Research Article

Moderating Effect of Demographic Characteristics on the Relationship between Work Life Quality and Turnover Intention: A Cross-Sectional Study

Luma Ghazi Al Zamel[1] , Khatijah Lim Abdullah[1,2] , Chong Mei Chan[3] , Chua Yan Piaw[4]

[1]Department of Nursing Science, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[2]Department of Nursing Science, School of Medicine and Life Sciences, Sunway University, Selangor, Malaysia
[3]Department of Nursing Science, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[4]Department of Mathematics and Science Education, Faculty of Education, University of Malaya, Kuala Lumpur, Malaysia

ORCID iDs of the authors: L.G.A.Z. 0000-0001-5245-4678; K.L.A. 0000-0002-7185-6004; C.M.C. 0000-0002-8599-3018; C.Y.P. 0000-0001-6900-2977

Abstract

AIM: This study aimed to investigate the moderating effect of demographic variables (sex, age, marital status, years of experience, level of education, and income) on the relationship between quality of work life and turnover intention in Malaysian nurses.

METHOD: A descriptive, and cross-sectional design using Brook's quality of nursing work life questionnaire (self-reported) and Porter's anticipated turnover scale was implemented to collect data from 430 randomly selected Malaysian nurses in a teaching hospital's medical, surgical, and special units. The data were analyzed using the structural equation model smart partial least squares and Statistical Package for Social Sciences software services.

RESULTS: The nurses had a moderate level of quality of work life and high level of turnover intention. Sex, number of children, and work wards/units had a moderating effect on turnover intention, after its interaction with quality of work life ($p < .05$).

CONCLUSION: The study findings highlighted the factors having a moderating effect on turnover intention after its interaction with quality of work life . This knowledge is beneficial for providing guidance to nursing leaders or healthcare departments in hospitals to improve nurses' quality of work life and decrease their turnover intention. Addressing and understanding the demands and needs of nurses in the work environment and the family structure within a quality of work life could affect nurse's retention, leading to a decrease in their turnover intention.

Keywords: Demographic data, Malaysian nurses, moderator, quality of work life, turnover intention

Introduction

Nursing shortage is a big challenge for nursing leaders and workforces in nursing administration. Frequent turnover of trained, qualified nurses affects the patients' care quality and productivity, and increases the cost(s) borne by healthcare organizations (Omar et al., 2018). In many developing countries, nurses seek out to work at private hospitals and migrate to developed countries looking for better income and opportunities, causing critical problems to many public hospitals. Malaysia faces this problem, especially in public hospitals (Omer et al., 2018). This phenomenon stems from many factors, including low salaries, aging workforce with inadequate replacements of retiring or migrated staff, lack of trained staff, growing world population, and rise in

communicable diseases (World Health Organization, 2013). Identifying the factors that affect turnover intention (TI) can help avoid the actual turnover and retain nurses to their organization.

Turnover intention is the probability that an individual changes her/his job during a certain period voluntarily, thus leading to an actual turnover (Price & Mueller, 1981). It is a complicated phenomenon dependent on various factors. Al Momani (2016) found that sex, work experience, and nursing roles had associations with TI. Yang and Kim (2016) reported that workload, support from peers, encouragement from family friends, and compassionate fatigue affect TI. Kalifa et al. (2016) argued that work environment, work pressure, and organizational management are significantly associated with TI. European

countries reported that 9% of their nurses have TI; the related factors were work environment, staff shortage, stress, and low quality and safety of care perceived (Heinen et al., 2013).

Quality of work life (QWL) is a subjective phenomenon that is affected by emotions (Lee et al., 2013). It is a paragliding term referring to the attitude toward employment and general satisfaction with working life (Faraji et al., 2017). Current literature provides evidence that QWL is negatively related to TI (Faraji et al., 2017; Lee et al, 2017). Yusmi et al. (2017) reported that most of the primary healthcare center nurses in Malaysia are dissatisfied with work life/home factors. Almalki et al. (2012) mentioned that work context and work design strongly contribute to TI. In addition, Lee et al. (2017) showed that 4 dimensions (work agreement, workload, patient to nursing staff ratio, and work/home life balance) were significantly predictive of TI. Low QWL is reported because of being poorly satisfied with pay, benefits, job promotion, and management support (Mosadeghrad et al., 2011).

