

The relationship between job stress and burnout levels of oncology nurses

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ABSTRACT

Objective: Job stress and burnout levels of oncology nurses increase day-by-day in connection with rapidly increasing cancer cases worldwide as well as in Turkey. The purpose of this study was to establish job stress and burnout levels of oncology nurses and the relationship in between. **Methods:** The sample of this descriptive study comprised of 189 nurses that are selected by nonprobability sampling method, employed by 11 hospitals in Istanbul. Survey form of 20 questions, Job Stressors Scale and Maslach Burnout Inventory (MBI) were used during collection of data. Data were evaluated using percentage, Kruskal-Wallis, Mann-Whitney U and Spearman correlation analyses. **Results:** In the study, there was a positively weak correlation between “Work Role Ambiguity” subdimension of Job Stressors Scale

and “Emotional Exhaustion” and “Personal Accomplishment” subdimensions, whereas a positively weak and medium correlation was encountered between “Work Role Conflict” subdimension and “Emotional Exhaustion” and “Depersonalization” subdimensions. A negatively weak correlation was found between “Work Role Overload” subdimension and “Emotional Exhaustion” and “Depersonalization” subdimensions. **Conclusion:** A significant relationship was established between subdimensions of job stress level and of burnout level, that a lot of oncology nurses who have participated in the study wanted to change their units, because of the high attrition rate.

Key words: Burnout, job stress, oncology nurse

Introduction

Work life takes up an important place in human life, and an employed person faces many stimuli from internal and external environments and is affected by them in a positive or negative way.^[1] Positive stimuli in general make individuals happy whereas in the face of negative stimuli, stress can be generated.^[2] Burnout may develop in the individual in the case of a long duration of the state of stress.^[3] According to Maslach, burnout is defined as a psychological syndrome including the long-term response given to sources of chronic stress in the workplace.^[4]

According to Hans Selye, a pioneer in the subject of stress, the concept of stress is not a simple concern; concern is a state only related to the emotional and psychological environment, while stress is discussed as a more comprehensive concept bearing also a physiological dimension.^[5]

Job stress creates a situation in which individual's characteristics act as an intermediary for job and organizational demands, constraints and opportunities while stress level is only affected by individual's characteristics.^[6] Advanced and chronic state of stress is burnout.^[1]

Psychiatrist Freudenberg^[7] viewed burnout as a status of wear and energy depletion. Then Maslach and Jackson^[8] stated behavioral dimensions of the concept of burnout and discussed it in three sub-dimensions being “Emotional Exhaustion”, “Depersonalization” and “Personal Accomplishment”.

Nurses, having an important role in the health care system, are considered to be members of a stressful job as a

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profession because they care for a stressful group comprising patients or those at health risk.^[9,10] The organizational structure of the health care system, improper working environment, critical patient care, working on a shift basis and the process of becoming a profession can affect the level of stress in nurses.^[11,12] Therefore, it is suggested that nurses comprise the group that experiences the maximum stress and burnout among health professionals.^[13,14] In the case of nurses working in oncology units, several circumstances such as critical decision-making, managing the treatment having serious side effects, patients' issues of anger and non-compliance with treatment, monitoring patients having pain and suffering, terminal care, stressful situations experienced in connection with the death of patients, emotional difficulties with patients and conflicts within the team can cause stress. Burnout syndrome often occurs as a result of chronic work stress seen in these units.^[15,16]

Another situation that negatively influences the working conditions of nurses in oncology is that antineoplastic drugs used in the treatment of cancer patients that not only affect patients treated but also adversely affect the nurses and other health professionals during preparation-administration and care initiatives thereafter.^[17] In addition, negative working conditions such as inadequate supplies and number of nurses, a growing number of patients and workload, insufficient protective measures in the preparation of antineoplastic agents and so on can be specified. All of these disadvantages lead to an increase in job stress and accordingly burnout in oncology nurses.^[18]

Given the existing working conditions and increasing number of patients in connection with rapidly increasing cancer cases worldwide as well as in Turkey.^[19] It can be said that job stress and accordingly burnout levels of oncology nurses increase day-by-day.^[20,21]

This investigation followed a descriptive and correlation design in order to establish job stress and burnout levels of oncology nurses and the relationship in between. Questions for which answers were sought are

1. What is the level of job stress in oncology nurses?
2. What is the level of burnout in oncology nurses?
3. Is there any relationship between job stress levels and burnout levels of oncology nurses?

