

Quality of Working Life among Pharmacists in Vietnam: A Preliminary Study using an Internet-Based Survey

NAM HOANG NGUYEN¹, TRUNG QUANG VO²

ABSTRACT

Introduction: The Quality of Working Life (QWL) is an important factor for achieving high-performance effectiveness from workers. Despite the importance of studying QWL to enhance worker satisfaction and performance, little information has been presented in Vietnam on healthcare human resources.

Aim: This study aimed to measure the QWL among pharmacists in Vietnam through an Internet-based survey.

Materials and Methods: Research was carried out via a cross-sectional study among 185 Vietnamese pharmacists between December 2016 and February 2017. The questionnaire contained 34 items, including questions regarding demographical characteristics and six categories of QWL. These six categories were job and career satisfaction, general well-being, stress at work, control at work, home-work interface, and working conditions. Descriptive statistical analysis, a Mann-Whitney U test and a Kruskal-Wallis H test were utilized to explore the relationship between demographics and QWL.

Results: Of the 185 pharmacists surveyed, the average age was 26.65 ± 3.99 and almost two thirds of the sample had a Bachelor degree. Most of the respondents were working in the business and distribution of pharmaceuticals ($n=98$, 53.0%) and spent about 25 to 50 hours per week working ($n=149$, 80.5%). The mean overall QWL score was 3.21 out of 5.00 with a Standard Deviation (SD) of 0.58. The QWL score for job and career satisfaction was the highest (mean=3.37, SD=0.7), while the stress at work subscale had the lowest score (mean=2.92, SD=0.94). The factors that affected overall QWL were line of work ($\chi^2=14.341$, $p=0.006$), total income ($\chi^2=12.132$, $p=0.007$), adequate income ($U=2356.500$, $p<0.001$), and working hours per week ($\chi^2=7.868$, $p=0.049$).

Conclusion: This study on the QWL of pharmacists has demonstrated that aiming to create and maintain a healthy work life for pharmacists is vital to enhance their performance and productivity. The most significant associations were found between QWL and line of work, total income, adequate income, and working hours per week, which could offer managers opportunities to launch appropriate strategies to improve the work lives of their employees.

Keywords: Income, Quality of life

INTRODUCTION

One of the earliest appearances of the term "Quality Of Working Life" (QWL) was in 1960, and since then the definitions for QWL have differentiated over time [1]. In 2006, a historical overview of the concept of QWL was presented, and the authors suggested a new definition for QWL: "Quality of working life, at a given time, corresponds to a condition experienced by the individual in his or her dynamic pursuit of his or her hierarchically organized goals within work domains where the reduction of the gap separating the individual from these goals is reflected by a positive impact on the individual's general quality of life, organizational performance, and consequently the overall functioning of society" [2]. Van Laar DL et al., identified six independent psychosocial factors as contributing to QWL for healthcare workers: job and career satisfaction, general well-being, stress at work, control at work, home-work interface, and working conditions [3]. QWL has been studied by many organizations and has become a basis on which to build policies with an aim of improving the work-related quality of life [4]. QWL is also an important issue related to achieving high-performance effectiveness from workers [5]. Understanding the factors that contribute to QWL may help organizations retain the best workforce and attract the most talented employees.

According to the Joint Annual Health Review 2015 of Vietnam Ministry of Health, the Vietnamese healthcare system has been undergoing considerable progress [6]. The government's objective for healthcare human resources has been to "promote the development of health human resources in both quantity and quality, to meet the needs of the health sector; strengthen the health workforce for rural, mountainous and remote areas and in specific specialties (para-clinical, preventive medicine, paediatrics, communications and

health counselling)" [6]. In recent years, Vietnam has increased and broadened the scope of its international relations. A key event took place when the ASEAN Economic Community (AEC) was officially established in December 2015, allowing skilled labour, including healthcare workers, to begin to flow freely throughout the AEC [7]. This milestone has caused Vietnamese pharmacists to face more and more challenges. Although there have been increases in salaries and salary supplements for healthcare workers, they are still incommensurate with the time spent in training and the hardships of specific occupations, working environments, and working conditions [6]. Additionally, the geographic distribution of healthcare workers, including pharmacists, is imbalanced due to the difficulties of working in rural or mountainous areas [6]. These issues may be related to the QWL of Vietnamese pharmacists, so it is essential to address their QWL problems in order to improve their performance and help them better compete with foreign pharmacists.

