

Effects of Workload on Burnout and Turnover Intention of Medical Staff: A Study

Yang Xiaoming¹, Ben-Jiang Ma², Chunchih lisa Chang³ and Chich-Jen Shieh⁴

¹*Institute of Higher Education, University of Science and Technology Beijing 30 Xueyuan Road, Haidian District, Beijing 100083, China*

²*Business School, Central South University, Changsha China, Changsha City Lushan South Road, Hunan, China 410083*

³*Lunghwa University of Science and Technology, No. 300, Sec. 1, Wanshou Rd., Guishan, Taoyuan County 33306, Taiwan, ROC*

⁴*Department of International Business, Chang Jung Christian University, Taiwan No.1, Changda Rd. Gueiren District, Tainan City 71101, Taiwan, ROC*

E-mail: ¹<yxm40@sina.com>, ²<mabenjiang@csu.edu.cn>, ³<lisac1879@gmail.com>, ⁴<charles@mail.cjcu.edu.tw>

KEYWORDS Workload. Burnout. Turnover Intention. Medical Industry. Emotional Exhaustion

ABSTRACT Medical staff is forced to leave the work as they bear distinct stress and burnout from workload. When the amount of work is not reduced but increased from resigning employees, such a ferocious circle would eventually reduce medical quality. Taking the medical staff in Kaohsiung Chang Gung Memorial Hospital as the research sample, total 500 copies of questionnaires were randomly distributed. Having deducted invalid and incomplete ones, 327 copies are valid, with the effective retrieval rate 65%. The research results show 1.significantly positive effects of Workload on Burnout, 2.remarkably positive effects of Burnout on Turnover Intention, 3.notably positive effects of Workload on Turnover Intention, and 4.mediating effects of Burnout on the correlations between Workload and Turnover Intention. Based on the conclusions, some suggestions are proposed in this study, expecting to assist in the problems of high turnover rate of medical staff and the reducing medical quality caused by workload.

INTRODUCTION

Since medical industry is closely related to human life, the increasing national income has the citizen pay attention to medical quality. The emerging problem of nurse shortage in recent years reflects the worry of reducing medical quality resulted from high turnover rate of nurses. It therefore becomes a popular issue for researchers.

The problem of medical staff also bothers medical industry in Taiwan. For healthcare, medical staff has to constantly take turns in 24 hours looking after patients. When patients are well cared, such medical staff is suffering from adjusting the daily schedule and the stress from taking care of patients. What is more, they might take the roles of secretary, manager, supervisor, and subordinate at work, but the roles of student, parent, and child in the life. The embarrassment in face of the inconsistency between role behaviors and expectation as well as the lack of proper instruction and authority because

of unclear work power could result in the dilemma of practicing the role behaviors. A lot of nurses eventually cannot bear such loads because of dislike, escape, and apathy at work and protest by leaving the work. The high turnover rate of medical staff presents the worry of reducing medical quality.

In the large amount of healthcare services, medical staff is the direct care-giver in a medical system and shows the irreplaceable function and role. Unfortunately, medical staff, on the other hand, is the largest "disadvantaged group", who suffers from enormous workload but does not receive respect and reasonable treatment. It therefore results in the high turnover rate of medical staff. In spite of many graduates from medical departments, hospitals are still short of medical manpower, causing an un-positive environment. In this case, the effects of Workload on Burnout and Turnover Intention of medical staff are explored in the study.

