

# Consequences of nursing procedures measurement on job satisfaction

*Seyyed Mohammad Khademol-hoseyni, Jamileh Mokhtari Nouri, Mohammad Ali Khoshnevis, Abbas Ebadi*

## ABSTRACT

**Background:** Job satisfaction among nurses has consequences on the quality of nursing care and accompanying organizational commitments. Nursing procedure measurement (NPM) is one of the essential parts of the performance-oriented system. This research was performed in order to determining the job satisfaction rate in selected wards of Baqiyatallah (a. s.) Hospital prior and following the NPM.

**Materials and Methods:** An interventional research technique designed with an evaluation study approach in which job satisfaction was measured before and after NPM within 2 months in selected wards with census sampling procedure. The questionnaire contained two major parts; demographic data and questions regarding job satisfaction, salary, and fringe benefits. Data analyzed with SPSS version 13.

**Results:** Statistical evaluation did not reveal significant difference between demographic data and satisfaction and/or dissatisfaction of nurses (before and after nursing procedures measurement). Following NPM, the rate of salary and benefits dissatisfaction decreased up to 5% and the rate of satisfaction increased about 1.5%, however the statistical tests did not reveal a significant difference. Subsequent to NPM, the rate of job value increased ( $P=0.019$ ), whereas the rate of job comfort decreased ( $P=0.033$ ) significantly.

**Conclusions:** Measuring procedures do not affect the job satisfaction of ward staff or their salary and benefits. Therefore, it is suggested that the satisfaction measurement compute following nurses' salary and therefore benefits adjusted based on NPM. This is our suggested approach.

**Key words:** Evaluation studies, Iran, job satisfaction rate, nursing procedure measurement

## INTRODUCTION

Although more than 4 years of the fee-for-service legislation in Iran's nursing have passed, in practice nursing as a career involve full of challenges. Nursing authorities believe this legislation will increase nurses' job satisfaction and clients' satisfaction.<sup>[1]</sup> Remarkable evidence reveals that there is a relationship between nursing workload and job satisfaction rate.<sup>[2,3]</sup> Numerous studies have been organized on the outcomes of job satisfaction rate among nurses. The results have shown a positive relationship between job satisfaction and job performance<sup>[4]</sup> as well as patient satisfaction and quality of care.<sup>[5]</sup> Behavioral outcomes caused by job dissatisfaction in nursing include: Reduced morality, absenteeism, terminations, and insignificant job performance.<sup>[6]</sup> Since the high workload leads to poor nurse-patient communication,<sup>[7]</sup> weakening

nurse-doctor relationship,<sup>[8]</sup> nurse burnout and job dissatisfaction, decreasing the quality of patient care, decreased patient safety, decreasing family satisfaction, reduced quality of working life, and likewise economic consequences,<sup>[9]</sup> therefore measuring and managing the workload is imperative.

One of the ways to measure nursing work is through measurement of nursing procedures. Procedure is one of the stages of the work process that establishes the activities and achieves the desired result.<sup>[10]</sup> Measurement of nursing procedures may reveal, explicitly or implicitly, and the disease severity. A basis can be established for measuring the impact of nursing care on patient outcomes by promoting quantitative strategies and measurement of nursing care.<sup>[11]</sup> A brief evaluation of procedures will cause an intensification in the illegal payments.<sup>[12]</sup> Procedures' evaluation and measurement are the most challenging steps in the controlling of processes since it requires data collection and research models. It is also a progressive process that must be performed repeatedly and the repetition frequency depends on the type of the activity that should have been determined.<sup>[13]</sup> In recent years, all the procedures are defined and the rewards are meted out