Most of the literature reviews reported demographic characteristics, namely, age, sex, marital status, level of education, tenure (years of experience), and income, as independent variables of TI (Omar et al., 2018). Many studies in the nursing field reported that younger nurses have a greater desire to leave their organization than older ones (Almalki et al., 2012; Alonazi & Omar, 2013). Similarly, the study conducted in a Nigerian public hospital by Abubakar et al. (2014) showed that younger nurses desired to leave their organization and profession more than older nurses; male nurses desired to leave their organization more than female nurses. Consistently, Faraji et al. (2017) found that male nurses were more likely to quit than female nurses. However, some studies reported mixed results between 2 or more demographic characteristics. For example, Omar et al. (2018) reported that income and years of experience were significant in TI. Singh and Loncar (2010) reported that educational level, marital status, and years of experience have significant associations with TI. In addition, age, educational level, years of experience, and unit of work are significant to TI (Cortese, 2012). Furthermore, El-Jardali et al. (2009) found that age, sex, marital status, educational level, and income were associated with TI, while Al Momani (2016) found that sex and work experience were associated with TI. Likewise, age, work experience, and educational level were significant to TI (Ramoo et

al., 2013). Moreover, age and educational level have been reported to be significant to TI, with younger and higher educated nurses being more likely to show TI (Masum et al., 2016). Recently, Frenet et al. (2017) found that sex and years of experience are significant to TI.

The present study provides an understanding of how demographic variables such as sex, age, marital status, years of experience, level of education, and income affect TI and QWL of nursing. This study attempts to identify the moderating effect of demographic variables on the Malaysian nurses' relationship between QWL and TI.

Research Questions
1. What is the level of TI and QWL among Malaysian nurses?
2. Do the QWL dimensions have a correlation with TI among Malaysian nurses?
3. Do the demographic variables significantly moderate the relationship between quality of nursing work life (QNWL) and TI?

Method

Study Design
This was a descriptive and cross-sectional study.

Sample
Stratified random sampling was used to ensure that the required population of nurses has been selected from various wards or units, and each nurse participant in the population has an equal and independent chance of being selected, thus yielding a better representation. This technique divided the population (nurses) into strata (the hospital wards or units), and the target population was selected by simple random sampling. The sample was collected from medical wards, surgical wards, and critical units. The percentage of nurses in each department was calculated. The results indicated that 36% of nurses from the main sample were from the medical ward, 31% from the surgical ward, and 33% from the critical unit. The participants who met the eligible inclusion criteria, such as have been working in the inpatient ward of general medical, surgical, and critical units and have a working experience of more than 6 months, were recruited. The sample size based on the empirical power tables was determined (Fritz & MacKinnon, 2007). It was developed as a guide to determine the sample sizes

required for a sufficient power for regression coefficients, which was assessed as path coefficients in the structural equation model. In this study, the researchers hypothesized that a high QWL of nursing results in low TI. The sample size estimated in this study was 405 nurses.

Data Collection

A self-reported questionnaire was used to collect data from Malaysian nurses from February to April 2019. This study was undertaken at a public teaching hospital in Kuala Lumpur, Malaysia. The hospital has 1,643 beds distributed over 44 wards, serving a population of 1,782,375; it stands as a statutory body under the ministry of higher education, Malaysia. The self-reported questionnaire comprised 3 parts. In the first part, data on demographic characteristics (age, sex, marital status, number of children, ethnicity, educational level, years of experience, working ward/unit, and income) were collected. The second part of the questionnaire comprised questions on the QNWL (Brooks, 2001). The internal consistency Cronbach's alpha coefficient has been reported as .89 by Sirin and Sokmen (2015). The instrument was validated in Malaysian language with Cronbach's alpha coefficient of .90 (Mohamad & Mohamad, 2012). It includes 42 items covering 4 dimensions of work design, work/home life, work world, and work context. Each item ranged from 1=completely disagree to 6=completely agree. All the items were positive statements, except item number 20, which was a negative statement. The total minimum score was 42, and the maximum score was 252. The scoring interpretation is as follows: 42 to 112, low QNWL; 113 to 182, moderate QNWL; and 183 to 252, high QNWL. Higher total scores indicate better QWL (Brooks, 2001). The final part of the questionnaire consists of the anticipated turnover scale. It includes 12 items, ranging from 1=strongly disagree to 7=strongly agree. The total score was calculated by dividing the sum of all items by the total number of items in the scale, which is the total mean score. Higher scores indicate greater intent to leave the organization. A total response score over 43 is considered an indicator of TI (Hinshaw & Atwood, 1984). The scores ranges are as follows: 12–24, low TI; 25–42, moderate TI; and 43–84, high TI. The survey was translated from English into Bahasa Malaysia by a professional bilingual translator using the forward and backward method. The translation was then checked by 2 nursing academicians.

