.669	3.3(3)
			NUR	0.999	0.812	0.553	0.669	-	3.2(3)
				Total mean					**3.3(3)**

Table 3: Mean and significance probability of sex from independent sample t-test for QoL

		Mean					Levene's test for equality of variances	Independent sample t-test (2-tailed)
		Male	Female	Total				
p- values of four domains and total QoL	Physical health domain	3.5(4)	3.4(3)	3.4(3)	Equal variances	assumed	0.607	0.301
						not assumed		0.296
	Psychological domain	3.4(3)	3.3(3)	3.4(3)	Equal variances	assumed	0.133	0.215
						not assumed		0.237
	Social relationships domain	3.7(4)	3.7(4)	3.7(4)	Equal variances	assumed	0.188	0.649
						not assumed		0.661
	Environment domain	3.2(3)	3.1(3)	3.1(3)	Equal variances	assumed	0.265	0.264
						not assumed		0.286
	Total QoL	3.3(3)	3.3(3)	3.3(3)	Equal variances	assumed	0.095	0.690
						not assumed		0.713

Table 4: Mean and significance probability of BMI categories from ANOVA and post-hoc tests for QoL

		ANOVA	Post hoc test	Under weight	Normal weight	Pre-obesity	Obesity class I	Obesity class II	Mean
p- values of four domains and total QoL	Physical health domain	0.438	Under weight	-	0.945	0.997	0.445	1.000	3.5(4)
			Normal weight	0.945	-	0.887	0.543	1.000	3.4(3)
			Pre- obesity	0.997	0.887	-	0.394	0.998	3.6(4)
			Obesity class I	0.445	0.543	0.394	-	0.807	2.7(3)
			Obesity class II	1.000	1.000	0.998	0.807	-	3.4(3)
				Total mean					**3.4(3)**
	Psychological domain	0.641	Under weight	-	0.946	0.803	0.964	0.980	3.3(3)
			Normal weight	0.946	-	0.951	0.913	0.943	3.4(3)
			Pre- obesity	0.803	0.951	-	0.830	0.873	3.6(4)
			Obesity class I	0.964	0.913	0.830	-	1.000	3.0(3)
			Obesity class II	0.980	0.943	0.873	1.000	-	3.0(3)
				Total mean					**3.4(3)**
	Social relationships domain	0.284	Under weight	-	0.710	1.000	0.997	0.600	3.8(4)
			Normal weight	0.710	-	0.955	0.963	0.391	3.7(4)
			Pre- obesity	1.000	0.955	-	0.994	0.584	3.8(4)
			Obesity class I	0.997	0.963	0.994	-	0.934	4.0(4)
			Obesity class II	0.600	0.391	0.584	0.934	-	3.5(4)
				Total mean					**3.7(4)**
	Environment domain	.398	Under weight	-	0.9880	0.505	0.996	0.883	3.1(3)
			Normal weight	0.988	-	0.594	0.989	0.822	3.2(3)
			Pre- obesity	0.505	0.594	-	0.880	0.563	3.3(3)
			Obesity class I	0.996	0.989	0.880	-	0.994	3.0(3)
			Obesity class II	0.883	0.822	0.563	0.994	-	2.7(3)
				Total mean					**3.2(3)**
	Total QoL	0.492	Under weight	-	1.000	0.731	0.951	0.918	3.3(3)
			Normal weight	1.000	-	0.620	0.950	0.916	3.3(3)
			Pre- obesity0	0.731	0.620	-	0.774	0.708	3.5(4)
			Obesity class I	0.951	0.950	0.774	-	1.000	3.1(3)
			Obesity class II	0.918	0.916	0.708	1.000	-	3.1(3)
				Total mean					**3.3(3)**

Table 5: One-Sample t- test for Q1 and total QoL, Q2 and physical health domain

	N	Mean score	One sample t – test P – value (2 - tailed)
Q 1 (first question of the WHOQOL - BREF)	227	3.5	.000
Total QoL	230	3.3	
Q 2 (second question of the WHOQOL - BREF)	229	3.6	.007
Physical health domain	228	3.4	

Comparison of students' perception of their quality of life (Q1) and physical health (Q2) with scores of total QoL and physical health domain

Mean scores of Q1 and Q2 were calculated as 3.5 and 3.6 respectively which indicates students' perception of their quality of life and physical health as **more than a moderate level, but not yet reached satisfactory level** (in between moderate and satisfactory level). Total QoL was scored a mean of 3.3 which indicates a 'moderate' QoL from analysis of four domains of the questionnaire. Mean score of the physical health domain was identified as 3.4 which indicates a 'moderate' physical health. One sample t-test was used to identify any statistically significant difference between Q1 and total QoL, Q2 and physical health domain. It was found that both pairs were presented with statistically significant difference of the means of Q1 and total QoL, Q2 and physical health domain. Therefore, though students had answered as they have more than a moderate quality of life and physical health, statistically it has been proved that they have a '**moderate**' quality of life and physical health, not more than that (Table 5).

