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THE EFFECTS OF NEW MANAGEMENT INITIATIVES
ON DIAGNOSTIC RADIOGRAPHERS' JOB SATISFACTION
WORKING IN HOSPITAL AUTHORITY HOSPITALS

by

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ABSTRACT

The research problem studied was the effect of new management initiatives on the job satisfaction of diagnostic radiographers working in Hong Kong public hospitals in relation to staff development review, in-service training and quality improvement.

The objectives of the study are as follows: (1) to describe the new management initiatives implemented by Hospital Authority, (2) to describe the job satisfaction of diagnostic radiographers, (3) to relate the new management initiatives to the job satisfaction of the diagnostic radiographers working under HA hospitals, and (4) to propose, in the light of the implications of the findings, the possible modifications to the initiatives to enhance the job satisfaction of diagnostic radiographers. Five facets of the job satisfaction were selected for the study which were pay, security, social life, supervision, and growth.

The data was collected by means of a questionnaire from 163 respondents including 2 Department Managers, 6 Senior Radiographers, 87 Radiographers I, and 68 Radiographers II from the selected 10 hospitals under Hospital Authority. The overall response rate was 53 %.

T-tests, one-way analysis of variance (ANOVA) and Scheffe tests were used for data analysis. There were no statistically significant differences between the diagnostic radiographer’s job satisfaction and the staff development review, in-service training, and quality improvement under the new management initiatives of Hospital Authority (HA). However, there were statistically significant differences between demographic data of rank,
It is proposed that the study findings should be used to make informed policy decisions to raise the level of job satisfaction of radiographers in order to attract and retain qualified and committed radiographers. This may enable the Hong Kong Hospital Authority to improve the quality of patient services delivered by radiographers.
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Chapter 1

INTRODUCTION

Introduction to the research problem

The research problem addressed is the effect of new management initiatives on the job satisfaction of diagnostic radiographers working in Hong Kong public hospitals in relation to staff development review (SDR), in-service training (both technical and managerial training), and quality improvement.

In the 1980’s, overcentralizing, inflexibility, the archaic management structure, low staff morale, the lack of courtesy to patients, long waiting lists, overcrowded conditions, poor coordination between government and subvented hospitals, and lack of public participation in the management of public hospitals were some of the frequently cited problems of the public hospital system (Scott 1985).

The formation of the Hong Kong Hospital Authority (HA) was the strategy chosen by the government to tackle these problems (Wong, E. 1990).

As stated by Dr. E K Yeoh in the Hospital Authority Convention 1996, the Hong Kong Hospital Authority (HA), was a publicly funded organization set up by statutes, was given the management responsibility of all the 42 public hospitals in the territory with a complement of 26,000 beds.
The purpose of setting up the HA in Hong Kong in December 1990 (Refer to appendix A) was to revitalise the public hospital system to face the challenges from increasing community expectation, deteriorating staff morale and limited resources (Tsui 1996) also with the objectives of attracting, motivating and retaining well-qualified staff and improving the efficiency and effectiveness of hospital services through the introduction of a new corporate culture and scientific management.

To fulfill the mission and purpose of the Hospital Authority as enshrined in the Ordinance, the HA set in motion a transformation process in the public hospital system to create a new vision of hospitals. These changes encompass structure, system, people and culture.

The key features of the Hospital Authority

In 1985, the Hong Kong Government commissioned a firm of management consultants, W.D. Scott Pty Co. to review the management of the public hospital system. The background of the consultation was that the system was recognized to be subject to increased pressure from escalating costs, enhanced community demand and expectations together with the steady growth in the numbers of bed available and patients treated. The recommendation for an independently administered hospital system was accepted by the Government, and the Provisional Hospital Authority (1989) was established on 1 October 1988. The Provisional Hospital Authority was charged with the responsibility to develop infrastructures that would manage and develop the public hospital system, "in ways which optimise the use of the resources available, improve efficiency and the hospital environment, and which will attract, retain and motivate well qualified staff" (Hong Kong Government, 1989, p.ii).
In the Annual Plan of 1995, the Hospital Authority established its Corporate Plan to the year 2000. Key issues to be tackled were the need for cost-containment (e.g. see McKinlay & Stoeckle, 1990; Brannon, 1994a, 1994b; Salmon, 1990), enhanced public expectations on health care (e.g. see McClure & Nelson, 1982), increasing demand for extended health care facilities (e.g. see Diamond, 1983; Maddox & Glass, 1989) and the charge for primary health care (e.g. see Bezold & Carson, 1986; Fries, 1986; Orlando, 1987). In tackling these issues, the Hospital Authority proposed five strategic directions. They were (1) creating a seamless health care system, (2) developing an outcome focused health care system, (3) involving the community as partners in health, (4) cultivating organization transformation and development and (5) promoting corporate infrastructure development and innovation (Hospital Authority, 1995b).

The key emphasis in the corporatization of health care is the introduction of a business-oriented management paradigm in health care services. The three important characteristics of such an approach are rationalization, productivity and cost efficiency (McKinlay & Stoeckle, 1990; Brannon, 1994a, 1994b). Feinglass (1990) places the concept of corporatization in the context of medical practice and argues that the crux of corporatization is the attempt to improve medical productivity by asserting bureaucratic control over physicians. The new breed, the health care managers, being trained in marketing strategies, gain legitimacy to initiate surveillance of physician decision-making. The diminution of professional power during the shift of health care delivery to a corporate mode of production was also observed by Salmon (1990). When the daily work is run by managers instead of professionals, it is not surprising that the health care agenda is mainly to meet the interests of management goals. As Owens and Glennerster (1990) have pointed out, management is only concerned with
corporate goals where individual and professional interest must be subordinated to the general interest. This management style may have impacts on the job satisfaction of diagnostic radiographers.

Rationale for and significance of the research study

The HA launched many new management initiatives like clinical management teams, productivity gains, continuous quality improvement, patient-centred and patient-chartered service, in-service training for staff, etc. in order to create a seamless health care system and fulfill the mission and purpose of setting up of HA.

Legge says 'that most Human Resources Management (HRM) models emphasize the management of the organization's culture as the central activity for senior management (in Storey, 1989:28). Change in structure, performance appraisal, performance related pay, training programmes and counseling are all activities in which HRM is likely to be the repository of old skills available for new purposes; if it is the aim of the new chief executive to create a new culture, 'the policies necessary to achieve this are those of HRM' (Guest, 1990:394)

To implement these new management initiatives successfully, the HA staff must get job satisfaction or motivation from the HA policies. These changes encompass structure, system, people and culture. New management structures with clearly delineated accountability and responsibility are set up; systems are installed to facilitate operation and decision making; training and development opportunities are provided to health care professionals to equip them with the requisite management capabilities to influence and lead their other colleagues
through the change. Also a quality-oriented, patient-centred and team culture is being fostered and promoted throughout the organization. Health care institutions today need to have committed and dedicated staff who are ready to adjust, and perhaps readjust, to the ever-increasing demands from customers. Because it is they who know what customers’ expectations are, and it is only they who know how to meet these expectations (Tsui, 1996).

The author was unable to find a study on the effects of new management initiatives implemented by the HA on diagnostic radiographers’ job satisfaction working in Hong Kong HA and assumed that no such study has been carried out as yet. This present study of their job satisfaction will provide a data base.

It is hoped that the study will make HA aware of the factors contributing to their job satisfaction and enable the HA to make informed policy decisions to provide diagnostic radiographers with real job satisfaction.

Objectives of the study

The objectives of the study are as follows:

1. To describe the new management initiatives implemented by the Hospital Authority.
2. To describe the job satisfaction of diagnostic radiographers.
3. To relate the new management initiatives to the job satisfaction of the diagnostic radiographers working under HA hospitals.
4. To propose, in the light of the implications of the findings, the possible modifications to the policies to enhance the job satisfaction of diagnostic radiographers.
Organization of the study

The study has five chapters. Chapter one introduces the research problem, the key features on the Hong Kong Hospital Authority, the rationale, the significance, and the objectives of the study.

Chapter two presents the review of the related literature. Then a theoretical framework is proposed and nine hypotheses testing are formulated.

Chapter three outlines the methodology of the study. It discusses the use and the rationale of the survey method, the population and the sampling method, data collection instrument and method, validity and reliability of the instrument, data analysis procedure, and ethical and political considerations.

Chapter four presents the sample characteristics and the descriptive results of the survey.

Chapter five is the discussion of the nine hypotheses testing, implications of the study for practice and further research, and a brief conclusion of the study.
Chapter II

LITERATURE REVIEW

The purpose of this chapter is to identify what is already known about the research problem. From this, a conceptual scheme is derived. This chapter reviews (1) the definitions of job satisfaction; (2) the new management initiatives in HA; (3) the studies of relationships between job satisfaction and independent variables of training, quality improvement, and staff development; (4) the studies of relationships between job satisfaction and the demographic variables of gender, age, educational level, rank, marital status and working experience. (5) Finally, this chapter proposes a theoretical framework and (6) nine hypotheses for testing.

Job satisfaction (dependent variables)

Job satisfaction has been defined in a number of ways in the literature. Key features which emerge from the literature are: Hoppock (1935) defined job satisfaction as the individual’s overall feeling about the job as expressed in liking or disliking. Job satisfaction, according to Smith, Kendall, and Hulin (1969) is the feelings a worker has about his or her job based on the worker’s perception of the differences between what was expected as fair and reasonable as compared with what was actually experienced. Locke (1969) defined job satisfaction as “the pleasurable emotional state resulting from the appraisal of one’s job as achieving or facilitating one’s job values” (p.316). Job satisfaction and dissatisfaction is a “function of the
perceived relationship between what one wants from one’s job and what one perceives it as offering or entailing" (Locke, 1969, p.316).

Lawler (1973) similarly explained job satisfaction in terms of the difference between what a person thought he or she should receive and what he or she perceived that he or she actually did receive. Hopkins (1983) defined job satisfaction as “the fulfillment or gratification of certain needs of the individual that are associated with one’s work” (cited in Finley, 1991, p.9). These and many other definitions of job satisfaction are similar and complementary. Dawis and Lofquist (1984) have summarized the various definitions of job satisfaction as “a pleasurable affective condition resulting from one’s appraisal of the way in which the experienced job situation meets needs, values and expectations” (p.72).

According to Robbins (1993), job satisfaction can be treated as either an independent variable or a dependent variable. If job satisfaction is treated as a dependent variable, then mentally challenging work, equitable rewards, supportive working conditions, supportive colleagues, and personality may be the independent variables. If job satisfaction is treated as an independent variable, productivity, absenteeism and turnover may be the dependent variables.

In this study, job satisfaction of the diagnostic radiographers working in HA hospitals is treated as a dependent variable while the independent variable is new management initiatives implemented by HA. This is subdivided into staff development review (SDR), in-service training (both technical & managerial training), & quality improvement.
Managers should be concerned with the level of job satisfaction in their organizations for at least three reasons:

(1) there is clear evidence that dissatisfied employees skip work more often and are more likely to resign or exhibit higher rates of both turnover and absenteeism;

(2) it has been demonstrated that satisfied employees have better health and live longer because the stress that results from dissatisfaction apparently increases one's susceptibility to heart attacks and the like; and

(3) satisfaction on the job carries over to the employee's life outside the job because these people will hold a more positive attitude toward life in general and make for a society of more psychologically healthy people. (Robbins, 1993)

The subscales of job satisfaction

The key features which emerge from the literature of the subscales of job satisfaction are summarized in the following:

Seventeen elements of jobs that lead to overall job satisfaction have been identified: promotion, training, supervisor, upper management, organizations of work tasks, work stress, work challenge & autonomy, physical work space & equipment, work group, organizational commitment, organizational structure, pay, merit pay, affirmative action, benefits, job security, & distribution of staff (Conway, Patricia, William, Martha & Green, 1987).

The categories of job satisfaction which were analyzed were promotion, pay, work, coworkers, supervision, and overall satisfaction (Shaughnessy, 1997).
The six scales of job satisfaction are: work on present job, present pay, opportunities for promotion, supervision, co-workers (people), and job in general (Oswalt, 1995).

There is a significant relationship between the level of job satisfaction and the research variables of personal satisfaction, satisfaction with workload, satisfaction with professional support, satisfaction with pay and prospects; satisfaction with training; but not of satisfaction with client goal attainment (Ponce, 1995).

The six subscales of Minnesota Satisfaction Questionnaire (MSQ) are: advancement, company policies and practices, compensation, recognition, supervision-human relations, and supervision-technical (Gregory, 1989).

