

A cross-sectional assessment of quality of life among pharmacy academics

Running Title: QoL among pharmacy academics

Authors' contributions:

This work was carried out in collaboration among all authors. Authors MSI and FIA designed the study, performed the initial statistical analyses and wrote the protocol. Authors MZI and MSI wrote the first draft of the manuscript. Authors FIA and MZI managed refined analyses. Authors FIA and MSI revised the manuscript. All authors read and approved the final manuscript.

Original Research Article

ABSTRACT

Introduction: These days, living a good quality life has become a luxury rather than a necessity and investigating the quality of life (QoL) across teaching professionals seems to be beneficial. This study aimed to determine the association between demographic and socioeconomic variables and the QoL among pharmacy academics.

Methods: Stratified random sampling was applied to collect data using a prevalidated and self-administered questionnaire the Duke Health Profile (DHP). Statistical Package for Social Science

(SPSS) ver. 22.0 was used to analyze the descriptive and inferential data.

Results: One hundred and fifty-five pharmacy academics were included in this study where majority 98 (63.2%) were males and 57 (36.8%) were females. The majority 74.2% were married and 68.4% were having more than 5 years of teaching experience. A total of 123 of the pharmacy academics were more than 35 years old which accounted for 79.4% of the respondents. Various determinants like age, residence, gender, administrative position, marital status, monthly income, and teaching experience are the main factors affecting QoL among pharmacy academics.

Conclusion: From the present study it could be concluded that QoL among pharmacy academics was significantly influenced by numerous socio-economic and demographic determinants.

Keywords: Quality of life, pharmacy academics, QoL, DHP, pharmacotherapy, pharmacology

INTRODUCTION

Stress is a general term that people use for the pressure they experienced in life. It can be defined as the effort that is displayed by an individual against a stimulant that has excessive psychological and physical pressure on the person.^[1] Occupational stress is one of the most common daily challenges in every job. For employees, it may cause the low quality of performance, poor job satisfaction high turnover and increase work absence. Besides, stress is one of the main factors of job dissatisfaction, job-related illness, and early retirement.^[2] The previous study reported that stress has also become a

common part of daily life for health professionals such as nurses, doctors, pharmacists and also especially academicians due to the demanding nature of such occupations. ^[3,4]

QoL is a concept that is multi-dimensional which involves domains related to physical, mental, economic, emotional and social functioning. ^[5] A Study done by Akram *et al* showed that physical activity has a positive effect on the QoL. Thus, active individuals are less likely to get cardiovascular disease, musculoskeletal disorders, diabetes, cancers, pulmonary infections, and obesity. ^[5] Another study also reported that most university professional academics who teach the health-related course are also doctors, dentists or pharmacists. Pharmacy academicians in the health-related course also have to prepare for examination or assignment questions, giving lectures, attend meetings or seminars and sometimes have to be a supervisor for the research studies. ^[5, 6] In addition to the demands from their job, they also have to fulfill their family needs, personal needs, etc. All of these multiple roles carried by them could be a significant burden that may lead to a natural complication at work and also home. ^[7]

Another previous study by Organization for Economic Cooperation and Development (OERD) had classified factors that may affect the QoL of a human into several factors such as health status, work, and life balance, education and skills, social connections, personal commitments, working environment quality, personal security, and subjective well-being. ^[8] A study by Perie *et al* stated that satisfaction of an academician can be based on two factors which are intrinsic factors or extrinsic factors. Intrinsic factors came from the activities in the class which involve the daily interaction with students, student's characteristics and also perception. Extrinsic factors are associated with academician's salary, perceived support from administrators, environment safety, and availability of the required resources. ^[9,10]

It is not only interesting but important to study and assess the factors that affect the QoL among pharmacy academics. This study aimed to determine QoL among pharmacy academics involved in pharmacy, medical and allied health-related teaching institutes. This study also evaluated the factors and variables affecting their QoL.

MATERIALS AND METHOD

The pharmacy academics teaching in various institutes of pharmacy, medicine, and allied health sciences were recruited using stratified random sampling in different cities of Pakistan. Prevalence based sampling methodology was used to calculate the sample size. **Those pharmacy academics who gave written consent were included in the study and those who were unable to give written informed consent were excluded from the study.** The Duke Health Profile (DHP) research tool was used and the content of the tool was rephrased to better suit study objectives. Eventually, the slightly modified DHP was tested for the face and content validity. All information gathered was strictly confidential. In the demographic data, questions such as gender, marital status, age, teaching experience, administrative positioning, residence, doing another job, and monthly income were asked from the participants. Each question had its respective score which calculated using the manual available with the questionnaire. The scoring consists of 10 domains which were divided into six health measures and 4 dysfunction measures. The six health measures were physical health, mental health, social health, general health, perceived health, and self-esteem. The four dysfunction measures were anxiety, depression, pain, and disability. ^[11] Statistical tests such as descriptive statistics were performed to report the demographic, socioeconomic and user information. To categorize the QoL into healthy and unhealthy, the inter-quartile range (IQR) test was performed on the obtained DHP scores. **Inferential statistics such as the chi-square test was used to determine the**

association between demographic and socioeconomic variables and QoL. The level of statistical significance was set at 0.05.