Literature and Hypothesis

I. Workload

Allard et al. (2011) described Workload as an employee spending psychological and physio-

Address for correspondence:

Dr. Chunchih lisa Chang
Lunghwa University of Science and Technology
No. 300, Sec.1, Wanshou Rd., Guishan,
Taoyuan County 33306, Taiwan, ROC
E-mail: lisac1879@gmail.com

logical costs on task practice to achieve the requirements. Ippolito et al. (2010) proposed that workload was basically over-workload resulted from work requirements exceeding human boundary, which is an individual had to practice a lot amount of work and complete it in certain period, or lengthy working time causing the body or spirit not being able to bear the load. Ksenia (2012) regarded Workload as the workload in the working environment exceeding personal capabilities and further resulting in threats and the reactions of nervousness, anxiety, frustration, pressing, or annoyance. Such reactions would change the physical and mental conditions of a normal person as well as the behaviors. Marina (2012) considered Workload originating from role overload that, in the competitive environment, personal work was extended from single items to multiple duties, and the risk of over-workload resulted in low emotion of employees, delaying work, low team atmosphere, and not obeying rules to further affect the organizational performance and the employee's centripetal force. Shafieezadeh (2011) also pointed out the effects of Workload on the relations between work input and output. Chen (2001) divided Workload into qualitative workload as an employee perceived the ability being insufficient for completing the work and quantitative workload as excessive amount of work. The common multiple subjective workload assessment technique is utilized for this study. The subjective workload assessment technique (SWAT), developed by United States Air Force (Virtanen et al. 2012), contained three dimensions. 1. Time Load. When a person perceived large stress from the work frequency, such a speed (frequency) could be slowed down or madly urgent. 2. Spirit Investment. A person had to work hard (mentally and physically) with physical activities to achieve the preset performance. 3. Mental Stress, referring to the investment in mental or perceptual activities at work, for example, thinking, decision-making, calculation, memory, attention, and search.

II. Burnout

Dyrbye et al. (2011) regarded Burnout as a development process in which an employee would be frustrated and emotionally changeable to indirectly result in interpersonal conflict when encountering work stress and then protect him-

self/herself with emotional shrink. Shafieezadeh (2011) further defined Burnout as physical, emotional, and psychological exhaustion, which appeared on physical exhaustion and long-term fatigue, sense of helpless and not developing, and negative concepts and attitudes toward work, life, or other people (Kane 2010). Lau (2010) considered that burnout was the emotional exhaustion caused by long-term and continuous stress, which could be easily generated by excessive demands. Letvak (2010) pointed out the problem of Burnout in various developed countries and defined it as human resource personnel and emotional labor workers losing the activities because of stress in the workplace and generating Emotional Exhaustion. Natallia (2010) defined Burnout as burning out and pointed out the meaning of Burnout as completely physical and mental exhaustion causing a person, who excessively pursued unreal work objectives, not being able to or unwilling to re-try a work (Stephen 2011). This study refers to Maslach Burnout Inventory (MBI) proposed by Maslach and Jackson in 1981, who regarded Burnout as the symptoms of Emotional Exhaustion and cynicism occurring on workers who engaged in contacting with people and divided it into three dimensions (Wu et al. 2012; Runcan et al. 2012). (1) Emotional Exhaustion, originating from exhausted feeling, emotionally over-expansion, and emotion as resources being exhausted that resulted in the loss of energy and incapability of dealing with stress. (2) Depersonalization, referring to separating oneself from others, presenting cold emotion, and showing negative reactions to others' attitudes, for example, treating the served subject with improper attitudes, losing rationality and being irritable; such negative intention would transfer, change, develop, or accumulate as time went on. (3) Diminished Personal Accomplishment, indicating inefficient and inappropriate feelings, negative self-evaluation, and the lack of achievement in the interpersonal relationship, which could be explained as discouragement, low morale, shrink, reducing productivity or potential, or incapable of adaptation.