Nursing Faculty, Baqiyatallah University of Medical Sciences, Tehran, Iran

**Address for correspondence:** Dr. Jamileh Mokhtari Nouri, Nursing Faculty, Baqiyatallah University of Medical Sciences, Tehran, Iran.  
E-mail: mokhtari@bmsu.ac.ir

in accordance with. Researchers believe that this method leads to promotion of caring quality.<sup>[14,15]</sup> The effects of payments and rewards on the procedures' quantity are other relevant aspects. Ransom *et al.*'s classified samples into control and experimental. They found a 15% overall reduction in the number of surgical procedures that were performed during the capitates reimbursement period compared with the fee-for-service time interval.<sup>[16]</sup> In his study, Bjørndal found that physicians, who received fee-for-service, worked an average of 42 hours per week, however based on their contract, working hours are much less around 38 hours per week. Since the procedures they performed were accounted for and led to merit rewards, they worked more than the contract.<sup>[17]</sup> It means that their extra efforts were compensated as such and so they got more motivated toward their assignments.

Cullen proposed a nursery care plan in order to measurement nursing functions which included 57 therapeutic procedure items and was designed based on disease severity in the intensive care unit.<sup>[18]</sup> By quantifying the quality of each nursing function, the evaluation of each will be measurable and effortless. Nursing head employees require a system to determine how much work to allocate to nurses for each patient and each day.<sup>[19]</sup> Although much research has been done on methods of calculating nursing services, they have not showed the complexities of nursing yet.<sup>[20]</sup> More researches are recommended to shed the light in order to reach actual decision making.<sup>[21]</sup>

At the time of sending a tariff rate bill of nursing services to the national parliament, the question was to what extent is an accounting of nursing procedures possible? On the other hand, to what extent does the participation of nurses in this issue have an effect on job satisfaction? The researchers have designed the current study trying to establish job satisfaction rate of nurses prior and following NPM in the selected wards of Baqiyatallah (a. s.) Hospital with the assumption that the procedure measurement could impact nurses' job satisfaction.

## MATERIALS AND METHODS

An interventional research with evaluation approach was designed to evaluate the impact of a program, activity, or a particular policy. The objectives were the reasons for success and failure, the methods of increasing the effectiveness, analyzing the performance, process, implementation, and outcomes, analyzing the cost and the basis of a successful plan, and also the basis for further research.<sup>[22]</sup> Evaluation research methodology included formative evaluation that performs compression and consummative evaluation.<sup>[23]</sup> In the present study, "formative evaluation" was implemented.

The samples consisted of all nurses in selected wards of the Baqiatallah (a.s.) Hospital, which were selected using the census sampling procedure. Job satisfaction was measured before and after NPM. All the participants were informed about the method and purpose of the study. They were informed that participation in the study is voluntary and they could refuse to participate or withdraw from the study at any time with an informed consent. A procedure sheet of NPM included a table with various aspects including date, hour, type of procedure, and nurse's particulars.

The total numbers of all the members of the nursing teams of the selected wards were 96 nurses. A meeting was held by the 53 nurses (55.21%) in order to manage the quality of documentation as the brief meeting. Data from other nurses was collected individually by researchers in the ward.

Eighty-seven procedures were determined in the meeting of head nurses and the researcher and also six procedures were added during the time of recording according to their point of views. Subsequently, the list of nursing countable procedures designed and the trial period had been determined. During the trial recording which took around one week, the researchers were fully accessible to the nurses and answered ambiguity in order to recording the procedures, and noted the problems of the recording to the nurses at the same time. The recording procedures during the trial were not counted in the results. All the nursing teams were responsible to record each procedure in a particular shift. Each week, a chart of procedures was given as feedback to the ward staff. With regards to job satisfaction rate, salary and benefits, value, and comfort and difficulty of the job according the valid Luthans questionnaire was given before and after NPM to all subjects in six selected wards. The validity and stability of the Persian form of this questionnaire were counted by Nehrir heretofore (2010).<sup>[24]</sup> The content validity was confirmed by experts and the reliability was counted by the test-re-test ( $r = 0.7$ ). The questionnaire was completed before (70 subjects) and following (72 subjects) the NPM. All the nursing teams were participated voluntarily in the recording of data.

