

Determinants of Job Satisfaction: Evidence from Algerian Hospitals

Fayssal AYAD¹

Abstract

The current paper aims basically to apprehend and assess the relative importance of several conceptual key drivers of Job Satisfaction in Algerian health care organizations. Data from cross-sectional survey of staff doctors, nurses and auxiliaries from Algerian hospitals were collected. Six determinants related to the nature of the job and the organization system were examined using multiple regression analysis. Based on the results of the first regression models, remuneration items were explored in a second regression stage. Findings indicated that determinants of job satisfaction varied between the examined groups. The only domain of work that significantly predicted job satisfaction for the three studied groups was the remuneration. Equity and fairness of remuneration were the strongest predictors of job satisfaction for doctors, nurses and auxiliaries. It is suggested for Algerian health care management from the perspective of enhancing the levels of job satisfaction to modify the current policy of wages towards a more perceived fairness and equity of salaries. Health care management should also focus on the amelioration of working conditions and available material means.

Keywords: Job Satisfaction, Algerian Hospitals, Health Care Management

1. Introduction

Job Satisfaction is a complex function of various variables. Each variable is a necessary condition of Job Satisfaction but it cannot be a sufficient condition of job Satisfaction if other variables are ignored. Job Satisfaction is then a multidimensional function. A person may be satisfied with one or more aspects of his/her job but at

¹ Teaching at Ecole Supérieure de Commerce (ESC) of Algiers, International Statistical Consultant for Statistics Made Easy Inc., Lincoln, Toronto, and Edinburgh. Your comments are welcome on www.faylosophie.web.officelive.com.

the same time may be unsatisfied with other things related to his/her job. For example, a Doctor may be satisfied with his time working but may not be satisfied with the level of his income.

In recent years, researchers emphasized on the impact of Job Satisfaction on the management and the hospital quality in health care organizations (Shortell *et al.*, 1993; Davies *et al.*, 2000). Quality of medical care and Doctor-Patient relationship may be dependent on the level of Job Satisfaction (Aiken *et al.*, 1994; Norrish and Rundall, 2001). Studies of job satisfaction among hospital collaborators are important because of the relationship between satisfaction and job turnover and performance. For instance, the average cost of hospital-sponsored orientation of newly hired registered nurses in a hospital of 500 or more beds was estimated at \$130,878 in annual salary costs of training staff (Kase and Swenson, 1976). As health care employees' turnover results in high costs to hospitals and as the issue of quality of health care is currently the subject of much research, examination of job satisfaction as an antecedent variable is highly relevant. Moreover, research on job satisfaction in Algerian health care organizations is virtually nonexistent. Algeria is a country with too poor health indicators when compared to more developed countries. The health care system has a highly complex structure that is once centralized and fragmented, health care being provided by quasi-public and too few private organizations. Relations between these institutions are not well structured or regulated, as the current system is the result of historical developments rather than rational planning. So, measuring job satisfaction levels at the Algerian hospitals can be a key issue for health quality management.

In this study, the researcher attempts to fill the research gap through some initial analysis on several hospitals in Algeria, an area where there has been virtually no previous research. The paper also contributes methodologically through the use of linear regression models to predict job satisfaction and its major components among hospital staff working clinically at inpatient hospital wards in Algeria. More specifically, the purpose of this research is twofold:

- ☐ To assess the level of job satisfaction of the Algerian hospitals using cross-sectional survey data from the year 2009;
- ☐ To explore what domains of work are important for job satisfaction among doctors, nurses and auxiliaries.

The rest of the paper is organized as follows. The next section reviews relevant literature. The following section summarizes the methodology used to conduct the analysis. The subsequent section presents empirical results of the study. Next, the paper sets out the discussion of the results. The final section concludes the findings highlighting some managerial recommendations and the limitations of the study.