Factor loadings for McCloskey/Mueller Satisfaction Scale are interaction with other disciplines, social contact with colleagues after work, social contact at work, physicians you work with, opportunity to belong to department or institutional committees, recognition from superiors, care method on unit, opportunity to interact with faculty, control over work setting, peers' recognition, encouragement and positive feedback, your nursing peers, salary, hours that you work, vacation, weekends off per month, compensation for working weekends, maternity leave time, child care facilities, control over work conditions, your amount of responsibility, your participation in decision making, opportunities for career advancement, opportunities to participate in nursing research, opportunity to write and publish, and opportunity for part-time work (Misener, Haddock & Gieaton, 1996).

Wong Thomas (1995) included communication, professionalism, job nature, pay and prospect, locus of control, education and training, commitment, personal control and recognition as the
subscales of the questionnaire with totally 38 questions. It was a local questionnaire, bilingual in Chinese and English. However, it was used to measure nurses' job satisfaction.

The sub-scales of job satisfaction are made up of items like pay, security, social, supervisory and growth (Hackman and Oldham, 1975).

As a result of the literature review, the researcher selects the subscales of job satisfaction suggested by Hackman & Oldham because it is less-time consuming for data analysis, simplicity, suitability, and it is because of its well-established reliability (refer p.35-36) for the questionnaire adopted. There are totally five job facets, with fourteen questions, in the questionnaire of the job satisfaction.

The new management initiatives (independent variables) in the Hospital Authority

According to the Manual on hospital management structure (Management Division, April 1992).

The new management structure of the hospital is based on the recommendations of the Provisional Hospital Authority (PHA) Report and refined with input from front-line staff of various disciplines. The objective of this structure is to provide a proper framework with clear lines of management accountability in order to improve the efficiency of hospital services for the benefit of patients. Underpinning the new management structure, however, is the new management culture and philosophy which emphasizes the following:
a) Focus on the front-line operating units;

b) Multi-disciplinary team approach to patient care;

c) Clear line of management accountability;

d) Participatory management culture; and

e) Greater public participation in the provision of hospital services.

Also, the new policy emphasizes a patient focused approach in the delivery of quality hospital services. Doctors, nurses, allied health professionals and other support staff must work together to achieve common goals. In working together as a multi-disciplinary team, there is a need for open and honest communication which is facilitated through the committee system of the new management structure.

Since the new management initiatives conducted by HA is not a single dimension, it is difficult to generalise the idea by using a few questions. The literature shows that it is a multiple dimensions concept and can be categorised into several attributes. SDR implemented by HA is to replace the traditional staff appraisal system. Recently, HA has placed great emphasis on in-service training and quality improvement. In the researcher's point of view, these three new management initiatives have great impacts on the job satisfaction of the diagnostic radiographers working in the HA hospitals. Therefore, the researcher selected the most recent and important attributes which are in-service training (both technical & managerial training), quality improvement, and SDR for this study.
The relationship between training & job satisfaction

Many studies covering many different professional fields have been undertaken with the aim of investigating the relationship between training and job satisfaction. Most writers found that there was some positive relationship between training and job satisfaction. However to define the exact nature of this relationship is not easy as there are many variables and provisos involved. Moreover some studies suggested that training was not an essential ingredient of job satisfaction.

In the field of Special Education, Jones (1996) states “several previous studies concluded that lack of professional growth is a commonly cited reason for leaving the teaching profession”.

In industrial management, Helphinstone (1993) mentions that there was a significant difference in the perceptions of intrinsic job satisfaction between the trained and the untrained managers at Digital Audio Disc Corporation (DADC).

In the field of Banking and Insurance Industries, Oswalt (1995) stressed the importance of voluntary training. His research also reveals some other interesting variables “Analyses of data revealed a significant relationship between voluntary corporate training and job satisfaction. Office support workers who participated in corporate training expressed higher job satisfaction scores when the training was delivered by an outside consultant as opposed to company personnel. Workers who volunteered for training also expressed higher levels of job satisfaction than workers who were required to enroll in training sessions”.

Grant, Kane, Pothoff and Ryden (1996) conducted research on nursing assistants and stressed the importance of variety in methodology. They concluded tentatively that "Staff training may affect the retention of professional nursing staff. A diversity of training methods, including workshops or seminars, films or videos, outside consultants, reading materials, training manuals, in-house experts, role playing techniques, or an orientation program for new staff, might be used to develop more effective training programs and reduce rates of nursing assistant turnover." The rate of turnover he refers to however, may not be strictly related to job satisfaction.

Following a similar line of argument to Oswalt, quoted above, Gregory (1989) writing about research done in an institute of higher education found that "employee job satisfaction levels were differentially influenced by career development training when measured at the completion of the training. Subjects were affected by the program, but it may not be equally beneficial for all participants. Therefore training sessions designed to improve employee job satisfaction levels may be beneficial for certain employees".

The relationship between quality improvement & job satisfaction

With the advent of ISO9000 every department seems determined to improve the quality of its products and services. This not only makes for better business but also improves job satisfaction. The idea of the quality circle, imported from Japanese management, has had some impact on the nursing profession. Weiglein said back in 1988 "Staff nurses perceive job satisfaction being greater in units using quality circles than in those not using them. The quality of patient care is higher in units using quality circles than in those not using them".
Shian (1990) reported that the results of his research indicated that quality circle programs in a Taiwan hospital did have a positive impact on the degree of job satisfaction experienced by nurses working there. There were lower rates of absenteeism, lower turnover of staff and patients showed increased satisfaction with nursing care. Neuhs reported much the same thing (1994) "the recent emphasis on total quality management and continuous quality improvement (TQM/CQI) is a positive way to improve the professional status of nurses and minimize repetitive cycles of nursing shortages".

Other kinds of co-operative work also affect staff morale. Glazer (1995) reporting in a university setting remarked that "... As a result of the team process, many indirect gains occurred in the areas of job satisfaction, improved co-worker relationships and office harmony". Goodman (1990) noted that other types of team work Within Unit (WU) and Out of Unit (OU) groups showed similar positive characteristics regarding job satisfaction.

Other aspects concerned with quality have also been commented on in the literature as affecting job satisfaction. For example

- **Quality of management**

Matlosz writing in 1994 about graduate students commented that job satisfaction varied directly with management quality.

- **Quality of information**

Frone and Major (1988) writing about nurse managers said "The quality of information received from immediate supervisors, co-workers, and subordinates was positively related to job satisfaction among highly job-involved Ss but was unrelated to job satisfaction among low job-involved Ss".
The relationship between staff development & job satisfaction

Besides training there are other forms of staff development which prevent staff from stagnating. The literature shows that the most important of these are feedback on work done and the acceptance of greater responsibility, and appreciation from superiors.

De writes (1992) in connection with research done on Health Services, “Staff need regular assessments so that job satisfaction, training and good quality services can be ensured“.

Kirsch (1990) says “There is a positive relationship between nurse job satisfaction and hospital-sponsored nursing staff development. Nurses are committed to the organization and intend to remain employed in the organization”.

Teachers, according to Theunissen (1994) “experience job satisfaction when they are given responsibility in accordance with the demands of their profession. Career development also promotes job satisfaction as it prevents a teacher’s career from stagnating“.

Feedback from patients in a hospital is often on a personal basis and is difficult to measure but Steffen (1992) echoes what most people in service industries experience when he says “Consumers’ perceptions of service quality are positively associated with employees’ job satisfaction and affective organizational commitment, and negatively associated with intention to leave the organization” Everybody likes to be thanked!
The relationship between demographic variables (moderating variables)

and job satisfaction

The demographic factors mentioned in the literature include: gender, age, rank, educational level, marital status and working experience.

- Gender

Researchers saw a paradox here, expressed by Chiu (1997) who conducted a case study on professional lawyers. He is of the opinion that the central paradox in studies of gender and job satisfaction is why women's job satisfaction is not lower than men's, though women's jobs (in the researchers estimation!) are often inferior, lack influence and promotion opportunity. "The explanation most commonly used is that women have lower expectations than men because they compare themselves to women, while men compare themselves to men. Professional women have the same expectations as professional men, but because of inequality in opportunity have lower satisfaction".

According to McDuff (1997), who worked with Protestant clergy, one way of explaining the gender/job satisfaction paradox (women experiencing greater job satisfaction in spite of having inferior working conditions) is to assume that women receive greater workplace rewards that counter the lower extrinsic rewards. For example greater support from colleagues for women and greater social support compensate for a low salary and low chances of promotion. Work in a Protestant ministry may in some ways be very similar to work in a hospital in that both professions are “caring” ones.
Wallace and Mueller, 1994 declare “The inferior work conditions of females do not result in their being less satisfied with their jobs than are males because females have different values regarding extrinsic work rewards. The degree to which their expectations had been met is much more important for females than males in determining levels of job satisfaction, and females use different comparison groups than males in determining their own levels of job satisfaction”.

Poole (1993) said that in Pacific Bell, one of the largest companies in the USA, males were more satisfied than females with their jobs. This finding however was confined to the Diablo district.

In some high status professions gender and job satisfaction seemed unrelated.

Gender and firm status are not responsible for differences in the levels and determinants of job satisfaction in two high status service occupations: law and human service work (Cranswick and Wallace 1995).

Both Johnson and McNeeley reported no significant relationship between gender and job satisfaction.

“Gender alone was not a determinant of one’s job satisfaction” (Johnson, 1995).

“Factor and multiple stepwise regression analyses indicate no statistically significant differences in job satisfaction by gender” (McNeeley, 1985).
• Age

Many studies have been done about the relationship between age and job satisfaction. In some cases, job satisfaction increases with age. Some are also linked to gender.

"Gender did interact with age to influence satisfaction, i.e. male respondents aged 45+ were more satisfied with their jobs than similarly aged female respondents; male respondents under age 25 were the least satisfied; in the age 25-35 range, male respondents were more satisfied than females; and in the 35-45 age range, females were more satisfied" (Goh, Koh and Low, 1991).

According to Clark, Oswald and Warr (1996), the relationship between job satisfaction and age is U-shaped, declining from a moderate level in the early years of employment and then increasing steadily up to retirement.

A similar finding was made by Olguin (1991) "Age and job satisfaction had a positive linear relation for women on all job satisfaction measures (global, facet-specific, and combined). For men, age had a quadratic (inverted U-shaped) relation to global and combined job satisfaction, but a positive linear relation to facet-specific satisfaction".

Firebaugh and Harley (1995) referring to clerical workers put it most succinctly. "Generally speaking, older workers report greater job satisfaction".
The idea is also echoed by Thomson (1980) "Older workers are more likely to be satisfied with their jobs than are younger workers because of the differing expectations of older workers and to the mesh between their extrinsic expectations and rewards ".

Only one dissenting voice was heard, that of Essen. He found no correlation between age or gender and job satisfaction. "Chronological age was found to have no significant relationship with overall job satisfaction. The mean differences between men and women in evaluation of overall job satisfaction was non-significant" (Essen, 1985).

- Educational level

Most researchers reported that the higher the level of education the greater the job satisfaction.

According to the data of Bridges (1996), a positive correlation existed between age and job satisfaction, and between the level of education and of job satisfaction.

Even those who are overqualified for jobs can find plenty of satisfaction. In 1991, in Czechoslovakia, Hyska and Sugar (1992), using a questionnaire to obtain the data found that retired military professionals who entered new careers demanding a lower educational level than the army found greater job satisfaction in doing them.

There were two studies among the literature that found no significant relationship with these variables. "The finding showed weak correlation between education and job satisfaction" (Carey, 1996).
Working with police science graduates, Gierach (1982) could find no significant linear relationship between educational level and job satisfaction.

- **Rank**

In the literature, I could find no studies covering this subject thoroughly. The study by Al Rashid and Nazih (1984) in a study of "powerlessness", concluded that there was not any significant effect of class on the satisfaction of workers with their jobs. They also found education to be not statistically significant.

- **Marital status**

In the study by Wickrama, Conger, Lorenz and Mattews (1995), the researchers found that job satisfaction for married women was dependent upon their husbands health.

- **Working experience**

The only other variable found in the literature is job experience. This is mentioned together with other factors in one study by Embrey in 1991. He says "age, marital status, years of experience, highest education degree completed, ... provided no statistically significant effect on job satisfaction".

After reviewing the literature, it is not possible to come to any firm conclusions. There is no overall pattern for all professions. In the light of these inconclusive findings it seems worthwhile conducting a study to investigate the effects of the new management initiatives on
the job satisfaction of diagnostic radiographers working under the Hong Kong Hospital Authority.

**Theoretical framework**

The following diagram shows the relationship of all the variables identified.