Material and methods

Population and sampling

All of the hospitals in Istanbul (18 hospitals) that have oncology units were included in the study. However 7 hospitals, intended to be included in the study, did not

approve the study and oncology nurses in these hospitals could not be included in the study. Because of that the sample of the study was comprised of nurses working in oncology units of a total of 11 hospitals, 4 of which were hospitals of Ministry of Health, 3 of which were university hospitals and 4 of which were private hospitals. Data collection tools were distributed to all oncology nurses (200 nurses) who work in these units and volunteered to participate in the investigation. A high rate of return from 189 nurses (94.5%) was found in the research.

The following information was obtained about the oncology nurses who participated in the study: 93.1% of the nurses were female, 29.1% were in the age range of 25-29, and 35 years and above (mean age 32.13 ± 8.58), 38.1% had BSc/MSc degrees, 54.5% were married and 52.4% did not have kids, 39.7% work in private hospitals, 33.9% had a professional experience of 13 years and above (mean years of professional experience 10.88 ± 8.79) and 37% have been working in oncology unit for 3-7 years (mean years of employment in oncology unit 7.07 ± 6.38).

Data collection tools

Data collection tool used in the study is composed of two parts. In the first part, there were 20 questions for determining personal (gender, age, to be married) and professional (number of years as a nurse, number of years as an oncology nurse, desire to work in another clinic, working style, and enough number of nurses in the clinic) characteristics of the nurses and in the second part, there were scales for determining job stress and burnout levels of the nurses.

Job stressors scale

Job Stressors Scale developed by J.R. Rizzo, R. J. House and I.S. Lirtzman in 1981 and adapted to Turkish by Güngör (1997) was used in order to establish job stress level of oncology nurses. Job Stressors Scale is comprised of three subdimensions, being "Work Role Ambiguity" (Cronbach's $\alpha=0.87$), "Work Role Conflict" (Cronbach's $\alpha=0.81$) and "Work Role Overload" (Cronbach's $\alpha=0.61$). In this study, in Job Stressors Scale, Cronbach's $\alpha=0.86$ was found for "Work Role Ambiguity" subdimension, Cronbach's $\alpha=0.82$ for "Work Role Conflict" subdimension and Cronbach's $\alpha=0.11$ for "Work Role Overload" subdimension. The scale is composed of 17 items and has five point likert type scoring. High scores for all subdimensions indicate high job stress. General score of the inventory is in the range 17-85, job stress is not expressed by a single score since it is a process and includes various functions. By adding

up all these scores, scores varying in the range 6-30, 8-40 and 3-15 are obtained for work role ambiguity, work role conflict and work role overload, respectively. Accordingly, a high final score is evaluated as high work role ambiguity (low if ≤ 14 ; medium if 15-22; and high if ≥ 23), work role conflict (low if ≤ 18 ; medium if 19-29; and high if ≥ 30), and work role overload (low if ≤ 7 ; medium if 8-11; and high if ≥ 12).^[22]

Maslach burnout inventory (MBI)

Maslach Burnout Inventory (MBI) used in order to determine burnout levels of oncology nurses was developed by Maslach and Jackson,^[4] and adapted to Turkish by Ergin.^[23] MBI has three subdimensions being "Emotional Exhaustion" (Cronbach's $\alpha=0.83$), "Depersonalization" (Cronbach's $\alpha=0.65$) and "Personal Accomplishment" (Cronbach's $\alpha=0.72$). In this study, in MBI, Cronbach's $\alpha=0.85$ was found for "Emotional Exhaustion" subdimension, Cronbach's $\alpha=0.67$ for "Depersonalization" and Cronbach's $\alpha=0.69$ for "Personal Accomplishment".^[23]

The inventory which is composed of 22 items in total has a five point likert type scoring varying between 0 (never) and 4 (always). Scores for each subdimension is found by taking the sum of scores of all items included in such subdimension. Emotional exhaustion and depersonalization subdimensions are comprised of negative statements, whereas personal accomplishment comprise positive statements and scored in reverse, with higher scores indicating higher levels of burnout. Although general score of the inventory is in the range 0-88, burnout is not expressed by a single score since it is a process and includes various functions. By adding up all these scores, scores varying in the range 0-36, 0-20 and 0-32 are obtained for emotional exhaustion, depersonalization and personal accomplishment, respectively. Accordingly, a high final score is evaluated as high emotional exhaustion (low if <16 ; medium if 17-26; and high if >27) and depersonalization (low if <6 ; medium if 7-12; high if >13) and low personal accomplishment (low if >28.03 ; medium if 28.02-21.54; high if <21.53).^[23]