2. Literature Review

Job Satisfaction is the most explored dimension about the organizational behavior papers. Two great reasons stated by Spector *et al.* (1988) explain the multiplication of the number of Job Satisfaction studies dealing with the organizational behavior. The first considers that Job Satisfaction may be a good indicator of the well being in work. The second is based on the idea that the worker's behavior can affect the organization. Job satisfaction may be defined as the degree of positive affect toward the overall job or its components. Several authors distinguish between operational definitions of job satisfaction as an (1) an overall rating of the job as an entity, and (2) the sum of evaluative ratings of several job characteristics or "facets" (Hinrichs, 1968; Wanous and Lawler, 1972; Quinn and Shepard, 1974). The literature has failed to demonstrate either the superiority of one approach or the relative utility of different types of multi-facet measures (Wanous and Lawler, 1972; Evans, 1969; Seashore and Taber, 1976). The use of several indicators relevant to the population under study is often recommended.

Generally speaking, Job satisfaction concerns the way individuals will apprehend their work and its components. Locke (1976) considers that Job Satisfaction is a resultant emotional state of the measurement estimation in which the work allows for the individual to obtain and to facilitate the achievement of the considered working values. Some studies treated the global job satisfaction whereas others focused on the particular dimensions of job satisfaction. The first type of researches gave attention to a general affective state and the second ones were empirical and they tried to explore the contributions of diverse sources of job satisfaction. The different studied sources of job satisfaction are: the wages (Okerlund

et al., 1994), the social advantages, opportunity of promotion...etc. Locke (1976) used factorial analysis to determine the structure of job satisfaction. Four factors were significant: incentives, colleagues, the nature of the work and the organization. These factors can be related to two dimensions: the nature of the job and the organization.

Ali Hasan (1995) used a questionnaire to collect data from 297 nurses and 214 physicians at 34 health centers and one major public hospital to investigate the status and determinants of job satisfaction among physicians and nurses in both hospital centers in Jordan. For hospital physicians, autonomy was the most important factor of job satisfaction, and growth was the second strongest determinant. The data further indicated that the strongest determinants of job satisfaction for health care centers physicians were working conditions and security. On the other hand, the most important determinant of job satisfaction for health center nurses was working conditions and the second was the policy and the work itself. The evidence from this study suggested that improvement in opportunities to grow, salary, working conditions and autonomy would help increase the level of job satisfaction of physicians and nurses.

Suliman and Abu Gharbieh (1996) identified factors that influence Jordanian nurses' job dissatisfaction and estimated the magnitude of anticipated withdrawal from practice (number of nurses that leave their jobs/year). The results indicated that Jordanian nurses were dissatisfied with many work variables such as payment, career opportunities, nursing and hospital administrators' support, transportation, and child care facilities.

Bader *et al.* (1998) used a questionnaire to explore factors affecting job satisfaction among primary care physicians in Kuwait. Factor analysis on a random sample of 185 primary care physicians across the 5 governorates of Kuwait showed that the physicians were dissatisfied with 3 factors: salary and promotion, relationship with superiors, and availability of resources. They were satisfied with the remaining six factors: intrinsic work factors, work surroundings, job enthusiasm, relationship with hospital doctors, and relationship with colleagues, finally comfort at work. In another work concerning a gulf country, Khalid *et al.* (1999) explored 330 PHC (Primary Health Care) physicians in Riyadh through a questionnaire. The survey leaded at the workload, unsuitable working hours and lack of incentives as the main factors of dissatisfaction among PHC physicians.

Mrayyan (2005) performed comparisons between 3 public and 2 private hospitals to identify variables of Jordanian nurses' job satisfaction and retention. A descriptive design using surveys guided this study through a convenience sample of 438 nurses. Data were analyzed using descriptive and inferential statistics. Nurses who work in private hospitals were more satisfied and intended to retain their jobs more than nurses in public hospitals. This study showed clearly that nurse job satisfaction and retention are related concepts; nurse who are satisfied in their jobs are likely to retain these jobs.

Krogstad *et al.* (2006) designed a cross sectional survey from hospital staff working clinically at impatient hospitals wards in Norway. A total of 1814 Doctors, Nurses and auxiliaries working at 11 Norwegian hospitals responded. The only domain of work that significantly predicted high job satisfaction important for all groups was positive evaluation of local leadership. All the statistical analyses suggested that professional development is most important for Doctors.

To investigate levels of job satisfaction and burnout among Istanbul physicians, Ozyurt *et al.* (2006) collected data using the Maslach Burnout Inventory (MBI) and the Minnesota Job Satisfaction Questionnaire (MSQ) from a randomly selected sample group of 598 physicians from health care institutions in Istanbul. The results showed that job satisfaction was inversely correlated with emotional exhaustion and depersonalization, and positively correlated with personal accomplishment. Under multilevel regression, the most significant and common predictors of all burnout dimensions and job satisfaction were the number of vacations at individual level, and public ownership of health care facilities at group level.