1. Staff Development Review (SDR)
2. In-service training (technical & managerial)
3. Quality Improvement

---

1. Working experience
2. Age
3. Marital status
4. Gender
5. Educational level
6. Rank

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Moderating variable</th>
<th>Dependent variable</th>
</tr>
</thead>
</table>
Hypotheses development

From the theoretical framework, nine hypotheses have been developed for this study.

Hypothesis 1

H₀: *Staff development review (SDR)* under the new management initiatives of HA has no effect on a diagnostic radiographer’s *job satisfaction* working in HA hospitals.

Hₐ: *Staff development review (SDR)* under the new management initiatives of HA has effect on a diagnostic radiographer’s *job satisfaction* working in HA hospitals.

Hypothesis 2

H₀: *In-service training* under the new management initiatives of HA has no effect on a diagnostic radiographer’s *job satisfaction* working in HA hospitals.

Hₐ: *In-service training* under the new management initiatives of HA has effect on a diagnostic radiographer’s *job satisfaction* working in HA hospitals.

Hypothesis 3

H₀: *Quality improvement* under the new management initiatives of HA has no effect on a diagnostic radiographer’s *job satisfaction* working in HA hospitals.

Hₐ: *Quality improvement* under the new management initiatives of HA has effect on a diagnostic radiographer’s *job satisfaction* working in HA hospitals.
Hypothesis 4

$H_0$ : Working experience has no effect on a diagnostic radiographer’s job satisfaction working in HA hospitals.

$H_A$ : Working experience has effect on a diagnostic radiographer’s job satisfaction working in HA hospitals.

Hypothesis 5

$H_0$ : Rank has no effect on a diagnostic radiographer’s job satisfaction working in HA hospitals.

$H_A$ : Rank has effect on a diagnostic radiographer’s job satisfaction working in HA hospitals.

Hypothesis 6

$H_0$ : Marital status has no effect on a diagnostic radiographer’s job satisfaction working in HA hospitals.

$H_A$ : Marital status has effect on a diagnostic radiographer’s job satisfaction working in HA hospitals.
Hypothesis 7

\( H_0 \): Age has no effect on a diagnostic radiographer's job satisfaction working in HA hospitals.

\( H_A \): Age has effect on a diagnostic radiographer's job satisfaction working in HA hospitals.

Hypothesis 8

\( H_0 \): Gender has no effect on a diagnostic radiographer's job satisfaction working in HA hospitals.

\( H_A \): Gender has effect on a diagnostic radiographer's job satisfaction working in HA hospitals.

Hypothesis 9

\( H_0 \): Educational level has no effect on a diagnostic radiographer's job satisfaction working in HA hospitals.

\( H_A \): Educational level has effect on a diagnostic radiographer's job satisfaction working in HA hospitals.
Chapter III

METHODOLOGY

This chapter presents the research methodology for the study in the following sequence: the use and the rationale of the survey method, definitions of the operational terms, the population and sampling method, the data collection instrument and method, validity and reliability of the instrument, data analysis procedures, and finally the ethical and political considerations.

The use and the rationale of the survey method

It was assumed that the sample of diagnostic radiographers in the ten out of forty four hospitals, selected on a convenience basis, was broadly representative of all the diagnostic radiographers working in the Hospital Authority hospitals because the selected ten hospitals are from different regions in Hong Kong, with either Schedule I or Schedule II hospitals, with the researcher’s classmates act as co-ordinators in order to have a high response rate. It was assumed that the sample was large enough to yield sufficient data to reach a significant conclusion. It was also assumed that the respondents responded honestly to the questionnaire.

The research was to be carried out in the natural environment of the organization with the researcher delineating the important variables that were associated with job satisfaction. The study was a correlational one with minimal interruption to the normal flow of daily work. This research was analytical in nature because the study attempted to analyze the relationships between the dependent and independent variables.
The study was conducted in a natural setting without any modifications or interference of variables. It was in a non-contrived setting. This was a field study because it studied the effect of new management initiatives on the job satisfaction of diagnostic radiographers in their natural working environment of a department of a diagnostic radiology in HA hospitals.

The data for this study was intended to be collected over a 2-week period. After considering the effort, time and cost of data collection, it was decided to make this study a ‘case study’ type of research project. The expected time spent was about 8 months for the whole study.

The unit of analysis for this study was the individual diagnostic radiographer working in the department of diagnostic radiographer in HA hospitals because the researcher wanted to analyze the new management initiatives experienced by each individual diagnostic radiographer with respect to his/her job satisfaction.

The data were collected by means of a questionnaire which was developed using the issues and ideas indicated by the existing literature on the job satisfaction of radiographers. The Statistical Package for the Social Sciences (SPSS) was used in analyzing the data. T-tests, one-way ANOVA, linear regression, and Scheffé tests were used for data analysis.

The independent-samples T test procedure computes Student’s t statistic for testing the significance of a difference in means for independent samples. The assumption for the T-test is that the observations are random samples from normal distributions with the same variance.

Analysis of variance (ANOVA) is the technique to examine the variability of the observations within each group as well as the variability between the group means. Based on these two
estimates of variability, we draw conclusions about the population means. One-way ANOVA is needed when only one variable is used to classify cases into the different groups. We can use the one-way ANOVA procedure only when analysed groups are independent. When two or more variables are used to form the groups, the Simple Factorial ANOVA procedure is required. The assumptions for ANOVA procedures are (1) each of the groups is an independent random sample from a normal population, (2) in the population, the variances of the groups are equal.

Scheffe test is conservative for pairwise comparisons of means and requires larger differences between means for significance than the other multiple comparison tests.

Definitions of the operational terms

For the purpose of this study the following definitions of operational terms were used:

Job facet : job factor.

Job satisfaction : individual’s overall feeling about a job as expressed in liking or disliking (Hoppock, 1935); it is the pleasurable affective condition resulting from one’s appraisal of the way in which the experienced job situation meets one’s needs, values, and expectations (Davis and Lofquist, 1984).

Diagnostic radiographer : Holders of Degree in Diagnostic Radiography, or Professional Diploma in Diagnostic Radiography, or Higher diploma in Diagnostic Radiography (the Hong Kong Polytechnic), or Diploma of the College of Radiographers in Diagnostic Radiography
(United Kingdom). They perform a variety of diagnostic imaging duties including general radiography, special radiography, computerized tomography, ultrasonography, nuclear medicine, and magnetic resonance imaging, etc.

Quality control (QC) : Quality control is a series of distinct technical procedures which ensure the production of a satisfaction product. Its aim is to provide quality that is not only satisfactory and diagnostic, but also dependable and economic (NCRP, 1988).

Quality assurance (QA) : Quality assurance is a comprehensive concept that comprises all of the management practices instituted by the imaging physician to ensure (1) every imaging procedure is necessary and appropriate to the clinical problem at hand; (2) the images generated contain information critical to the solution of that problem; (3) the recorded information is correctly interpreted and made available in a timely fashion to the patient's physician; and (4) the examination results in the lowest possible radiation exposure, cost and inconvenience to the patient consistent with objectives in point (2) above (NCRP, 1988).

Quality improvement : An approach to the continuous study and improvement of the processes of providing health care services to meet the needs of patients and others. Synonyms and near synonyms include continuous quality improvement, continuous improvement, and total quality management (Joint Commission, 1994).

Age : Participant’s years since birth up to 31st December, 1997.

Marital status : Participant’s state of being never married, married, separated, widowed or divorced.
In-service training: The training includes the technical or professional study inside or outside the participant's department, and the managerial study associated with the job inside or outside the participant's department.

Staff development review: The performance management of the HA is called the staff development review (SDR). SDR is designed to manage performance and develop staff. It will enhance communications between staff and their managers and help them to achieve personal, department, hospital and corporate goals, and assist in identifying the development needs to improve job performance and enhance career development. SDR is an on-going process which involves objective planning and setting, feedback and staff development planning, and it will take one year to complete a cycle.

Education level: The highest education qualification of the participant achieved up to 31st December, 1997 which either Diploma of the College of Diagnostic Radiographer (Radiography), or Higher Diploma in Diagnostic Radiography, or Professional Diploma in Diagnostic Radiography, or Degree in Diagnostic Radiography, or Master of Science in Diagnostic Radiography, or Master of Science in Management.

Population and sampling method

According to the Hospital Authority Statistical Report 1996/1997 published by the Hospital Authority in Table 8.1 (P.127), staff of the diagnostic and therapeutic radiographers in HA as on 31st March 1997 are as follows:

<table>
<thead>
<tr>
<th>Radiographer (Diagnostic)</th>
<th>587</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiographer (Therapeutic)</td>
<td>127</td>
</tr>
</tbody>
</table>
According to the rules of thumb for determining sample size developed by Roxcoe (1975), the sample size should roughly be 10 times as large as the number of variables in the study. It can be summarised as in the following equation:

\[
\text{Number of variables} = (5 \text{ job satisfaction} + 3 \text{ new management initiatives} + 6 \text{ demographic}) \times 10 = 140
\]

We anticipated that the response rate would be about 50%, thus the sample size should reach about 310.

**Data collection instrument and method**

Questionnaire was chosen as the data collection method of the research because of the following reasons:

1. The instrument from which the researcher adopted were questionnaires themselves.
2. The researcher had to collect information from more than 300 diagnostic radiographers working in HA hospitals in Hong Kong. So a questionnaire was convenient and practical for this study.
3. A questionnaire approach was found to be the most feasible method of data collection in view of the nature of the study, money and time restraints. A questionnaire enables the collection of data from as large a sample as possible in the least expensive manner in so a time (Smith, 1986).
4. The questionnaire provided a structure to the interview so that it flowed smoothly and in an orderly manner. It was important in any survey of more than just a few people that all respondents were asked the same questions in exactly the same way.

5. The questionnaire facilitated data processing.

6. A questionnaire would give people time to consider their answers carefully, so the result would be reliable.

The questionnaire contained an introductory letter to the participants explaining the nature and purpose of the study on job satisfaction of diagnostic radiographer working in the Hospital Authority. The questionnaire consisted of four parts: PARTS I, II, III, and IV.

In PART I of the questionnaire, the questionnaire design used in studies by Hackman and Oldham (1995) was used. Respondents were asked to indicate their degree of agreement with the presence of that job aspect. Responses were again scored on a seven point Likert-type scale ranging from extremely dissatisfied to extremely satisfied. A score of 7 was allotted to the response “extremely satisfied”, 6 to “satisfied”, 5 to “slightly satisfied”, 4 to “neutral”, 3 to “slightly dissatisfied”, 2 to “dissatisfied”, 1 to “extremely dissatisfied”.

<table>
<thead>
<tr>
<th>Job facets</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pay</td>
<td>2</td>
</tr>
<tr>
<td>2. Security</td>
<td>2</td>
</tr>
<tr>
<td>3. Social life</td>
<td>3</td>
</tr>
<tr>
<td>4. Supervision</td>
<td>3</td>
</tr>
<tr>
<td>5. Growth</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total number of items</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>
PART II of the questionnaire was used to gather the information on the independent variables including number of Staff development reviews conducted, technical and managerial in-service training inside and outside the department, and quality circles formed and joined in their departments.

PART III of the questionnaire collected demographic information on working experience, rank, marital status, age, sex, and highest educational qualification achieved.

PART IV of the questionnaire posed an open-ended question which gave the respondents the opportunity to make their most important recommendation for Staff development reviews, In-service training (both technical and managerial), and Quality improvement. An open-ended question was incorporated to allow respondents to answer freely in their own words rather than respond to alternatives suggested by the researcher (Bogdan & Biklen, 1982)

The data collection process of the research consisted of 3 stages: a preliminary study, a pre-test of the questionnaire, and the questionnaire administration.

Eight diagnostic radiographers from the researcher’s working hospital were conveniently selected to attend an individual face-to-face semi-structured interview by the researcher. The interview was semi-structured because it contained a pre-determined list of questions based on the information from the literature review. The interview also included broad and open-ended questions. The purpose of the structured part was to obtain more deep information about specific variables. The purpose of the unstructured part was to collect more definite ideas about what was or was not important and relevant to a particular problem situation. From all
of these questions, the researcher developed the research instrument or modified existing and available instruments that were relevant to the study.

In the pre-test of the questionnaire, 8 diagnostic radiographers from the researcher’s working hospital were selected to answer the questionnaires which were distributed to them in person. The purpose of this pre-test was to test for the reliability and validity of the instrument so as to make any necessary modification before the actual run.

Before the actual run of the questionnaire, a pilot study was conducted in which 30 diagnostic radiographers were invited to be tested for their interpretation of the questionnaire. In the actual run of the survey, the questionnaires were distributed & collected back after 2 weeks through hospital coordinators to ensure a high return rate. The questionnaire with the covering letter (refer to appendix B and C) were sent to the diagnostic radiographers in the selected ten hospitals in November, 1997. The participants were requested to give honest responses. They were not required to write their names to assure them of the confidentiality and anonymity of their responses. The completed questionnaires were returned to their hospital coordinators within two weeks of receipt. Because of the Christmas and Lunar New Year holidays, the completed questionnaires were returned much later than the author expected.

