

Role of Chronic illness in Health-related Quality of Life among University Students

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University students experience a variety of challenges which affect their physical and mental health. Quality of life is seen as a broad concept pertaining to one's sense of well-being and satisfaction in life. Chronic illness brings pain, discomfort, and uncertainty about the future, which can negatively affect a person's day-to-day functioning, level of independence, and interpersonal relationships and ultimately affecting their quality of life. The present study sought to investigate the health-related quality of life and uncover the role of chronic illness linked with it among university students. The study used a between-subjects design. The sample comprised of 120 Indian university students within the age group 18 years – 33 years. Participants were recruited for this study via purposive sampling method. The RAND 36-item Short Form Health Survey (SF-36) version 1.0 and Beck's depression inventory were the tools used in the study. Descriptive statistics, independent sample t-test, and stepwise multiple regression were used for the statistical analysis of the variables using SPSS v26. Findings indicated that the university students had low health related quality of life and the students with chronic illnesses had poorer health related quality of life as compared to the students without chronic illnesses. Low health related quality of life significantly contributed to depressive symptoms. To prevent a further decline in students' health and to formulate effective health promotion programs, university supervisors and administrators, healthcare experts, and policymakers must exercise caution in monitoring students' health.

Keywords: health-related quality of life, chronic illness, university students, depression, regression

University life's experience can be very challenging. It could be as a result of being exposed to a variety of stimuli. Separation from family support, high personal expectations, time pressure, academic overload, exams, competitions, attempting to achieve educational goals despite financial constraints, and a lack of leisure time activities are some of them. The interplay of biological and socio-psychological elements that occurs during this period is well-known for making students particularly prone to high-risk physical or psychological behaviours that may have a severe influence on their long-term health and viability (Kwan et al., 2016). During their university years, students also encounter a significant amount of perceived stress, which predisposes them to a lower health-related quality of life (Bhandhari 2012; Racic et al., 2017). Decreased health related

quality of life in university students is associated with poor academic achievement, strained social connections, and mental health issues.

The World Health Organization has defined quality of life 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" (The WHOQOL Group, 1995). Health-Related Quality of Life (HRQoL) is a broad term that refers to the physical, psychological, and social domains of health, as distinct areas influenced by a person's experiences, beliefs, expectations, and perceptions (Testa & Simonson, 1996). Health-related quality of life (HRQOL) refers to a person's perceived wellbeing in the physical, mental, and social domains of health, as well as

how well they function in their daily lives (Hays & Reeve, 2010). The functioning component of HRQOL includes whether a person can perform a variety of daily tasks such as washing and dressing himself or herself (physical functioning). It also determines whether or not the individual can climb stairs, walk, or run. The level to which one can interact with family, friends, and others is another important part of functioning (social functioning). HRQOL's functional component is made up of behaviours that can be witnessed by others. Internal, subjective sensations such as energy, pain, anxiety, depressive symptoms, and overall health perceptions are all part of HRQOL's well-being component (Hays & Reeve, 2008).

The idea of health-related QOL (HRQOL) and its determinants has evolved to incorporate those aspects of overall QOL that can clearly be proved to affect health - either physical or mental (McHorney, 1999). Self-assessed health status is a powerful predictor of mortality and morbidity in the future (Idler & Benyamini, 1997). Quality of life is widely viewed as a crucial component of one's life, not just for those who are ill but also for those who are healthy, regardless of age (Fayers & Machin, 2007).

According to previous literature, students who have a higher quality of life use all academic services to their full potential, are more active in scientific and extracurricular activities, and are better integrated into academic settings (Wrosch & Scheier, 2003). Gender, age, socioeconomic, and demographic status are all important factors that can have a negative impact on university students' health-related quality of life (Sabbah et al., 2013; Nur et al., 2017).

