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Job Satisfaction Among Radiologic Technologists at Hospitals in Saudi Arabia's Southern Region: A Cross-sectional Study

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In Aseer province, Kingdom of Saudi Arabia, we sought to identify the level of radiographers' job satisfaction. Methods: From April to December 2019, we carried out a cross-sectional study to measure job satisfaction among radiological technologists at major hospitals in the province of Aseer. The Minnesota Satisfaction Questionnaire (MSQ) was used for work satisfaction assessments. This study established a high degree of feelings of work contentment in our participating radiographers. It also showed that the level of job satisfaction differed between men and women radiographers; men radiographers were much less comfy (90.3%) with their jobs than had been women employees (96.7%).Advanced modalities branch employees were the most-satisfied group among all participating individuals in Aseer region hospitals, the overall job satisfaction is high among our radiographers. In addition, men radiological technologists had a lower level of job satisfaction than women staff. When workers were stratified by age groups or years of experience, we found no significant differences in the level of satisfaction. Further research is needed to determine the factors that affect job satisfaction

Keywords: Job satisfaction, radiological technologists, radiology.

INTRODUCTION

Job satisfaction is a positive state of emotion resulting from the performance of one's job or work experience (Kamarulzaman et al., 2012). Job pleasure is an in-built reaction to a condition of employment, which is often determined by how the outcomes encounter or outperform anticipations (Locke et al., 1976). As reported in the Literature Earnings, (Eslick et al., 2000; Raj et al., 2006) Professional Support, (Watson et al., 2008) Working Environments, (Aiken et al., 2013) and Constructions for Occupational Growth (Probst et al., 2007) are the key reasons that make a contribution to job satisfaction for radiographic technologists. Eslick (Eslick et al., 2000), Raj (Raj et al., 2006) and Watson conducted job satisfaction studies among radiographic technologists in other countries locations (Watson et al., 2008)

Studies have shown that work satisfaction is correlated with labour productivity and performance (Haas et al.,2000; Deshkulkarni et al.,2009). Furthermore, employees' positive or negative thoughts about their work will influence

the quality of the services provided to their clients (Judge et al., 2001). Job dissatisfaction may contribute to behavioural and emotional outcomes such as carelessness, decreased productivity, stress (Ali Jadoo et al., 2015),depression, exhaustion (Faragher et al., 2005) and can lead to a decrease organizational engagement and satisfaction with life, resignation, or increases in early retirement applications, and outbreak of aggressive workplace behaviours (Hackman and Oldham,1976; Franco et al.,2002).

The work satisfaction of radiologic technologists, who are the most necessary development factor in a health care organisation, has a critical significance (Cooper et al., 1989). Other factors that can influence dissatisfaction related to health care facilities include conditions in which the workplace is too crowded, noisy, dark, high temperatures or insufficient air (Li et al., 2014)

Different scholars had approached job satisfaction differently. As Greenberg and Baron have said, work satisfaction is the employees ' personal conduct towards their jobs, which could be positive or negative (Kamarulzaman et al., 2012). Locke described work satisfaction as the emotional state that results from viewing one 's job as achieving one 's job values (Locke et al., 1976). There is evidence from quite a few studies that job satisfaction is related to performance and presentation (Haas et al.,2000; Deshkulkarni et al.,2009). Job satisfaction can influence worker behaviour, and therefore the organization's overall performance (Hutton et al., 2014)

The reports identified a correlation between job satisfaction of health workers and patient satisfaction (Haas et al.,2000; Deshkulkarni et al.,2009). Workers with higher job satisfaction rates have a favourable response to low retraction behaviour towards their employers. On the other hand, workers with low work satisfaction levels have a negative attitude to their jobs (Judge et al., 2001).Therefore, job satisfaction has been recognized as a significant factor in uplifting the physical health and mental capacity of employees, (Hackman and Oldham, 1976; Franco et al., 2002 and Ali Jadoo et al., 2015)

In addition, several studies have indicated that discontentment can have a negative effect on the mental health and self-confidence of a worker, which can contribute to anxiety leading to depression (Faragher et al., 2005). Somel factors, like management style, and workload, have been shown to have a possible impact on the worker's mental health and happiness. Such problems will increase the workers stress level (Ali Jadoo et al., 2015). Workplace dissatisfaction are anxiety, depression, sluggishness, tiredness and inattentiveness (Cooper et al., 1989). Discontentment in the workplace may also reduce organizational loyalty, resulting in increased resignation, early retirement applications, and workplace resentment. It is asserted that providing high level promotions would improve workplace satisfaction (Warr et al., 1979).