There were researches on QWL conducted in Vietnam [8,9], however, this is not adequate to know the real time scenario on the conditions of the pharmacists. The current study aimed to measure the QWL among pharmacists in Vietnam.

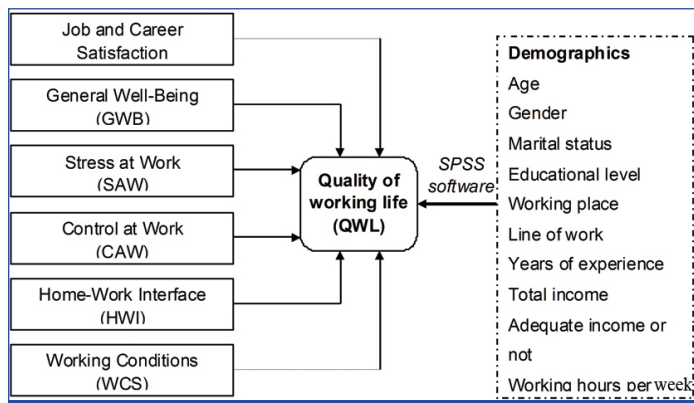
MATERIALS AND METHODS

This research was designed as a cross-sectional, descriptive, and analytical study using an Internet-based survey that was launched and then distributed to Vietnamese pharmacists between December 2016 and February 2017.

Measurement Instruments

With a total of 34 items, the first section was a collection of questions on 10 demographical characteristics: age, gender, marital status,

educational level, workplace, line of work, years of experience, total income, adequate income or not, and working hours per week. The second section was developed incorporating the Work-Related Quality of LifeScale-1 (WRQoLS-1) and used 24 Likert-type items (a five-point scale ranging from 1=strongly disagree to 5=strongly agree) [10]. The questionnaire targets six psychosocial sub-factors. These are Job and Career Satisfaction (JCS) with six questions, General Well-Being (GWB) with six questions, Stress At Work (SAW) with two questions, Control At Work (CAW) with three questions, Home-Work Interface (HWI) with three questions, and Working Conditions (WCS) with three questions.



[Table/Fig-1]: Quality of working life and demographical characteristic framework.

To ensure that the validity of these tools within the local context of Vietnam, the questionnaire was translated from the original English into Vietnamese using a translating and back-translating technique, and a committee approach was taken using ten pharmacists. Any language mistakes or misunderstandings were adjusted to generate an official Vietnamese version of the questionnaire.

Data Collection

An Internet survey was developed via the online service Kwik Surveys (<https://kwiksurveys.com>). By accessing the electronic database of Faculty of Pharmacy, University of Medicine and Pharmacy at Ho Chi Minh City, emails addresses of graduated students for the last five years were extracted. Each pharmacist was sent an invitation that described the aims of the study and provided a link to access the survey. After it was completed and returned, responses were saved and updated instantly into a secure database. The authors sent the questionnaires to 553 pharmacists who agreed to participate in the study; however, with an effective response rate of 33.5% (only 185 pharmacists sent the completed questionnaire back).

Data Analysis

The data was imported into SPSS version 22.0 for Windows and analysed. The descriptive statistical analysis, total scores for each QWL subscale, and overall QWL were computed and reported.