The questionnaire consisted of two parts, demographic data included eleven questions related to membership, age, sex, marital status, education, clinical experience, shiftwork, overtime, occupational status, and housing and the second part included 33 questions that were on job satisfaction, salary and benefits, value, and comfort and difficulty of their job. Each question which was ranked as satisfied, indifferent, and dissatisfied. To evaluate the job satisfaction rate, logic 33 had been utilized. Final scores were assessed at three levels, low (0-33.33%), average (33.34-66.67%), and good (66.67-100%). In the meantime job satisfaction was measured before and after NPM.<sup>[25]</sup> Group discussion

was held with the nursing director, head nurses, and all ward staff and the aim of the study was explained clearly likewise. Subjects determined their satisfaction or dissatisfaction by completing the questioners. Data analyzed with SPSS version 13. Chi-square and Fisher exact tests were performed to examine the relationship between variables.

## RESULTS

A total of 82,638 nursing procedures were recorded by nurses for 978 patients within two months. Results are presented as following:

### Findings related to demographic characteristics

Of 96 individuals, 70 subjects before counting procedures and 72 subjects after counting procedures completed the job satisfaction questionnaire. Prior and after the NPM respectively, membership contract (57.67%, 63.39%), less than 30 years (51.43%, 52.78%), female (52.86%, 61.11%), married (72.86%, 75%), without children (47.1%, 51.38%), circulation shift (45.71%, 44.44%), with overtime (60%, 62.5%), nurse (57.1%, 65.1%), with rental housing (57.14%, 43.05%), and with less than 5 years of clinical experience (57.14%, 47.22%) were documented.

The percent of job dissatisfaction decreased minimally following NPM compared to the previous (0.7%). Furthermore the average job dissatisfaction decreased slightly after NPM compared to the previous (0.4%) however statistical tests showed no significant differences ( $P = 0.08$ ). Women documented the procedures further than men (Fisher's exact test with  $P = 0.013$  and the tests core with  $P = 0.009$ ) in terms of comparison.

There was no significant difference between the demographic characteristics of the subjects (except gender) before and after the procedures measurement.

### Findings related to job satisfaction, salary and benefits, value, and comfort and difficulty of job

The mean job satisfaction rate was 25.71% as satisfied before procedures measurement, 21.43% indifferent, and 52.86% dissatisfied, however following procedures measurement, 25% satisfied, 23.61% indifferent, and 51.38% dissatisfied. The job satisfaction and dissatisfaction decreased following the measurement about 1%, however it showed no statistical difference ( $P = 0.08$ ; Table 1).

Prior to NPM, 62.86% of ward staff were dissatisfied with their job status, salary, and benefits and 8.57% were in the satisfied group. Following the measurement, 58.33% of ward staff were dissatisfied with their job status, salary, and only 9.72% were in the satisfied group. Thus, after the procedures measurement, the level of dissatisfaction

of salary decreased about 5% and satisfaction of salary increased to 1.15%, additionally further evaluation revealed no statistical difference ( $P = 0.13$ ; Table 2).

Prior to procedures measurement, 61.43% of the ward staff introduced their work as valuable, 20% introduced their jobs as worthless, and 17.14% were indifferent however following NPM, 72.22% documented it as a valuable job, 15.28% revealed as worthless, and 12.5% were indifferent. Following NPM, the rate of job value increased in terms of nursing staff ( $P = 0.019$ ; Table 3).

The average comfort level and job difficulty after NPM were, respectively, 12.86% comfort, 14.29% indifferent, and 72.86% difficult. On the other hand following the NPM, 5.56% of individuals documented job difficulty status as comfort, 22.22% were in different, and 72.22% documented the rate with difficulty. After NPM, the level of professional comfort in ward staff decreased significantly ( $P = 0.033$ ; Table 4).