Ethical aspect of the investigation

Before starting the investigation, approval from Istanbul University, Cerrahpaşa Medical School, Ethics Committee was obtained; a protocol was signed with Ministry of Health, Provincial Directorate of Health in Istanbul and official/written permissions were obtained from administrations of private hospitals. Moreover, before the distribution of data collection tool, written consents of

oncology nurses participated in the study were obtained by asking them to complete the consent form.

Collection of research data

For collection of research data after completion of the process of obtaining ethics committee approval and consents, preliminary meetings were held with nurse managers of 11 hospitals included in the sample and from which permissions were obtained and such hospitals were visited on the specified dates. To oncology nurses who agreed to participate in the study, the researcher provided necessary explanations regarding the study and distributed data collection tools by completing informed consent forms, and collected them by revisiting the hospitals around one week later.

Data analyses

Statistical analyses of research data were performed by the support of a statistics consultant by using SPSS (Statistical Package for Social Sciences) for Windows 11.5" software. During statistical evaluation of data distribution statistics, Mann-Whitney U and Kruskal-Wallis, and Spearman Rho correlation tests were utilized. Because sampling distribution was found irregular.

Results

In view of the findings for professional characteristics of oncology nurses who have participated in the study, it was seen that most of them voluntarily chose nursing profession (63.5%), however, they continue to perform nursing profession mostly because of family insistence and pressure (43.5%) and for economical reasons (37.7%), that 79.9% of the nurses were involuntarily appointed by assignment and 59.8% wanted to change their units, and when this request was addressed in detail, it was seen that most of the nurses emphasized reasons such as exposure/being affected by antineoplastic agents (75.2%), workload (74.3%), not being supported materially (47.8%) and being affected negatively by the patients (40.7%).

When the findings of oncology nurses who have participated in the study were considered, it was established that a large percentage worked in a night duty/shift basis (72.5%), the number of nurses working in oncology units was inadequate (83.1%), workload was increased by the works other than nursing (96.8%) such as creating patient's file (68.3%), management of support services (67.2%) and requesting supplies and linen from depot (55.6%), and it was found that, for provision of better services, oncology nurses request not doing any works other than nursing

(89.9%), provision of adequate number of nurses (87.8%) and reduction in the number of patients per person (81%).

Given the problems experienced by oncology nurses who have participated in the study in the units they have been working, emphasis was made on tension associated with extreme workload (84.7%), tensions associated with patients in terminal phase in the unit they work (83.6%), problems related to patient care procedures (67.7%), intervention to treatment by the patient and his/her relatives (42.3%) and lack of communication with the patient and patient's relatives (41.8%).

When "Job Stressors Scale" subdimension mean scores of oncology nurses included in the study were evaluated, it was (Mean $\pm$ SD=15.22 $\pm$ 4.35), "Work Role Conflict" (Mean $\pm$ SD=24.52 $\pm$ 5.58) and "Work Role Overload" (Mean $\pm$ SD=7.98 $\pm$ 1.77) subdimensions were at medium level [Table 1].

In view of burnout inventory subdimension scores of oncology nurses included in the study, it was determined that "Emotional Exhaustion" subdimension was at medium level (Mean $\pm$ SD=18.31 $\pm$ 6.02), "Depersonalization" subdimension was at low level (Mean $\pm$ SD=5.96 $\pm$ 3.58) and "Personal Accomplishment" subdimension was at high level (Mean $\pm$ SD=11.14 $\pm$ 4.04) [Table 2].

