

Measurement of Rehabilitation Services Staffs' Job Satisfaction Using the Effort Reward Imbalance Model in Saudi Arabia

¹I. Devreux, ²A. Jacquerye, ²F. Kittel, ¹A. Almazrooa and ¹B. Al-Awa
¹Department of Physical Therapy, College of Applied Medical Sciences,
King Abdul Aziz University, Jeddah, Kingdom of Saudi Arabia
²Universite Libre de Bruxelles, Ecole de Sante Publique, Brussels, Belgium

Abstract: To evaluate the level of work satisfaction of staff working in rehabilitation services based on the Effort-Reward Imbalance Model. A cross-sectional study among rehabilitation services staff working in 10 healthcare facilities in Jeddah. Total of 166 therapists and assistants working in the departments of physical, occupational and respiratory therapy are recruited from 10 healthcare facilities of the Jeddah area. The effort-reward imbalance and staff job satisfaction were measured using self-administered survey questionnaires. A comparatively higher effort reward imbalance ratio and low satisfaction in work is seen for foreign nationals, respiratory therapists and night schedule workers. The age, higher educational levels of the therapists and adult, geriatric and inpatients' caseloads are also positively associated with a high effort reward imbalance ratio. Job satisfaction of rehabilitation services staff based on the Effort Reward Imbalance Model is significantly correlated to the variables of age, nationality, rehabilitation specialty, work schedule and the type of patients treated which reflects an increased work stress for these professional categories. Workload, professional growth and financial benefits are essential determinants of job satisfaction of rehabilitation services staff.

Key words: Job satisfaction, effort-reward imbalance, rehabilitation services, departments, satisfaction

INTRODUCTION

With the increased awareness on the role of rehabilitation services in Saudi Arabia, the last decade has seen the growth of the health care professions in this part of the world by the progression of the quantity of available services and by the growing number of beneficiaries.

However, in a context of worldwide shortage of qualified health care providers in general and more specifically professionals with expertise in rehabilitation and with the increasing workload and control of resources, it is thought that rehabilitation services professionals are under work related stress. While the number of patients increases, occupational stress could develop amongst rehabilitation professionals represented by the high percentage of burn-out in health care professions with eventually resulting in a decreased job performance (Bakker *et al.*, 2000; Piko, 2006). Burnout levels in physiotherapists in Cyprus ranged from low to moderate (Pavlakis *et al.*, 2010) and affects 53% of young Australian physical therapists (Scutter and Goold, 1995)

while 4% of the Spanish physiotherapists have been found to present signs of severe burnout (Gisbert *et al.*, 2008). It is essential to be aware of the potential causes of work related stress before it develops for preventing detrimental effects on the patient, therapist and facility in which the therapist is employed. As in many other countries, health professionals retention is a serious problem in the Kingdom of Saudi Arabia and hospital administrations need to provide evidences to justify the allocation of specific resources to improve staff satisfaction.

At a regional level in the Kingdom of Saudi Arabia, the interest of the research is to provide a picture of the level of satisfaction of rehabilitation professionals in a multinational population practicing in the region of Jeddah which could differ from the work motivating factors in other countries of the world.

This research might hopefully assist managers to use the information as a baseline for developing a quality improvement program and considering the value of staff satisfaction to allocate time, resources and set related monitoring strategies.

MATERIALS AND METHODS

Subjects: The study is related to a population of 166 rehabilitation professionals (Therapists and assistants in physical therapy, occupational therapy and respiratory therapy that are employed on a full time basis) practicing in the various public and private health care settings of the Jeddah area. Sub-groups per professional category and nationality have been made during the data analysis and the results' correlation. The surveyed therapists are working in university hospitals or public hospitals related to the Ministry of Health as well as from private health care facilities, hospitals, rehabilitation centers and large outpatient clinics. The hospital sizes varies in average from 700 inpatients beds to smaller dimensions of 250 beds while several healthcare facilities that only treat outpatients were also included in the survey after a random selection.