Another survey was conducted by Syed *et al.* (2007) using mailed questionnaires to a random sample of 60 Doctors working at Bahawal-Victoria Hospital in Pakistan. This study showed that overall 56% Doctors were not satisfied with the level of their income. It is found that 92% of all the Doctors were neither satisfied with the present service structure nor with the career prospects in Pakistan. Further, 78% of the Doctors would like to serve abroad. Main factors contributing towards job satisfaction were designation and work environment whereas service structure turned out to be the source of dissatisfaction.

3. Methodology

Selection of the variables

Selection of variables that should measure job satisfaction was done on the basis of two criteria:

- ☐ Originality of the variable compared to previous researches and should reflect as well as possible the elements highlighted in previous empirical studies;
- ☐ Variables that can be translated into answerable questionnaire items.

The equity of remuneration is a central variable of job satisfaction (Rice *et al.*, 1990). In the same framework, Lawler (1971) emphasized that job satisfaction is not only dependent on the absolute wage but on the individual perception of its value. Working conditions are another explored factor of job satisfaction (Ali Hasan, 1995). This variable has in previous studies a significant impact on job satisfaction. Some researchers focused on the availability of resources (Bader *et al.*, 1998) as a good predictor of job satisfaction. The assumption is simple. It is noted that workers having the necessary resources may perform easily their tasks and then may be more satisfied in their job than those having less material means. The relationship between the supervisors and subordinates is also another highlighted variable in the literature (Krogstad *et al.*, 2006). The context of this variable can be summarized by local leadership. The work organization can be another important factor of job satisfaction. The importance of this variable is established in some papers (Krogstad *et al.*, 2006). Professional development was significant predictor of job satisfaction (Krogstad *et al.*, 2006). Thus, it could be a significant determinant of job satisfaction in Algerian hospitals. Finally, six variables were retained to apprehend two dimensions of job satisfaction. Selected variables are highlighted in Table 1.

Table 1. Variables of the study

Construct	Dimension	Variables
Job	Nature of the job	Remuneration

Satisfaction	<i>Working conditions</i>
	<i>Available material means</i>
	<i>Local leadership</i>
Organization	<i>Work organization</i>
	<i>Professional development</i>
The questionnaire	

The retained instrument to collect data is the questionnaire. Each variable was represented by a certain number of items measured on a 5-point Likert scale rated as: 1= Strongly Disagree, 2= Disagree, 3= Medium level of agreement, 4= Agree, 5= Strongly Agree. All items were designed so that higher numerical values represented higher levels of satisfactions. The dependant variable (Job Satisfaction) was assessed through the last item in the questionnaire: "All things considered, how satisfied are you with your job?". It was measured also on a 5-point Likert scale ranging from "very dissatisfied" to "very satisfied". Sex, age, and hospital level are also included as demographic variables in the questionnaire. This last combined selected items from established job satisfaction questionnaires like the "Job Satisfaction Survey" developed by Spector (1994) and the study of Krogstad et al., (2006) with additional items designed to map the Algerian model of hospital work organization. The first version of the questionnaire, which consisted of 50 Likert items, was originally pilot-tested on a group of thirty participants. Furthermore, a group of five experts who held a Ph.D in Human resources' management reviewed the instrument for content validity. On revision, the instrument was administered to a group of 200 members of three different types of hospitals (University hospital, County hospital, Local hospital). Reliability tests were conducted, and instrument was further refined and expanded. In particular, items with low reliabilities and low factor loadings in relation to their corresponding constructs were replaced or deleted. The threshold used for factor loadings was 0.50. In its final format, the instrument consisted of 22 Likert items. The overall reliability of the instrument was measured in terms of Cronbach's alpha and was found to be 0.92. The final items and attributes of each scale are listed in Table 2.