DISCUSSION

This study has shown that the students were having a moderate quality of life with a mean of 3.3 score for total QoL. A study done in 2020 had the same findings as current study with moderate quality of life of the dental students (Burdulu et al, 2020). Another study conducted in 2019 concluded that the students' quality of life was satisfactory among dental students (Al-Shibani and Al-Kattan, 2019) while few other studies were concluded as its dissatisfactory which were conducted among medical undergraduates (Mahmoud and Fareed, 2018; Biswas et al, 2019).

All four variables of this study (study year, degree program, sex and BMI category) were presented with a moderate level of physical health, psychological and environment domains while social relationships has shown a satisfactory level. Social relationships have satisfactory levels compared with other three domains may be due to sub-cultural adaptations of the Faculty of Allied Health Sciences. Students of this faculty are engaged in cultural events, health camps, and sports etc. and they participated in more activities in their first year. Moderate physical health domain was identified with a study done in 2018 among dental students (Al-Shibani and Al-Kattan, 2019) while physical health was satisfactory in another study done in India in 2016 among post-graduate students (Bullappa and Kengnal, 2017). Dissatisfactory psychological domain was identified in a study conducted in 2020 among dental undergraduates (Burdulu et al, 2020) and a 2017 study was concluded that the students were presented with moderate psychological domain, which has the same results as current study (Bullappa and Kengnal, 2017). Supporting the current study results, a study has shown a moderate environmental domain (Bullappa and Kengnal, 2017) while another study has presented a satisfactory level (Al-Shibani and Al-Kattan, 2019). Current study concluded that the students were presented with satisfactory social relationships but few other previous studies concluded that was moderate (Al-Shibani and Al-Kattan, 2019; Bullappa and Kengnal, 2017).

Statistically significant differences ($p<0.05$) found in quality of life scores of the current study. There were a statistically significant difference found among the means of total QoL, physical health, psychological and environmental domains in the total sample. It was stated that the means of the domains and the total QoL are not equal, even it appears nearly same values. In between 4th

year and 2nd year, means of total QoL and all four domains had a statistically significant difference. Another statistically significant difference was found in between 4th year and 1st year in the mean values of total QoL, physical health and environmental domains. A similar study done with 5th year to 1st year medical students in China (Zhang et al, 2012) using WHOQOL-BREF questionnaire, has illustrated that the clinical medicine students were presented with the highest QoL scores compared with pre-clinical students. Another study conducted in 2019 among medical students in India has stated that students in the second and third year had higher QoL scores compared to first-year students (Biswas et al, 2019).

Another statistically significant difference was found between total QoL with Q1-students' perception of their quality of life and in between physical health domain with Q2-students' perception of their physical health. In the current study, even students were answered as they were having moderate to satisfactory level of quality of life and physical health, statistically it was not significant and found as the students had moderate quality of life and physical health domain. A study also found with moderate to satisfactory level of students' perception of quality of life (Burdulu et al, 2020) which is same as the current study results while another study has shown satisfactory level (Malibary et al, 2019). Students' perception of their physical health was moderate to satisfactory in few more previous studies which is supporting the current results (Burdulu et al, 2020;Malibary et al, 2019).A study done with 5th year to 1st year dental students has shown that the students who highly rated their overall quality of life and satisfaction with health, had higher domain scores. (Al-Shibani and Al-Kattan, 2019)

In the present study, there were no statistically significant differences in degree program, sex and BMI category in total QoL and QoL domains. According to degree program, sex and BMI category, students were presented with moderate quality of life. There were another factors associated with QoL in different studies among health related undergraduates. Students who were staying with family had a higher overall QoL score (Mahmoud and Fareed, 2018) and higher scores for environmental domain and lower scores for psychological domain (Biswas et al, 2019) than those living alone or living in hostels. Male students scored better than females in psychological domain; females performed better in the social relationship's domain (P, 0.006). Smoking was negatively associated with the physical health domain score (P, 0.027). Alcohol consumption was related with a higher score in the psychological domain (P, 0.049). Students with better academic performance had better scores on all domains (Biswas et al, 2019). Nevertheless another study was concluded that high academic achievers showed lower psychological health, while poor academic performance was associated with better psychological health and social relationship domain scores (P, 0.013 and P, 0.014, respectively) (Malibary et al, 2019).

Finally, it can conclude that the students of Faculty of Allied Health Sciences, University of Peradeniya presented with moderate quality of life, with moderate physical, psychological, environmental and satisfactory social relationships domains.

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