Face validity and content validity were verified by 2 health professionals from a teaching hospital and nursing academicians. Minor modifications were made according to the comments by a panel of experts to ensure the clarity of certain words before the pilot study.

The data collection procedure consisted of 2 phases. The first phase was a pilot study carried out on 52 nurses not included in the main study for testing the instrument. The reliability was determined using Cronbach's coefficient, which revealed Cronbach's alpha of QNWL at .911 and TI at .758. According to Porter (2004), low response rates should not be complacently accepted, but researchers should try to minimize survey non-response. Therefore, the total number of distributed survey questionnaires in the second phase was 520 to ensure a reasonable response rate. In total, 455 questionnaires were returned, of which 13 were incomplete and 12 were outliers (missing data); finally, 430 questionnaires were analyzed.

Statistical Analysis

The Statistical Package for Social Sciences software (IBM SPSS Corp., Armonk, NY, USA) version 24 was used to analyze the descriptive data collected, which included frequency, percentage, weighted mean, and standard deviation. Subsequently, Pearson r coefficient correlation was applied to identify correlations between the selected variables. The significant level was produced at α = .05 (2-tailed). The structural equation model smart partial least squares (PLS) version 3 was used to estimate the path coefficients, t -statistics, standard errors, and squared multiple correlations (R^2) to test the research relationships. The path coefficients showed the strengths and direction of the relations, and t-statistics and standard errors showed the importance of the effect, while the R^2 value showed the amount of variance explained. The structural model focused on the relationships between independent variables and dependent variables. The variances that correlated with the dependent variables established the explanatory power of the proposed model. Furthermore, the model is concerned with the testing of relationship related to the moderating effect. The present study applied the PLS standard bootstrapping procedure bootstrap sample number 5000 and 216 cases to determine the significance of the path coefficient and produce t-statistics and standard errors (Hair et al., 2004).

Ethical Considerations

Ethical approval was obtained from the ethics committee of the teaching hospital University of Malaya Medical Centre where this study was conducted (Ethics Ref. No. 20181031-6826). In addition, permission from the original copyrighted author was requested and received. A questionnaire and an information sheet explaining the study were given to the participants. The nurses were informed about voluntary participation, and steps were taken to maintain confidentiality. The returned and completed questionnaires pointed out implicit consent for participation.

Results

Nurses' Characteristics

A total of 430 nurses participated in this study, yielding a response rate of 82.7%. Most participants were women (93%, n = 400), with an age range of 21 to 30 years (77%, n = 331), having a diploma (95.6%, n = 441), and with less than six years of experience (85%, n = 365). Among the respondents, more than half of the nurses were married (53%, n = 229), had no children (62.3%, n = 268), and had an income between RM2001 and RM3000 (47.2%, n = 203). The ethnicity of the nurses were mostly Malay, with 1.6% (n = 7) Chinese, 3% (n = 13) Indian, and others 1.4% (n = 6). Table 1 presents the nurses' characteristics.