Healthcare workers job satisfaction is strongly affected by factors in healthcare facilities such as financial problems, staff safety, management style, and professional development opportunities (Cooper et al., 1989). Additional factors associated with health care facilities that could trigger frustration include situations where the workplace is extremely full, grimy, noisy, humid, or low in air quality (Li et al., 2014)

Workers in the Radiology department have a vital role to play in the performance of a health facility. To maintain a highly efficient work environment, it is therefore important to inspire the departmental radiology staff and observe their job satisfaction levels. A limited number of scientific literature studies have concentrated on radiology technologists(Akroyd and Shewchuk, 1990; Eslick and Raj, 2000 ;Hutton et al., 2014; Knight, 2004; Probst and Griffiths, 2009;Buddeberg-Fischer et al., 2011; Gualano et al., 2016) ; only one study in Saudi Arabia has reported work satisfaction for radiographers (Alamri et al., 2020) .So far, in the Aseer region of Saudi Arabia, no published work has evaluated job satisfaction among radiology technologists. We therefore conducted this study to determine how satisfied with their work are the radiology technologists in the hospitals of Aseer province.

MATERIALS AND METHODS

The research is a cross-sectional analysis that started in April 2019 and ended in September 2019, assessing the level of work contentment and satisfaction of medical imaging professionals (radiological technologists) at three main hospitals in the Aseer province, Kingdom of Saudi Arabia; 133 Saudi citizens contributed in this study.

Job satisfaction was measured using the Minnesota Satisfaction Questionnaire (MSQ) (Weiss et al., 1967) and the Statistical Package for Social Sciences (SPSS) software was used to evaluate the questionnaire data. The survey questionnaire had two parts: The first segment was related to statistical data obtained on the participants' characteristics, gender identity, age,

education level, years of experience, institution of employers and professional sub-specialty.

Twenty questions related to job fulfillment were included in the second part of the survey questionnaire; these questions related to the views of the participants on appreciation, accomplishment, working conditions, attitudes of the supervisors, freedom, pay , promotion, obligation, innovation, working conditions, colleagues, company policies and practices, moral values, security , social protection, authority and ability utilisation.

The participants replied individually to each question and responded to a scale of five grades from very satisfied to very dissatisfied. Formal ethical approval for the study has been obtained from the relevant department. In addition, the demographic information variables were further subdivided into two groups to ensure data consistency: older or younger than 30 years, and two sets of qualifications (diploma versus higher).

Amount of experience was split into two groups (greater or shorter than five years). Professionals were further classified by specialty: interventional radiation therapy (RT), nuclear medicine (NM), ultrasonography (US), magnetic resonance imaging (MRI), computed tomography (CT), and general radiology (GR) sub-specialties. According to Minnesota Satisfaction Questionnaire (MSQ) manual (Alamri et al., 2020), levels of 75% or higher are considered a high degree of satisfaction, while between 74% and 25% is a moderate level of satisfaction, and lower than 25% is interpreted as a low degree of satisfaction (Alamri et al., 2020).

We examined the results using the Social Sciences Statistical Software (SPSS), version 23. The significance step was set at a level of 5% using the Person Chi-Square Test to determine the association between the variable quantity of respondents and of area assessed in the questionnaire. Due to its ability to perfectly encapsulate the definite analysis, the chi-square test was applied in our research.

RESULTS

For three public hospitals a cross-sectional survey has been conducted among radiographers. The answers returned were checked, and excluded those with incomplete results. A total of 133 surveys were completed. There were 72 men (54.1%) and 61 women (49.1%) participants. Of the total participants, 46 were specialized in general x-ray (34.6%), 32 in CT (24.1%), 25 in MRI (18.8%), 22 in US (16.5%) and 8 in other specialties (12%) including angiography, nuclear medicine and radiotherapy**.**

In terms of work experience, the most populous group were those who had spent less than three years at work (36.8%, n=49), followed by those with 3–5 years and 5–10 years equally (21.8%, n=29), while the least populous group were those with more than ten years' experience (19.5%, n=26). The majority of participants were the youngest group, aged 21–30 (58.6%, n=78), followed by participants aged 31–40 (35.3%, n=47), and the least populous was the oldest group (6.1%, n=8).