The QWL of individual was calculated based on subscale scores, and then compared to a given norm group (United Kingdom Higher Education group norms) [11]. Due to the non-normal distribution of most QWL variables, two tests, namely the Mann-Whitney U test and Kruskal-Wallis *H* test, were used to analyse the relationship between the components of the demographical characteristics and each subscale of QWL. As a result, the authors could determine which characteristics affected the overall QWL as well as each domain of QWL. Pairwise comparisons using the Dunn-Bonferroni approach as an option as a post-hoc test after the significant Kruskal-Wallis tests and standard multiple regression were also applied to the analysis using the SPSS software.

ETHICS APPROVAL

This study was conducted with the permission of the University of Medicine and Pharmacy of Ho Chi Minh City.

RESULTS

Demographical Characteristics

The mean age of respondents was 26.65 ± 3.99 years (ranging from 21 to 54-year-old). The majority of respondents were female ($n=117$, 63.2%) and declared that they were unmarried ($n=137$, 74.1%). Approximately two thirds of the sample (67.6%) had a Bachelor of Pharmacy, and pre-university and post-graduate educational levels each accounted for 16.2%. Among the respondents, 16.8% stated that they worked in Clinic-Related Pharmacy (CRP), 13.5% worked in Pharmacy-related Training and Research (PTR), 53.0% worked in the Business and Distribution of Pharmaceuticals (BDP), and the rest worked in State Administration of Pharmacy (SAP) and Production and Quality Assurance of Pharmaceuticals (PQA), with percentages of 2.7% and 14.1%, respectively. Work experience of less than five years was dominant ($n=148$, 80.0%). The number of pharmacists who stated that their income was adequate to provide a comfortable living was slightly higher than those who said it did not. The majority of respondents worked about 25 to 50 hours per week. [Table/Fig-2] provides more detailed demographical characteristics.

Quality of Working Life

The score for each subscale was determined by calculating the average of the items that contributed to it, and the overall quality of working life score was the average of the 23 QWL items (excluding the 24th "overall" question) [11]. A low score indicated a low QWL, while a high score indicated a high QWL. [Table/Fig-3] illustrates that the QWL for JCS had the highest (mean=3.37, SD=0.70) score. Meanwhile, the lowest score was for SAW (mean=2.92, SD=0.94). The scores for the QWL related to GWB, HWI, CAW, and WCS were 3.13 (SD=0.78), 3.29 (SD=0.75), 3.07 (SD=0.83), and 3.29 (SD=0.71), respectively. The possible score for each QWL subscale could range from 1 to 5. For the overall QWL, respondents had a minimum score of 1.35 and a maximum of 4.74 (mean=3.21, SD=0.58), which gave a range of 3.39 and showed a strong fluctuation among pharmacists.

The User Manual for the Work-Related Quality of Life Scale provides researchers with a method for interpreting the scores of respondents into low, average, and high ranges when compared to norm sample data [11]. [Table/Fig-4] displays the distribution of QWL levels by each subscale. For each psychosocial subscale, as well as for the overall, the proportion of pharmacists with a low QWL was the greatest. Approximately half of the pharmacists had scores that were in the low range for GWB, CAW, WCS, and overall QWL. The number of pharmacists having a high QWL was unquestionably the lowest. In particular, the percentage of respondents who had a high QWL related to GWB, CAW, and SAW were only 15.2%, 17.3%, and 21.6%, respectively. Overall, it was clear that GWB, CAW, and SAW shared the lowest quality of life scores out of the six QWL domains.

Demographic Variables and Quality of Working Life

A Mann-Whitney U test and a Kruskal Wallis H test were conducted to examine if there was any relationships between QWL and demographical characteristics. The indications from the results of these procedures are presented in [Table/Fig-5]. Statistically significant differences in QWL were found between groups of depending on gender, workplace, line of work, years of experience, total income, adequate income or not, and working hours per week. One of the most striking observations to emerge from the data was that HWI was the most sensitive-to-demographic dimension (affected by six demographical characteristics) compared to the other dimensions. It can be seen from the table that total income and adequate income affected most domains of QWL (except only SAW). However, no significant differences were discovered in the QWL score between other characteristics (marital status and educational background).