Level of QNWL and TI

Table 2 presents the level of QNWL. Approximately, 75% of the nurses had a moderate level of overall QNWL, whereas 20.2% had a low level of overall QNWL. More than half of the nurses had high TI, whereas 44.9% had moderate TI. Furthermore, the results revealed that two thirds of the nurses had a moderate QWL with their family needs. Most of the nurses (93%) stated that their workload is moderate for nursing work composition and defines the actual work nurses do. More than three quarters of the respondents (80.3%) had a high level of work context as practice settings, which describe the working environment for nurses as well as patient systems; only 19% had a moderate level of work context dimension. A total of 324 (75.3%) nurses in this study reported moderating level of wok world dimensions. However, 97 (22.5%) nurses believed that nursing work had a positive impact on the lives of others.

Correlation between QNWL and TI

Table 3 shows the actual range score of QNWL dimensions including work/home life balance, work design, work context, and work world [a mean (SD) of 28.5 (3.1), 35.8 (4.2), 83.7 (9.9), and 18.8 (2.9), respectively].

The study findings showed that the correlation between QNWL and TI was negatively significant at r = −.43, n = 430, p < .01]. The QNWL dimensions including work/home life balance, work design, work

Table 1

Characteristics of Nurse Respondents (n = 430)

Demographic Data		*n*	(%)
Nurses' age (years)	21–30	331	77
	31–40	92	21.4
	≥41	7	1.6
Sex	Male	30	7
	Female	400	93
Marital status	Not married	202	47
	Married	229	53
Number of children	0	268	62.3
	≤2	126	29.3
	≥3	36	8.3
Ethnicity	Malaysia	404	94
	Chinese	7	1.6
	India	13	3
	Other	6	1.4
Level of education	Diploma	411	95.6
	Bachelor	4	.9
	Master	1	.2
	Other	14	3.3
Years of experience	<6 years	365	85
	≥6 years	65	15
Wards/units	Medical	137	34.2
	Surgical	117	27.2
	Special unit	166	38.6
Income	Less 2000 RM	78	22.8
	2001–3000 RM	203	47.2
	3001–4000 RM	108	25.1
	More 4000 RM	21	4.9
Range of age	21–51		
Average age	31		

Note. Data are presented as number (n) and percentage (%)

Table 2

Level of Quality of Nursing Work Life Dimension and Turnover Intention (n = 430)

Variable	Score	Low, n (%)	Moderate, n (%)	High, n (%)
Work/home life balance	7 to 42	0 (0)	276 (64.0)	154 (36.0)
Work design	10 to 60	7 (1.6)	402 (93.4)	21 (5.0)
Work context	20 to 120	1 (.2)	82 (19.1)	347 (80.7)
Work world	5 to 30	9 (2.1)	324 (75.3)	97 (22.6)
QNWL	42 to 252	1 (.2)	342 (79.5)	87 (20.2)
TI	12 to 84	–	193 (44.9)	237 (55.1)

Note. Data are presented as number and percentage. QNWL = Quality of nursing work life; TI = turnover intention

Table 3

Quality of Nursing Work Life and Turnover Intention: Correlations and Descriptive Statistics (n = 430)

Variable	Score	Total Score Means	Pearson's Correlation Coefficient (r)
Work/home life balance	7 to 42	28.5 (3.1)	−.23**
Work design	10 to 60	35.8(4.2)	−.32**
Work context	20 to 120	83.7 (9.9)	−.43**
Work world	5 to 30	18.8 (2.9)	−.38**
QNWL	42 to 252	167.0 (17.3)	−.43**
TI	12 to 84	71.9 (10.3)	–

Note. **Correlation is significant at the .01 level (2-tailed). Data are mean (standard deviation), QNWL = Quality of nursing work life; TI = Turnover intention

Table 4

Results of Moderating Effect of Demographic Variables on the Relationships between Quality Nursing of Work Life and Turnover Intention (indirect Effects)

Relation	Original Sample (β)	t	p
QNWL*Age → TI	.00	.16	.434
QNWL*Gender → TI	.08	1.96	.040*
QNWL*Marital status → TI	−.04	.89	.186
QNWL* Had children → TI	.04	.91	.181
QNWL*Number of children → TI	−.09	2.05	.042*
QNWL*Ethnicity → TI	−.00	.18	.428
QNWL* Level of education → TI	−.04	.61	.268
QNWL* Years of experience → TI	.02	.71	.236
QMWL* Wards/units → TI	.09	2.14	.040*
QNWL* Income → TI	.00	.12	.452