III. Turnover Intention

Turnover Intention refers to individual attitudes and intention, during to retain and actually to leave, to voluntarily leave the work and look for another one, in which reducing job sat-

isfaction and positive prediction of turnover behavior are the factors (Chen et al. 2010). Guest et al. (2011) mentioned that turnover rate would reduce when the employees reduced the turnover intention; therefore, turnover intention and turnover behavior were dependent concepts. Kaori (2011) also pointed out the occurrence of turnover behavior when an employee tended to leave the working organization. Lee and OK (2012) proposed that turnover was the behavior when an employee left the work after deliberately considering the work being not affirmed for a period of time. Malik et al. (2011) generally defined turnover concept as labor movement, which contained three dimensions of (1) regional movement, showing an employee transferring from one region to another, (2) occupational movement, referring to an individual transferring from one occupation to another, and (3) industrial movement, presenting an individual transferring from one industry to another. Furthermore, Peng et al. (2011) pointed out the narrow definition of labor movement as an organization member flowing outwards. Shanafelt et al. (2011) mentioned that the withdrawal behavior of nurses was considered to leave current working sector, then the current hospital, and finally nursing industry. Accordingly, the withdrawal behavior was a gradual process. Since talents are the key capital in an organization, researchers often do the research from multiple dimensions, expecting to understand the reason of Turnover Intention (Simon et al. 2008). Consequently, this study refers to Heydarian and Abhar's (2011) concept of Turnover Intention, which is defined as the overall attitude and behavior measurement of an employee deciding to voluntarily leave the work.

IV. Research Hypothesis

According to the classification of Cheng et al. (2011), Workload without exceeding the limit of personal capabilities is often regarded as the source of challenging stress. In other words, high Workload induces an employee's burnout with positive effects (Guardado 2011). In this case, Workload is often discussed with burnout. Workload also reveals close relations with Burnout (Klusmann et al. 2012). Ksenia (2012) pointed out Workload as the reactions of nervousness, anxiety, frustration, pressing, or annoyance when exceeding personal abilities and

causing threats. Such reactions changed the normal physical and mental conditions of a person, changed the behaviors, and burnt out the person. Deepak (2013) considered that the risk of over-workload resulted in low emotion of an employee, delaying work, low team atmosphere, and unwilling to obey rules which further affected the organizational performance and the employee's centripetal force. The following hypothesis is therefore proposed in this study.

H1: Workload Presents Significantly Positive Effects on Burnout

Lesage et al. (2013) revealed that an employee would appear various reactions when the work demands were excessive; Burnout was one of special reactions, which could result in Turnover Intention. Manzano and Ayala (2012) regarded Turnover Intention as the shrink of an individual encountering excessive stress at work or dissatisfying with the work. Ksenia (2012) found out the significant correlations between Burnout and Turnover Intention as well as remarkable effects of Burnout on Turnover Intention. Pinar (2010) also proved the positive correlations and positive effects of Burnout on Turnover Intention, which is an employee with higher Burnout would show higher Turnover Intention. Shanafelt et al. (2012) concluded the notably positive correlations between Burnout and Turnover Intention. Shreffler et al. (2011) indicated the significantly positive effects of Burnout on Turnover Intention with the mediating effects of Emotional Exhaustion, Dehumanization, and Diminished Personal Accomplishment. The following hypothesis is further proposed in this study.

H2: Burnout Reveals Remarkably Positive Effects on Turnover Intention

Heydarian and Abhar (2011) explained that an employee had to invest in more mental and physical standards and pay more efforts to complete an objective when it was enhanced the difficulty and reduced the achievability; Workload, therefore, was likely caused. For employees, Workload might be a sweet burden as well as a bothering nightmare; proper Workload could encourage employees constantly learning to master the skills, enhance the confidence, and promote the work performance (Chen et al. 2010).

However, excessive Workload could harm the health and result in negative emotion that the generation of Burnout would influence Turnover Intention (Deepak 2013). As a consequence, the following hypotheses are proposed in this study.

H3: Workload Shows Notably Positive Effects on Turnover Intention

H4: Burnout Appears Mediating Effects on the Correlations between Workload and Turnover Intention

V. Conceptual Framework

Summing up the above literatures, the conceptual framework (Fig. 1) is developed in this study to discuss the correlations among Workload, Burnout, and Turnover Intention.

RESEARCH DIMENSION AND APPROACH DESIGN

Definition of Research Definition

(1) Workload

According to Wu et al. (2012), the source of Workload is divided into Time Load, Spirit Investment, and Mental Stress.