**Table 1: Comparison the job satisfaction rate before and after nursing procedures measurement**

Job satisfaction	Before NPM		After NPM		Test
	Frequency	Percent	Frequency	Percent	
Dissatisfied	37	52.86	37	51.38	Chi-square=1.5 df=4 P=0.08
Indifferent	15	21.43	17	23.61	
Satisfied	18	25.71	18	25	
Total	70	100	72	100	

NPM: Nursing procedures measurement

**Table 2: Comparison on salary satisfaction, before and after nursing procedures measurement**

Job satisfaction	Before NPM		After NPM		Test
	Frequency	Percent	Frequency	Percent	
Dissatisfied	44	62.86	42	58.33	Chi-square=0.7 df=4 P=0.13
Indifferent	6	8.57	9	12.5	
Satisfied	6	8.57	7	9.72	
No answer	14	20	14	19.44	
Total	70	100	72	100	

NPM: Nursing procedures measurement

**Table 3: Comparison between the job values before and after nursing procedures measurement**

Job value	Before NPM		After NPM		Test
	Frequency	Percent	Frequency	Percent	
Valuable	43	61.43	52	72.22	Chi-square=7.6 df=4 P=0.019
Indifferent	12	17.14	9	12.5	
Worthless	14	20	11	15.28	
No answer	1	1.42	0	0.00	
Total	70	100	72	100	

NPM: Nursing procedures measurement

**Table 4: Comparison between the job comfort and job difficulty before and after nursing procedures measurement**

job comfort	Before NPM		After NPM		Test
	Frequency	Percent	Frequency	Percent	
Comfort	9	12.86	4	5.56	Chi-square=8.4 df=4 P=0.033
Indifferent	10	14.29	16	22.22	
Difficulty	51	72.86	52	72.22	
No answer	0	0.00	0	0.00	
Total	70	100	72	100	

NPM: Nursing procedures measurement

## DISCUSSION

The statistical results indicated a significant difference between the demographic data and procedures measurement only on gender. Women documented the procedures further than men (Fisher's exact test with  $P = 0.013$  and the test score with  $P = 0.009$ ). Besides that, the relationship between gender and job satisfaction, salary, and benefits survey was done, but statistically no significant difference was observed. Therefore in our study gender per se did not affect the results. On the job satisfaction of nurses, before NPM, only 24.3% of nurses were satisfied with their job, which is closer to the results of this study.<sup>[26]</sup>

Jahangir stated the levels of job satisfaction of nurses as moderate to high<sup>[27]</sup> however in Sodagar's study, 3.5% of nurses were completely satisfied with their jobs, 35.5% satisfied, 34% dissatisfied, and 2.7% were very dissatisfied.<sup>[19]</sup> But the results of Kelagry's paper indicated that job satisfaction in the most nurses was low to medium (79.8%).<sup>[28]</sup> Manokyan reported the low levels of job satisfaction of nurses in the cancer ward.<sup>[29]</sup> In Shahbazi's research, 83.26% of samples had a medium level of job satisfaction.<sup>[30]</sup> Mogarab in his study on nurses' satisfaction stated nursing satisfaction as 58.9% low, 37.9% moderate, and 3.2% more.<sup>[31]</sup> Regarding job satisfaction of nurses following NPM, 50.73% of ward staff did not have any job satisfaction and just 23.3% of nurses were in the satisfied group.

Comparison of nursing job satisfaction and dissatisfaction decreased about 1%, but statistical tests showed no significant difference [Table 1]. Heslin measured satisfaction by changing the management systems, increasing the number of nurses, continuing education, and so on. He increased the satisfaction rate 1.15% in the first year and next year faced decrease in 0.36%.<sup>[32]</sup>

Ward staff were not satisfied with their jobs' salary and benefits before NPM (62.52%), and only 8.54% were in the satisfied group. However, after measuring dissatisfaction of salary status of job showed a decreasing trend (8.57%) and

satisfaction showed an increasing trend (10%), but statistical tests showed no significant difference [Table 2]. However, procedures were only documented and no payment has been done. Performance of payment systems may increase the difference in the longer term.<sup>[15]</sup>

Although overall satisfaction had not changed before and after NPM, when the questions were evaluated one by one, a meaningful difference was seen in the responses of two questions that were difficulty, expedient job, and job value. Therefore, they were compared before and after NPM. Comfort level of ward staff was decreased after NPM ( $P = 0.033$ ; Table 3).