Current research is limited to the diagnosis of stress, stressors, and mental illnesses (Bhandhari, 2012; Kleiveland et al., 2015). Despite some evidence in the available body of literature, chronic diseases among university students and their impact on overall wellbeing remain understudied. Beside challenges in the academic setting, there is evidence to suggest that presence of chronic illnesses has influence on lower school achievements, regardless of ethnicity or socioeconomic status. A growing corpus of research has looked into numerous

health problems and health-related quality of life in the general population, but only few studies have looked into the impact of chronic illness on health-related quality of life of university students in India. Understanding what factors influence university students' health, wellbeing, and health related quality of life can help build successful health promotion policies and deliver targeted preventive. Therefore, the present study sought to investigate the health-related quality of life and uncover the role of chronic illness linked with it among students of university of Hyderabad.

Objectives

The objectives of the present study were:

- To assess the prevalence of chronic illness in university students
- To examine the difference in health-related quality of life of university students with respect to their chronic illness status
- To examine the difference in depression of university students with respect to their chronic illness status
- To examine the impact of health-related quality of life on depression

Method

The study used a between-subjects design.

Participants

The sample comprised of 120 students (44 men and 76 women) within the age range 18 years – 33 years, from University of Hyderabad, Telangana, India. Participants were recruited for this study via purposive sampling method. The demographic characteristics of the sample are discussed in the results section.

Tools

The RAND 36-item Short Form Health Survey (SF-36) version 1.0: This scale was developed by Research and Development Corporation (RAND) (Ware et al., 1980) USA. It assesses eight health concepts as follows: physical function, bodily pain, role limitation due to physical of health problems, role limitation due to personal or emotional problems, emotional well-being, social functioning, vitality, and general health perception. Scoring for each item is done on a 0 to 100 range and the lowest

and highest probable scores are 0 and 100, respectively. Reverse scoring was performed where necessary. A higher score indicates less limitation, better functioning or less pain. The Cronbach's alpha coefficient was found to be 0.74 for the present sample, thus, indicating that the tool is reliable.

Beck's Depression Inventory: Developed by Beck, this scale is a multiple choice self-report inventory that assesses attitudes and symptoms related to depression (Beck et al., 1961). The scale composed of 21 items relating to symptoms of depression like hopelessness and irritability, cognitive patterns like guilt and suicidal thoughts, in addition to somatic symptoms such as fatigue, sleep problems, loss of appetite, and lack of interest in sex. The total score is obtained by summing the ratings of all the items. Each item is measured on a 4-point Likert scale ranging from 0 to 3. The highest total score possible is 63 and the lowest possible score is 0. Higher total scores indicate more severe depressive symptoms. The Cronbach's alpha coefficient was found to be 0.80 for the present sample, thus, indicating that the tool is reliable.

In order to measure the demographic characteristics of the respondents such as age, gender, accommodation type (boarder/day-scholar), substance use, and presence of any chronic illnesses, a demographic information sheet was also administered to the participants. In addition to this, an informed consent form was provided to the participants to obtain their informed consent.

Procedure

After identifying participants who met the inclusion and exclusion criteria specified, rapport was built between them and the investigator. Only students who gave their consent were included in the study. The tools along with the consent form were administered to the students. The administration of the questionnaires was preceded by the instructions to be followed while filling them up. When the participants had difficulty in reading or understanding the statements, it was read out and explained to them clearly.

Results

The present study comprised of 120 students from University of Hyderabad (India), aged between 18-33 years, with a mean age of 24.07 years. Further distribution of the sample according to the demographic characteristics is displayed in Table 1.

Table 1. Demographic characteristics of the Participants

Characteristics	N	%
Age		
Below 25	76	63.3
Above 25	44	36.7
Sex		
Male	44	36.7
Female	76	63.3
Education		
Undergraduates /Postgraduates	81	67.5
Research Scholars	39	32.5
Chronic Illness		
Present	24	20
Absent	96	80

Note. N = 120. Mean age of participants = 24.07 years (SD = 2.71), and participants' age range in the study sample is from 18 years to 33 years.