1. *Time Load*: The work frequency is the stress perceived that the speed (frequen-

cy) could be slowed down or madly urgent.

2. *Spirit Investment*: One has to work hard (mentally and physically) to invest in physical activities for achieving the pre-set performance.
3. *Mental Stress*: referring to mental or perceptual activities invested in a work, such as thinking, decision-making, calculation, memory, attention, and search.

(2) Burnout

Based on Virtanen et al. (2012), Burnout is divided into three dimensions.

1. Emotional Exhaustion, originating from exhausted feelings, emotionally excessive expansion, and emotion being exhausted as resources which result in the loss of energy that one becomes weak towards the source of stress.
2. Depersonalization, separating oneself from others to present cold emotion and to transfer others' attitudes towards negative reactions.
3. Diminished Personal Accomplishment, referring to inefficient and improper feelings, negative self-evaluation, and lack of achievement in the interpersonal relationship.

(3) Turnover Intention

Heydarian and Abhar (2011) defined Turnover Intention as the overall attitude and behavior measurement of an employee deciding to

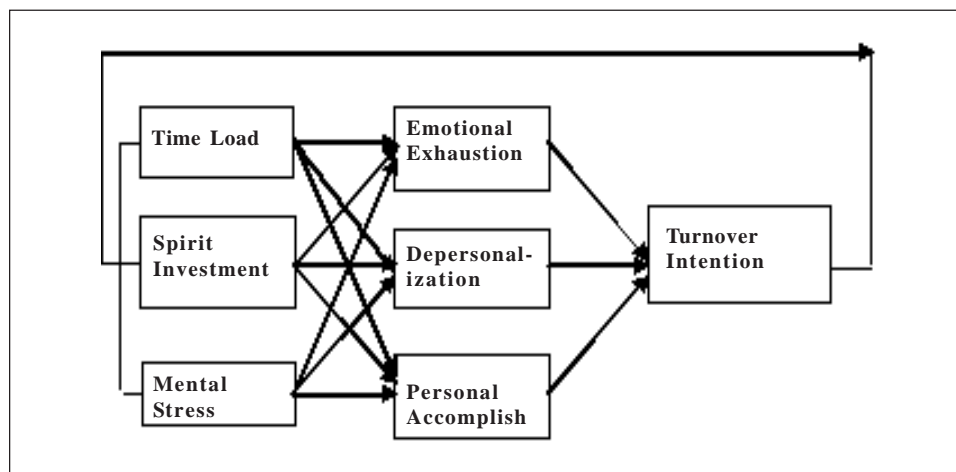


Fig. 1. Conceptual framework

voluntarily leave the work. Turnover Intention therefore is used as the single variable for this study.

Research Participant

Kaohsiung Chang Gung Memorial Hospital was established on the first of January. It currently opens 2,720 beds for the public and has more than 5,300 employees. The daily average outpatients reach 6,700 person-times and the emergency 350 person-times. It is one of Chang Kung Medical Foundations as well as an excellent medical center evaluated by Ministry of Health and Welfare. There are 73 specialties and sub-specialties in the hospital, which present the tasks of service, instruction, and research. To practice patient-centered healthcare, the hospital stresses on interdisciplinary, construct user-friendly and secure environments to maintain the patient rights, and innovate the medical skills through consensus and management to promote the excellent healthcare quality. The medical staff in Kaohsiung Chang Gung Memorial Hospital is, therefore, sampled for the questionnaire survey. Total 500 copies of questionnaires are randomly distributed. Having deducted invalid and incomplete ones, 327 valid copies are collected, with the effective retrieval rate 65%.