Furthermore comparing job value before and after NPM showed that the ward staff had increased the rate of job value after NPM ( $P = 0.019$ ; Table 4). Although the ward staff worked harder (because they had recorded NPM), they had increased the job value. These findings confirm the performance of new professional evaluation methods and should be considered by nursing managers.

In the present study, research hypothesis which was "increasing job satisfaction following implementation of NPM" had been rejected. Lack of feedback during the project period (almost within two months) cannot be ignored which considered as limitation. We hope that the authorities construct some positive changes based on our results to increase level of satisfaction.

## CONCLUSIONS

From the perspective of the personnel, the work had been more difficult during NPM, but job value increased meanwhile. Measuring procedures do not affect the job satisfaction of ward staff, or their salary and benefits. Therefore, it is recommended that the satisfaction measurement be done after payment according to NPM; it is the greatest approach in our views.

## ACKNOWLEDGMENT

Researchers would like to appreciate the Vice President of Baqiyatallah (a.s.) University of Medical Sciences and also the personnel and authorities of Baqiyatallah (a.s.) Hospital who assisted the researchers in fulfilling this study.

## REFERENCES

1. Mehrnews. Nursing tariff pilot implementation will accept no government funding, 2011. Available from: <http://www.mehrnews.com/fa/NewsDetail.aspx?NewsID=1533640.8.9.2011> [Last accessed on 2011 Nov 20].
2. Bratt MM, Broome M, Kelber S, Lostocco L. Influence of stress