Data collection

A postal survey including all types of personnel at 25 acute somatic hospitals across Algeria was performed during the year 2009. The participating hospitals represented approximately the biggest hospitals in Algeria and they are assumed to be a good sample of the overall population. For the purpose of this study, all the doctors, nurses and auxiliaries working more than 50% of full time and working at least 6 months in the hospital are included. Names and addresses were obtained through the personnel administration systems of the participating hospitals. The convenience sampling method was used because it is easy for the researcher to reach the sample participants; however, the researcher acknowledges that this type of non probability sampling method will provide little opportunity to control biases.

The sample size was determined to be 1,200 participants distributed as follows: 200 doctors, 700 nurses, and 300 auxiliaries. Non-respondents received one reminder after three to four months. Due to anonymity aims, the only information about non-respondents retained after the reminder was profession and hospital. To protect the subject's rights of the respondents they were informed of the purpose of the study and that the participation is voluntary, they have the right to refuse participating. Further, the subjects were told that they can refrain from answering to any item in the questionnaire and data will be organized by subject's codes.

Statistical analysis

According to the assumption that job satisfaction is a complex response to several variables, multiple linear regression model was set up as the tool of analysis. The dependent variable is considered as the job satisfaction and the independent variables are the predetermined variables in Table 1. The age was included in the regression as the controlling variable because earlier analyses show that increasing age significantly contributes to job satisfaction (Krogstad *et al.*, 2006). Sex is not included as a correcting variable, because of the fact that almost all nurses were female and doctors mostly male is a characteristic of the sample that should not be "corrected". Separate regression models were specified for each of the three professions.

It is expected that the three professions will differ in their explanatory models. If the three groups did not differ on the level of indices, another exploration of whether there were differences at a more detailed level, by doing a second regression using single items as explanatory variables. Again, separate analyses for each professional group were conducted. Statistical analyses were performed using STATA 9.2 software for Windows.

Table 2. Items of the questionnaire (#)

Variable	Items
<i>Remuneration</i>	My salary can be considered as high compared to proposed salaries of other hospitals.
	My salary can be considered as high compared to other workers' salaries in the hospital I work.
	I feel I am being paid a fair amount for the work I do*.
	I feel my efforts are rewarded the way they should be*.
	My work in hospital provides me the opportunity to increase my wage.
	My work in the hospital provides me an acceptable amount of incentives.
<i>Working Conditions</i>	The working times are suitable for me.
	I am satisfied with the working conditions of lighting.
	I am satisfied with the working conditions of hygiene.
	I feel satisfied with the working conditions of air-conditioning.
<i>Available material means</i>	I think that my hospital has sophisticated material means compared to other hospitals in Algeria.
	The available material means in my hospital is suitable to perform the necessary tasks in a best way.
<i>Local leadership</i>	My immediate superior knows exactly the efforts

	I provide.
	I get the encouragement I need from my immediate superior*.
	My immediate superior provides feedback so that I know whether I am doing a good job.
	My immediate superior always speaks clearly*.
	Expectations from superiors are clear.
	Tasks are clearly defined.
<i>Work organization</i>	Many of our procedures make doing a good job easy.
	Work assignments are fully explained.*
<i>Professional development</i>	My work environment provides great chances for promotion.
	The hospital where I work provides me good opportunities for professional development.

*these items are borrowed from the "Job Satisfaction Survey" developed by Spector (1994) and the study of Krogstad et al. (2006).

#it is important to note that the distributed questionnaire was in French language.

4. Results

A total of 861 health care collaborators responded after the reminder (overall responses rate: 71.75%) respectively 154 doctors (response rate: 77%), 523 nurses (response rate: 74.71%), and 184 auxiliaries (response rate: 61.33%). Nurses in the study were fairly equally distributed among hospital types: university hospitals (34%), county hospitals (34.8%) and local hospitals (31.2%), while other professions differed between 22.7% and 46.7% for doctors whereas auxiliaries vary between 23.4% and 44.6% (Table 3). Further characteristics of responders are described in Table 3. Internal consistency reliabilities (Cronbach's alpha) of the constructed questionnaire, based on the reached sample are summarized in the Table 4.