Note. *Significant at bootstrapping p < .05 **Significant at bootstrapping p < .01. QNWL = Quality of nursing work life; TI = Turnover intention

context, and work world had a negative correlation with TI [(r = −.23, n = 430, p < .01), (r = −.32, n = 430, p < .01), (r = −.43, n = 430, p < .01), (r = −0.38, n = 430, p < .01), respectively]. Overall, there was a strong, negative correlation between QNWL dimensions and TI. Increases in QNWL dimensions correlated with a decrease in the rating of TI.

Results of the Structural Equation Model Smart PLS

The structural equation model indicates the R^2 values of the model, with TI at R^2 = .331. The QNWL dimensions explain 33.1% of registered nurses' TI in teaching hospitals.

Results of Moderating Effect – QNWL

Table 4 presents the results of an indirect relationship between QNWL and TI through the interaction of demographic variables such as age, sex, marital status, ethnicity, level of education, years of experience, and income as the mean. The interacting effects of demographic variables (age, sex, marital status, children, number of children, ethnicity, level of education, years of experience, wards/units, and income) on the relationship between QNWL and TI were examined and reported.

Table 4 shows that sex significantly impacts the relationship between QNWL and TI after interacting with QNWL (β = .08; t = .1.96; p < .05). Similarly, there was a significant effect between the number of children and work wards/units (β = −.09; t = 2.05; p < .05 and β = −.09; t = 2.14; p < .05, respectively).

In addition, age (β = .00; t = .16; p > .05), marital status (β = −.04; t = .89; p > .05), ethnicity (β = −.00; t = .181; p > .05), level of education (β = .04; t = .61; p > .05), experience (β = .02; t = .71; p > .05), and income (β = .00; t = .12; p > .05) had no significant effect on TI after interacting with QNWL. Table 4 shows the results of the moderating effect of demographic variables on the QNWL and TI of Malaysian nurses in teaching hospitals.

Discussion

The results showed that most of the nurses were females and young. The average age was 31 years (range: 21–51 years) consistent with previous studies (Omar et al., 2018; Ramoo et al., 2013). The majority of nurses in this study had a diploma, which was consistent with that of previous studies reporting 63.6% (Omar et al., 2018) and 75.9% (Ramoo et al., 2013) nurses with a diploma. According to the Malaysian Nursing Board (2011) and Sowtali (2019), most Malaysian nurses were diploma holders, placing the nursing field in the sub-professional group within the government structure. This may be because promotions to higher educational levels might proceed in a slower manner than those among nurses with higher academic levels, for example, nursing degree holders. Therefore, one can deduce that these nurses will remain in the same position longer. These findings are supported by the findings by Omar et al. (2018), who found that many nurses remained in the same position for more than 5 years and had a tendency for being stabilized. All nurses should have opportunities to further their basic level of education because educational opportunities improve the commitment, self-esteem, and retention of nurses.

The findings of this study showed that nurses have a moderate level of QWL in a teaching hospital. The nurses responded "disagreed" to the QWL dimensions such as work/home life balance, work design, and work world. Similar to the findings of the study conducted by Faraji et al. (2017) in a teaching hospital, Khaghanizadeh et al. (2013) in a military hospital, and Suresh (2013) in a governmental and private hospital, the nurses in the present study reported to have a moderate level of QWL. A possible explanation for these outcomes can be, but are not limited to, the shortage and inadequacy in nursing staff leading to heavy workload, increment in working hours, and reduction in vacation. In addition, this may have led to nurses feeling exhausted, having no time to accomplish their job, and being unable to balance their work with family life, thereby increasing the intention to leave. Indeed, this notion is supported by the studies of Almalki et al. (2012) and Yusmi et al. (2017), who reported that the high intention to leave was attributed to such factors. Nursing leaders and health policymakers should discuss strategies and solutions for adequate number of nurses to achieve their work goals. Nursing managers should identify ways to design work schedules as close to nurses' expectations as possible and allow flexible working hours.