Survey design: A survey prospective design by self administered questionnaires to the targeted population of therapists and technicians was used. Two hundred and twenty two survey questionnaires were distributed to all the staff of the ten rehabilitation services of the Jeddah area. The questionnaires were specifically adapted for this research which consisted of the evaluation the rehabilitation staffs' satisfaction in work. It is based on three sections; a first one resuming the socio-demographic information related to the therapists and assistants, the second section is evaluating the effort and reward imbalance ratio and over-commitment of the staff (Siegrist, 1996). A third section is a questionnaire based on some specific questions related to the practice of work in rehabilitation.

Job satisfaction measures: Job satisfaction has been generally defined as an attitudinal variable which is how people feel about their jobs and different aspects of their jobs. It is the extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs (Spector, 1997) and is also the affective orientation that an employee has about his research (Price, 2001). The study of several intrinsic and extrinsic variables are identified and utilized such as workload, salary and benefits, professional growth, working relationships, role and job autonomy, environment of care, work recognition, security and supervision, involvement in quality improvement (Lopopolo, 2002; Okerlund *et al.*, 1994; Moore *et al.*, 2006).

Work stress measures (ERI and overcommitment): The model of Effort-Reward Imbalance (ERI) claims that failed reciprocity in terms of high efforts spent and low rewards

received in turn is likely to elicit recurrent negative emotions and sustained stress responses. Conversely, positive emotions evoked by appropriate social rewards promote well being, health and survival (Siegrist, 2002). With reference to the literature review a questionnaire for rehabilitation services personnel was adapted and included a validated approach to measure psycho-social work stress based on the high-effort/low-reward imbalance ratio (Siegrist, 1996) and an associated over-commitment scale which sum both in total composed of twenty three questions without modifications from the original standardized questionnaire. The sum of the values of the efforts is related to the rewards and a ratio of 1 is indicated as the optimal reference value. A recent version of the effort and reward imbalance questionnaire is using a Likert scale of 4 points instead of five to avoid a neutral type of answer. The last part of the effort-reward questionnaire is including questions related to the affective commitment of the person to the organization (Siegrist *et al.*, 2004).

Data analysis: The questionnaires' results and collected data are first encoded in an Excel format and in the SPSS (Statistical Package for Social Sciences, Version 16) program for analysis. Data were computed by descriptive statistics and by correlation analyses. The $p < 0.05$ are considered as significant. Results per hospital as well as hospital category were summarized, compared and correlated. Normality test of the distribution by one-sample Kolmogorov-Smirnov test was made. Pearson test for significance and Kruskal Wallis Nonparametric tests for ranks were made and the Spearman-Rho test was applied with numerical variables (age, number of patients per day and working hours).

RESULTS

Summary of the study population characteristics: The survey obtained a response rate of 74.9% and the study population is by 76% composed of physical therapists and by 77% of bachelors in their field. The mean (SD) age of the surveyed rehabilitation staffs is of 32 (7.6) years old and more than half of the population (53%) is composed of females while 44% of the subjects are single persons. The 44% of the concerned rehabilitation professionals are Filipino nationals and 25% are Saudi nationals. Their work experience is in average of 8.3 and 4.6 years in the actual hospitals. For 69% of the subjects a therapist position is held and the most frequent salary ranges between 2001 SR and 4000 SR (Mode = 1000 US\$). Concerning the leave days an average of 20 vacation days, 2.25 sick leave days of 3.5 educational leave days and of 0.21 unjustified absence days are taken per subject per year.

Table 1: Effort-Reward Imbalance (ERI) ratio of rehabilitation staff per nationality

Nationality	N = 160	ERI ratio				p-value	
		Mean±SD	Median	Min.	Max.	Between groups	Within groups
Filipino	71	1.55±0.56	1.47	0.71	3.24	p = 0.001	p1 ≤ 0.001, p2 ≤ 0.009, p3 ≤ 0.004
Other	20	1.22±0.34	0.74	0.73	1.97	-	-
Middle East	29	1.21±0.36	1.22	0.58	1.83	-	-
Saudi	40	1.11±0.40	1.01	0.52	2.33	-	-
Total	160	1.34±0.50	1.26	0.52	3.24	-	-

p1: Saudi > Filipino; p2: Filipino > Others; p3: Filipino > Middle East

A Spearman correlation analysis showed a significant 2-tailed correlation ($p \leq 0.025$) between the age of the therapists and the effort reward imbalance ratio with a general increase of imbalance if the staff is older.