Table 3. Description of the sample (N=861)

Doctors	Nurses	Auxiliaries
N=154	N=523	N=184

Sex						
Male	124	80.5%	27	5.2%	8	4.3%
Female	30	19.5%	496	94.8%	176	95.7%
Age						
<30 years	16	10.3%	184	35.2%	67	36.4%
30-50 years	100	65%	286	54.7%	104	56.5%
>50 years	38	24.7%	53	10.1%	13	7.1%
Hospital level						
University	35	22.7%	178	34%	43	23.4%
hospitals	72	46.7%	182	34.8%	59	32%
County hospitals	47	30.6%	163	31.2%	82	44.6%
Local hospitals						

Table 4. Internal consistency reliabilities of the variables

<i>Scale</i>	<i>Cronbach's alpha</i>
<i>Remuneration</i>	0.71
<i>Working conditions</i>	0.62
<i>Available material means</i>	0.76
<i>Local leadership</i>	0.87
<i>Work organization</i>	0.90
<i>Professional development</i>	0.91
Total of all facets	0.83

For all the scales the internal consistency reliabilities were acceptable (>0.7) except for the working conditions ($0.62 < 0.7$). So, the variable 'working conditions' was removed from the measurement of job satisfaction. The dependent variable was checked for satisfactory distribution of standardized residuals.

First regression models

Satisfaction with their professional development was the most important explanatory variable for doctors' job satisfaction. Job satisfaction also increased with positive perception of the remuneration. Age showed a negative effect on job satisfaction for doctors. Adjusted R^2 for the model was 0.42 (Table 5). For nurses the prime predictor for job satisfaction was the remuneration. Available material means and work organization also were important for their job satisfaction (Adjusted $R^2=0.26$). The strongest predictor of high job satisfaction for auxiliaries was the remuneration. Positive local leadership as well as available material means and professional development also significantly predicted job satisfaction. Adjusted R^2 for this model was 0.36. The only variable that was a significant predictor for all three groups was the remuneration.

Second regression models

A positive evaluation of the remuneration was shown to be a significant predictor of job satisfaction for all groups. By exploring this variable alone in more detail, it is found that the different professions emphasized different aspects of remuneration. All the items of remuneration were significant predictors of doctors' job satisfaction specifying the item "I feel I am being paid a fair amount for the work I do" as the most important for doctors' job satisfaction (Table 6). For nurses the item "My salary can be considered as high compared to other workers' salaries in the hospital I work" was the most important predictor of job satisfaction. However, "I feel I am being paid a fair amount for the work I do", "I feel my efforts are rewarded the way they should be" and "My work in the hospital provides me an acceptable amount of incentives" were also important.

The models explained 20% of the variance for doctors and 23% for nurses, as measured by adjusted R^2 . The items "My salary can be considered as high compared to other workers' salaries in the hospital I work", "I feel I am being paid a fair amount for the work I do" and "My work in the hospital provides me an acceptable amount

of incentives" were significant predictors of auxiliaries' job satisfaction. Moreover, the item "I feel my efforts are rewarded the way they should be" was the most important (Adjusted $R^2=19\%$).

Table 5. Effects of the variables on job satisfaction for each type of staff workers

	Beta	P-value	95% CI for Beta
Doctors N=154			
(constant)	1.52	0.00	[1.31,1.67]
Age	-0.12	0.04	[-0.16,-0.09]
Remuneration	0.25	0.01	[0.17,0.31]
Available material means	0.13	0.11	[0.08,0.17]
Local leadership	0.08	0.06	[0.04,0.13]
Work organization	0.02	0.23	[-0.04,0.06]
Professional development	0.34	0.00	[0.23,0.44]
Adjusted $R^2=0.42$			
Nurses N=523			
(constant)	1.38	0.00	[1.22,1.51]
Age	0.01	0.31	[-0.05,0.07]
Remuneration	0.41	0.00	[0.27,0.61]
Available material means	0.07	0.02	[0.01,0.14]
Local leadership	0.02	0.12	[-0.09,0.07]
Work organization	0.11	0.03	[0.06,0.15]
Professional development	0.03	0.07	[-0.01,0.05]
Adjusted $R^2=0.26$			
Auxiliaries N=184			
(constant)	1.62	0.00	[1.35,1.71]
Age	0.03	0.21	[-0.01,0.06]
Remuneration	0.39	0.00	[0.27,0.48]
Available material means	0.08	0.01	[0.02,0.15]
Local leadership	0.11	0.00	[0.08,0.16]
Work organization	0.01	0.09	[-0.04,0.07]
Professional development	0.06	0.04	[0.03,0.10]
Adjusted $R^2=0.36$			