Furthermore, this study showed that over half of the nurses had a high TI. A possible explanation for this result is that the nurses disagreed with some QWL dimensions such as work life/family balance, work design, and work world. In addition, most nurses were young and half of them were married, which meant they had high expectations about their future career, especially in terms of good salaries and better opportunities. Moreover, the nurses who participated in this study were from surgical and medical wards and special units, which experience complex and emergency situations leading to work stress and overload. Direct patient care and shift duty with shortage of staff further aggravate the stress conditions, leading to an increased intention to leave among Malaysian nurses. Nevertheless, this study showed that 44.9% of the nurse participants had a moderate level of TI, similar to that in the study by Faraji et al. (2017), who reported a moderate TI (46%) among Iranian nurses. Ramoo et al. (2013) also reported that 40% of nurs-

es have moderate TI to their organizations. The study results indicated that nurses' QWL affects their TI. There is a negative correlation between QNWL and TI. This finding supports the fact that QWL is the largest determinant of TI. It plays a major role in the nurses' (employees') decision to leave their organization (Al-Hussami et al., 2014).

The results show that the correlation between QNWL and TI was significant and negative. These findings explain that TI has an impact on the work context, work design, work world, and home/work life. In other words, workload, workplace, home/work balance, and social contact affect TI among Malaysian nurses. Therefore, QNWL should be carefully handled to prevent real nurses' turnover. These results were similar to previous literature and provide evidence that QNWL's perception of the intention of nurses to leave their organization is negatively related (Lee et al., 2017; Mosadeghrad et al., 2011; Yusmi et al., 2017). Hence, these findings support the notion that QWL is the strongest determinant of TI. It plays an important role in the nurses' (employees') decision to leave or remain in their organization (Al-Hussami et al., 2014; Eren & Hisar, 2016).

Finally, the present study revealed that sex has a moderating effect on TI after its interaction with QWL. The relationship was significant and positive. This predictor explains the variance in TI. Although most of the participants were women (93%, $n =$ 400), the results did not affect the fact that sex has a moderating impact on TI after interacting with QWL. The role of the moderator is to function as causal variables, antecedent or exogenous to certain criterion effects, which means that the number of participants does not affect the role. These findings are supported by those of previous studies reporting that gender has a significant role in TI (Al Momani, 2017; Faraji et al., 2017; Frent et al., 2017; Omar et al., 2018).

Furthermore, the number of children has a moderating effect on the relationship between QNWL and TI. A potential explanation for this factor is that it may be difficult for married nurses to achieve a work/home life balance owing to shift duties and housework and childcare responsibilities, especially with an increased number of children (Camerino et al., 2010). In addition, the current findings showed that wards/units (work setting or units) has a moderating effect on the QNWL/TI relationship. This is probably owing to the fact that the different circumstances of wards and units, which result from the size of the unit, number and type of patients, hospital policy, and physical environment, may affect QNWL and lead to an increase in TI (Azarang et al., 2012; Moradi et al., 2014).

Study Limitations

First, because of misinterpretation of some of the items, the use of self-reporting instruments may have reduced the reliability of answers. Second, the sample was collected from a teaching hospital from a certain area, which may lead to the inability to generalize these collected data to other groups in other areas. Third, this cross-sectional study was only able to measure the "intention" to leave and not the actual leaving rates.

Conclusion and Recommendations

This study showed moderate levels of QWL and low levels of TI. Quality of work life had a negative relationship with TI. Sex, number of children, and place of work (wards/units) had a moderating effect on the nurses' relationship between QWL and TI.

Quality of work life dimensions are important as they may influence many factors such as workplace, work life/family balance, workload, and the influence of work agreement. Thus, the change in these factors may affect the QWL with different levels of personal work and performance. A nursing leader is advised to focus their attention to these dimensions. This study seeks to help nursing managers to meet the nurses' needs, particularly the quality of work. Therefore, nursing managers need to respect nurses' desires and expectations, and they should obtain regular feedback from nurses to avoid actual turnover.

