International Journal of Engineering & Technology, 7 (4.1) (2018) 142-144

International Journal of Engineering & Technology

Website: www.sciencepubco.com/index.php/IJET

Research paperer

Employees' health related quality of life in medical education provider setting: Does academicians report higher scores?

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Abstract

Purpose: The objective of this study was to measure level of health-related quality of life among employees working in medical education provider's setting and its association with type of jobs as academicians or non-academicians. Approach: A cross sectional study was conducted among employees in a medical education provider's setting. Study instrument consisted of validated Medical Outcome 36-item Short Form Survey (MOS-36) questionnaire were distributed as online survey form. All employees in the study location were recruited. Significant difference in quality of life scores were compared between job types using chi square and Mann-U Whitney statistical test. Results: A total of 196 employees participated in this study. Majority of them were female employees (59%) with Master degree level of education (20%). Academicians were found to score higher in 6 out of 8 domains measured compared to non-academicians. Significant associations were observed between these 2 groups involving 3 domains which were physical functioning (Difference in scores= 10.0, U=2589, p=0.01), emotional health (Difference in scores= 12.0, U=2496, p=0.01) and general health (Difference in scores=10.0, U=2452, p=0.004) domains. Findings from this study supported existing evidence in literature which revealed that in general, academicians did have higher level of HRQOL when compared with their counterparts. These findings would add to existing but limited knowledge on the HRQOL status of healthy working population; because in the past, majority of previous HRQOL studies were emphasized towards patients' population or population with special conditions. Conclusion: Future initiatives or strategies by policy makers and employers for ensuring good HRQOL among this healthy working population should focus on improving general, physical and emotional health of their employees.

Keywords: *Health related quality of life; Employee; Academician; Medical education; QOL.*

1. Introduction

Health related quality of life (HRQOL) is defined as "an individual's or group's perceived physical and mental health over time" [1]. It is not easy to measure the level of HRQOL as an aggregated outcome because the term "quality of life" itself has different meaning to nearly everyone and every academic disciplines, individuals and groups which can characterize it differently.

Nevertheless, over the years many measuring tools for quality of life (QOL) had been developed, validated and studied for different categories of population. Among widely used measuring tools available, the Medical Outcome 36-item Short Form Survey (MOS-36) developed by RAND Corporation was used in this study due its characteristics which were generic, coherent, and easily administered measures [2].

In the past, many of HRQOL studies using MOS-36 had focused on patients' population [3-7] and few were conducted among general population [8-10]. In other words, majority of these studies were skewed towards patients' population and limited in healthy or working populations. This is a gap that was being addressed in this study focusing on healthy working population with different job types in providing medical education to medical students as well as providing clinical services to patients. The main aim of this study was to measure the level of HRQOL among employees working in medical education provider's setting and whether job types as academician and non-academician significantly affected the measured scores.

2. Material and methods

This cross sectional study was conducted in a public medical education provider's setting from January 2017 to June 2018 among all employees registered within organization's email mailing list during the study period.

2.1. Study instrument

The study instrument consisted of online questionnaires with 2 parts; Part A required the respondent to fill in their basic socio-demographic data meanwhile Part B was the RAND 36-Item Health Survey form that need to be completed by them. The RAND 36-Item Health Survey (MOS-36) contains thirty-six questions that requires respondent to scores their preferences about their health in the past four weeks. These scores will be calculated to be categorized into eight scales. These eight scales include physical functioning, bodily pain, role limitations because of physical health problems, role limitations because of personal or emotional problems, emotional well-being, social functioning, energy/fatigue, and general health perceptions.

Calculation of score for health related quality of life using MOS-36 into these eight scales involved two process. In the first process,

scoring key given will be used to recode the pre-coded numeric values. All of these recoded items are scored. The high scores will define a preferable health level. The lowest and highest scores are set to be at 0 to 100 respectively. These scores will translate into percentage of total possible scores. For the second process, to create eight domains, items in the similar scales are averaged. Missing data do not need to be calculated for each of these eight scales. Thus, all items in the scale are equal to the average for all items answered by respondents. The reliability, central tendency, and variability of the scales scored using this calculation from previous study is shown in Table 1 [11].

Table 1: Reliability, Central Tendency, and Variability of Scales in the Medical Outcomes Study

Scale	Items	Alpha	Mean	SD
Physical functioning	10	0.93	70.61	27.42
Role functioning/physical	4	0.84	52.97	40.78
Role functioning/emotional	3	0.83	65.78	40.71
Energy/fatigue	4	0.86	52.15	22.39
Emotional well-being	5	0.90	70.38	21.97
Social functioning	2	0.85	78.77	25.43
Pain	2	0.78	70.77	25.46
General health	5	0.78	56.99	21.11

(Source: Ware & Sherbourne CD, 1992)

2.2. Data collection

The study instrument was delivered to all employees using their organizational email address. In order to ensure adequate number of respondents were recruited, reminder emails were sent to all employees at the end of every 2 months from date of first email until the end of data collection period in June 2018. All of these completed questionnaires were printed as hardcopy and all data were then manually entered into SPSS software [12] data file for further analysis.

2.3. Data analysis

Median and inter-quartile range for scores of individual respondents were determined and compared according to job types as academicians or non-academicians. Statistical analysis was done using $\chi 2$-test and Mann U Whitney test for finding significant association between respondents' characteristics, job types and domains' scores. The values were considered statistically significant when p values were less than 0.05.

3. Results

3.1. Respondents' characteristics

A total of 196 employees completed the online questionnaires. Median age of these respondents was 39 years old (IQR +9). Majority of them were female (59%), married (66%) and hold a Master degree (20%). Categories of respondents participating in this study by job types and tenure were shown in Figure 1.