Table 6. Effects of single item predictors on job satisfaction

	Beta	P-value
Doctors N=154		
(constant)	2.10	0.00
My salary can be considered as high compared to proposed salaries of other hospitals.	0.09	0.01
My salary can be considered as high compared to other workers' salaries in the hospital I work.	0.05	0.04
I feel I am being paid a fair amount for the work I do.	0.11	0.02
I feel my efforts are rewarded the way they should be.	0.07	0.00
My work in hospital provides me the opportunity to increase my wage.	0.04	0.05
My work in the hospital provides me an acceptable amount of incentives.	0.05	0.03
Adjusted $R^2=0.20$		
Nurses N=523		
(constant)	1.98	0.00
My salary can be considered as high compared to proposed salaries of other hospitals.	0.08	0.33
My salary can be considered as high compared to other workers' salaries in the hospital I work.	0.14	0.00
I feel I am being paid a fair amount for the work I do.	0.12	0.02
I feel my efforts are rewarded the way they should be.	0.09	0.00
My work in hospital provides me the opportunity to increase my wage.	0.07	0.12
My work in the hospital provides me an acceptable amount of incentives.	0.06	0.01
Adjusted $R^2=0.23$		
Auxiliaries N=184		
(constant)	1.89	0.00
My salary can be considered as high compared to proposed salaries of other hospitals.	0.05	0.06
My salary can be considered as high compared to other workers' salaries in the hospital I work.	0.09	0.04
I feel I am being paid a fair amount for the work I do.	0.08	0.03

I feel my efforts are rewarded the way they should be.	0.17	0.00
My work in hospital provides me the opportunity to increase my wage.	0.05	0.09
My work in the hospital provides me an acceptable amount of incentives.	0.07	0.00
Adjusted R ² =0.19		

5. Discussion

Interpreting doctors' regression models

The strongest predictor of doctors' job satisfaction was working in a culture of professional development. Having a good level of remuneration and available material means were also seen as important. The variable of age showed a negative relationship with doctors' job satisfaction. The importance of available material means for doctors can be interpreted by the lack of the necessary resources comparing with the increasing cases of emergencies; this result is supported by the finding of Bader *et al.* (1998). Remuneration is an established factor of job satisfaction in the literature (Okerlund *et al.*, 1994; Ali Hasan, 1995; Suliman and Abu Gharbieh, 1996; Bader *et al.*, 1998; Syed *et al.*, 2007).

Remuneration emerged as a significant factor of doctors' job satisfaction in the current study by the fact that many doctors in Algerian hospitals perceive their income as not fair comparing with the work they do. This fact is confirmed by the results of the second regression model showing the fairness of remuneration as the most important item predicting doctors' job satisfaction. Findings of the regression models for doctors are adequately justified by the last events occurring in the Algerian health care sector which was characterized by several catastrophic stopping of service caused by the negative perception of incomes. The most striking trait emerging from the doctors' results is the noticeable importance of the profession. Findings of the Krogstad *et al.*'s study (2006) supported the results of the current research showing the valuable contributions of the doctors' knowledge and professional responsibility. It is important to note that

aged doctors were more dissatisfied than younger ones. This may be explained by the fact that intention to leave for senior doctors is caused by the inaction of public management to change the current situation after the different stopping of service in hospitals.

Interpreting nurses' regression models

The predictors of job satisfaction of nurses included remuneration and available material means as well as work organization dimensions. The first regression showed the remuneration to be the most important factor of nurses' job satisfaction. Focusing on this variable in the second regression, the importance of being paid as other health staff was the most important item predicting nurses' job satisfaction. This result was supported by the ideas of the theory of social comparison processes (Festinger, 1954) and the work of Adams (1963) on social inequity. Knowing that nurses have a great contact with inpatients, an acceptable level of available resources should exist in Algerian hospitals to facilitate their work and prevent them from inpatients' complaints and grievances. Work organization was an important predictor for nurses' job satisfaction. This is in line with findings that cohesive working relationships, cooperation with medical staff and appropriateness of the system of nursing was important for nurse job satisfaction (Adams and Bond, 2000; Krogstad *et al.*, 2006). The nature of nursing work tends to be concerned with a coordinating role among several organizational levels (horizontal and vertical relationships) which may explain the logical character of the reached results concerning nurses' job satisfaction.