When the correlations between job stress levels assessed by "Job Stressors Scale" of oncology nurses and subdimensions of "Maslach Burnout Inventory" are reviewed:

A positively weak correlation was established between "Work Role Ambiguity" subdimension and "Emotional Exhaustion" ($r=0.33$; $P=0.0001$) and "Personal Accomplishment" ($r=0.49$; $P=0.0001$) subdimensions and a positively very weak correlation between the same work role dimension and "Depersonalization" subdimension ($r=0.25$; $P=0.0001$). A positively weak and medium level of correlation was encountered between "Job Role Conflict" subdimension and "Emotional Exhaustion" ($r=0.43$; $P=0.0001$) and "Depersonalization" ($r=0.52$; $P=0.0001$) subdimensions, respectively and no significant correlation was established in the case of "Personal Accomplishment" subdimension ($P\geq 0.05$). A negatively weak and very weak correlation was encountered between "Work Role Overload" subdimension and "Emotional Exhaustion" ($r=-0.29$; $P=0.0001$) and "Depersonalization" ($r=-0.18$; $P=0.02$) subdimensions, respectively and no significant correlation was established in the case of "Personal Accomplishment" ($P\geq 0.05$) subdimension [Table 3].

Discussion

In this study, it was seen that a large percentage of oncology nurses voluntarily chose nursing profession and most of them continue to perform nursing profession mostly because of family insistence and pressure and for economical reasons.

The fact that a large percentage, nearly 80% of the oncology nurses were appointed by assignment without asking nurses' request and 59.8% wanted to change their units, and when this request was addressed in detail, special emphasis on reasons such as exposure/being affected by antineoplastic agents, workload, which was expressed as another situation that creates negativity in working conditions like job stress and burnout, was supported by other research findings. Studies by Baykal *et al.*,^[17] Pinar and Burgaz, in which they investigated, the oncology nurses overworked, had insufficient time off work, did not receive compensation for overtime work, would not be protected themselves

Table 1: Distribution of job stress levels of oncology nurses

Subdimensions of job stressors scale	Mean	SD	Minimum	Maximum
Work role ambiguity	15.22	4.35	7.00	30.00
Work role conflict	24.52	5.58	8.00	39.00
Work role overload	7.98	1.77	3.00	12.00
Work Role Ambiguity (low if ≤ 14 , medium if 15-22, and high if ≥ 23)				
Work Role Conflict (low if ≤ 18 , medium if 19-29, and high if ≥ 30)				
Work Role Overload (low if ≤ 7 , medium if 8-11, and high if ≥ 12)				

Table 2: Distribution of findings with respect to oncology nurses' burnout levels

Subdimensions of MBI	Mean	SD	Minimum	Maximum
Emotional exhaustion	18.31	6.02	2.00	34.00
Depersonalization	5.96	3.58	0.00	16.00
Personal accomplishment	11.14	4.04	0.00	22.00
MBI: Maslach burnout inventory				
Emotional exhaustion (low if <16 , medium if 17-26, and high if >27)				
Depersonalization (low if <6 , medium if 7-12, high if >13)				
Personal accomplishment (low if >28.03 , medium if 28.02-21.54, high if <21.53)				

Table 3: Correlation between subdimensions of job stress level and of burnout level of oncology nurses

Subdimensions of job stressors scale	Work role ambiguity		Work role conflict		Work role overload	
Subdimensions of MBI	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>
Emotional exhaustion	0.33	0.0001	0.43	0.0001	-0.29	0.0001
Depersonalization	0.25	0.0001	0.52	0.0001	-0.18	0.02
Personal accomplishment	0.49	0.0001	0.02	0.84	-0.12	0.11
$P<0.05$, $P<0.01$, $P\leq 0.001$						
$r=0.00-0.25$ (very weak), $r=0.26-0.49$ (weak), $r=0.50-0.69$ (medium), $r=0.70-0.89$ (high), $r=0.90-1.0$ (very high)						
MBI: Maslach burnout inventory						

sufficiently, and faced deficiencies in occupational health and safety.^[18,24]

Given working conditions of oncology nurses and the problems they have experienced in the units while they have been working were particularly emphasized that they experience tension associated with extreme workload and tensions associated with patients in terminal phase, that there are problems related to patient care procedures, that most of the oncology nurses work in a night duty/shift basis and the number of nurses working in the unit is not adequate as well as their workload is increased by the demand for activities other than nursing such as creating patient's file, management of support services, provision of supplies.