DISCUSSION

Factor Analysis of Workload

With Factor Analysis, Workload was extracted three factors of Time Load (eigenvalue=3.144, $\alpha=0.83$), Spirit Investment (eigenvalue=2.751, $\alpha=0.82$), and Mental Stress (eigenvalue=2.216, $\alpha=0.86$). The accumulative covariance explained

achieved 81.437%. With Factor Analysis, Burnout was extracted three factors of Emotional Exhaustion (eigenvalue=2.762, $\alpha=0.84$), Depersonalization (eigenvalue=2.138, $\alpha=0.88$), and Personal Accomplishment (eigenvalue=1.896, $\alpha=0.85$). The accumulative covariance explained reached 79.581%. With Factor Analysis, the accumulative covariance explained of Workload (eigenvalue=2.517, $\alpha=0.80$) achieved 86.732%.

Correlation Analysis of Workload and Burnout

Multiple Regression Analysis was applied to testing the hypothesis and theoretical framework. The first regressive equation, Table 1, revealed the significant standard ($F=19.436$, $p<0.001$) that Workload presented significant effects on Emotional Exhaustion, where Time Load, Spirit Investment, and Mental Stress in Workload showed remarkably positive effects on Emotional Exhaustion in Burnout, with the significance ($\beta=1.836$, $p<0.05$; $\beta=2.153$, $p<0.001$; $\beta=2.344$, $p<0.001$).

The second regressive equation, Table 1, showed the significant standard ($F=31.755$, $p<0.001$) that Workload appeared notable effects on Depersonalization, where Time Load, Spirit Investment, and Mental Stress in Workload presented remarkably positive effects on Depersonalization in Burnout with the significance ($\beta=2.075$, $p<0.01$; $\beta=2.241$, $p<0.001$; $\beta=2.183$, $p<0.001$).

The third regressive equation, Table 1, revealed the significant standard ($F=42.382$, $p<0.001$) that Workload showed notable effects on Personal Accomplishment, where Time Load, Spirit Investment, and Mental Stress in Work-

Table 1: Regression analysis of workload and burnout

Dependent variable→ Independent variable↓	Burnout					
	Emotional exhaustion		Depersonalization		Personal accomplishment	
Workload	\hat{a}	\hat{n}	\hat{a}	\hat{n}	\hat{a}	\hat{n}
Time load	1.836*	0.019	2.075**	0.003	1.973*	0.013
Spirit investment	2.153**	0.000	2.241**	0.000	2.415**	0.000
Mental stress	2.344**	0.000	2.183**	0.000	2.327**	0.000
F	19.436	31.755	42.382			
P	0.000***	0.000***	0.000***			
R2	0.276	0.325	0.396			
Adjusted R2	0.024	0.028	0.037			

Note: * stands

load appeared significantly positive effects on Personal Accomplishment in Burnout with the significance ($\beta=1.973$, $p<0.05$; $\beta=2.415$, $p<0.001$; $\beta=2.327$, $p<0.001$). As a result, H1 was supported.

Correlation Analysis of Workload, Burnout and Turnover Intention

Multiple Regression Analysis was used for testing the hypothesis and theoretic framework. The first regressive equation, Table 2, showed the significant standard ($F=26.523$, $p<0.001$) that Workload presented remarkable effects on Turnover Intention, where Time Load, Spirit Investment, and Mental Stress in Workload revealed notably positive effects on Turnover Intention with the significance ($\beta=2.153$, $p<0.001$; $\beta=2.342$,

$p<0.001$; $\beta=2.573$, $p<0.001$). Consequently, H2 was supported.

The second regressive equation, Table 2, appeared the significant standard ($F=37.621$, $p<0.001$) that Burnout showed notable effects on Turnover Intention, where Emotional Exhaustion, Depersonalization, and Personal Accomplishment in Burnout presented notably negative effects on Turnover Intention with the significance ($\beta=2.362$, $p<0.01$; $\beta=2.471$, $p<0.01$; $\beta=2.615$, $p<0.01$). In this case, H3 was supported.