Reliability & validity of the instrument

Oppenheim (1996) suggests that reliability and validity of any research deserve careful attention. Oppenheim (1966) defines reliability as consistency in obtaining the same results time and again. Validity is defined as the question of whether the item really measures what it
is intended to measure. Necessary steps were taken to ensure the reliability and validity of the diagnostic radiographer’s job satisfaction questionnaire.

The questionnaire of the job satisfaction was adopted from Hackman & Oldham (1975) without modification because of its well-established reliability and validity. Within the job diagnostic survey, the authors include a 14-item measure to tap five specific satisfactions: pay (two items), job security (two item), social life (three items), supervision (three items) and growth satisfaction (four items) The first four of these are referred to as Work Context Satisfaction. Growth Satisfaction is concerned within intrinsic features of the job, being the degree to which an employee is satisfied with opportunities for personal growth and development on the job. A seven-point response dimension is used, and scores are averaged (from 1 to 7) within each sub-scale.

A comprehensive summary of data from 6930 employees working on 876 jobs in 56 organizations is provided by Oldham, Hackman and Stepina (1978), and from this we have drawn the material in Table 3.2.

Oldham, Hackman and Stepina (1978) also report intercorrelations between sub-scales, which are generally rather high. Within the four Context Satisfactions the median intercorrelation is 0.42 (range 0.28 to 0.47); however, the Growth Satisfaction sub-scale is correlated still more highly with the others: 0.43, 0.51, 0.57 and 0.55 with Pay, Security, Social life and Supervision Satisfaction respectively.
Table 3.2 Normative and psychometric information for Specific Satisfaction (N=6930)

<table>
<thead>
<tr>
<th></th>
<th>Pay</th>
<th>Security</th>
<th>Social life</th>
<th>Supervision</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of items</strong></td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>4.16</td>
<td>4.76</td>
<td>5.31</td>
<td>4.79</td>
<td>4.74</td>
</tr>
<tr>
<td><strong>Standard deviation</strong></td>
<td>1.66</td>
<td>1.48</td>
<td>1.02</td>
<td>1.57</td>
<td>1.33</td>
</tr>
<tr>
<td><strong>Spearman-Brown</strong></td>
<td>0.86</td>
<td>0.73</td>
<td>0.64</td>
<td>0.87</td>
<td>0.84</td>
</tr>
<tr>
<td><strong>reliability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>r with General</strong></td>
<td>0.42</td>
<td>0.48</td>
<td>0.47</td>
<td>0.50</td>
<td>0.69</td>
</tr>
<tr>
<td><strong>satisfaction (2.6)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The face validity of the whole questionnaire including the Job Diagnostic Survey, the demographic data, and the seven questions in relation to the Staff Development Review, Training and Quality Improvement, was established by a panel of lecturers: Dr. Margaret Shaffer, Dr. David Thompson, Dr. Thomas Wong and Dr. Edward Snape who had expert knowledge on the matter. Discussions and suggestions for wording and clarity of items were considered and necessary revisions were made.

A reliability test for the PART IV of the questionnaire was not applicable because the open-ended question not only collected additional information on radiographer's job satisfaction but also helped to confirm and support the findings derived from the quantitative data.
Data analysis procedures

The data was coded, entered, and analyzed using the Statistical Package for the Social Sciences (SPSS) computer program (PARTS I, II, and III of the questionnaire).

Statements in PART I of the questionnaire were grouped according to the five job facets, presented and analyzed using descriptive statistics including means and standard deviations.

For question number 2 to number 8 in PART II of the questionnaire dealing with staff development review, in-service training, and quality improvement, descriptive statistics using means and standard deviations as well as the frequency distributions and percentages were calculated.

For PART III of the questionnaire, frequency distributions and percentages were calculated for the demographic information including number of years working experience, rank, marital status, age, gender, highest qualification achieved, and working hospital of the respondents.

The open ended question in PART IV of the questionnaire needed no statistical treatment. The recommendations by participants on staff development review, in-service training (both technical & managerial), and quality improvement were listed.

T-tests and one-way analysis of variance (ANOVA) were used to determine significant differences existed in the satisfaction mean for the five job facets and the six demographic variables. Since the t-test is most appropriate in testing differences between two groups, t-tests were performed to determine significant differences between male and female respondents.
One-way ANOVA is a statistical tool which helps determine the means of two or more samples. It was used to test significant differences in the job satisfaction mean for the five job facets and the five demographic variables which were: age, qualifications, marital status, and rank.

**Ethical considerations**

Verbal consent had to be obtained from diagnostic radiographers selected for the survey. They were told the purpose of this study to ensure that they were fully informed before making any decision. It was clearly mentioned to the radiographers that the survey would not disturb the daily jobs they had to perform, and they could refuse to participate if they did not feel comfortable to do so.

As the *Personal Data (Privacy) Ordinance (1997)* was introduced on 20th December 1996, radiographers who participated in the study were assured of confidentiality and privacy. Anonymity was guaranteed and completed questionnaires were sealed in envelopes to avoid disclosure of personal details. Only researchers could gain access to the data collected and the questionnaires would be destroyed after the survey. The results of the study would not be used to disadvantage the participants.

**Political considerations**

Since this survey involved diagnostic radiographers’ participation and would be conducted in the Hospital Authority hospitals, it had to be approved by the ethics committee. Approval from Hospital Chief Executive(HCE) for recruitment of samples of the department of
diagnostic radiology in the hospitals where the survey would take place was also necessary before it could go ahead.

In order to gain approval and support from the hospital involved, a letter was written to its Hospital Chief Executive/ Department Manager to explain to him/her the purpose of the study and how the findings would be beneficial to the hospital as a whole, particularly on its significant implication to quality patient-centred and patient-chartered service. However, it was emphasised that there was nothing in the research dealing with re-distribution of resources, which was a very sensitive political issue in the management structure of Hospital Authority as competition for resources among hospitals is very keen.
Chapter IV

DESCRIPTIVE RESULTS OF THE SURVEY

This chapter is concerned with the descriptive results of the survey. It is divided into five sections: section one describes the sample characteristics; section two deals with the responses to the five job-facets; section three presents the responses dealing with SDR, in-service training, and quality improvement; section four deals with the responses about the six demographic variables; and section five presents the responses to the open ended question.

Sample characteristics

Questionnaires were sent to 310 diagnostic radiographers within ten hospitals. 163 questionnaires were returned giving a response rate of 53%. Of the 163 respondents, 2 were Department Managers, 6 were Senior Radiographers, 87 were Radiographers I and 68 were Radiographers II. They were working in the selected ten out of forty four hospitals in the HA.

Descriptive results of the survey

Part I of the questionnaire: questions on dependent variables

The overall questionnaire consisted of four parts. In PART I of the job satisfaction questionnaire, the respondents were asked to respond to fourteen statements, using a seven
point, Likert-type frequency scale. Questionnaire items were grouped according to the five job-facets shown in the following tables, to facilitate the systematic presentation of the data.

Table 4.1, 4.2, 4.3, 4.4, and 4.5 present responses to questionnaire items concerning pay, security, social life, supervision, and growth respectively. Table 4.1 provides the responses to statements related to pay. The respondents were slightly satisfied with the amount of pay and fringe benefits they receive. They were slightly satisfied with the degree to which they are fairly paid for what they contribute to their organization.

Table 4.1 Responses to items related to Pay (N=163)

<table>
<thead>
<tr>
<th>Questionnaire items</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1b. The amount of pay and fringe benefits I receive</td>
<td>4.724</td>
<td>1.330</td>
</tr>
<tr>
<td>1i. The degree to which I am fairly paid for what I contribute to this organization</td>
<td>4.387</td>
<td>1.183</td>
</tr>
</tbody>
</table>

Table 4.2 presents responses to statements related to security. The respondents were slightly satisfied with the amount of job security they have. However, the respondents were slightly dissatisfied with how secure things look for them in the future in their organization indicated by a low mean of 3.877.

Table 4.2 Responses to items related to Security (N=163)

<table>
<thead>
<tr>
<th>Questionnaire item</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. The amount of job security I have</td>
<td>4.773</td>
<td>1.244</td>
</tr>
<tr>
<td>1k. How secure things look for me in the future in this organization</td>
<td>3.877</td>
<td>1.099</td>
</tr>
</tbody>
</table>
Table 4.3 provides responses to statement related to social life. The respondents were slightly satisfied with the people they talk to and work with on their jobs, and the chance to help other people while at work. However, they were slightly dissatisfied with the chance to get to know other people while on the job, indicated by a slightly low mean of 3.926.

<table>
<thead>
<tr>
<th>Questionnaire item</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1d. The people I talk to and work with on my job</td>
<td>4.405</td>
<td>1.169</td>
</tr>
<tr>
<td>1g. The chance to get to know other people while on the job</td>
<td>3.926</td>
<td>1.255</td>
</tr>
<tr>
<td>1l. The chance to help other people while at work</td>
<td>4.847</td>
<td>1.081</td>
</tr>
</tbody>
</table>

Table 4.4 presents responses to statements related to supervision. The respondents were slightly satisfied with the degree of respect and fair treatment they receive from their bosses. However, they were slightly dissatisfied with the amount of support and guidance they receive from their supervisors, and the overall quality of the supervision they receive in their works indicated by a low mean of 3.877 and 3.939 respectively.

<table>
<thead>
<tr>
<th>Questionnaire item</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1e. The degree of respect and fair treatment I receive from my boss</td>
<td>4.098</td>
<td>4.362</td>
</tr>
<tr>
<td>1h. The amount of support and guidance I receive from my supervisor</td>
<td>3.877</td>
<td>1.469</td>
</tr>
<tr>
<td>1n. The overall quality of the supervision I receive in my work</td>
<td>3.939</td>
<td>1.251</td>
</tr>
</tbody>
</table>
Table 4.5 provides the responses to statement related to growth. The respondents were slightly satisfied with the amount of independent thought and action they can exercise in their jobs, and the amount of challenge in their jobs. However, they were slightly dissatisfied with the amount of personal growth and development they get in doing their jobs, and the feeling of worthwhile accomplishment they get from doing their jobs.

Table 4.5 Responses to items related to Growth (N=163)

<table>
<thead>
<tr>
<th>Questionnaire item</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1c. The amount of personal growth and development I get in doing my job</td>
<td>3.742</td>
<td>1.289</td>
</tr>
<tr>
<td>1f. The feeling of worthwhile accomplishment I get from doing my job</td>
<td>3.975</td>
<td>1.138</td>
</tr>
<tr>
<td>1j. The amount of independent thought and action I can exercise in my job.</td>
<td>4.270</td>
<td>1.296</td>
</tr>
<tr>
<td>1m. The amount of challenge in my job</td>
<td>4.160</td>
<td>1.191</td>
</tr>
</tbody>
</table>

**Part II of the questionnaire: questions on independent variables**

Question number two to number eight in PART II of the questionnaire deal with staff development review, in-service training, and quality improvement.

Table 4.6 presents the number of Staff Development Reviews that have been conducted for respondents by their supervisors from December 1991 up to December 1997 in their department. Most of the respondents (24.5%) have been reviewed three times while 20.9%, 20.2%, and 19.6% of the respondents have been reviewed zero, one, and four or more times respectively.
Table 4.6 Frequency distribution of the number of SDRs reviewed (N=163)

<table>
<thead>
<tr>
<th>Number of SDR conducted</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>34</td>
<td>20.9</td>
</tr>
<tr>
<td>1</td>
<td>33</td>
<td>20.2</td>
</tr>
<tr>
<td>2</td>
<td>24</td>
<td>14.7</td>
</tr>
<tr>
<td>3</td>
<td>40</td>
<td>24.5</td>
</tr>
<tr>
<td>4 or more</td>
<td>32</td>
<td>19.6</td>
</tr>
<tr>
<td>Total</td>
<td>163</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.7 presents the distribution of respondents who have undergone technical training inside the department. 42.3% of the respondents have undergone technical training inside the department while 57.7% of the respondents have not undergone technical training inside the department.