Of the total participants, there were 22 diploma degree holders (16.5%), 100 bachelor's degree holders (75.2%), 9 with masters (6.8%) and only 2 with PhD degrees (1.5%). Among the overall participants, 54.9% (n=73) were very satisfied and 38.3% (n=51) were satisfied, while 4.5% (n=6) showed neutral satisfaction and only 2.3% (n=3) were very dissatisfied. Table 1 shows the mean satisfaction level score in different categories among the overall participants; the general satisfaction level was high (77%). Our statistical analysis showed significant differences in levels of satisfaction between men and women; women (mean (m)=4.4, standard deviation (SD)=0.52) were more satisfied with their jobs than men (m=4.1, SD=0.81), and p=0.04 (Figure 1).

In addition, MRI radiographers were the most satisfied group of the total participants (m= 4.34, SD= 0.61), followed by CT specialists and radiotherapy specialists (m= 4.3, SD= 0.77 and m= 4.27, SD= 0.35, respectively), while NM was the least satisfied group (m=3.8, std=0.47). More significantly, the findings revealed a substantial difference in the degree of satisfaction between the diploma degree holders (m= 3.9, std= 0.78) and the bachelor's degree holders (m= 4.28, std= 0.68, p=0.015). Although, we noticed no substantial difference between bachelor and master degree holders (m= 4.27, std= 0.62, p= 0.27) (Figure 2D).

The mean satisfaction level for each question is shown in Table 2. There was no substantial difference in satisfaction rates with respect to age groups, where the youngest and older groups displayed a small difference in the mean scores (m= 4.3, SD= 0.72 and m= 4.3, SD= 0.60, respectively) (Figure 2A). Years of experience also do not show any significant effect on satisfaction level, while the most-satisfied group was those who had spent 3–5 years at work (m= 4.4, std= 0.48), and the least satisfied were those

with 5–10 years of work experience (m= 4.1, std= 0.74), as seen in Figure 2B.

The highest rates of satisfaction were recorded when radiographers were asked about the sense of accomplishment they received from the job (m=4.29, std=0.83),

Table 1:Demographic, qualification and employment details for the study population

Groups	Variable	Mean	SD
Overall		4.2143	.70519
Gender	Men (n=72)	4.0694	.80625
	Women (n=61)	4.3852	.51956
Age	22 – 30 (n=78)	4.2692	.72386
	31- 40 (n=47)	4.1170	.69323
	41 – 50 (n=8)	4.2500	.59761
Years of practice	3-5 years (n=29)	4.3793	.47538
	5-10 years (n=29)	4.0690	.74071
	less than 3 years (n=49)	4.1939	.80891
	over 10 years (n=26)	4.2308	.66679
Specialty	Angiography (n=2)	4.0000	.70711
	CT (n=32)	4.2969	.77104
	General X-ray (n=46)	4.2391	.66449
	MRI (n=25)	4.3400	.60759
	NM (n=4)	3.8750	.47871
	Radiotherapy (n=2)	4.2500	.35355
	US (n=22)	3.9773	.83776
Qualification	Diploma (n=24)	3.8958	.77990
	Bachelor (n=100)	4.2850	.67888
	Master (n=9)	4.2778	.61802

Table 2:Questionnaire's questions, and the related statistics

Items	Satisfaction %	Mean Satisfaction score	Std. Deviation
Question 1: Activity	83%	4.14	.860
Question 2: Independence	76%	3.78	1.047
Question 3: Variety	75%	3.77	1.027
Question 4: Social Status	84%	4.18	.952
Question 5: Supervision- Human Relation	77%	3.83	1.091
Question 6: Supervision- Technical	76%	3.80	1.071
Question 7: Moral Values	78%	3.91	1.171
Question 8: Security	80%	3.98	1.004
Question 9: Social Services	85%	4.26	.867
Question 10: Authority	79%	3.97	.825
Question 11: Ability Utilization	83%	4.14	1.016
Question 12: Company Policies and Practices	63%	3.14	1.086
Question 13: Compensation	74%	3.72	1.083
Question 14: Advancement	70%	3.50	1.132
Question 15: Responsibility	70%	3.51	1.056
Question 16: Creativity	76%	3.80	.991
Question 17: Working Conditions	72%	3.62	1.112
Question 18: Co-workers	78%	3.90	.968
Question 19: Recognition	74%	3.71	1.028
Question 20: Achievement	86%	4.29	.833
General Satisfaction	77%	4.2143	.70519