Interpreting auxiliaries' regression models

The results of the first regression highlighted the importance of remuneration, available material means, positive local leadership and professional development. Focusing on the most important predictor of their job satisfaction (i.e., remuneration) in the second regression it is found that the fairness of income compared with the provided efforts was the strongest item predicting auxiliaries' job satisfaction. This may be explained by the fact that auxiliaries despite their lower level of authority are working hardly and their income is not consistent with the efforts they provide to keep the hospital running

smoothly. Again this result is supported by the findings of Festinger (1954) and Adams (1963). Having a leader who knows the work situation and gives feedback on the work was also seen as important. The nearest superior for auxiliaries is usually a doctor or a senior nurse. Knowing the work situation means understanding the difficulty and variation of clinical assessment and having the capacity to give professional feedback.

The challenge for leaders could be to strengthen the bonds linking them with auxiliaries and to provide good assessment to their efforts. It may seem surprising that professional development was an important factor for auxiliaries' job satisfaction. One interpretation is that currently they have a little chance to formal promotion. They are however, also the most stable staff in Algerian hospitals, thus representing long experience and considerable tacit knowledge about the reality of the health care situation as well as the hospital organization.

6. Conclusion

This study provided evidence about the relationship between hospital staff's job satisfaction and the variables: remuneration, available material means, local leadership, work organization and professional development. The findings emphasized the importance of the remuneration for both studied staff groups. The critical situation of Algerian hospitals can be explained by a general climate of dissatisfaction toward the level of remuneration. Thus, the first step to enhance job satisfaction is to review the current wages' policy and propose a new one on the basis of the shaped results of the current study. The new plan of wages should increase the general level of income for both the three studied categories (doctors, nurses and auxiliaries) and should deal with disparities of wages between the hospital staffs such that the new wage policy will lead to a general perception of equity remuneration especially for nurses and auxiliaries. The second step to bridge the gap between managerial and clinical rationalities in Algerian hospitals is to increase the current

level of available resources and provide consistent training plans in managerial theory and methods for all the types of hospital staffs.

The response rate of the study for auxiliaries was 61.33% under the required level of 70%, which may be considered low. As the sample was made unidentifiable after the inclusion procedure, knowledge about non-respondents is limited. Only the largest hospitals were selected to this study. So, many of Algerian regions are not represented by the selected sample leading to a potential probability of sample bias. Another limitation of this study is the convenience sampling method which increases the probability of systemic sampling error, and constraints the power of representativeness and the degree of generalization of the results of the study. It is interesting to note that including the specialization of the hospital staffs may affect the results of the research. Lack of internal consistency reliability of the working conditions is another limitation of this study, use of other items may lead to different results. Use of identical questions to different professions risks differing interpretations from the various groups. This may represent a validity problem, but on the other hand it also allows direct comparison between professional groups. The fact that gender still is closely linked to professions represents some interpretation problems. The reached results may be rooted in gender rather than type of professions.

7. References

Adams, J.S. (1963), "Toward an understanding of inequity", *Journal of Abnormal and Social Psychology*, Vol. 67 No 5, pp. 422-436.

Adams A., and Bond S. (2000), "Hospital nurses' job satisfaction, individual and organizational characteristics", *Journal of Advanced Nursing*, Vol. 32, pp. 536-543.

Aiken L. H., Smith H. L., and Lake E. T. (1994), "Lower Medicare mortality among a set of hospitals known for good nursing care", *Med Care*, Vol. 32, pp. 771-787.

Ali Hasan G. (1995), *Job Satisfaction Among physicians and nurses in public sector in Amman area*. Unpublished PHD thesis, Amman University of Jordan.

Bader M.A.Z., Sana S.B., and Al Ibrahim A.H. (1998), "Factors for job satisfaction among primary care physicians in Kuwait", *Medical principles and practice: international Journal of the Kuwait University health sciences center*, Vol. 7 No. 2, pp. 109-119.

Davies H.T., Nutley S.M., and Mannion R. (2000), "Organizational culture and quality of health care", *Quality Health care*, Vol. 9 No.2, pp. 111-119.