Table 1 is highlighting the significant differences between the median ERI values per nationality. It appears by Kruskal Wallis analysis that the Filipino nationals have a higher effort reward imbalance ratio than the Saudi staffs, the other nationalities (French, American, Czech, South African and Thai therapists) and the Middle Eastern staff.

Rehabilitation specialties: Results show a significant difference ($p \leq 0.001$) between the median ERI values for the professionals working in the surveyed specialties. The group of respiratory therapists is presenting in average a higher median effort reward imbalance value of 1.79 compared to the other professionals in rehabilitation services ($p \leq 0.001$). However, the difference between the occupational therapists' median ERI ratio of 1.08 and physical therapists' median ERI ratio of 1.22 is not significant.

Educational level: Statistical analysis shows that the ERI ratio is correlated to a higher educational degree. The lowest effort reward imbalance value is observed in average amongst diploma holders with a mean (SD) of 1.12 (0.32) and median of 1.60 while a mean (SD) value of 1.3 (0.53) and median of 1.30 is seen for persons with a Bachelor degree. The highest stress and dissatisfaction is seen if the person has a Master or a Ph.D degree with a mean effort reward imbalance ratio (SD) of 1.57 (0.39) and median value of 1.60. This difference is significant between groups and using the Kruskal Wallis test between the diploma and bachelor degrees ($p \leq 0.009$, p2 (Diploma versus Masters+Ph.D) ≤ 0.006 and p3 (Diploma versus bachelor degree) ≤ 0.012).

Work schedule: It has been noticed a significant difference ($p \leq 0.029$) of ERI ratio between the staffs that perform night duties and the therapists having a straight

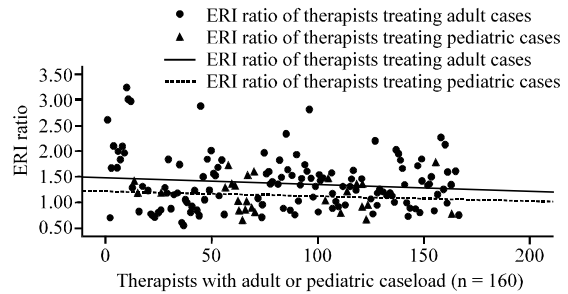


Fig. 1: Distribution of ERI ratio per adult/pediatric caseloads

work schedule in the daytime. In addition, therapists having split duties (as in the morning and the evening) are related to a higher ERI ratio (Median = 1.40).

Pertaining to the areas of practice, a significant difference is identified between the ERI ratio of the professionals that treat in majority inpatients ($n = 28$) as compared to the ones having an outpatients caseload (ERI median = 1.24, $n = 50$). The Kruskal Wallis test demonstrated significant differences between groups ($p \leq 0.038$) and between the staff treating inpatients ($p1 \leq 0.034$ and $p2 \leq 0.012$) and the other staff categories. The ERI ratio is in average higher for the personnel working exclusively with inpatients. While the majority (52%) of the staff in the survey are working in both the in-patients and out-patients services, their work stress measure (Median = 1.24) is comparatively lower and the ERI ratio is the lowest for staff working with outpatients (Median = 1.19).

Results showed that 83% of the therapists are in majority working more with adults and have in average a significantly higher ($p \leq 0.032$) median effort and reward imbalance ratio of 1.31 compared January 14, 2012 to the persons working with a pediatric caseload (Median = 1.19) (Fig. 1).

From the results, therapists treating a majority of geriatric cases ($p \leq 0.004$) have in average a significantly higher ERI ratio compared to the orthopedic ($p1 \leq 0.006$), neurologic caseloads ($p3 \leq 0.010$) and with treating developmental delayed patients ($p4 \leq 0.007$). There is no significant difference of the median ERI ratios between the

Table 2: ERI ratio of rehabilitation staff per types of medical cases (n = 160)