Table 4.7 Frequency distribution showing the technical training inside the department (N=163)

<table>
<thead>
<tr>
<th>Undergone technical training inside the department</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>69</td>
<td>42.3</td>
</tr>
<tr>
<td>No</td>
<td>94</td>
<td>57.7</td>
</tr>
<tr>
<td>Total</td>
<td>163</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.8 presents the distribution of respondents who have undergone managerial training inside the department. 14.1% of the respondents have undergone managerial training inside the department while 85.9% of the respondents have not undergone managerial training inside the department. It is six times the difference between these two groups which is a great percentage difference of 71.8%.
Table 4.8 Frequency distribution showing the managerial training inside the department (N=163)

<table>
<thead>
<tr>
<th>Undergone managerial training inside the department</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>23</td>
<td>14.1</td>
</tr>
<tr>
<td>No</td>
<td>140</td>
<td>85.9</td>
</tr>
<tr>
<td>Total</td>
<td>163</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.9 presents the distribution of respondents who have undergone technical training outside the department. 38.7% of the respondents have undergone technical training outside the department while 61.3% of the respondents have not undergone technical training outside the department. The difference between these two groups is 22.6%.

Table 4.9 Frequency distribution showing the technical training outside the department (N=163)

<table>
<thead>
<tr>
<th>Undergone technical training outside the department</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>63</td>
<td>38.7</td>
</tr>
<tr>
<td>No</td>
<td>100</td>
<td>61.3</td>
</tr>
<tr>
<td>Total</td>
<td>163</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.10 presents the distribution of respondents undergone managerial training outside the department. 17.8% of the respondents have undergone managerial training outside the department while 82.2% of the respondents have not undergone managerial training outside the department. The percentage difference between these two groups is 64.4% which is a great difference.
Table 4.10 Frequency distribution showing the managerial training outside the department (N=163)

<table>
<thead>
<tr>
<th>Undergone managerial training outside the department</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>29</td>
<td>17.8</td>
</tr>
<tr>
<td>No</td>
<td>134</td>
<td>82.2</td>
</tr>
<tr>
<td>Total</td>
<td>163</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.11 presents the distribution of the quality circle/ quality assurance group/ quality task force/ quality control group, etc. formed in the respondents’ departments. 75.5% of the respondents’ departments had quality circles formed while 24.5% of the respondents’ departments had not yet formed quality circles. Quality circles are now common in most departments.

Table 4.11 Frequency distribution showing quality circle formed in the department (N=163)

<table>
<thead>
<tr>
<th>Quality circle formed in the department</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>123</td>
<td>75.5</td>
</tr>
<tr>
<td>Not yet</td>
<td>40</td>
<td>24.5</td>
</tr>
<tr>
<td>Total</td>
<td>163</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.12 provides the information about whether respondents’ joined the quality circles in their department. 56.4% of the respondents joined the quality circles in their departments. 43.6% of the respondents did not join the quality circles in their departments.
Table 4.12 Frequency distribution showing quality circle joined in the department (N=163)

<table>
<thead>
<tr>
<th>Quality circle joined in the department</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>92</td>
<td>56.4</td>
</tr>
<tr>
<td>No</td>
<td>71</td>
<td>43.6</td>
</tr>
<tr>
<td>Total</td>
<td>163</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Part III of the questionnaire: questions on moderating variables**

PART III of the questionnaire collected demographic data such as number of years working experience, rank, marital status, age, gender, highest qualification achieved.

Table 4.13 shows the distribution of the respondents by working experience. Working experience ranged from 0.1 year to 33 years with a mean working experience of 6.866 years and a standard deviation of 6.054 years. The largest group of respondents (16) had six years of working experience as diagnostic radiographers followed closely by the second highest number of respondents (15) who had working experience of 2 years. 4.3% of the respondents did not answer this question.
Table 4.13 Frequency distribution of the respondents by working experience (N=163)

<table>
<thead>
<tr>
<th>Years of working experience as diagnostic radiographer</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>0.25</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>0.50</td>
<td>5</td>
<td>3.1</td>
</tr>
<tr>
<td>1.00</td>
<td>6</td>
<td>3.7</td>
</tr>
<tr>
<td>1.25</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>1.50</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>2.00</td>
<td>15</td>
<td>9.2</td>
</tr>
<tr>
<td>2.50</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>3.00</td>
<td>13</td>
<td>8.0</td>
</tr>
<tr>
<td>3.50</td>
<td>3</td>
<td>1.8</td>
</tr>
<tr>
<td>4.00</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>5.00</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>6.00</td>
<td>16</td>
<td>9.8</td>
</tr>
<tr>
<td>7.00</td>
<td>11</td>
<td>6.7</td>
</tr>
<tr>
<td>7.50</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>8.00</td>
<td>5</td>
<td>3.1</td>
</tr>
<tr>
<td>9.00</td>
<td>5</td>
<td>3.1</td>
</tr>
<tr>
<td>10.00</td>
<td>12</td>
<td>7.4</td>
</tr>
<tr>
<td>11.00</td>
<td>5</td>
<td>3.1</td>
</tr>
<tr>
<td>12.00</td>
<td>4</td>
<td>2.5</td>
</tr>
<tr>
<td>13.00</td>
<td>4</td>
<td>2.5</td>
</tr>
<tr>
<td>14.00</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>15.00</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>16.00</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>17.00</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>18.00</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>20.00</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>22.00</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>25.00</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>26.00</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>29.00</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>30.00</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>33.00</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Missing</td>
<td>7</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>163</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Mean : 6.866 and Standard deviation : 6.054
Table 4.14 provides the frequency percentage of the respondents by rank. Of the 163 respondents, 2 were Department Managers, 6 were Senior Radiographers, 87 Radiographers I, 68 Radiographers II.

Table 4.14 Frequency distribution of respondents by rank (N=163)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department Manager</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>Senior Radiographer</td>
<td>6</td>
<td>3.7</td>
</tr>
<tr>
<td>Radiographer I</td>
<td>87</td>
<td>53.4</td>
</tr>
<tr>
<td>Radiographer II</td>
<td>68</td>
<td>41.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>163</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 4.15 shows the distribution of the respondents by marital status. 61.3% of the respondents were single while 38.0% of the respondents were married. However, only 0.6% of the respondents were widowed (which was only one respondent).

Table 4.15 Frequency distribution of the respondents by marital status (N=163)

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>100</td>
<td>61.3</td>
</tr>
<tr>
<td>Married</td>
<td>62</td>
<td>38.0</td>
</tr>
<tr>
<td>Widowed</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>163</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 4.16 indicates the age distribution of the respondents. The largest number of respondents (29.4%) were found in the age group less than 26 years and 26-30 years followed by the second largest number of respondents (27%) in the age group 31-35 years. Only two respondents (1.2%) were in the age group greater than 50 years. 1.2% of the respondents did not reply to this question.
Table 4.16 Frequency distribution of respondents by age (N=163)

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;26</td>
<td>48</td>
<td>29.4</td>
</tr>
<tr>
<td>26-30</td>
<td>48</td>
<td>29.4</td>
</tr>
<tr>
<td>31-35</td>
<td>44</td>
<td>27.0</td>
</tr>
<tr>
<td>35-40</td>
<td>13</td>
<td>8.0</td>
</tr>
<tr>
<td>41-45</td>
<td>5</td>
<td>3.1</td>
</tr>
<tr>
<td>46-50</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>&gt;50</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>Total</td>
<td>163</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.17 presents the distribution of the respondents by gender. 55.8% of the respondents were male diagnostic radiographer while 42.9% of the respondents were female diagnostic radiographers. The difference was 12.9%. 1.2% did not reply to this question.

Table 4.17 Frequency distribution of the respondents by gender (N=163)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>91</td>
<td>55.8</td>
</tr>
<tr>
<td>Female</td>
<td>70</td>
<td>42.9</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>Total</td>
<td>163</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.18 provides the respondents' qualifications. The majority of the respondents had a Degree qualification (62%). The second largest group had a Professional Diploma in Diagnostic Radiography. Four respondents were graduates with Msc in Management while two respondents with Higher Diploma in Diagnostic Radiography. Only one respondent had a Msc in Diagnostic Radiography.
Table 4.18 Frequency distribution of respondents by qualification (N=163)

<table>
<thead>
<tr>
<th>Highest educational level</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Diploma</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>Professional Diploma</td>
<td>53</td>
<td>32.5</td>
</tr>
<tr>
<td>Degree</td>
<td>101</td>
<td>62</td>
</tr>
<tr>
<td>Msc in Management</td>
<td>4</td>
<td>2.5</td>
</tr>
<tr>
<td>Msc in Radiography</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>Total</td>
<td>163</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.19 presents the age distribution of the respondents by gender. The largest number of both the male and female respondents were in the age group less than 26 years and 26-30 years followed by 31-35 age group.

Table 4.19 Crosstable of respondents for age group by gender (N=163)

<table>
<thead>
<tr>
<th>Age</th>
<th>Male</th>
<th>Female</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;26</td>
<td>26</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>26-30</td>
<td>26</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>31-35</td>
<td>26</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>36-40</td>
<td>8</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>41-45</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>46-50</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>&gt;50</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>91</td>
<td>70</td>
<td>2</td>
</tr>
</tbody>
</table>

Part IV of the questionnaire: open-ended questions

Question number 16a, 16b, & 16c of the PART IV of the questionnaire posed an open ended question which gave the respondents an opportunity to make recommendations regarding the new management initiatives implemented by the Hospital Authority.
Responses from 43 (26.38%) respondents were received. Some respondents had made more than one recommendation in question number 16a, 16b, & 16c of the questionnaire. Some of the respondents explained the changes they recommended, others simply indicated the area they wanted to be changed. Most of the respondents were young (below 26), not married and holding the post of Radiographer II.

Their recommendations on staff development review, in-service training (both technical & managerial), and quality improvement are presented in appendix D.

From the above results of the survey, we cannot draw any definite conclusions. In the next chapter, we can draw some conclusions and give implication for practice and further research after the discussion of the nine hypotheses testing.
Chapter V

HYPOTHESES TESTING, DISCUSSION AND CONCLUSION

This final chapter is a presentation of the discussion of the nine hypotheses testing, implications for practice and further research, and a brief conclusion of the study.

Discussion of the nine hypotheses testing

significant differences in job satisfaction within the selected five job facets and the independent and demographic variables:-

In order to determine the significant differences between the selected demographic variables namely working experience, rank, marital status, age, gender, and highest qualification with the job satisfaction of the selected five job facets namely pay, security, social life, supervision, and growth; and to determine the significant differences between the selected independent variables namely staff development review, in-service training, and quality improvement with the job satisfaction of the selected five job facets namely pay, security, social life, supervision, and growth, the following nine null hypotheses were formulated:

1. Staff development review (SDR) under the new management initiatives of HA has no effect on a diagnostic radiographer's job satisfaction mean for the five-job facets working in HA hospitals.
2. *In-service training* under the new management initiatives of HA has no effect on a diagnostic radiographer’s *job satisfaction mean for the five-job facets* working in HA hospitals.

3. *Quality improvement* under the new management initiatives of HA has no effect on a diagnostic radiographer’s *job satisfaction mean for the five-job facets* working in HA hospitals.

4. *Working experience* has no effect on a diagnostic radiographer’s *job satisfaction mean for the five-job facets* working in HA hospitals.

5. *Rank* has no effect on a diagnostic radiographer’s *job satisfaction mean for the five-job facets* working in HA hospitals.

6. *Marital status* has no effect on a diagnostic radiographer’s *job satisfaction mean for the five job facets* working in HA hospitals.

7. *Age* has no effect on a diagnostic radiographer’s *job satisfaction mean for the five job-facets* working in HA hospitals.

8. *Gender* has no effect on a diagnostic radiographer’s *job satisfaction mean for the five-job facets* working in HA hospitals.

9. *Educational level* has no effect on a diagnostic radiographer’s *job satisfaction mean for the five-job facets* working in HA hospitals.
The t-test and one-way ANOVA were used for testing the nine hypotheses. Significance level was established at 0.05. However, Scheffe test is used to perform simultaneous joint pairwise comparisons for all possible pairwise combinations of means with using the F sampling distribution.

Hypothesis One

*Staff development review (SDR)* under the new management initiatives of HA has no effect on a diagnostic radiographer’s *job satisfaction mean for the five-job facets* working in HA hospitals.

The number of Staff Development Review conducted as response by the respondents were grouped into five categories: None, one, two, three, and four or more. The result of one-way ANOVA showed no significant differences in their *job satisfaction mean for the five job facets* between the respondents for the number of SDR conducted \([f=0.641, \text{df}=4, 158], P>0.05\]. The null hypothesis was accepted.

Hypothesis Two

*In-service training* under the new management initiatives of HA has no effect on a diagnostic radiographer’s *job satisfaction mean for the five-job facets* working in HA hospitals.