- and nursing leadership on job satisfaction of pediatric intensive care unit nurses. *Am J Crit Care* 2000;9:307-17.
3. Darvas JA, Hawkins LG. What makes a good intensive care unit: A nursing perspective. *Aust Crit Care* 2002;15:77-82.
  4. McCloskey JC, McCain BE. Satisfaction, commitment and professionalism of newly employed nurses. *Image J Nurs Sch* 1987;19:20-4.
  5. Gould CC. Globalizing democracy and human rights. Cambridge, United Kingdom: Cambridge University Press; 2004. p. 72.
  6. Cavanagh SJ. Job satisfaction of nursing staff working in hospitals. *J Adv Nurs* 1992;17:704-11.
  7. Llenore E, Ogle KR. Nurse-patient communication in the intensive care unit: A review of the literature. *Aust Crit Care* 1999;12:142-5.
  8. Baggs JG, Schmitt MH, Mushlin AI, Mitchell PH, Eldredge DH, Oakes D, *et al.* Association between nurse-physician collaboration and patient outcomes in three intensive care units. *Crit Care Med* 1999;27:1991-8.
  9. Aiken LH, Clarke SP, Sloane DM, Sochalski J, Silber JH. Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *JAMA* 2002;288:1987-93.
  10. Wan D. *Dorland's illustrated medical dictionary*. Canada: Elsevier; 2003. p. 798.
  11. Hall ES, Poynton MR, Narus SP, Thornton SN. Modeling the distribution of nursing effort using structured labor and delivery documentation. *J Biomed Inform* 2008;41:1001-8.
  12. Liaropoulos L, Siskou O, Kaitelidou D, Theodorou M, Katostaras T. Informal payments in public hospitals in Greece. *Health Policy* 2008;87:72-81.
  13. Fisher ML. *Quick reference to redesigning the nursing organization*. Albany: Delmar Publishers; 1996. p. 4 5.
  14. Mannion R, Davies HT. Payment for performance in health care. *BMJ* 2008;336:306-8.
  15. Van Herck P, Annemans L, De Smedt D, Remmen R, Sermeus W. Pay-for-performance step-by-step: Introduction to the MIMIQ model. *Health policy* 2011;102:8-17.
  16. Ransom SB, Gene McNeeley S, Kruger ML, Doot G, Cotton DB. The effect of capitated and fee-for-service remuneration on physician decision making in gynecology. *Obstet Gynecol* 1996;87:707-10.
  17. Bjørndal A, Arntzen E, Johansen A. Salaried and fee-for-service general practitioners: Is there a difference in patient turnover? *Scand J Prim Health Care* 1994;12:209-13.
  18. Cullen DJ. Results and costs of intensive care. *Anesthesiology* 1977;47:203-16.
  19. Sodagar S. Job satisfaction of nurses in hospitals of Hormozgan University of Medical Sciences. *Hormozgan Med J* 2003;8:233-7.
  20. Galimberti S, Rebori P, Di Mauro S, D'Illio I, Viganò R, Moiset C, *et al.* The SIPI for measuring complexity in nursing care: Evaluation study. *Int J Nurs Stud* 2012;49:320-6.
  21. Hoomans T, Evers SM, Ament AJ, Hübber MW, van der Weijden T, Grimshaw JM, *et al.* The methodological quality of economic evaluations of guideline implementation into clinical practice: A systematic review of empiric studies. *Value Health* 2007;10:305-16.
  22. Polit DF, Beck CT. *Essentials of Nursing Research: Methods, Appraisal, and Utilization*. 6<sup>th</sup> ed. Philadelphia: Lippincott, Williams and Wilkins Co; 2006. p. 162-96.
  23. LoBiondo-Wood G, Haber J. *Nursing Research Methods, Critical Appraisal, and Utilization*. New York: Mosby co; 2006. p. 220-37.
  24. Nehrir B, Ebadi A, Sh T, AA KZ, Honarvar H. Relationship of job satisfaction and organizational commitment in hospital nurses. *Milit Med J* 2010;12:23-6.
  25. Nezamzadeh M, Khademolhosseini SM, Mokhtari Nouri J, Ebadi A. Design of guidelines evidence-based nursing care in patients with angina pectoris. *Iran J Crit Care Nurs* 2012;4:169-76.
  26. Mirzabeigi G, Sanjari M, Heidari S. Job satisfaction among Iranian nurses. *Hayat* 2009;15:18-26.
  27. Jahangir F, Pazargadi M, Pourmahfoz S, Akbarzadeh Negahban A. Job satisfaction of nurses in surgical wards of hospitals. *J Nurs Beheshti Univ Med Sci* 2006;16:20-7.
  28. Kelagry SH, Khoddami H. The relationship between leadership styles of nursing and nurses' job satisfaction. *J Gorgan Univ Med Sci* 2008;9:65-8.
  29. Manokyan A, Pedram Razi SH, Monjamed Z, Faghizadeh Q. Compared with nurses' job satisfaction and delivery of cancer. *Hayat* 2008;13:49-55.
  30. Shahbazi L, Salimi H. Job satisfaction of nurses in hospitals in the province of Yazd. *Yazd Univ Med Sci Health Serv* 2003;10:70-3.
  31. Mogharab M, Madrshahyan F, Aliabadi N, Rezaei N, Mohammad A. Job satisfaction of nurses in the hospitals of Birjand. *B U Med Sci J* 2006;12:92-9.
  32. Heslin MJ, Doster BE, Daily SL, Waldrum MR, Boudreaux AM, Smith AB, *et al.* Durable improvements in efficiency, safety, and satisfaction in the operating room. *J Am Coll Surg* 2008;206:1083-9.

**How to cite this article:** Khademol-hoseyni SM, Nouri JM, Khoshnevis MA, Ebadi A. Consequences of nursing procedures measurement on job satisfaction. *Iranian J Nursing Midwifery Res* 2013;18:123-7.

**Source of Support:** This study supported by Faculty of Nursing, Baqiyatallah (a.s.) University of Medical Sciences, **Conflict of Interest:** None.