Characteristics	N	%	Overall quality of working life		
			Mean	SD	p-value ¹
Gender					
Male	68	36.8	3.23	0.65	0.521
Female	117	63.2	3.19	0.54	
Marital status					
Married	48	25.9	3.24	0.64	0.792
Unmarried	137	74.1	3.20	0.56	
Educational level					
Pre-university ²	30	16.2	3.16	0.66	0.744
Bachelor of Pharmacy	125	67.6	3.24	0.56	
Post-graduate	30	16.2	3.13	0.61	
Working place					
HCMC ³	119	64.3	3.24	0.59	0.190
Others provinces ⁴	66	35.7	3.15	0.56	
Line of work					
CRP ⁵	31	16.8	3.18	0.42	0.006
PTR ⁶	25	13.5	2.90	0.62	
BDP ⁷	98	53.0	3.31	0.62	
SAP ⁸	5	2.7	3.45	0.31	
PQA ⁹	26	14.1	3.09	0.52	
Years of experience (year)					
< 5	148	80.0	3.22	0.58	0.428
≥ 5	37	20.0	3.15	0.59	
Total income (million VND)					
< 5	37	20.0	3.02	0.57	0.007
5-10	70	37.8	3.12	0.55	
10-15	43	23.2	3.35	0.53	
> 15	35	18.9	3.40	0.64	
Adequate income or not					
Yes	100	54.1	3.41	0.52	0.000
No	85	45.9	2.96	0.56	
Working hours per week					
<25	18	9.7	3.41	0.71	0.049
25-40	57	30.8	3.30	0.53	
40-50	92	49.7	3.12	0.57	
>50	18	9.7	3.14	0.63	
Total	185	100	3.21	0.58	-

[Table/Fig-2]: Demographical characteristics of pharmacists and overall quality of working life (N=185).
 1) Mann-Whitney U test/ Kruskal-Wallis H test; 2) Pre-university includes intermediate professional education junior college; 3) Ho Chi Minh City; 4) Other provinces include An Giang, Binh Duong, Binh Dinh, Can Tho, Da Nang, Dak Lak, Dong Nai, Dong Thap, Gia Lai, Ha Noi, Hai Duong, Hai Phong, Khanh Hoa, Lam Dong, Long An, Nghe An, Ninh Thuan, Quang Nam, Thanh Hoa, Thua Thien – Hue, Tien Giang, Vinh Long; 5) Clinic-related pharmacy; 6) Pharmacy-related training and research; 7) Business and distribution of pharmaceuticals; 8) State administration of pharmacy; 9) Production and quality assurance of pharmaceuticals

	JCS	GWB	HWI	CAW	SAW	WCS	OVR
Mean	3.37	3.13	3.29	3.07	2.92	3.29	3.21
SD*	0.70	0.78	0.75	0.83	0.94	0.71	0.58
Min	1.00	1.00	1.00	1.00	1.00	1.00	1.35
Max	4.83	5.00	5.00	5.00	5.00	5.00	4.74

[Table/Fig-3]: Quality of working life in terms of six psychosocial subscales and overall scores.
 * SD: Standard Deviation

The Mann-Whitney test indicated that the HWI score was greater for males (mean rank=103.10) than for females (mean rank=87.13), U=3291.500, p=0.048. Of the six subscales and overall QWL, there was a statistically significant difference in HWI for those who worked in Ho Chi Minh City versus other provinces (p<0.01). The QWL among

	JCS	GWB	HWI	CAW	SAW	WCS	OVR
Low	59 (31.9)	85 (45.9)	78 (42.2)	98 (53.0)	79 (42.7)	105 (56.8)	85 (45.9)
Average	71 (38.4)	72 (38.9)	54 (29.2)	55 (29.7)	66 (35.7)	35 (18.9)	62 (33.5)
High	55 (29.7)	28 (15.2)	53 (28.6)	32 (17.3)	40 (21.6)	45 (24.3)	38 (20.6)