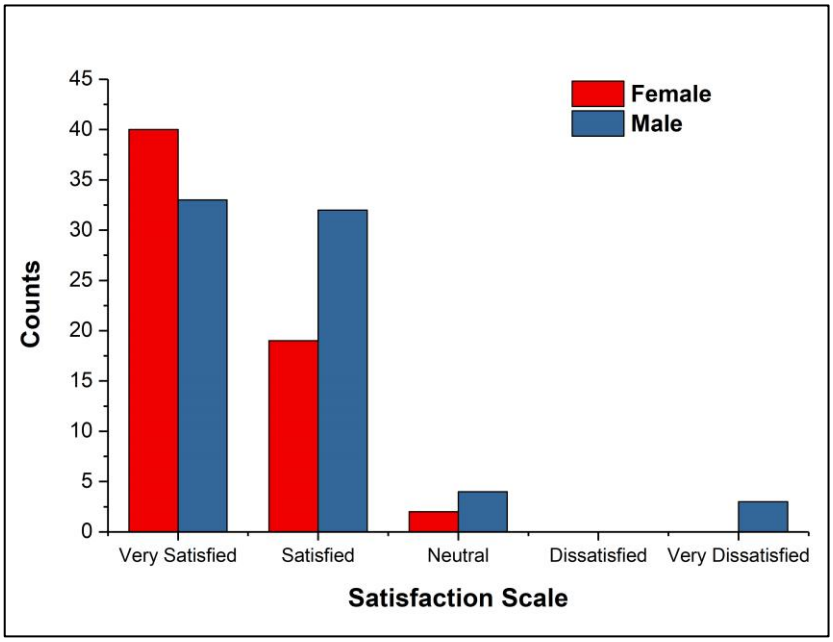

Figure 1: Comparison between men and women mean satisfaction levels.

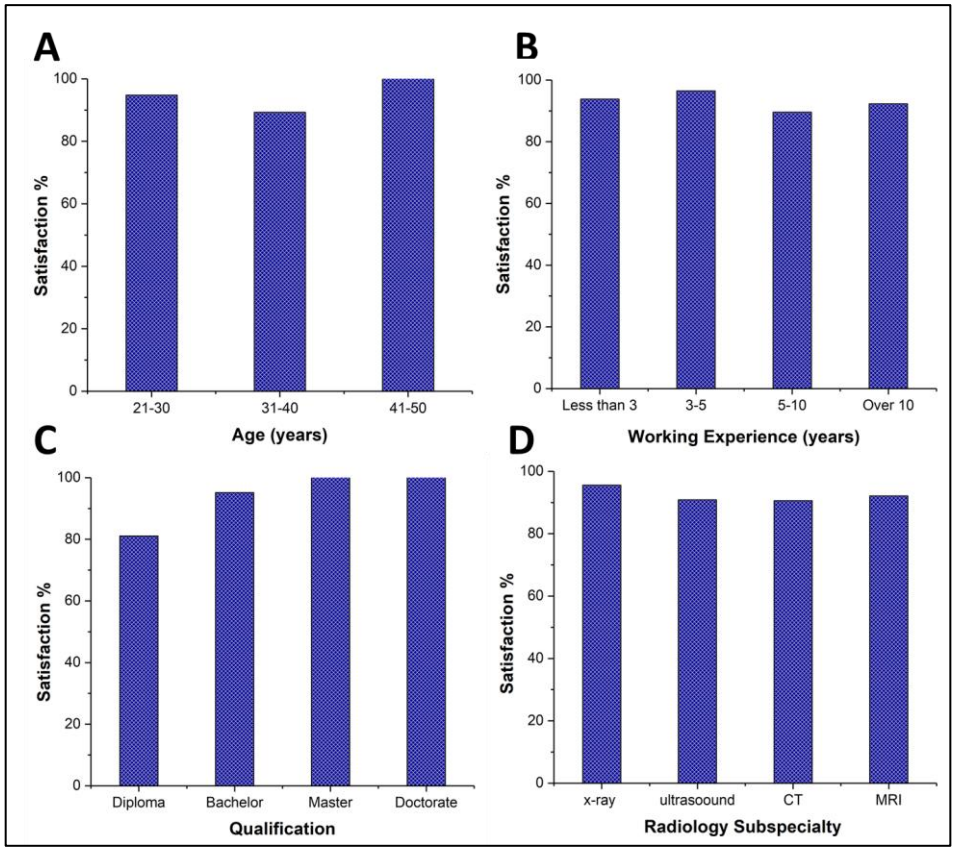

Figure 2: Satisfaction levels for the study population from various perspectives, including participant's age, working experience, qualification and subspecialty.

in which 87.9% were satisfied. Furthermore, 83.5% were pleased with the ability to do good things for other people in the society (m=4.26, std=0.87), and 80.5% of radiographers were satisfied with their values within the society they live in (m=4.18, std=0.95).