In-service training was divided into technical and managerial aspects which were further subdivided into inside and outside the departments in this study. The respondents were required to response either have undergone or have not undergone the training. The result of one-way ANOVA showed no significant differences in their *job satisfaction mean for the five job facets* between the respondents for technical training inside the department \([f=1.605, \text{df}=1, 161],\)
P>0.05], technical training outside the department \( [f=1.324, (df=1, 161), P>0.05] \), managerial training inside the department \( [f=0.379, (df=1, 161), P>0.05] \), and the managerial training outside the department \( [f=0.941, (df=1, 161), P>0.05] \). Therefore, the null hypothesis was accepted.

**Hypothesis Three**

*Quality improvement* under the new management initiatives of HA has no effect on a diagnostic radiographer's *job satisfaction mean for the five-job facets* working in HA hospitals.

For the quality improvement of the questionnaire, the respondents were required to indicate whether quality circles were formed in their departments, and whether they have joined the quality circle groups in their departments. The result of one-way ANOVA showed no significant differences in their job satisfaction mean for the five job facets between the respondents for quality improvement of quality circle formed \( [f=0.383, (df=1, 161), P>0.05] \), and quality circle groups joined \( [f=2.297, (df=1, 161), P>0.05] \). Therefore, the null hypothesis was accepted.

**Hypothesis Four**

*Working experience* has no effect on a diagnostic radiographer's *job satisfaction mean for the five-job facets* working in HA hospitals.

A diagram was plotted using regression analysis to investigate whether there is any relationship between the working experience of the respondents and the job satisfaction mean for the five job facets of the diagnostic radiographers. The result of the regression analysis
showed no significant relationship between the working experience and the job satisfaction mean for the five job facets of the diagnostic radiographers. Therefore, the null hypothesis was accepted.

**Hypothesis Five**

*Rank* has no effect on a diagnostic radiographer's *job satisfaction mean for the five-job facets* working in HA hospitals.

The respondents' rank were grouped into four categories: Department Manager (2), Senior Radiographer (6), Radiographer I (87), and Radiographer II (68). The ANOVA test showed statistically significant difference in the job satisfaction mean for the five job facets and the rank \([f=6.769, (df=3, 159), p<0.05]\). Therefore, the null hypothesis was rejected.

**Table 5.1 One-way ANOVA for the satisfaction mean with the five job facets and rank**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>13.558</td>
<td>3</td>
<td>4.519</td>
<td>6.769</td>
<td>0.000</td>
</tr>
<tr>
<td>Within groups</td>
<td>106.146</td>
<td>159</td>
<td>0.668</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>119.704</td>
<td>162</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One-way ANOVA tests with the individual five job facets indicated that there were significant differences in the satisfaction means for the pay, security, supervision & growth in the different ranks. Their result are \([f=2.815, (df=3, 159), p=0.041]\), \([f=3.309, (df=3, 159), p=0.022]\), \([f=8.537, (df=3, 159), p=0.000]\), & \([f=3.846, (df=3, 159), p=0.011]\) respectively as showed in the following tables.
Table 5.2 One-way ANOVA for pay and rank

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>9,760</td>
<td>3</td>
<td>3,253</td>
<td>2.815</td>
<td>0.041</td>
</tr>
<tr>
<td>Within groups</td>
<td>183,743</td>
<td>159</td>
<td>1.156</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>193,503</td>
<td>162</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5.3 One-way ANOVA for security and rank

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>8,712</td>
<td>3</td>
<td>2,904</td>
<td>3.309</td>
<td>0.022</td>
</tr>
<tr>
<td>Within groups</td>
<td>139,555</td>
<td>159</td>
<td>0.878</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>148,267</td>
<td>162</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5.4 One-way ANOVA for supervision and rank

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>79,644</td>
<td>3</td>
<td>26,548</td>
<td>8.537</td>
<td>0.000</td>
</tr>
<tr>
<td>Within groups</td>
<td>494,444</td>
<td>159</td>
<td>3.110</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>574,089</td>
<td>162</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5.5 One-way ANOVA for growth and rank

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>8,874</td>
<td>3</td>
<td>2.958</td>
<td>3.846</td>
<td>0.011</td>
</tr>
<tr>
<td>Within groups</td>
<td>122,281</td>
<td>159</td>
<td>0.769</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>131,154</td>
<td>162</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Scheffe test can locate the sources of significant differences in the means as shown in the Table 5.6 & Table 5.7. However, no two groups are significantly different at the 0.050 level for job facets pay, security, growth and rank groups.
Table 5.6 The Scheffe test results for the satisfaction mean with the five job facets and rank groups

<table>
<thead>
<tr>
<th></th>
<th>Group 3 (Rad. I)</th>
<th>Group 4 (Rad. II)</th>
<th>Group 1 (D.M.)</th>
<th>Group 2 (S.R.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.0525</td>
<td>Group 3 (Radiographer I)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2836</td>
<td>Group 4 (Radiographer II)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3214</td>
<td>Group 1 (D.M.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4048</td>
<td>Group 2 (S.R.)</td>
<td></td>
<td></td>
<td>**</td>
</tr>
</tbody>
</table>

* indicates significant difference with P<0.05

Table 5.7 The Scheffe test results for the job facet supervision and rank groups

<table>
<thead>
<tr>
<th></th>
<th>Group 3 (Rad. I)</th>
<th>Group 4 (Rad. II)</th>
<th>Group 1 (D.M.)</th>
<th>Group 2 (S.R.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5900</td>
<td>Group 3 (Radiographer I)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1471</td>
<td>Group 4 (Radiographer II)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.8333</td>
<td>Group 1 (D.M.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.222</td>
<td>Group 2 (S.R.)</td>
<td></td>
<td></td>
<td>**</td>
</tr>
</tbody>
</table>

* indicates significant difference with P<0.05

**Hypothesis Six**

*Marital status* has no effect on a diagnostic radiographer's *job satisfaction mean for the five job facets* working in HA hospitals.

The respondents' marital status were categorized into three categories only: Single (100) married (62) and windowed (1) because no respondents fell into the other two categories of
divorced and separated. The ANOVA test showed statistically significant differences in the satisfaction mean for the five job facets of the marital status [F=3.715, (df=2, 160), P<0.05].

Table 5.8 One-way ANOVA for mean job satisfaction with the five job facets & marital status

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>5312</td>
<td>2</td>
<td>2.656</td>
<td>3.715</td>
<td>0.026</td>
</tr>
<tr>
<td>Within groups</td>
<td>114392</td>
<td>160</td>
<td>0.715</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>119704</td>
<td>162</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One-way ANOVA tests with the individual five job facets indicated that there were significant differences in the satisfaction means for the pay, security, & supervision with the marital status. Their result are [F=5.757, (df=2, 160), p=0.004], [F=4.207, (df=2, 160), p=0.017], & [F=3.046, (df=2, 160), p=0.050], respectively as showed in the following tables.

Table 5.9 One-way ANOVA for pay and marital status

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>12991</td>
<td>2</td>
<td>6.495</td>
<td>5.757</td>
<td>0.004</td>
</tr>
<tr>
<td>Within groups</td>
<td>180512</td>
<td>160</td>
<td>1.128</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>193503</td>
<td>162</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5.10 One-way ANOVA for security and marital status

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>7408</td>
<td>2</td>
<td>3.704</td>
<td>4.207</td>
<td>0.017</td>
</tr>
<tr>
<td>Within groups</td>
<td>140859</td>
<td>160</td>
<td>0.880</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>148267</td>
<td>162</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5.11 One-way ANOVA for supervision and marital status

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>21.057</td>
<td>2</td>
<td>10.529</td>
<td>3.046</td>
<td>0.050</td>
</tr>
<tr>
<td>Within groups</td>
<td>553.032</td>
<td>160</td>
<td>3.436</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>574.089</td>
<td>162</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Scheffe test can locate the sources of significant differences in the means as shown in the
Table 5.12, Table 5.13, & Table 5.14. However, no two groups are significantly different at
the 0.050 level for job facet supervision and marital status groups.

Table 5.12 The Scheffe test results for the satisfaction mean with the five job facets and
marital status groups

<table>
<thead>
<tr>
<th>Mean</th>
<th>Marital status</th>
<th>Group 5 (Widowed)</th>
<th>Group 1 (Single)</th>
<th>Group 2 (Married)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0714</td>
<td>Group 5 (Widowed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.0729</td>
<td>Group 1 (Single)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.4447</td>
<td>Group 2 (Married)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* indicates significant difference with P<0.05

Table 5.13 The Scheffe test results for the job facet pay and marital status groups

<table>
<thead>
<tr>
<th>Mean</th>
<th>Marital status</th>
<th>Group 5 (Widowed)</th>
<th>Group 1 (Single)</th>
<th>Group 2 (Married)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5000</td>
<td>Group 5 (Widowed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.3850</td>
<td>Group 1 (Single)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.8629</td>
<td>Group 2 (Married)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* indicates significant difference with P<0.05
Table 5.14 The Scheffe test results for the job facet security and marital status groups

<table>
<thead>
<tr>
<th>Mean</th>
<th>Marital status</th>
<th>Group 5 (Widowed)</th>
<th>Group 1 (Single)</th>
<th>Group 2 (Married)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0000</td>
<td>Group 5 (Widowed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1600</td>
<td>Group 1 (Single)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5968</td>
<td>Group 2 (Married)</td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

* indicates significant difference with $P<0.05$

Hypothesis Seven

*Age* has no effect on a diagnostic radiographer’s *job satisfaction mean for the five job-facets* working in HA hospitals.

The respondents’ ages were categorized into seven categories: Under 26, 26-30, 31-35, 36-40, 41-45, 46-50, and above 50 years (Table 4.16). There was a significant difference in their satisfaction mean for the five facets between the respondents in the various age groups [$F=3.876$, (df=6, 154), $p=0.001$]. Therefore, the null hypothesis was rejected.

Table 5.15 One-way ANOVA for the satisfaction mean with the five job facets and age

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>$F$</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>15,609</td>
<td>6</td>
<td>2,601</td>
<td>3.876</td>
<td>0.001</td>
</tr>
<tr>
<td>Within groups</td>
<td>103,349</td>
<td>154</td>
<td>0.671</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>118,958</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One-way ANOVA tests with the individual five job facets indicated that there were significant differences in the satisfaction means for the pay, security, & supervision in the different age groups. Their result are [$F=2.443$, (df=6, 154), $p=0.028$], [$F=2.641$, (df=6, 154), $p=0.018$], & [$F=3.599$, (df=6, 154), $p=0.002$] respectively as showed in the following tables.
Table 5.16 One-way ANOVA for pay and age

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>16.695</td>
<td>6</td>
<td>2.782</td>
<td>2.443</td>
<td>0.028</td>
</tr>
<tr>
<td>Within groups</td>
<td>175.370</td>
<td>154</td>
<td>1.139</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>192.065</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5.17 One-way ANOVA for security and age

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>13.758</td>
<td>6</td>
<td>2.293</td>
<td>2.641</td>
<td>0.018</td>
</tr>
<tr>
<td>Within groups</td>
<td>133.714</td>
<td>154</td>
<td>0.868</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>147.472</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5.18 One-way ANOVA for supervision and age

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>70.349</td>
<td>6</td>
<td>11.725</td>
<td>3.599</td>
<td>0.002</td>
</tr>
<tr>
<td>Within groups</td>
<td>501.738</td>
<td>154</td>
<td>3.258</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>572.087</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Scheffe test can locate the sources of significant differences in the means as shown in the Table 5.19, & Table 5.20. However, no two groups are significantly different at the 0.050 level for job facets pay, security and age groups.
Table 5.19 The Scheffe test results for the satisfaction mean with the five job facets and age groups

<table>
<thead>
<tr>
<th>Mean</th>
<th>Age</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Group 4</th>
<th>Group 5</th>
<th>Group 6</th>
<th>Group 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.9205</td>
<td>Group 3 (31-35)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.0957</td>
<td>Group 3 (36-40)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1592</td>
<td>Group 5 (26-30)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2872</td>
<td>Group 4 (&lt;26)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.4286</td>
<td>Group 6 (46-50)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.0385</td>
<td>Group 4 (36-40)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3214</td>
<td>Group 7 (26-30)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* indicates significant difference with P<0.05

Table 5.20 The Scheffe test results for the job facet supervision and age groups

<table>
<thead>
<tr>
<th>Mean</th>
<th>Age</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Group 4</th>
<th>Group 5</th>
<th>Group 6</th>
<th>Group 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3333</td>
<td>Group 5 (41-45)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3333</td>
<td>Group 6 (46-50)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3712</td>
<td>Group 3 (31-35)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.8403</td>
<td>Group 2 (26-30)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1667</td>
<td>Group 1 (&lt;26)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3333</td>
<td>Group 7 (26-30)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.8462</td>
<td>Group 4 (36-40)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* indicates significant difference with P<0.05

Hypothesis Eight

Gender has no effect on a diagnostic radiographer’s job satisfaction mean for the five-job facets working in HA hospitals.