[Table/Fig-4]: Distribution of quality of working life levels*.
 * Data is presented as number (percentage)

pharmacists working in Ho Chi Minh City was higher than those working in the other provinces. Also, years of experience had a significant impact on SAW (U=2019.500, p=0.012), particularly among pharmacists with fewer than five years of work experience (mean rank=97.85). They had lower SAW than those with more than five years of experience (mean rank=73.58). The analysis of the data obtained from the QWL questionnaire also showed strongly statistically significant differences between the two groups of with or without adequate income in terms of the mean ranks for JCS, GWB, HWI, CAW, and WCS (p<0.01). Pharmacists whose life income was adequate experienced a higher QWL compared to those whose income was not.

Line of work also affected QWL in terms of JCS, HWI, and WCS. The five line of works included CRP, PTR, BDP, SAP, and PQA. The statistical indices related to JCS, HWI, and WCS were in turn $\chi^2=13.225$, p=0.010; $\chi^2=11.777$, p=0.019; and $\chi^2=13.876$, p=0.008. Meanwhile, total income was the factor that most powerfully influenced QWL among pharmacists. Statistically significant differences were found in GWB ($\chi^2=13.342$, p=0.004), HWI ($\chi^2=24.019$, p<0.001), CAW ($\chi^2=11.470$, p=0.009), and WCS ($\chi^2=10.390$, p=0.016). The final demographic indicated as a QWL-related factor was working hours per week. There were statistically significant differences determined by the Kruskal-Wallis test (p<0.05) in HWI and SAW between the groups sorted by the number of working hours. More results of these analyses are summarized in [Table/Fig-5].

[Table/Fig-6] displays the unstandardized coefficients (B), standardized coefficients (β), and p-values for the model for the standard multiple regression analysis. Overall QWL was determined to be affected by the four demographic factors of line of work ($\chi^2=14.341$, p<0.01), total income ($\chi^2=12.132$, p<0.01), adequate income (U=2356.500, p<0.01), and working hours per week ($\chi^2=7.868$, p<0.05). A multiple regression analysis was run to predict the overall QWL from demographics alone. Only the four variables above that had a significant impact on QWL were included in the analysis. These variables made a statistically significant predictor for overall QWL, F(4,180) = 9.290, p<0.0005, R² = 0.171. In other words, altogether 17.1% of the QWL scores among the pharmacists could be explained by knowing these four demographics. The largest beta value was -0.357, which was for adequate income, followed by working hours per week (-0.137). This meant that the adequate income variable made the strongest unique contribution to explaining overall QWL when the variances explained by all other variables in the model were controlled. The other significant variable was working hours per week (p<0.05). Its beta value (-0.137) was lower than for adequate income, which indicated that it made less of a contribution. The line of work and total income variables did not contribute significantly to the explanation of overall QWL.

DISCUSSION

Quality of Working Life

The findings of the current study indicated that, of the six QWL subscales, JCS was the highest. It was apparent that the pharmacists were generally satisfied with their job and career, with a total of 68.1% having an average or high QWL in the JCS subscale, which was much higher than that of the other dimensions as well as for overall QWL. Meanwhile, the lowest QWL subscale was for SAW. These results were likely related to the fact that most pharmacists