– L.G.Z.; Analysis and/or Interpretation – L.G.Z., K.L.A., C.M.C., C.Y.P.; Literature Search – L.G.Z; Writing Manuscript – L.G.Z., K.L.A., C.M.C., C.Y.P.; Critical Review – L.G.Z., K.L.A., C.M.C., C.Y.P.

References

Abubakar, R. A., Chauhan, A., & Kura, K. M. (2014). Role of demographic variables in predicting turnover intention among registered nurses in Nigerian public hospitals. *International Journal of Business and Technopreneurship, 4*(3), 373-383. [Crossref]

Al Momani, M. (2017). Factors influencing public hospital nurses' intentions to leave their current employment in Jordan. *International Journal of Community Medicine and Public Health, 4*(6), 1847-1853. [Crossref]

Al-Hussami, M., Darawad, M., Saleh, A., & Hayajneh, F. A. (2014). Predicting nurses' turnover intentions by demographic characteristics, perception of health, quality of work attitudes. *International Journal of Nursing Practice, 20*(1), 79-88. [Crossref]

Almalki, M. J., FitzGerald, G., & Clark, M. (2012). Quality of work life among primary health care nurses in the Jazan region, Saudi Arabia: A cross-sectional study. *Human Resources For Health, 10*(1), 30. [Crossref]

Alonazi, N. A., & Omar, M. A. (2013). Factors affecting the retention of nurses. *A survival analysis. Saudi Medical Journal, 34*(3), 288-294.

Azarang, S., Yaghmaee, F., & Shiri, M. (2012). Correlation dimensions of quality of work life of nurses and demographic characteristics [in Persian]. *Iranian Journal of Nursing Research*, 7(27), 18-24.

Brooks, B. A. (2001). Development of an instrument to measure quality of nurses' worklife. Unpublished doctoral dissertation, University of Illinois, Chicago. Google Scholar. https://doi.org/hdl.handle.net/10755/19226

Camerino, D., Sandri, M., Sartori, S., Conway, P. M., Campanini, P., & Costa Shiftwork, G. (2010). Work-family conflict among Italian nurses, and prevention efficacy. *Chronobiology International*, 27(5), 1105-1123. [Crossref]

Cortese, C. (2012). Predictors of critical care nurses' intention to leave the unit, the hospital, and the nursing profession. *Open Journal of Nursing, 2*(3), 311-326. [Crossref]

El-Jardali, F., Dimassi, H., Dumit, N., Jamal, D., & Mouro, G. (2009). A national cross-sectional study on nurses' intent to leave and job satisfaction in Lebanon: Implications for policy and practice. *BMC Nursing, 8*(1), 3. [Crossref]

Eren, H., & Hisar, F. (2016). Quality of work life perceived by nurses and their organizational commitment level. *Journal of Human Sciences*, 13(1), 1123-1132. [Crossref]

Faraji, O., Salehnejad, G., Gahramani, S., & Valiee, S. (2017). The relation between nurses' quality of work life with intention to leave their job. *Nursing Practice Today, 4*(2), 103-111.

Fernet, C., Trépanier, S. G., Demers, M., & Austin, S. (2017). Motivational pathways of occupational and organizational turnover intention among newly registered nurses in Canada. *Nursing Outlook, 65*(4), 444-454. [Crossref]

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological Science, 18*(3), 233-239. [Crossref]

Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). A primer on partial least squares structural equation modeling (PLS-SEM): Sage publications. https://us.sagepub.com/en-us/nam/a-primer-on-partial-least-squares-structural-equation-modeling-pls-sem/book244583

Heinen, M. M., van Achterberg, T., Schwendimann, R., Zander, B., Matthews, A., Kózka, M., & Ball, J. (2013). Nurses' intention to leave their profession: A cross sectional observational study in 10 European countries. *International Journal of Nursing Studies, 50*(2), 174-184. [Crossref]

Hinshaw, A., & Atwood, J. (1984). Anticipated turnover among nursing staff study. *Nursing Research, 34*, 54-65. [Crossref]

Kalifa, T., Ololo, S., & Tafese, F. (2016). Intention to leave and associated factors among health professionals in Jimma zone public health centers, southwest Ethiopia. *Open Journal of Preventive Medicine, 6*(01), 31. [Crossref]

Khaghanizadeh, M., Ebadi, A., & Rahmani, M. (2013). The study of relationship between job stress and quality of work life of nurses in military hospitals. *Journal of Military Medicine, 10*(3), 175-184.