RESULTS

Table 1 shows the demographic and socioeconomic status of the study participants. A total of 98 (63.2%) were male and 57 (36.8%) were female pharmacy academics who participated in this study. Around 49 (31.6%) were having less than 5 years of teaching experience while 106 (68.4%) were having more than 5 years of teaching experience. More than half i.e. 123 (79.4%) of the respondents were more than 35 years old while the remaining i.e. 32 (20.6%) were less than 35 years old. According to their monthly income, 88 (56.8%) were having less than 1000 USD whereas around 67 (43.2%) were having a monthly income of >1000 USD.

Table1: Demographic and socioeconomic characteristics of the study participants

Description	Frequency	Percentage
Gender		
Male	98	63.2
Female	57	36.8
Marital Status		
Single	40	25.8
Married	115	74.2
Age (Years)		

<35 years	32	20.6
≥35 years	123	79.4
Teaching Experience		
<5 Years	49	31.6
>5 Years	106	68.4
Administrative Position		
Yes	34	21.9
No	121	78.1
Residence		
Urban	133	85.8
Rural	22	14.2
Doing another Job		
Yes	39	25.2
No	116	74.8
Monthly Income		
<1000 USD	88	56.8
>1000 USD	67	43.2

Table 2 represents the **interquartile range (IQR) of all 10 domains** of the DHP. From this test, the score at percentile 75 was taken as the cut-off point for healthy against domains physical health, mental health, social health, general health, perceived health and self-esteem while the score at percentile 25 was taken as the cut-off point for healthy against domains anxiety, depression, pain, and disability.

Table 2: Interquartile range scores for DHP domains

		Physical health	Mental health	Social health	General health	Perceived health	Self-esteem	Anxiety	Depression	Pain	Disability
N	Valid	155	155	155	155	155	155	155	155	155	155
	Missing	0	0	0	0	0	0	0	0	0	0
Percentiles	25	60	60	40	59	50	50	16	20	0	0
	50	80	70	60	66	100	60	33	30	0	0

75 90 82 70 80 100 80 41 40 50 0

The results of health measuring domains of DHP are presented in Table 3. In the physical health domain, age and residence were shown a statistically significant result. For the mental health domain, gender and administrative position were significant. Meanwhile, in the social health domain, only marital status was statistically significant.

Table 3: Health measuring domains' scores of DHP

Demographics	Healthy N	(%)	Unhealthy N	(%)	P-value	Odds Ratio	95% CI	
							Lower	Upper
Domain 1: Physical Health								
Age (Years)								
<35 years	28	87.5	4	12.5	0.018	0.275	0.090	0.846
>35 years	89	72.4	34	27.6				
Residence								

Urban	111	83.5	22	16.5	0.022	0.431	0.430	0.520
Rural	17	77.3	5	22.7				
Domain 2: Mental Health								
Gender								
Male	79	80.6	16	16.3	0.000	0.157	0.056	0.444
Female	37	64.9	20	35.1				
Administrative Position								
Yes	24	70.6	10	29.4	0.001	0.386	0.867	0.533
No	87	71.9	34	28.1				
Domain 3: Social Health								
Marital Status								
Single	32	80	8	20	0.042	2.848	1.010	1.029
Married/Separated	88	76.5	27	23.5				
Domain 4: General Health								
Residence								
Urban	109	82.0	24	18.0	0.028	1.234	1.981	2.567
Rural	14	63.6	8	36.4				
Monthly Income								
<1000 USD	69	78.4	19	21.6	0.001	2.070	1.689	1.999
>1000 USD	35	52.2	32	47.8				
Domain 5: Perceived Health								
Age (Years)								
<35 years	28	87.5	4	12.5	0.000	1.125	1.024	1.236
>35 years	107	87.0	16	13.0				
Domain 6: Self-esteem								
Teaching Experience								
<5 Years	39	79.6	10	20.4	0.019	5.211	1.155	2.517
>5 Years	63	59.4	43	40.6				

Table 4 illustrates scores of dysfunction measuring domains of DHP. In the anxiety domain, gender and monthly income were statistically significant. In the depression domain, marital status and doing another job were significant whereas in pain domain age and administrative position were significant.

Table 4: Dysfunction measuring domains' scores of DHP

Demographics	Healthy N	(%)	Unhealthy N	(%)	P-value	Odds Ratio	95% CI	
							Lower	Upper
Domain 7: Anxiety								
Gender								

Male	62	63.3	36	36.7	0.040	0.462	0.22	0.972
Female	41	71.9	16	28.1				
Monthly Income								
<1000 USD	59	67.0	29	33.0	0.036	2.639	1.046	6.66
>1000 USD	55	82.1	12	17.9				
Domain 8: Depression								
Marital Status								
Single	33	82.5	7	17.5	0.000	0.277	0.134	0.573
Married/Separated	78	67.8	37	32.2				
Doing another Job								
Yes	10	25.6	20	51.3	0.000	4.55	1.868	1.083
No	88	75.9	28	24.1				
Domain 9: Pain								
Age (Years)								
<35 years	29	90.6	3	9.4	0.009	0.365	0.17	0.783
>35 years	105	85.4	18	14.6				
Administrative Position								
Yes	17	50	17	50	0.033	0.521	0.611	0.874
No	87	71.9	34	28.1				
Domain 10: Disability								
Residence								
Urban	119	89.5	14	10.5	0.032	0.875	0.811	0.944
Rural	19	86.4	3	13.6				
Doing another Job								
Yes	21	53.8	18	46.2	0.002	0.555	0.496	0.663
No	99	85.3	17	14.7				