Mediating effects of Workload and Burnout on Turnover Intention

The mediating effects of Burnout in this study are shown in Table 3. Workload revealed significant explanation on Turnover Intention

Table 2: Regression analysis of workload, burnout and burnout

Dependent variable→	Turnover intention			
	Independent variable↓ Workload		Burnout	
	\hat{a}	\hat{n}	\hat{a}	\hat{n}
Time load	2.153**	0.000		
Spirit investment	2.342**	0.000		
Mental stress	2.573**	0.000		
Burnout				
Emotional exhaustion			2.362**	0.000
Depersonalization			2.471**	0.000
Personal accomplishment			2.615**	0.000
F	26.523	37.621		
P	0.000***	0.000***		
R2	0.341	0.392		
Adjusted R2	0.031	0.037		

Note: * stands for $p<0.05$, ** for $p<0.01$, *** for $p<0.001$.

Table 3: Hierarchical regression of workload, burnout, and turnover intention

Dependent variable→	Turnover intention			
	Independent variable↓ Workload		Burnout	
	Model 1		Model 2	
	\hat{a}	\hat{n}	\hat{a}	\hat{n}
Time load	2.153**	0.000	1.927*	0.016
Spirit investment	2.342**	0.000	2.133**	0.000
Mental stress	2.573**	0.000	2.374**	0.000
Burnout				
Emotional exhaustion			2.216**	0.000
Depersonalization			2.307**	0.000
Personal accomplishment			2.524**	0.000
F	26.523	47.537		
P	0.000***	0.000***		
R2	0.341	0.463		
Adjusted R2	0.031	0.042		

Note: * stands for $p<0.05$, ** for $p<0.01$, *** for $p<0.001$.

($F=26.523$, ($p<0.001$)). According to Model 2, the effects of Workload and Burnout on Turnover Intention were taken into account to discuss the mediating effects of Burnout. It was discovered that β of Time Load remarkably dropped from 2.153 ($p<0.001$) down to 1.927 ($p<0.05$), revealing that Burnout would reduce the direct effects of Time Load on Turnover Intention; β of Spirit Investment notably dropped from 2.342 ($p<0.001$) down to 2.133 ($p<0.001$), showing that Burnout would reduce the direct effects of Spirit Investment on Turnover Intention; and, β of Mental Stress remarkably dropped from 2.573 ($p<0.001$) down to 2.374 ($p<0.001$), presenting that Burnout would reduce the direct effects of Mental Stress on Turnover Intention. From the research results, Burnout appeared partial mediating effects on the correlations between Workload and Turnover Intention that H4 was supported.

CONCLUSION

Accordingly, Workload presents obvious effects on Burnout and Turnover Intention, that is medical staff with higher Workload and Burnout would show higher Turnover Intention, and the ones with higher Workload would appear higher Burnout. Apparently, Burnout is generated when Workload gets worse, while over-Workload is the work requirements exceeding the boundary of medical staff, that is medical staff could not bear the load physically or spiritually when excessive amount of work needs to be completed in certain period or the working time is too long. The medical staff would first perceive Emotional Exhaustion and then Depersonalization, which is to keep the distance with the working subjects in order to release Emotional Exhaustion; and, the accumulation of the two would cause the perception of the work losing meanings so that the medical staff is lack of achievement and further increases Turnover Intention.

In the process of serving patients, medical staff has to create the working atmosphere conforming to the requirements of the sector as well as to satisfy the patients' objectives. The medical staff, therefore, has to constrain the inner perception which appears conflict between the true perception and the requirement of the medical sector. In this case, the medical staff would present Burnout to seriously affect the work

performance. Avoiding the negative effects caused by Burnout by reducing Workload has become the core of management in a medical sector.

RECOMMENDATIONS

Aiming at the research results among Workload, Burnout, and Turnover Intention of medical staff, the following suggestions are proposed in this study.