The obtained quantitative data were analyzed by means of descriptive statistics and t-test through IBM SPSS v. 26. Table 2 presents the results of independent samples t-test for health-related quality of life and depression with respect to the status (present / absent) of chronic illness in the sample. The Cohen's d effect size was calculated to establish the magnitude of differences found between the statistically significant groups for comparing the demographic characteristics and the domains of HRQoL.

Table 4 shows multiple regression stepwise analysis. The first model shows HRQoL (emotional wellbeing) as a single predictor, significantly explaining 50.3% variance in depression [$F(1, 118) = 119.274, p < .001$]. In the second model, HRQoL (Total score) was added;

Table 2. Mean, Standard deviation, and t-values of HRQoL dimensions with respect to chronic illness (CI) status and depression in the sample

Outcome	CI Present (N=24)		CI Absent (96)		T(118)	P	Cohen's d
	M	SD	M	SD			
HRQoL dimensions							
Physical Functioning	69.58	24.49	76.51	22.54	1.32	0.19	0.29
Role limitation due to physical health	33.33	38.07	61.46	37.68	3.26	0.00***	0.74
Role limitation due to emotional problems	33.33	40.53	41.67	42.44	0.87	0.39	0.20
Vitality	41.88	21.10	52.71	20.35	2.32	0.02*	0.52
Emotional wellbeing	49.00	25.11	59.04	19.95	2.09	0.04*	0.44
Social functioning	48.44	23.11	62.73	22.317	2.787	0.01**	0.6290
Pain	57.19	25.10	72.01	23.94	2.69	0.01**	0.60
General health	40.00	15.81	62.40	18.28	5.51	0.00***	1.31
Total score	46.59	19.35	61.07	16.83	3.66	0.00***	0.80
Depression	16.58	10.32	11.90	8.23	2.37	0.02*	0.50

Note. N=120. *p < .05, **p < .01, ***p < .001; CI – Chronic Illness

Table 4. Summary of Multiple Regression Analysis Stepwise for Variables

Variables	Depression				
	B	SEB	B	T	Sig
Model 1 (C=29.584, R²=.503)					
HRQoL (Emotional wellbeing)	-.294	.027	-.709	-10.921	.000
Model 2 (C=32.646, R²=.540)					
HRQoL (Emotional wellbeing)	-.203	.039	-.489	-5.140	.000
HRQoL (Total score)	-.142	.046	-.293	-3.075	.003

Note. HRQoL = health related quality of life

and along with HRQoL(emotional wellbeing) it predicted 54.0% variance (R^2 change = .037) in depression [$F(2, 117) = 68.640, p < .001$]. A scrutiny of table 4 indicates that overall health-related quality of life and the emotional domain of health related quality of life significantly predicted depression in university students.

Discussion

The study aimed to estimate the prevalence of chronic illness in a university student population, to compare the health related quality of life as well as depression of university students with respect to their chronic illness status, and to examine the impact of health-

related quality of life on depression. In relation to the first objective of the study, the observed prevalence of chronic illness was 20%. Although there is little information on chronic illness rates for university students in India, at the present stage, chronic diseases account for 53 percent of total deaths each year in India, which is expected to grow up to 67 percent by 2030 (Reddy, Shah, Varghese & Ramadoss, 2005). And a high proportion of deaths due to chronic diseases occur at relatively younger ages among the Indian population (Karki, 2019). The observed prevalence of chronic diseases in this study was higher than the levels that were reported among

Belgrade university students (16.5%) (Gazibara et al., 2018).

In regards to the study's second objective, we compared the health-related quality of life of university students with respect to their chronic illness status. The highest HRQoL mean obtained in this study was in physical functioning domain, whereas the lowest mean was in role limitation due to emotional problems domain and role limitation due to physical health domain. Physical functioning had the highest mean score of 76.51. This finding is in line with the findings of Thomas et al., (2021), Latas et al., (2014), and Sabbah et al., (2013). In this study, the lowest mean score obtained was 33.33 in role limitation due to emotional problems, which is similar with the findings of Sabbah et al., (2013) and Lins et al., (2015).