DISCUSSION

From this study, in each domain, there was at least one variable that had significant results which strongly showed academicians have a higher possibility to have a significant effect on their QOL. When looking at a specific variable especially gender, it was found out that there were overall more female pharmacy academics in the unhealthy group for most of the domains. This shows that female lecturers had comparatively lower QOL than male lecturers. Shamsuddin *et al* also found out that the female pharmacy academicians had a lower QoL compared with male academicians.^[12] The findings were again supported by a study done by Salahudin *et al* from which reported that the mean

overall t-test scores for occupational stress of female academics were significantly higher than males.^[13] This is probably because men tend to be less stressed may be due to better management of occupational stress and having much advantageous social life compared to women.^[7]

Furthermore, it was found out that there is no significant difference between the years of experience in working with the QoL of pharmacy academics in the majority of the domains except self-esteem domain. This study was supported by Whitehead *et al* which showed that there was no significant difference found in all groups with regards to their stress levels at their jobs in New Zealand.^[14] It can be concluded that there is no relation between years of teaching experience as an academician with the overall QoL.

Overall, different age groups also showed no significant association with QoL in this study. Though some domains such as physical health, perceived health and pain showed a significant association between QoL and age groups, however, the other domains showed no association between QoL and this variable. This finding is in line with other studies done in India by Kumar *et al* which found out that there is no significant difference between the age of the respondents and their perceived levels of overall QoL.^[15] Another study also confirmed that there were no significant differences in stress ratings were found between different age groups.^[14]

In doing another job variable, only two of the domains i.e. depression and disability were significantly associated with QoL. Based on this result, there is a possibility that pharmacy academics may experience problems with their depression and disabilities while performing their jobs. This is supported by a study done by Kumar *et al* reported that there is a significant difference between different departments of the participants with their perceived levels of overall QoL.^[15] This previous study also concluded that there is no significant association between different administrative positions with the QoL. Thus, this is coherent with the finding from this study which

showed that current administrative positions were only associated with pain and mental health domain. ^[15]

Marital status showed a significant association only in the social health domain alone. The previous study by Emadzadeh *et al* reported that there is no significant association between marital status with the overall QoL. ^[17] The domains which had two or more variables of significant results were physical health, mental health, general health, anxiety, depression, pain, and disability. This finding is supported by another study done by Sources *et al* which stated that the consequences of stress include anxiety and frustration, impaired performance and disrupted interpersonal relationships with colleagues at work or with family at home. Eventually, these usually significantly affect the overall QoL of pharmacy academics. ^[2]

Pharmacy academics are considered as pharmacotherapy experts that are directly involved in better patient care related to pharmacotherapy, drug usage pattern, dose adjustments, drug interaction identifications, adverse drug reactions reporting, patient counseling, drug law enforcement, etc. In order to provide these services, they must have comprehensive knowledge regarding drug therapies and disease management [18]. They should be aware of the different domains of the pharmacy syllabus especially pharmacology and pharmacotherapy. They should be equipped with recent advancements done in clinical pharmacology. They should also have updated knowledge about both pharmacokinetics i.e. how drugs affect human body systems and what is their mechanism of action, and pharmacodynamics i.e. in what way the human body responds to the drugs. Pharmacology and pharmacotherapy knowledge mainly focus on the therapeutic uses of drugs and their biological effects (therapeutic or toxic) on the human body [19-21].

Pharmacy academics especially pharmacologists and clinical and hospital pharmacists should also be acquainted with major drug classes (NSAIDs, antihypertensives, barbiturates, antidiabetics,

diuretics, benzodiazepines, anti-tuberculosis, antiarrhythmics, anti-asthmatics, and anti-cancers) together with their side effects, drug interactions, and drug-related problems. They must be very well familiar with human body systems like the central nervous system, cardiovascular system, gastrointestinal tract, renal system, endocrine disorders, respiratory disorders, musculoskeletal system, and reproductive system [22-24].

CONCLUSION

Based on the results obtained from this study, it can be concluded that there is an association between demographic and socioeconomic factors with the QoL of pharmacy academics attached to different healthcare institutes, organizations or universities. Improved QoL and lessen occupational stress are the key factors that may affect the QoL of pharmacy academics.

LIMITATIONS OF THE STUDY

One of the limitations of this study is that the target population does not represent the whole cader of pharmacy academics in the country because the study was only done among a few pharmacy academics attached to the pharmacy, medical and allied health-related institutes. Another limitation was due to the research instrument used, as DHP is a very lengthy tool comprising of 10 domains so only significant variables were reported in this study against each domain to provide the reader a comprehensive but significant data obtained from the study participants.

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