1. Formulating favorable working norms. The research results show the notably positive effects of Workload on Burnout that hospital managers are suggested to formulate favorable shift time, maintain regular working hours and day off, and increase the time to adjust the work and rest so as to reduce Workload resulted from shift work and Burnout. Establishing favorable communication channels to timely release stress. The research results revealed the significantly positive effects of Burnout on Turnover Intention. Hospital managers, therefore, are suggested to realize and pay attention to the physical and mental conditions of each medical staff for timely listening and concerns and to build favorable two-way communication channels for patients, patients' relatives, supervisors, subordinates, and colleagues at work as well as family and friends in the life for the mutual understanding and empathy.
2. Increasing nursing manpower. The research results present the significantly positive effects of Workload on Turnover Intention. Medical sectors therefore are suggested to increase the quantity of medical labor, enhance student intention and interests in investing in medical departments or schools, and promote the cooperative education with medical departments so as to release the dilemma of human resource shortage by students' internship. Medical resources in hospitals are expected to make up the vacancy in order to reduce and release Workload and fatigue of medical staff so as to decrease Turnover Intention.

ACKNOWLEDGEMENTS

This research work is supported by National Natural Science Foundation of China (Grant 70921001,71372061)

REFERENCES

- Allard K, Haas L, Hwang CP 2011. Family-supportive organizational culture and fathers' experiences of work-family Conflict in Sweden. *Gender-Work Organ*, 18(2): 141-157.
- Carneiro Paula 2010. *Musculoskeletal Disorders in Nurses: Hospital Versus Homecare*. Department of Production Engineering, School of Engineering. Azurem: University of Minho.
- Chen HF, Lee CH, Chang RE 2010. Workload of attending physicians at an academic center in Taiwan. *J Chinese Med Assoc*, 73(8): 425-430.
- Cheng HY, Huang PR, Li, Hsu JH 2011. Employment insecurity, workplace justice and employees' burnout in Taiwanese employees: A validation study. *Int J Behav Med*, 18(4): 391-401.
- Deepak BA 2013. Work related musculoskeletal disorders among hospital nurses in rural Maharashtra, India: A multi centre survey. *Int J Res Med Sci*, 2320-6012.
- Dyrbye LN, Shanafelt TD, Balch CM, Satele D, Sloan J, Freischlag J 2011. Relationship between work-home conflicts and burnout among American surgeons: A comparison by sex. *Arch Surg*, 146(2): 211-217.
- Guest RS, Baser R, Li Y, Scardino PT, Brown AE, Kissane DW 2011. Cancer surgeons' distress and well-being, II: Modifiable factors and the potential for organizational interventions. *Ann Surg Oncol*, 18(5): 1236-1242.
- Guardado 2011. Professional Liability Insurance Indemnity and Expenses, Claim Adjudication, and Policy Limits, 2000-2009. Policy Research Perspectives. From <<http://www.ama-assn.org/resources/doc/health-care-costs/medical-liability-reform.pdf>> (Retrieved on 12 November 2010).
- Ippolito Morrill M, Hines DA, Mahmood S, Córdova JV 2010. Pathways between marriage and parenting for wives and husbands: The role of coparenting. *Family Process*, 49(1): 59-73.
- Kane CK (Ed.) 2010. Policy Research Perspectives: Medical Liability Claim Frequency: A 2007-2008 Snapshot of Physicians. From <<http://www.ama-assn.org/resources/doc/hea;th-policy/prp-201001-clain-freq.pdf>> (Retrieved on 10 September 2011).
- Karagulle D, Kiraz EDE, Ergin F, Turan SG, Okur O 2014. Physicians awareness about the importance of environmental history in medical diagnosis. *J Environ Prot Ecol*, 15(3): 1164-1171.
- Kaori Fujishiro 2011. Associations of workplace aggression with work-related well-being among nurses in the Philippines. *American J Public Health*, 101(5): 861-867.