Subscale	Factor	Mean Rank	U/ χ^2	p-value	Subscale	Factor	Mean Rank	U/ χ^2	p-value	
JCS	Line of work†		13.225	0.010	HWI	Gender†		3291.500	0.048	
	CRP	93.15				Male	103.10			
	PTR	69.92				Female	87.13			
	BDP	103.19				Working place†				
	SAP	116.50				HCMC	100.54	3029.500	0.009	
	PQA	72.08				Others	79.40			
	Adequate income†						Line of work†			
	Yes	106.80	2870.000	0.000		CRP	87.31	11.777	0.019	
No	76.76	PTR			71.00					
Total income (million VND)†				BDP	102.48					
<5	73.64	13.342	0.004	SAP	127.10					
5-10	85.52			PQA	78.63					
10-15	106.44			Total income (million VND)†						
>15	111.91			< 5	67.66	24.019	0.000			
Adequate income†				5-10	82.54					
Yes	114.39	2111.000	0.000	10-15	116.28					
No	67.84			> 15	112.11					
Total income (million VND)†				Adequate income†						
< 5	68.20	11.470	0.009	Yes	110.54	2496.000	0.000			
5-10	91.01			No	72.36					
10-15	101.98			Working hours per week(hour)†						
>15	106.17			<25	115.67	11.224	0.011			
Adequate income†				25-40	106.17					
Yes	107.13	2837.000	0.000	40-50	81.85					
No	76.38			> 50	85.64					

[Table/Fig-5]: The relationship between characteristics and QWL using Mann-Whitney U test and Kruskal-Wallis H test.

†Mann-Whitney U test; ‡Kruskal Wallis H test

Predictor variables	Unstandardized Coefficients		Standardized Coefficients	t	P-value
	B	Std. Error	β		
Constant	4.013	0.274		14.664	0.000
Line of work	-0.001	0.034	-0.003	-0.039	0.969
Total income	0.027	0.045	0.047	0.595	0.552
Adequate income	-0.416	0.090	-0.357	-4.602	0.000
Working hours per week	-0.100	0.050	-0.137	-1.987	0.048

[Table/Fig-6]: Multiple regression analysis of each factor with overall quality of working life¹.

R¹: 0.414; R²: 0.171; Adjusted R²: 0.153; Dubin-Watson: 1.918

are assigned to work environments that help them promote and develop their competencies and skills. However, they may have also been under greater pressure to complete their work.

By interpreting the scores of each respondent into low, average, and high levels, this study discovered that a large proportion of pharmacists (almost 50%) experienced a low QWL, while the number of pharmacists having a high QWL was low. The most noticeable aspects of these results are for GWB, CAW, and WCS. According to authors of the WRQoLS-1 questionnaire, it can be inferred from these results that most pharmacists are substantially less satisfied with their work lives and that they probably are not enjoying their work as much as they could [11]. One possible explanation for this might be that salaries for healthcare workers are still incommensurate with the time spent in training and the hardships of the specific occupations, working environments, and working conditions [6]. Our findings are similar to those obtained by Almalki MJ et al., who reported that primary healthcare nurses in Saudi Arabia were dissatisfied with their work lives [12]. In addition, work lives and personal lives interact and any attempts to address the problems in either of these two realms will be effective for improving occupational concentration, job satisfaction, happiness

in the workplace, and organizational productivity [13]. Therefore, it is necessary to develop appropriate strategies to enhance the QWL of pharmacists in order to improve their morale and organizational effectiveness.

Demographic Variables and Quality of Working Life

The results of this study showed that total income, adequate income, and years of experience are the main factors affecting QWL. These findings match those observed in earlier studies [9,14-16]. Moreover, the current study explored some additional factors, including gender, work place, line of work, and working hours per week. In this study, the QWL subscale of HWI for female pharmacists was lower than that of their male colleagues. However, the findings of this study do not support previous research. Ganesh S et al., found that Indian female employees experienced better QWL than male employees [17]. In addition Vo TQ et al., declared that gender did not affect Vietnamese pharmacists' QWL (9). These differences may stem from differences in the population and setting of the research or from differences in the methods of data collection. The higher QWL subscale of HWI in the Ho Chi Minh City group may be associated with greater flexibility and opportunities in the work environment in Ho Chi Minh City that allowed pharmacists to more effectively manage their work-life balance. Pharmacists with fewer than five years of work experience had less stress at work than those with more than five years of experience. This result is compatible with that of Vo TQ et al., and Nabirye RC et al., who found that the more years of experience that Ugandan employees had, the lower the QWL they felt [9,15].