Types of medical caseloads	Number of respondents	ERI ratio				p-value	
		Mean±SD	Median	Min.	Max.	Between groups	Within groups
Geriatric cases	8	1.88±0.64	2.0212	0.81	3.00	p≤0.004	p1≤0.006*, p2≤0.036*, p3≤0.010*, p4≤0.007
Others	22	1.52±0.54	1.3559	0.80	2.96	-	-
Orthopedic cases	67	1.30±0.43	1.2223	0.52	2.88	-	-
Neurological cases	51	1.27±0.53	1.1918	0.58	3.24	-	-
Developmental delay	12	1.14±0.37	1.2649	0.63	1.63	-	-

p1: Orthopedic<<Geriatric caseload; p2: Orthopedic<<Neurological caseload; p3: Geriatric cases<>Neurological caseload; p4: Geriatric<<Developmental delay caseload

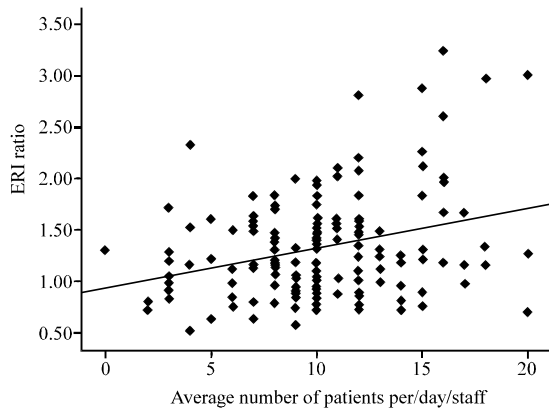


Fig. 2: Distribution of effort reward imbalance ratios and average number of patients per therapist/day

other four groups excepted between the staff with orthopedic compared to the neurologic caseloads ($p2 \leq 0.036$).

In the studied population, a Spearman-rho analysis revealed a highly significant two tailed correlation ($p \leq 0.001$) between the effort reward imbalance ratio and the variables of number of patients per day and working hours per week. The ERI ratio increases in average with a higher number of working hours and an increased number of patients per therapist. Results show that the average (SD) patients/therapist ratio per day is of 10.3 (3.9) and the average working hours per week (SD) is 47 (8.2) (Table 2 and Fig. 2).

The number of unjustified absence leave days and shift work are significantly correlated ($p \leq 0.008$, $p \leq 0.014$ on $n = 142$) with the ERI ratio with a Spearman's rho correlation analysis.

There is a reverse correlation between the ERI ratio and the number of unjustified absence leave days of the concerned staff as the more the staff is having unjustified absence; the lesser the effort-reward imbalance ratio appears.

In relation to the working situation, the correlations of the components of work organization have been

studied with the effort-reward imbalance ratio such as the variables of work schedule and overtime hours and no correlation has been drawn between the overtime and the work stress measure by the effort-reward imbalance ratio.

The results analysis did not identify significant differences of the ERI ratio for the variables of gender, position, marital status, years of experience and salary. The fact of performing overtime or an additional occupation did not show any difference reflected in the median ERI ratio. There is also no difference per categories of annual leave days, sick leave and educational leave days.

DISCUSSION

In the area of Jeddah in the Kingdom of Saudi Arabia, the surveyed rehabilitation departments are composed of 70% foreigners and 30% Saudi nationals. The results analysis identified that foreign nationals have in general a higher effort reward imbalance ratio which indicates a higher work stress and lower job satisfaction compared to the Saudi staffs. This is possibly explained by the high patient caseload in addition to perceived lower salaries and cultural differences reflected by the feeling of communication difficulties and a language barrier. Previous research identified the stress which often accompanies organizational change as a significant variable to job satisfaction in physiotherapists and influences the perception of job security (Lopopolo, 2002) and this element appears also of increased importance to foreign staff compared to Saudi therapists.

Differences of effort-reward imbalance ratios were identified between the specialties of the rehabilitation services as respiratory therapists have in average higher ERI ratios. This is both linked to the staffs' nationality but also work practice characteristics with a high patient/staff ratio and workload in inpatient clinical areas. Results are in accordance to previous research which identified job distress related to the perception of unsafe staffing may be related to career dissatisfaction and job turnover of respiratory therapists (Schwenzer and Wang, 2006).