Similarly, the reasons for oncology nurses' displeasure with the department they work were stated as the patients at terminal period and high rate of mortality (50%), negative physical environmental conditions, insufficiency of supplies and personnel (40%),^[25] in addition to this, in other studies, it was determined that oncology nurses face problems because of growing number of patients and workload, insufficient protective measures during preparation of antineoplastic agents, increasing workload.^[11,17] Consequence, it was emphasized that all of these negative effects were increased oncology nurses' job stress and burnout level.^[25,26]

When findings related to job stress levels of oncology nurses are considered, medium mean scores determined in three subdimensions of Job Stressors Scale. Similarly to our study, stress scores found for both nurse and physician groups were at medium level in a study by Isikhan *et al.*,^[11] while Onan and Işıl^[25] found that oncology nurses have medium level of job stress.

Considering the findings for burnout levels of oncology nurses, subdimension mean scores obtained from MBI were found to be at medium level in the case of "Emotional Exhaustion," at low level in the case of "Depersonalization" subdimension and high level in the case of "Personal Accomplishment" subdimension. Studies by Lopez-Castillo *et al.*^[27] and Dorz *et al.*,^[28] in which they investigated burnout of oncology employees, also established medium levels of burnout. It was reported that the nurses working in oncology unit experience burnout more because they encounter death more frequently, and have conflicts with the patient, his/her family, team members. Similarly, tension associated with extreme workload, tension associated with patients in terminal phase, communications problems with the patient

and patient's relatives were determined in our study. It can be concluded that all negative issues experienced by oncology nurses in their working conditions particularly increase emotional exhaustion and make it difficult for them to experience the feeling of personal accomplishment, hence cause them to become more exhausted.^[27,28]

In view of the findings related to the correlation between job stress level and burnout level in the case of oncology nurses:

It was determined that there is a positive relationship between "Work Role Ambiguity" subdimension and "Emotional Exhaustion", "Depersonalization" and "Personal Accomplishment" subdimensions and when "Work Role Ambiguity" increases, burnout increases in all three subdimensions. It was determined that there is a positive significant relationship between "Work Role Conflict" subdimension and "Emotional Exhaustion" and "Depersonalization" subdimensions, and when "Work Role Conflict" increases, burnout increases in both subdimensions, and that no significant correlation exists in the case of "Personal Accomplishment" ($P \geq 0.05$). It was determined that there is a negative significant relationship between "Work Role Overload" subdimension and "Emotional Exhaustion" and "Depersonalization" subdimensions, and when "Work Role Overload" increases, burnout decreases in both subdimensions, and no significant correlation was encountered in the case of "Personal Accomplishment" ($P \geq 0.05$). The findings of this investigation are supported by Lopez-Castillo *et al.*,^[27] who stated that there is a positive correlation between oncology nurses' working conditions perceived as stressful and burnout, by Bernard and Annette,^[29] who stated that any increase in stressors causes an increase in oncology nurses' "Emotional Exhaustion" and "Depersonalization", and by Dorz *et al.*^[28] and Quattrin *et al.*,^[30] who stated that any increase in stress is a factor that leads to burnout among oncology nurses.

Study limitations

This study are not appropriate for generalization. Because all of the hospitals in Istanbul (18 hospitals) that have oncology units were wanted to include in the study. However 7 hospitals of them did not approve the study and only 11 hospitals approved the study. Therefore, the results of the study are limited by the number of nurses and are not appropriate for generalization. Moreover, very low value of cronbach's alpha 0.11 obtained for this sample group for "Work Role Overload" of "Job Stressors Scale" (Cronbach's alpha 0.11) so that a different job stressors scale can be used for nurses to measure their job stress with

much bigger oncology nurse group, that will be represented all of them.

Conclusion

It can be concluded that work role ambiguity and work role conflict increase burnout under challenging and risky working conditions, and that any increase in work role overload causes the individual to become depersonalized and burnout decreases in all subdimensions.

Recommendations

- The requests of nurses are considered during their assignment to oncology unit,
- More attention is paid to taking measures for employee health and safety in oncology departments due to their risky nature, so it can be reduced oncology nurses' job stress.
- The nurses are not asked to do the works which are not directly related to nursing and increase workload of oncology nurses (creation of patient file, management of support services, requesting supplies and linen from depot, organize daily patient treatment) and their extreme workload is reduced and the number of nurses is increase. Because high workload has affected their job stress and burnout levels negatively.
- Oncology nurses' working conditions are improved in order to reduce their job stress levels and burnout (less hours of work, longer annual leave, short night duties because they are employed in risky working units), and that psychological/emotional support is provided to all health care workers, and in particular nurses, considering the patient profile in oncology units.

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