In consideration of professional line of work, pharmacists who were working in the business and distribution of pharmaceuticals were happier with working conditions than those in pharmacy-related training and research. Therefore, those working in the business and distribution of pharmaceuticals often experienced a higher QWL. Total income was also one of the most important factors for QWL. It

seems that people with a higher income also tend to have a higher QWL. Werther WB discovered that more highly paid people had a better QWL [18]. Another possible explanation for this is that people with a low income may fail to afford their basic living needs, which leads to psychological pressure and causes a negative impact on QWL. Additionally, pharmacists spending 40 to 50 hours per week at work experienced much more stress than those working fewer than 25 hours per week, and they had a lower QWL regarding HWI compared to pharmacists working 25 to 40 hours per week. Vo TQ et al., showed that working hours per week were not a factor for QWL, which differed from this study's findings [9]. The difference can again be explained in part by differences in the research population and setting or from differences in data collection methods.

It was somewhat surprising that the HWI subscale seemed to be the most sensitive to demographics and was affected by up to six factors, including gender, working place, line of work, total income, adequate income, and working hours per week. As indicated above, the HWI dimension measured an organization's understanding of attempts to help employees with pressures outside of work. HWI is connected to work-life balance and was improved when subjects had a more fulfilled life inside and outside of the workplace [11]. These findings supported the ideas of Bruce, who reported in Iran that many of the factors of QWL are dependent on the ability of a staff to make an appropriate balance between home and work environments [19].

The results of the regression analysis showed that adequate income was the most important predictor of overall QWL, followed by the working hours per week variable. The adequate income variable has been found in prior research to be a predictor of overall QWL [9]. Evidence supporting the impact of working hours per week as a predictor of overall QWL has not been detected before. Although line of work and total income were not found to be statistically significant contributors to QWL among pharmacists using the multiple regression analysis, the impact of these two factors on overall QWL cannot be omitted. They may be predictors of adequate income and working hours per week and thus have indirect effects on overall QWL through their influence on them. The regression model of the current study explained about 17% of the variance for overall QWL among the pharmacists, meaning that approximately 83% of the variance remained unexplained. This indicates that there are other important predictor variables for the overall QWL not captured by the model.

LIMITATION

The present study contains a few limitations. Firstly, while the second version of the WRQoL scale was introduced and updated with better properties, its authors have not yet provided a user manual as the authors of WRQLS-1 have. Therefore, this study used the WRQLS-1 set of questions instead. Secondly, the sample size was not very large due to the unwillingness of some pharmacists to participate in the study and the short time period for data collection. Therefore, it is recommended that this study be replicated to include a larger sample of variables with more subjects and over a longer time period in order to comprehensively investigate the influence of a variety of factors on QWL along with other aspects of QWL.

CONCLUSION

The findings of the current study demonstrate significant associations between the QWL of pharmacists and line of

work, total income, and working hours per week. This baseline information can help managers launch appropriate strategies to improve staff work life by focusing on these factors. For example, managers could create work environment that promote pharmacist performance by providing more opportunities for development and success, paying a higher salary, or setting up a better balance between the workplace and other parts of life. Further studies using different conditions are necessary to consolidate the validity of these results.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the Quality of Working Life Group who provided the Work-Related Quality of Life Scale-1 (WRQoLS-1) to use free of charge. Also, we would like to thank Ms.Ky Nhu Ly who helped us translate the Quality of Working Life scale into Vietnamese from the original English.