An essential aspect related to job satisfaction is the workload measured by the average number of patients treated per therapist per day and it appears recommended to managers to maintain a realistic workload as there is a highly significant correlation between the patient/therapist ratio and the effort-reward imbalance ratio. As concluded in previous research, the results point out that high caseloads are linked to decreased job satisfaction amongst allied health professionals (Cawthorn and Rybak, 2008). There is however, no significant difference with the ERI ratio between the types of positions, the effective salary or the categories of leave days. Similarly to other researches, the surveyed subjects' job satisfaction does not differ significantly in relation to socio-demographic variables such as the years of experience, gender and marital status of the surveyed staff (Meade *et al.*, 2005). However, the effort and reward imbalance seems to increase with the age of the therapists and could be related to possible difficulties to cope with the physical burden of the profession or higher expectations in work as it was expressed through the open questions of the questionnaire.

Another aspect affecting job satisfaction is related to the work schedules. Levels of dissatisfaction were associated with split schedules of work and this mainly at night compared to day schedules or straight schedule of work. Staff rotation from split shift schedules to straight schedules of work should be encouraged as this was reported by the surveyed staff to be associated with physical fatigue due to night duty, longer times spend in displacements between the home and work in addition to frustrations linked to the absence of financial compensation in the surveyed hospitals. It appeared however that working for longer hours (paid overtime) or having an additional occupation was not related to job dissatisfaction as they are associated to increased financial benefits.

Consistent with other research, the survey identified that with higher educational levels, the effort and reward imbalance tends in average to increase which reflects a lower job satisfaction level. This is possibly due to the staff expectations of what the job should provide or possible increased stress and responsibilities (Lu *et al.*, 2005).

The results analysis reveals that the main areas of dissatisfaction are in relation to the salary, salary equity and professional growth which is similar to the results of a Turkish survey (Eker *et al.*, 2004) and also a Saudi survey amongst nurses. Pay and benefits and opportunities for career development are major determinants of staff retention (Okerlund *et al.*, 1994; Randolph, 2005) and this aspect is possibly increased for

foreign therapists who are mainly motivated for working abroad by the financial aspects. Measures for developing rewards by increasing salaries in a consistently fair and steadily progressive manner based on universal salary scales would be indicated in addition to the recognition and financial compensation of hardship and difficult working conditions.

The variables that affect job satisfaction measured by the effort-reward imbalance are also related to the treated cases as rehabilitation staffs are in general more dissatisfied in work when having mainly adults, geriatric cases or inpatients caseload. Researchers can expect these categories of patients not to improve so rapidly and to present more limited outcomes in therapy thus increasing frustrations. Geriatric patients have often a more limited rehabilitation potential and are possibly more demanding while some of the patients' relatives tend also to express high expectations in rehabilitation. However, there is no significant difference identified between the levels of satisfaction of therapists working mainly with chronic or acute pathologies which can be found amongst both the inpatients and outpatients cases in the studied healthcare facilities. As confirmed in previous studies, job satisfaction is more related to the nature of the work as in the inpatients settings with a high caseload per therapist and possibly more difficult or complex cases to treat (Lindsay *et al.*, 2008; Santos *et al.*, 2010; Speakman *et al.*, 1996). In addition to improving rewards, the monitoring of intrinsic efforts and an optimal caseload management could contribute in improving job satisfaction in physical, occupational or respiratory therapy (Cawthorn and Rybak, 2008; Erlenson and Modrow, 2003).

CONCLUSION

The research in the physical rehabilitation services of ten health care facilities of the Jeddah region has been conducted to evaluate the level of job satisfaction of 166 physical, occupational and respiratory therapists. Effort reward imbalance ratio and correlations were calculated. Results indicate a significant correlation between job satisfaction measured by the effort reward imbalance ratio with the variables of age, nationality, work specialty, educational levels, caseload types and the number of patients treated daily per therapist. Decreased job satisfaction with a significantly higher effort reward imbalance ratio in work is in average expressed by foreign nationals, respiratory therapists, night schedule workers and therapists having a high workload or adult, geriatric or inpatients' caseloads. The effort or workload as well as

the need of professional growth and financial benefits appear as essential determinants of job satisfaction and have to be taken into consideration in human resources management of rehabilitation services staff.

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