The lowest satisfaction levels were reported when participants were asked about the work policies at their institution (m=3.14, std=1.086), in which 27.8% of radiographers were dissatisfied. Additionally, radiographers showed low satisfaction levels when asked about their ability to improve their skills and qualification at work (m=3.50, std=1.1); 22.5% were dissatisfied. Moreover, participants reported a low satisfaction level when asked about their ability to use their judgment at work (m=3.51, std=1.1), in which 18% of radiographers were dissatisfied. Furthermore, radiographers showed lower satisfaction levels when they were asked about the nature of the relationship between them and their supervisors (m=3.80, SD=1.1); 11.3% were dissatisfied.

DISCUSSION

Job satisfaction is a core aspect of the success of every organisation. Nonetheless, it is a dynamic topic that is the product of many variables and may have a different interpretation and definition from one person to the other. It can have a direct impact on the quality of work, particularly among health workers, owing to the intense demands of their work. This is the first recorded study exploring work satisfaction issues in radiology departments in Aseer region.

The results in this research used a scale of five grades from very satisfied to very dissatisfied. Our results indicated that 54.9% of workers were highly satisfied with their jobs, and 38.3% were satisfied, 4.5% showed neutral feelings, and only 2.3% were very dissatisfied with their jobs. Moreover, the participating radiology department staff showed a high level of satisfaction in general (77%), similar to that described by Alamri and colleagues from their study in Taif (2020).

A worldwide field of study has been the perception of job satisfaction among radiology employees. In their study conducted in the United Kingdom, Hutton and colleagues showed that the level of satisfaction among their research sample was (36%), whereas only 11% showed a low level of satisfaction (Hutton et al., 2014). Another study conducted in Sudan showed that the level of satisfaction was 63%(Elkhadir and Saeed, 2018). In addition, an Iranian study of 530 participants found that 54% were unhappy with their work (Alavi et al., 2017).

One of the factors that influence radiographers' work satisfaction is age. Our analysis revealed no difference in the level of satisfaction, with only a slight difference in mean scores between the youngest (21–30 years) and the older (41–50 years) category. This result does not replicate the study in Lithuania that found that young radiographers were more satisfied with their supervisors and colleagues (Vanckavičienė et al., 2017).

Another factor that could have an influence on a worker's satisfaction is education. Our result echoes that of the Lithuanian survey, which reported that workers with a diploma degree were less satisfied than were their co-workers with a bachelor's degree, but no significant difference was present between diploma and master's degree holders. In other studies, years of experience show no significant effect on satisfaction level; the most satisfied group was of those who had spent 3–5 years at work as compared to 5–10 years of experience. Contrary to our study, the one found that job satisfaction depends on the amount of work experience (Vanckavičienė et al., 2017).

Workers in advanced radiology modalities were more satisfied with their co-workers and their supervisors in one of the studies done in the United States (Knight, 2004). Such results match our results in which radiographers in the specialized modalities at the hospitals in Aseer province were more satisfied with their peers and supervisors compared with workers in general imaging modalities.

Moreover, a significant result was that 87.9% of radiographers Aseer were happy with their feelings of achievement and contribution to society and its values. The lowest satisfaction levels were reported when participants were asked about the work policies in the institution. The percentage varies significantly from an Italian study that found that about 80% were happy regarding working conditions (Gualano et al., 2016). In addition, the Italian study agrees with our results in the way that advance modalities enhance the degree of satisfaction with working conditions (Gualano et al., 2016). Finally, contrary to the Italian study (Gualano et al., 2016) our findings indicate that employees with more than five years of experience were happier with their relationships with their colleague and supervisors.

CONCLUSION

We found that overall job satisfaction of radiographers in Asser hospitals is high (77%). Various components contribute to this high level of satisfaction: job satisfaction among women radiographers is higher than among their co-workers, and job satisfaction is highest in the advanced modalities. This is first study of this type applied to radiographers in Aseer province of Saudi Arabia. We encourage this kind of research in order to identify the determinants of job satisfaction among the radiological workers in order to improve their job productivity.

The findings of this preliminary study encourages us to have confidence that expanding in scope of job satisfaction surveys to other health facilities would be well acknowledged and would provide highly relevant data for developing the health care professions. Increasing the set of available data would be useful to identifying corrective processes that could improve the professional satisfaction of radiologic technologists. Future research could report the concerns indicated in this study in greater depth.

CONFLICT OF INTEREST

The authors declared that present study was performed in absence of any conflict of interest.

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AUTHOR CONTRIBUTIONS

MA and MA Conceived and designed the study.SA and AA Performed the study. MA, MA Analysed the data. YK wrote the paper. EA and RA Provided comments and inputs to revise the paper. All the authors have read and approved the final version of the manuscript.

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