The HRQoL scores obtained from a study conducted by Gazibara et al., (2017) among the students of Belgrade University, where the healthy participants were evaluated in the range of 94.3 (physical function) and 65.3 (vitality) and participants with chronic diseases were evaluated in the range of 89.7(physical function) and 57.9 (role limitation due to emotional problems), and a similar study conducted by Sabbah et al., (2013) among the University students in Lebanon showed scores ranging between 89.9 (physical function) and 41.2 (role limitation due to emotional problems). The scores obtained in our study ranged from 76.151(physical function), 33.33 (role limitation due to physical health domain and role limitation due to emotional problems). It can be inferred from our study that the health related quality of life of the university students who participated in the study is poor, compared to their counterparts. The students with chronic diseases reported significantly lower quality of life than those without chronic diseases. This finding is in line with those of Zaliha et al. (2011), Singh et al. (2017), and Gazibara et al. (2017).

Despite the fact that the mean score of those with chronic diseases was significantly

lower across the domains, it was not statistically significant in the physical functioning and role limitation due to emotional problems domains. In all other HRQoL domains and the total score, those with chronic diseases reported significantly worse health related quality of life. Overall, the HRQoL among the students with chronic diseases was worse than among healthy students.

With regard to the third objective, the present study also found higher depression scores in those with chronic illnesses than those without chronic illnesses. This finding is in line with the study by Johnston et al. (2021) which indicated that college going students with chronic illnesses demonstrated greater symptoms of depression.

Coming to the fourth objective of the study, the results indicated that health-related quality of life significantly contributed to depression. Hence, University students with poor health related quality of life are at greater risk for depression. Similar finding was also reported by Ozabaci (2010) in a non clinical student population in Turkey. Depression has been demonstrated to be highly prevalent in university students all over the world (Adewuya et al., 2006). The depressive state can produce feelings of sadness, loss of interest in normal situations, lack of pleasure, emotional instability, and changes in sleep, appetite, and rest, among other aspects; which may hinder the development of academic and personal activities and, consequently, the future professional. The study by Ranjan et al. (2020) also found out that patients with chronic diseases such as diabetes and hypertension predicted poor quality of life and the presence of chronic illnesses were significantly associated with higher depression scores.

Hence, these findings highlight the importance of increasing the availability of evidence-based strategies tailored to young adults to improve the prevention, treatment, and management of chronic diseases and enhance their health-related quality of life. As a result, in order to address the demands of university

students, the health-care system should pay special attention to the presence of chronic diseases as well as the presence of depression among university students and offer assistance in the prevention and treatment of chronic diseases and mental illnesses.

Conclusion

The mean scores for all HRQoL domains revealed that the student population as a whole had a badly perceived health related quality of life (HRQoL). The low HRQoL score, as well as the predominantly low score on the role limitation due to physical health domain and emotional problems domain, support the importance of more effectively addressing university students' physical health as well as their mental health. As the future makers of societies, more attention must be paid to the quality of life and health of university students. It is also recommended that the emotional issues of students and their chronic illnesses be taken into consideration more than ever. It's crucial to note that academic life is full of challenges and hardships. To prevent a further fall in students' health and to adopt suitable health promotion programmes, university supervisors and administrators, healthcare experts, and policymakers must exercise increased caution in monitoring students' health. Effective health-promoting activities, social support, and counselling services should be implemented well on campus as they are a necessary step toward the goal of improving university students' health related quality of life. University and college campuses may be the last setting where a major proportion of the young adult population's health can be addressed comprehensively. It is important that health educators comprehend the challenges that university students are facing. Universities, as socially responsible stakeholders with a wide range of responsibilities, can have a positive impact on their students' well-being and health.

Limitations

One of the study's limitations was that it was cross-sectional, preventing causal inferences

among the variables. The self-reported nature of this study is the second limitation. Finally, the sample size was drawn only from University of Hyderabad and students from other major universities were not included. Despite the fact that the study attempted to reach a representative sample of the University student population, the sample size of the study may have influenced the results. To definitively answer this topic among university students, a large-sample study including multiple universities across the country is required.

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