Lee, Y. W., Dai, Y. T., Chang, M. Y., Chang, Y. C., Yao, K. G., & Liu, M. C. (2017). Quality of work life, nurses' intention to leave the profession, and nurses leaving the profession: A one-year prospective survey. *Journal of Nursing Scholarship, 49*(4), 438-444. [Crossref]

Lee, Y. W., Dai, Y. T., Park, C. G., & McCreary, L. L. (2013). Predicting quality of work life on nurses' intention to leave. *Journal of Nursing Scholarship, 45*(2), 160-168. [Crossref]

Malaysian Nursing Board, http://nursing.moh.gov.my. Date accessed (2018, 6 Jun).

Mohamed, W. N., & Mohamad, M. (2012). *Measuring the quality of nursing work life in public hospitals* [Conference presentation]. The International Conference on Management, Langkawi Kedah, Malaysia. http://www.internationalconference.com.

Moradi, T., Maghaminejad, F., & Azizi-Fini, I. (2014). Quality of working life of nurses and its related factors. *Nursing and Midwifery Studies*, 3(2), 19450. [Crossref]

Mosadeghrad, A. M., Ferlie, E., & Rosenberg, D. (2011). A study of relationship between job stress, quality of working life and turnover intention among hospital employees. *Health Services Management Research, 24*(4), 170-181. [Crossref]

Masum, A. K. M., Azad, M. A. K., Hoque, K. E., Beh, L. S., Wanke, P., & Arslan, Ö. (2016). Job satisfaction and intention to quit: An empirical analysis of nurses in Turkey. *PeerJ, 4*, e1896. [Crossref]

Omar, K., Halim, M., Yusoff, Y., Ahmad, A., & Ibrahim, R. (2018). Assessing intention to leave among public hospital nurses in Malaysia. *Journal of Fundamental and Applied Sciences*, 10(Suppl 3): 294-305.

Porter, S. R. (2004). Raising response rates: What works? *New Directions for Institutional Research, 121,* 5-21. [Crossref]

Price, J. L., & Mueller, C. W. (1981). A causal model of turnover for nurses. *Academy of Management Journal, 24*(3), 543-565. [Crossref]

Ramoo, V., Abdullah, K. L., & Piaw, C. Y. (2013).The relationship between job satisfaction and intention to leave current employment among registered nurses in a teaching hospital. *Journal of Clinical Nursing, 22*(21-22), 3141-3152. [Crossref]

Singh, P., & Loncar, N. (2010). Pay satisfaction, job satisfaction and turnover intent. *Relations Industrielles/Industrial Relations, 65*(3), 470-490. [Crossref]

Sirin, M., & Sokmen, S. M. (2015). Quality of nursing work life scale: The psychometric evaluation of the Turkish version. *International Journal of Caring Sciences*, *8*(3), 543.

Sowtali, S. N. (2019). Projection of nursing profession in Malaysia: Where we are and what need to be improved? *Nursing & Healthcare International Journal*, *3*(1), ISSN: 2575-9981. [Crossref]

Suresh, D. (2013). Quality of Nursing Work Life among nurses working in selected government and private hospitals in Thiruvananthapuram. (Doctoral dissertation, SCTIMST). https://despace.sctimst.ac.in. DOI:10.4172/2167-1168.C1.020

World Health Organization, (WHO). (2013). Migration and Retention. https://www.who.int/hrh/migration/en/

Yang, Y. H., & Kim, J. K. (2016). Factors influencing turnover intention in clinical nurses: Compassion fatigue, coping, social support, and job satisfaction. *Journal of Korean Academy of Nursing Administration, 22*(5), 562-569. [Crossref]

Yusmi, M., Idris, K., Abd Rahman, A., & Lai, H. (2017). The role of quality of nursing work life and turnover intention in primary healthcare services among registered nurses in selangor. *International Journal of Academic Research in Business and Social Sciences, 7*(6), 1201-1213. [Crossref]