The t-test results showed no statistically significant difference between male and female respondents’ satisfaction mean for the selected five job facets \( t=-0.19, \text{ (df}=159), P>0.05 \).

Therefore, the null hypothesis was accepted.
Hypothesis Nine

*Educational level* has no effect on a diagnostic radiographer's *job satisfaction mean for the five-job facets* working in HA hospitals.

Diagnostic radiographers' qualification were grouped into five categories: Higher Diploma (2), Professional Diploma (53), Degree (101), Msc in Management (4), and Msc in Radiography (1). The one-way ANOVA results showed that there were no statistically significant differences in the respondents' satisfaction mean for the five job facets and the educational level \[ f=0.346, (df=4, 156), P>0.05 \]. Therefore, the data supported the null hypothesis.

**Summary of the nine hypotheses testing**

To examine the interrelationships between dependent and independent variables, and between dependent and moderating variables, t-test, one-way ANOVA and the Scheffe test were performed on the demographic variables, subscales of new management initiatives, and job satisfaction scale. A value of \( p<0.05 \) is considered statistically significant.

Cronbach's alpha will be used to study the internal consistency of the new management initiatives of the questionnaire and its subscales of the job satisfaction questionnaire. This aims to assure the reliability of the instruments used in the study.

The results of the testing can be summarized in the following table :-
Table 5.21 The result of the nine hypotheses testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Mean satisfaction</th>
<th>Job facet Pay</th>
<th>Job facet Security</th>
<th>Job facet Social life</th>
<th>Job facet Supervision</th>
<th>Job facet Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: SDR</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2: Training</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>3: Quality improvement</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4: Working experience</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5: Rank</td>
<td>✓ *</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>✓ *</td>
</tr>
<tr>
<td>6: Marital status</td>
<td>✓ *</td>
<td>✓ *</td>
<td>✓ *</td>
<td>X</td>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>7: Age</td>
<td>✓ *</td>
<td>✓ *</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>✓ *</td>
</tr>
<tr>
<td>8: Gender</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>9: Educational level</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

X : Not statistically significant by T-test or ANOVA
✓ : Statistically significant by T-test or ANOVA
* : Statistically significant by Scheffe test

Recommendations of the respondents given in the open-ended questions

Most of the respondents felt that SDR was "useless, annoying, time-consuming, meaningless, and ambiguous. SDR just gave them additional work to do besides the daily technical duties".

They also felt that their knowledge could be updated if they were provided more training opportunities both in technical & managerial aspects. In fact, they found that "there were no systematic, no tailor-made, not enough technical & managerial training programmes, and not enough funding for existing in-service training".
"The quality improvement activities like quality circles, quality assurance groups, quality task forces, and quality control groups were poorly participated in by the respondents because of no support by supervisors, lack of resources especially in small hospitals and because no incentive was provided to the participants".

**Discussions of the nonsignificant hypotheses testing**

According to the results of this study, there are no significant relationships between the independent variables of staff development review, in-service training, and quality improvement with the dependent variable of job satisfaction. These nonsignificant relationships were also reported by Blaesi, 1981 and Goodman, 1990. There are nonsignificant relationships between the moderating variables of working experience, gender and educational level with the dependent variable of job satisfaction. These nonsignificant relationships were also reported by Johnson, 1995; McNeely, 1985; Gierach, 1982.

From the result of the study, we can conclude that new management initiatives have no measurable impacts on the job satisfaction of the diagnostic radiographers working in HA hospitals in relation to staff development review, in-service training, and quality improvement. This result may be due to many reasons: (1) the respondents chosen might not be representative of all the ranks of the diagnostic radiographers because only 2 were Department Managers and 6 were Senior Radiographers out of the 163 respondents which is only 4.9% of the respondents. (2) the hospitals chosen for this study might not be representative of all the HA hospitals because only 10 selected out of 44 HA hospitals which is only 22.7% of the HA hospitals. (3) the respondents might not respond honestly to the
questionnaire. (4) the new management initiatives might not affect the diagnostic radiographers to the same degree because of the different culture and policies implemented by their working hospitals.

Discussions of the significant hypotheses testing

Research Hypothesis Five

The duty of a Radiographer II is to perform diagnostic radiographic examinations under the supervision of a Radiographer I. The duties of a Radiographer I are to (1) take charge of the technological aspects of a diagnostic imaging room and perform related administrative duties; (2) perform diagnostic imaging examinations; and (3) supervise Radiographer II, Darkroom Technicians and provide training to student Radiographers from the Hong Kong Polytechnic University on clinical placements. The duties of a Senior Radiographer are to (1) take charge of one or more specialised technological imaging modalities to provide a quality diagnostic service; (2) perform general administrative duties in a diagnostic radiology/nuclear medicine department; (3) supervise Radiographer I, Radiographer II, Darkroom Technicians and provide training to student Radiographers from the Hong Kong Polytechnic University on clinical placements; (4) assist in the planning of new diagnostic radiology/nuclear medicine departments and procurement of medical imaging equipment. (Quote from the guide to appointment of the Human Resources Department in author’s hospital)

From the duties of Senior Radiographer, Radiographer I and Radiographer II, we know that Radiographer II mainly performs the clinical duties of radiography while Senior Radiographer
mainly performs managerial duties of supervision. The duties of the Radiographer I are somewhere in between the Senior Radiographer and the Radiographer II.

Therefore, the Scheffe test indicates that there is significant differences in the means for the supervision job facet between Senior Radiographers and Radiographers I, and between Senior Radiographers and Radiographers II.

**Research Hypothesis Six**

The Scheffe test indicates that there are significant differences in the means for the job facets pay & security between single and married groups. The stability of a family is more important for a married radiographer than for a single radiographer. If his/her family life is stable, he/she can give all his/her concentration on daily work to get job satisfaction. Therefore, the job facet pay and security is more essential to married radiographers than to a single radiographer.

**Research Hypothesis Seven**

The Scheffe test indicates that there is a significant difference in the means for the job facet supervision between 31-35 aged groups & 36-40 aged groups. The relationships between the age and the job satisfaction were also reported by Clark, Oswald & Warr (1996) who stated that the relationship is U-shaped, declining from a moderate level in the early years of employment and then increasing steadily up to retirement. Thomson (1980) also stated that older workers are more likely to be satisfied with their jobs than are younger workers because of the differing expectations of older workers and to the mesh between their extrinsic expectations and rewards.
Implications of the study

The findings of the study indicate the following implications for practice and further research:

Implications for practice

Staff development review

The research showed that SDR does not have any impact on the job satisfaction of radiographers working in HA hospitals. However, some of the respondents did make recommendations regarding the SDR in Part IV of the questionnaire. These recommendations were made with the intention of improving their job satisfaction and should be taken seriously. It is worth noting that the respondents were mainly young (below 26), not married and holding the post of Radiographer II.

Here are some quotations from their comments: SDR is meaningless, useless, unfair, annoying, time-consuming, not cost-effective, not well-implemented in some departments. There is the need to eliminate the weakness of SDR and to strengthen the benefits of SDR for the staff. In the light of these negative comments, the following are some suggestions which may get more positive responses:

1. The SDR should be linked to the total quality management: As the corporate goal of the Hospital Authority is to provide quality patient-centred care, objective setting and performance appraisal should be linked to the total quality management of the hospital. In this way the objective setting will not be seen as a new workload for staff, but rather a realistic process of continuous quality improvement.
2. The SDR should be linked to promotion and pay adjustment: SDR should, if possible, be used as a tool linked to promotion and pay adjustment. The “0, 1, 2 incremental point” system used by the staff in the management pay scale at present can be gradually extended to staff on the general pay scale, based on the performance of the staff and achievement of objectives. As a result, SDR can be given more weight in future promotion exercises.

3. Training: Introducing the SDR system should be an agenda item of the orientation and induction programme for the new staff recruited. Periodic refreshing course should be organized to ensure staff understand the rationale of the system. Parallel training should be conducted on the skills of coaching, interviewing, listening, questioning and giving feedback.

4. Performance rating: Performance rating can include good or undesirable job behaviour to form a somewhat behaviour anchored rating scale. The standard should be specific and the scale should be sensitive enough to differentiate staff performance easily.

5. Freedom from rating errors: Rating errors like leniency errors, severity errors, central tendency errors, halo effect errors, personal bias, recency errors, wrong interpretation assessment factors, etc. should be avoided as far as possible in order to give a fair and true reflection of the staff performance. For example, two supervisors, working as a team, could be used.

6. 360 degree appraisal review: SDR system should be reviewed through peers, supervisors, subordinates, and even patients if possible in order to give true picture of the staff performance. This approach is used to collect different sources, as many as possible, to maximize the breadth of information and cancel out biases unique to a particular sources.
7. Time of administration of SDR: The review and objective setting for staff should be spread out over three months, say from March to May, every year to avoid overcrowding in April.

In-service training

The research showed that in-service training does not have any impact on the job satisfaction of radiographers working in HA hospitals. However some of the respondents did make recommendations regarding the in-service training in Part IV of the questionnaire. These recommendations were made with the intention of improving their job satisfaction and should be taken seriously. It is worth noting that the respondents were mainly young (below 26), not married and holding the post of Radiographer II.

Here are some quotations from their comments: There were not enough training provided, not systematic training programmes, limited funding for training, no new and high technology in-service training including technical and managerial which were inside and outside the departments. In the light of these negative comments, the following are some suggestions which may get more positive responses:-

1. Needs analysis: A more comprehensive technical and managerial development programmes focused on a needs analysis should be conducted at various levels of the management hierarchy. Based on the findings, more systematic on-the-job technical and managerial development programmes should be developed along with the off-the-job programmes offered in the Training and Development Centres of the Hospital authority.
2. *Put the knowledge from training into practice*: The trainees should apply the knowledge both technical and managerial learned from the training into their daily work. Therefore, self-evaluation on the acquired knowledge, follow-up post-training action plans and daily work integration should be conducted in order to evaluate the training effectiveness and ensure the staff apply their knowledge and skills to their jobs.

3. *Attitude training*: A programme on staff attitude towards the patients should be conducted regularly in order to provide high quality patient-centred services.

4. *"Trained-to-trainer" programme*: A trained-to-trainer programme should be carried out so that the trained trainer can train the other staff in both technical and managerial aspects in order to have efficient and cost-effective training. But, we have to make sure the trainers are capable and competent to be trainers and regularly update their knowledge and skills which are to be passed on and to be absorbed by the new staff.

**Quality improvement**

The research showed that quality improvement does not have any impact on the job satisfaction of radiographers working in HA hospitals. However some of the respondents did make recommendations regarding the quality improvement in Part IV of the questionnaire. These recommendations were made with the intention of improving their job satisfaction and should be taken seriously. It is worth noting that the respondents were mainly *young* (*below 26*), *not married* and holding the post of *Radiographer II*. 
Here are some quotations from their comments: *The quality improvement activities were poorly participated in by the respondents because of no support by supervisors, limited resources especially in small hospitals, and no incentive to the participants.* In the light of these negative comments, the following are some suggestions which may get more positive responses:

1. *The quality improvement should be linked to SDR and in-service training* : As the corporate goal of the Hospital Authority is to provide quality patient-centred care, SDR and in-service training should be linked to the total quality management. In this way the objective setting and in-service training will not be seen as a new workload for staff, but rather a realistic process of continuous quality improvement.

2. *Support from the top management* : Participants have to be nominated by their supervisors. Their supervisors have to release the staff to attend the programmes concerning the quality improvement activities like quality circles, quality assurance groups, quality task forces, and quality control groups, etc..

3. *Break down barriers inside the department* : Staff from the department must be able to communicate with each other freely and frankly. Continuous improvement on an organizationwide basis requires a system that fosters teamwork and a common departmental vision.

4. *Redefine the role of management* : The top managers will do less of the decision making, leaving it to lower and middle level of management to make the majority of the decisions,
often on a consensual basis among the departments involved. The role of top management, then, is to manage the culture and to allocate resources to support the change process. Top management will have to establish a planning process that is flexible enough to adapt to the propositions that the TQM process develops. Middle management has responsibility for monitoring the process of TQM and authorizing the implementation of the process changes that are identified for improvement of both quality and cost. The first-line manager has to lead the process and at the same time give people enough room to make it work. All levels of management must be evaluated as role models for TQM.

5. *Modify the reward system*: The rewards are most likely to be psychological rather than financial.