- Klusmann U, Kunter M, Voss T, Baumert J 2012. Emotional exhaustion and job satisfaction of beginning teachers: The role of personality, educational experience and professional competence. *Zeitschrift Fur Padagogische Psychologie*, 26(4): 275-290.
- Ksenia Zheltoukhova 2012. Taking the Strain: The Impact of Musculoskeletal Disorders on Work and Home Life. From <<http://www.vra-uk.org/node/212>> (Retrieved on 10 December 2012).
- Lau YK 2010. The impact of fathers' work and family conflicts on children's self-esteem: The Hong Kong Case. *Soc Indic Res*, 95(3): 363-376.
- Lee JH, OK C 2012. Reducing burnout and enhancing job satisfaction: Critical role of hotel employees' emotional intelligence and emotional labor. *Int J Hosp Manage*, 31: 1101-1112.
- Lesage FX, Berjot S, Altintas E, Paty B 2013. Burnout among occupational physicians: A threat to occupational health systems?-A nationwide cross-sectional survey. *Ann Occup Hyg*, (in press).
- Letvak S 2010. The impact of worker health on long term care: Implications for nursing managers. *Geriatr Nurs*, 31(3): 165.
- Malik MI, Hussain S, Mahmood A 2011. Examining a chain relationship of layoff survivors' role overload, work-lift balance and their productivity. *Int J Contemporary Res Bus*, 3(6): 402-409.
- Manzano Garcia G, Ayala Calvo JC 2012. Emotional exhaustion of nursing staff: Influence of emotional annoyance and resilience. *Int Nurs Rev*, 59: 101-107.
- Marina Zambon 2012. Job factors related to musculoskeletal symptoms among nursing personnel. *A Review*, 41: 2516-2520.
- Natalia da Rosa Fonsec 2010. Factors Related to Musculoskeletal Disorders in Nursing Workers. From <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692010000600006> (Retrieved on November/December 2010).
- Peng JC, Tseng MM, Lee YL 2011. Relationships among supervisor feedback environment, work-related stressors, employee deviance. *J Nurs Res*, 19(1): 13-24.
- Pinar Erbay Dundar 2010. Low back pain and related factors in nurses in a university hospital. *Turkish J Public Health*, 8(2): 95-104.
- Runcan PL, Goian C, Tiru L 2012. The socio-communicational style and the need for supervision of professionals from the social services. *Rev Cercet Interv So*, 37: 180-195.
- Shafieezadeh KR 2011. The prevalence of musculoskeletal disorders and its relationship to general health statement in hospital. *Nurs Life Sci J*, 8(4): 1-6.
- Shanafelt T.D, Balch CM, Dyrbye L, Bechamps G, Russell T, Satele D, Oreskovich MR 2011. Special report: Suicidal ideation among American surgeons. *Arch Surg*, 146(1): 54-62.
- Shanafelt TD, Boone S, Tan L, Dyrbye LN, Sotile W, Satele D, Oreskovich MR 2012. Burnout and satisfaction with work-life balance among US physicians relative to the general US population. *Arch Intern Med*, 172(18): 1377-1385.
- Shreffler KM, Meadows MP, Davis KD 2011. Fire-fighting and fathering: Work-family conflict, parenting stress, and satisfaction with parenting and child behavior. *Fathering: A Journal of Theory, Research, and Practice about Men as Fathers*, 9(2): 169-188.
- Simon M, Tackenberg P, Nienhaus A, Estryng-Behar M, Conway PM, Hasselhorn HM 2008. Back or neck-pain-related disability of nursing staff in hospitals,

- nursing homes and home care in seven countries—results from the European Next-Study. *Int J Nurs Stud*, 45: 24-34.
- Stephen Wanless 2011. Improving training and education in patient handling. *Nursing Times*, 107(23): 17.
- Virtanen M, Stansfeld SA, Fuhrer R, Ferrie JE, Kivimäki M 2012. Overtime work as a predictor of major depressive episode: A 5-year follow-up of the Whitehall II study. *PLoS One*, 7(1): e30719.
- Wu TY, Hu C, Jiang DY 2012. Is subordinate's loyalty a precondition of supervisor's benevolent leadership? The moderating effects of supervisor's altruistic personality and perceived organizational support. *Asian J Soc Psychol*, 15(3): 145-155.