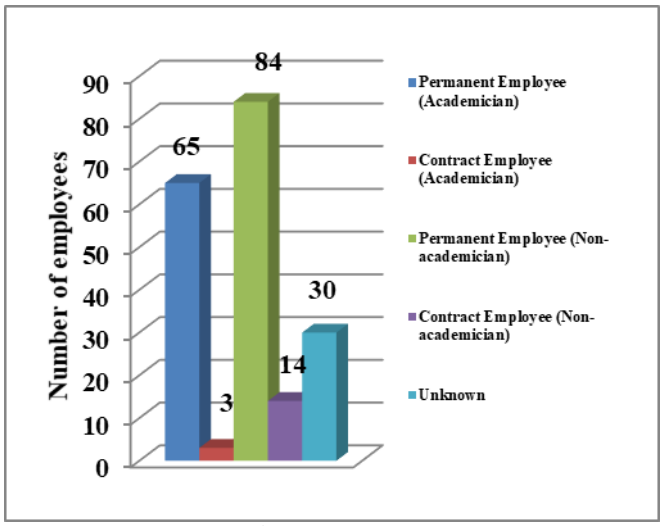

Fig. 1: Categories of employees by job types and tenure

3.2. Association between demographic characteristics and job type

Significant association was found between job types of respondents as academician or non-academician with marital status ($\chi 2$=11.2, p=0.03) and level of education ($\chi 2$=133.7, p<0.05).

3.3. Scores of employees measured by different domains of MOS 36

Findings from this study showed that academician had higher scores in 6 out of 8 domains measures by MOS-36 compares to non-academician. The highest median scores for academician was in role limitations because of physical health and mental health problems with median scores values of 100 for both domains. Meanwhile, non-academician showed higher score values over academicians in only one domain which was energy/fatigue with median score of 65 compared to 62.5 for academicians.

3.4. Scores of employees measured by different domains of MOS 36

As show in Table 2, significant association were found between job type with 3 domains including physical functioning (u=2589, p=0.01), emotional health (u=2496, p=0.01) and general health (u=2452, p=0.004).

Table 2: Comparison of scores as measured by different scales between job types

No.	Scales	Academician N=68 (Median +IQR)	Non-academician N=98 (Median +IQR)	P value
1.	Physical Functioning	95.0 + 19.0	85.0 + 40.0	0.01*
2.	Role limitations because of physical health problems	100.0 + 75.0	100.0 + 100.0	0.56
3.	Role limitations because of emotional health problems	100.0 + 67.0	100.00 + 100.0	0.25
4.	Energy/ fatigue	62.5 + 25.0	65.0 + 40.0	0.42
5.	Emotional health	72.0 + 23.0	64.0 + 33.0	0.01*
6.	Social functioning	75.0 + 25.0	75.0 + 38.0	0.24
7.	Bodily pain	77.5 + 34.0	67.5 + 45.0	0.07
8.	General health	65.0 + 30.0	55.0 + 33.0	0.004*

*p value <0.05 taken as level of significance

4. Discussion

HRQOL among the respondents in this study showed scores of more than 50 which was the average scores in MOS-36 for all 8 domains measured. This might imply that overall, good HRQOL were reported by this healthy population. Nonetheless, when the respondents were categorized by their job types of working as academician or non-academician, the difference in level of HRQOL could be observed. Those who were employed as academicians appeared to have higher scores in majority of the domains compares to the non-academicians. This finding supported the implication that academicians have higher quality of life which was similarly found in a previous Turkey study [13] that showed social and work life quality scores of academicians were higher compared to their research assistants.

Findings that job types differed significantly in terms of marital status and level of education of the employees were expected as in practice academicians must possess certain level of higher education certification to be accepted in their job position and having a secure income might explain the reason for difference in the marital status with the non-academicians.

Furthermore, highest score differences between academicians and non-academicians were in physical functioning domain which was also found to be statistically significant. This result supported findings from another study that showed that, academicians did obtain higher score in physical domain when measured using other type of QOL tools compared to the non-academicians' population. The reason for this was thought to be level of stress was seen higher in non-academicians group which lead to lower physical domain scores [14].

This study also found that emotional health domain scores were found to be significantly associated with type of job as academicians and non-academicians. As far as the author's knowledge, there was no other study which reported similar result. However, in proxy, this finding would support a study done on predictors for burnout among neurosurgeons where it was found that affiliation as academicians had significantly influenced the outcome of burnout status [15].

Finally, it was found that general health domain scores were significantly associated with type of jobs as academicians and non-academicians. This finding might be due to the reason that academicians in medical education setting have more chances to participate or better access to healthy lifestyle programs which could ensure their general health would be in good condition compared to the non-academicians. As an example such a program was in place in hospital setting in United States which lead to better health of their physicians [16].

This study shares similar limitation related to this cross sectional design whereby causality cannot be determined between variables studied and used of questionnaires may lead to recall bias by the respondents. The findings also might be applicable only in population sharing similar demographic characteristics as this study population.

The representativeness of these study findings deserves some consideration. Although not random, sampling include all eligible population that met the criteria to answer the study objectives. Moreover, the strength of this study is in its ability to provide the knowledge on the effect of job type on HRQOL among healthy population with high socioeconomic status using a validated QOL measures.

5. Conclusion

HRQOL for employees in medical education provider's setting revealed that significant association existed between job types as academician or non-academicians within at least 3 out of 8 domains measured. Therefore, future planning for ensuring high HRQOL among this healthy working population should be focus on 3 significance areas found from this study which includes general health, emotional health and physical fitness of the employees.

Acknowledgement

This study was approved by the Research Ethics Committee of Universiti Teknologi MARA and was funded under LESTARI Grant [600-IRMI/DANA 5/3/LESTARI (0080/2016)].

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