**Implications for further studies**

It is recommended that the following research studies be carried out:

1. The study might not have been a good representative sample of the HA hospitals because it only studied ten HA hospitals out of forty-four existing hospitals. Therefore, a similar study on job satisfaction of the diagnostic radiographers using a larger sample representative of the HA hospitals should be conducted in future.

2. Of the 163 respondents, only two were Department Managers and six were Senior Radiographers so the job satisfaction of the Department Managers and Senior Radiographers should be studied using the interview method of data collection. This qualitative research could help provide more enriching information on the job satisfaction of the Department Managers and Senior Radiographers.
3. Job satisfaction of radiographers working in the private hospitals or laboratories should be studied to provide grounds for comparisons with job satisfaction of radiographers working in HA hospitals.

4. The study was limited to the information gathered through a questionnaire which was administered in the months from November 1997 to January 1998. Also, there may be a culture difference between Hong Kong and foreign countries when applying the adopted questionnaire. Therefore, it is recommended that further studies be carried out over a longer period of time with a modified questionnaire suitable for Hong Kong.

5. The literature review showed that there were various sources of job satisfaction other than those included in this study of job facets: pay, security, social life, supervision, and growth. Therefore, it is recommended that studies be carried out to identify those job factors too.

6. A study on the relationship between diagnostic radiographers' job satisfaction and patients' satisfaction survey should be carried out to provide a data base for a complete picture of quality in health care.

7. There were various new management initiatives implemented by the Hospital Authority other than Staff Development Review, In-service training, and Quality improvement (as included in this study). Therefore, it is recommended that studies of (1) Patient-related groups or PRGs, (2) 44 hospitals organized as 8 functional hospital clusters, (3) Quality patient-centred care through teamwork, (4) Extensive professional & vocational training programmes, and (5) Quality in health care, be carried out to find out their effects on radiographers' job satisfaction working in HA hospitals.
Final conclusion

After finishing this study, the four objectives of the study have been achieved.

In appendix A, the purpose of setting up the HA in Hong Kong was well illustrated. According to the Manual on hospital management structure (Management Division, April 1992), there were a lot of new management initiatives to improve the efficiency of hospital services for the benefit of patients. The researcher had described the new management initiatives implemented by the HA and only selected the most important initiatives including staff development review, in-service training and quality improvement for studying the job satisfaction of the diagnostic radiographers working in HA hospitals.

After reviewing the literature, the author selected the definition of the job satisfaction as the individual’s overall feeling about a job as expressed in liking or disliking (Hoppock, 1935); it is the pleasurable affective condition resulting from one’s appraisal of the way in which the experienced job situation meets one’s needs, values, and expectations (Dawis and Lofquist, 1984). The subscales of the job satisfaction suggested by Hackman & Oldham (1975) were selected because of its simplicity, suitability, and well-established reliability for the questionnaire adopted. There are totally five job facets, with fourteen questions, in the questionnaire of the job satisfaction. To achieve the second objective, this questionnaire was used to describe the job satisfaction of diagnostic radiographers working in HA hospitals during the descriptive results analysis of the survey.
Objective three can be achieved by means of the nine hypotheses testing, which were used to test whether there are some significant relationship between the new management initiatives as well as the demographic variables, and the job satisfaction of the diagnostic radiographers.

Finally, to meet the objective four, the researcher proposes, in light of the findings of this research project, some modification of the new management initiatives concerning the staff development review, in-service training, and quality improvement. This may enhance the job satisfaction of the diagnostic radiographers.
REFERENCES:


Chiu, Charlotte. (1997). Do professional women have lower job satisfaction than professional men? Lawyers as a case study, American Sociological association (ASA), Institute Industrial Relations U California, Berkeley 94720.


Essen, UW. (1985). Relationships among work values, sex, age, & job satisfaction in a selected sample of United States workers.


Jones, Gary Allan. (1996). The relationships among teacher attitudes toward staff development, job satisfaction, and organizational morale in an educational setting, DAI-A 56/12, P.4623, Jun 1996.


Weiglein, SA. (1988). Relationship of quality circles in nursing to leadership, job satisfaction, patient care, and cost containment, Western Michigan University 1988


Wong, Thomas et al. (1995). Comparison of Task and Person Oriented Nursing in Hong Kong, The Hong Kong Polytechnic University: Department of Health Science.
BIBLIOGRAPHY:


Chau kam-hung, Peter. (January, 1995). The effect of implementing a total quality management programme on the job satisfaction of radiographer in a diagnostic imaging department, Hong Kong Polytechnic University, p.88-94.


HASLink, Hospital Authority. (October 1997, Issue 54). Assuring quality of care, P.1-2

HASLink, Hospital Authority. (March 1998, Issue 58). Manpower planning: how to learn and use the rules of the game, P.7.


APPENDIX

Appendix A

The purpose of setting up Hospital Authority in Hong Kong

The reasons given by the government in the establishment of an independent hospital authority outside the civil service are outlined in the 1985 Scott Report, the 1989 Provisional Hospital Authority Report, and the speech by the Secretary for the Health and Welfare to the Legislative Council in April 1990. They can be summarized as follows:

1. Greater flexibility, especially in dealing with personnel matters - such as salary scales, hiring and firing, the use of part-timers, and allowing public hospital doctors to be engaged in private practice;

2. Better integration of government and subvented hospital services. This would help to raise the occupancy rate in subvented hospitals and reduce the overcrowding conditions in some government regional hospitals. It would also raise the morale of subvented hospital staff by bringing their remuneration package in line with that of their government counterparts;

3. Greater participation by other major stakeholders of the health care system (besides the government) - voluntary organizations, professional bodies, academic institutions, and community groups - through membership of the Hospital Authority and its committees; and

4. Incentives for better management through devolution and financial independence at the Hospital Authority level, and decentralization and financial autonomy at the hospital level.
Appendix B

12th December 1997

Dear participant,

I am working as a diagnostic radiographer in the Department of Diagnostic Radiology of the Ruttonjee Hospital. This questionnaire is designed to study the effect of new management initiatives in relation to *Staff Development Review, In-service Training and Quality Improvement* implemented by Hospital Authority on the *job satisfaction* of the diagnostic radiographer. The information you provide will help me better understand the impact on you. Only you can give me a correct picture of how you experience the impact of new HA management initiatives, so please respond to the questions frankly and honestly.

Your response will be kept strictly confidential. Only researcher will have access to the information you give. To ensure the utmost privacy, the questionnaires will not be made available to anyone other than the researcher.

A summary of the results will be sent to you after the data are analyzed upon request to your hospital coordinator.

Thank you very much for your time and co-operation. I greatly appreciate your help in furthering this research endeavor. If you have any questions or comments concerning the questionnaire, please contact me by paging 7112

Yours faithfully,

Kam Fu-ting, Gordon
(Msc Student)
Appendix C

Questionnaire

1. How satisfied are you with this aspect of your job?

I: Extremely dissatisfied  2: Dissatisfied  3: Slightly dissatisfied   4: Neutral
5: Slightly satisfied  6: Satisfied    7: Extremely satisfied

(Please circle one number for each item)

a. The amount of job security I have  
   1  2  3  4  5  6  7

b. The amount of pay and fringe benefits I receive  
   1  2  3  4  5  6  7

c. The amount of personal growth and development  
   I get in doing my job  
   1  2  3  4  5  6  7

d. The people I talk to and work with on my job.  
   1  2  3  4  5  6  7

e. The degree of respect and fair treatment  
   I receive from my boss  
   1  2  3  4  5  6  7

f. The feeling of worthwhile accomplishment  
   I get from doing my job  
   1  2  3  4  5  6  7

g. The chance to get to know other people while on the job  
   1  2  3  4  5  6  7

h. The amount of support and guidance  
   I receive from my supervisor  
   1  2  3  4  5  6  7

i. The degree to which I am fairly paid for what  
   I contribute to this organization  
   1  2  3  4  5  6  7

j. The amount of independent thought and action  
   I can exercise in my job  
   1  2  3  4  5  6  7

k. How secure things look for me in the future  
   in this organization  
   1  2  3  4  5  6  7

l. The chance to help other people while at work  
   1  2  3  4  5  6  7

m. The amount of challenge in my job  
   1  2  3  4  5  6  7

n. The overall quality of the supervision  
   I receive in my work  
   1  2  3  4  5  6  7
2. How many times has a Staff Development Review been conducted for you by your supervisor from Dec. 1991 up to now in your department?
   a. 0  b. 1  c. 2  d. 3  e. 4 or more

3. Have you undergone any in-service training (technical) in your department this year?
   a. Yes  b. No
   1  2

4. Have you undergone any in-service training (managerial) in your department this year?
   a. Yes  b. No
   1  2

5. Have you undergone any in-service training (technical) outside your department this year?
   a. Yes  b. No
   1  2

6. Have you undergone any in-service training (managerial) outside your department this year?
   a. Yes  b. No
   1  2

7. Is there any quality circle/quality assurance group/quality task force/quality control group, etc. formed in your department?
   a. Yes  b. No, not yet
   1  2

8. Have you joined any quality circle/quality assurance group/quality task force/quality control group, etc. in your department?
   a. Yes  b. No
   1  2

9. Number of years working experience as a diagnostic radiographer: __________

10. Rank
    a. Department manager  b. Senior radiographer
        1  2
    c. Radiographer I       d. Radiographer II
        3  4

11. Marital status
    a. Single  b. Married
        1  2
    c. Divorced  d. Separated
        3  4
    e. Widowed
        5

    a. <26  b. 26-30
        1  2
    c. 31-35  d. 36-40
        3  4
    e. 41-45  f. 46-50
        5  6
    g. >50
        7
13. Sex
   a. Male 1  b. Female 2

   a. Higher diploma 1  b. Professional diploma 2
   c. Degree 3  d. Master level in Management 4
   e. Master level in Radiography 5

15. Please give additional comments regarding the new management initiatives implemented by the HA. Please write them in the appropriate space below or on an extra sheet of paper.

   a. Staff Development Review (SDR)

   b. In-service training (both technical & managerial)

   c. Quality Improvement

Please return the completed questionnaire to your hospital co-ordinator within two weeks of receipt. Thank you very much for your help!
Appendix D

Recommendations by the respondents on the staff development review, in-service training, and quality improvement are presented below:

Staff Development Review (SDR)

1. It was meaningless, useless and annoying, time-consuming, not cost-effective.
2. It was not well-implemented in some departments.
3. It seemed to be an extra paper work.
4. The expectations between the supervisor and subordinates were unclear. The departmental policies changed from time to time. Therefore, it was difficult for subordinates to meet the agreed requirement.
5. It could not really reflect the performance of the staff.
6. It was not enough time to conduct SDR
7. It was a good management tool to enhance the staff’s development and participation in the department.
8. Too much project would create barrier for staff’s professional development.
9. Basically, it was a good policy for administrative level personnel, not for front-line operational staff like radiographer II. SDR was just an excuse to transfer the work of administrative staff like SR to front-line staff. Most of the objectives delivered by staff might not be granted approval by their supervisors. The supervisor always preferred their staff to do what he/she wanted. That was not the real meaning of SDR. Besides, fulfilling SDR objectives always involved extra workload to the staff.
10. It was not enough guideline for staff, managers to implement SDR.

In-service training (both technical & managerial)

1. The chance of in-service training depended on the supervisor’s decision, manpower availability.
2. The training fund was under the control of the Chief of the Service in the department.
3. No managerial training provided in some hospitals.
4. Job rotation among hospitals were suggested by small-scale hospitals in order to have new and high technology training like MRI, CT, etc.
5. Managerial in-service training was not tailed made for different ranks of radiographers.

6. Limited training fund was available for technical training.

7. In-service training should be provided to all level of staff.

8. Radiologists should conduct programmes to train radiographers so that both parties can understand each other's requirement. As a result, patient could get the most benefits.

9. In-service managerial training should be confined to managerial staff while technical training was essential for front-line staff. Otherwise, too many in-service managerial training to all level of staff would affect the daily operational efficiency of the department.

Quality Improvement

1. Poor participation by staff.

2. There were no support by supervisors, no incentive, lack of resources to the department especially in small hospitals.

3. No actual quality improvement achieved, only endless paper work done to satisfied the head of the department.

4. There were too much quality improvement activities e.g. CQI, QA, QC, ...... etc.

5. It diversified the concentration of staff on professional development & clinical services.

6. A balance point was needed.

7. Heavy emphasis from top management instead of team work from all staff was the result.

8. Sometimes, it was overemphasized in areas such as efficiency, patient care, patient rights, so staff's feeling and job satisfaction were always neglected.

9. The results of quality improvement program might not be shown within a short period of time.

10. It seemed like a quantity measure instead of quality measure.