Evans M. C. (1969), "Conceptual and operational problems in the measurement of various aspects of job satisfaction", *Journal of Applied Psychology*, Vol. 2 No.53, pp. 93-110.

Festinger, L. (1954), "A Theory of social comparison processes", *Human Relations*, Vol. 7 No. 2, pp. 117-140.

Hinrichs J. R., (1968), "A replicated study of job satisfaction dimensions", *Personnel Psychology*, Vol. 21, pp. 479-491.

Kase S. H., and Swenson B. (1976), *Costs of hospital-sponsored orientation and in-service education for registered nurses, Health manpower references*. DHEW Pub. No. (HRA) 77-25. Washington, DC: U.S. Department of Health, Education, and Welfare.

Khalid A.K., Ahmed A.A.T., and Hamza A.G. (1999), "Factors influencing job satisfaction among primary health care physicians in Riyadh", *Annals of Saudi Medicine*, Vol. 19 No.5, pp. 424-426.

Lawler E.E. (1971), *Motivation and work organizations*, Bemont, CA, Wasworth publishing Company.

Locke E.A. (1976), *The nature and causes of job satisfaction*, Handbook of industrial and organizational psychology, Chicago, Rand McNally, pp. 1297-1349.

Mrayyan M.T. (2005), "Nurse job satisfaction and retention: comparing public to private hospitals in Jordan", *Journal of nursing management*, Vol. 13, pp. 40-50.

Norrish B. R., and Rundall T. G. (2001), "Hospital restructuring and the work of registered nurses", *Milbank Quarterly*, Vol. 79, pp. 55-79.

Okerlund V.W., Jackson P.B., and Parsons R.J. (1994), "Factors affecting recruitment of physical therapy personnel in Utah", *Physical Therapy*, Vol. 74 No.2, pp. 177-184.

Ozyurt A., Hayran O., and Sur H. (2006), "Predictors of burnout and job satisfaction among Turkish physicians", *Quarterly Journal of Medicine*, Vol. 99, pp. 161-169.

Quinn R. P., and Shepard L. J. (1974), *The 1972-73 Quality of Employment Survey*, Ann Arbor: Institute for Social Research, University of Michigan.

Rice R.W., Phillips S.M., and McFarlin D.B. (1990), "Multiple discrepancies and pay satisfaction", *Journal of applied psychology*, Vol. 75, pp. 386-393.

Seashore S. E., and Taber T. D. (1976), "Job satisfaction indicators and their correlates". In Albert D., Biderman and Thomas F., Drury (eds.), *Measuring work quality for social reporting*, Chap., 5. New York: Sage.

Shortell S.M., Gillies R.R., Anderson D.A., Mitchell J.B., and Morgan K.L. (1993), "Creating organized delivery systems: the barriers and facilitators", *Hospital Health Service Administration*, Vol. 38, pp. 447-466.

Spector P.E., Dwyer D.J., and Jex S.M. (1988), "Relation of Job stressors to affective, Health and performance outcomes: A comparison of multiple data sources", *Journal of applied psychology*, Vol. 73 No.1, pp. 11-19.

Suliman W. A., and Abu Gharbieh P. (1996), "Jordanian nurses: job dissatisfaction and anticipated withdrawal from practice", *Dirasat, Medical and Biological*, Vol. 23 No.2, pp. 78-87.

Syed S.A.G., Ijaz A.S., Syad A.Z., and Tahir M.H. (2007), "Job satisfaction among doctors working at teaching hospital of Bahawalpur", *Pakistan, J Ayub Med Coll Abbottabad*, Vol. 19 No. 13, pp. 42-45.

Krogstad U., D. Hofoss, M. Veenstra and P. Hjortdahl. (2006), "Predictors of job satisfaction among doctors, nurses and auxiliaries in Norwegian hospitals: relevance for micro unit culture", *Human Resources for Health*, Vol. 4 No. 3. Downloaded September 3, 2008, from <http://www.human-resources-health.com/content/4/1/3>.

Wanous J. P., and Lawler E. E. (1972), "Measurement and meaning of job satisfaction", *Journal of Applied Psychology*, Vol. 2 No.56, pp. 95-114.