REFERENCES

- [1] Mayo E. The human problems of an industrial civilization. New York: Viking Press; 1960. 187p.
- [2] Martel JP, Dupuis G. Quality of work life: theoretical and methodological problems, and presentation of new model and measuring instrument. *Social Indicator Research*. 2006;77:333-68.
- [3] Van Laar D, Edwards JA, Easton S. The Work-Related Quality of Life (WRQoL) scale for healthcare workers. *Journal of Advanced Nursing*. 2007;60(3):325-33.
- [4] Venkata Subrahmanyam CV, Pattu Meenakshi S, Ravichandran K. Quality of work life - The need of the hour. *International Journal of Bussiness and Management Invention*. 2013;2(1):01-4.
- [5] Efraty D, Sirgy MJ. The effects of quality of working life (QWL) on employee behavioral responses. *Soc Indic Res*. 1990 Feb;22(1)31-47.
- [6] Ministry of Health (VN). Joint annual health review 2015: strengthening primary health care at the grassroots towards universal health coverage. Hanoi: Medical Publishing House; 2016. 227 p.
- [7] ASEAN Secretariat. ASEAN Economic Community Blueprint 2025. Jakarta: ASEAN Secretariat; 2015. 43 p.
- [8] Phan GT, Vo TQ. A Literature review on quality of working life: a case of healthcare workers. *Journal of Applied Pharmaceutical Science*. 2016;6(07):193-200.
- [9] Vo TQ, Phan GT, Phan DT, Pham LD. A preliminary study on the effect of the work-related quality of life indicators in Vietnamese hospital: a tool for healthy, healthcare workplaces? *International Journal of Pharmacy and Pharmaceutical Research*. 2015;4(4):80-94.
- [10] Easton S, Van Laar D. Work-related quality of life scale. 2008.
- [11] Easton S, Van Laar D. User manual for the work-related quality of life (WRQoL) scale: a measure of quality of working life. Portsmouth: University of Portsmouth; 2012. 53p.
- [12] Almalki MJ, Fitzgerald G, Clark M. The relationship between quality of work life and turnover intention of primary health care nurses in Saudi Arabia. *BMC health services research*. 2012;12:314.
- [13] Sharifzade S. The effect of the role of managers on the work and life balance and improvement of the quality of work life of the staffs. In: 9th Congress of Nursing & Midwifery The Role of Nurse on the Improvement of Quality of Life. 2007:44-8.
- [14] An JY, Yom YH, Ruggiero JS. Organizational culture, quality of work life, and organizational effectiveness in Korean university hospitals. *J Transcult Nurs*. 2011 Jan;22(1):22-30.
- [15] Nabirye RC, Brown KC, Pryor ER, Maples EH. Occupational stress, job satisfaction and job performance among hospital nurses in Kampala, Uganda. *J Nurs Manag*. 2011 Sep;19(6): 760-68.
- [16] Almalki MJ, Fitzgerald G, Clark M. Quality of work life among primary health care nurses in the Jazan region, Saudi Arabia: a cross-sectional study. *Human resources for health*. 2012;10:30.
- [17] Ganesh S, Ganesh MP. Effects of masculinity-femininity on quality of work life: Understanding the moderating roles of gender and social support. *Gender in Management: An Int J*. 2014;29(4):229-53.
- [18] Werther WB. Out of the productivity box. *Bussiness Horizons*. 1982;25(6):51-59.
- [19] Bruce W. The Relationship between Quality of Work Life and Job Satisfaction: A Study of the Nation's Municipal Clerks. Eric's Report Research. 1989.

PARTICULARS OF CONTRIBUTORS:

1. Undergraduate Student, Department of Pharmacy Administration, Faculty of Pharmacy, University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam.
2. Lecturer, Department of Pharmacy Administration, Faculty of Pharmacy, University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Trung Quang Vo,
Lecturer, Department of Pharmacy Administration, Faculty of Pharmacy, University of Medicine and Pharmacy at Ho Chi Minh City,
Ho Chi Minh City 700000, Vietnam.
E-mail: voquangtrungdk@gmail.com

Date of Submission: **Jan 26, 2018**

Date of Peer Review: **Mar 14, 2018**

Date of Acceptance: **Mar 28, 2018**

Date of Publishing: **Jun 15, 2018**

FINANCIAL OR OTHER COMPETING INTERESTS: None.