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The professional burnout syndrome in radiologists

Among the care-providing professions, the profession of physicians belongs to those in which professionalism and personality constitute the instruments of work. Focusing on patients requires permanent concentration and is associated with various mental and physical stress. The necessity to be deeply involved, a considerable, often excessive level of responsibility together with limited freedom of choice, asymmetry of interpersonal relations and permanent lack of time, including leisure time, complete the description of professional stress among physicians and form the risk factors of job-related burnout. In the majority of cases, the choice of medical profession is not accidental. Physicians help patients, treat their work as the way to fulfill their vocation, feel that they are really needed, which gives them satisfaction. Therefore, it seems paradoxical that the health care providers are particularly exposed to burnout (1,8,9).

The professional burnout syndrome (PBS), described by Freudenberger in 1974 in people professionally involved in giving help to others, has recently become the issue of interest to theoreticians and the subject of numerous studies in various professional groups (3,5,6,8,9). PBS is structurally varied and has a dynamic course – with 4 distinguishable stages described by Edelwich and Brodsky (2). The first stage – enthusiasm, is likely to be characterized by unreal expectations, excessive involvement in work and emotional identification with the people cared for. This stage is best defined by the expression 'in order to burn out, one should first burn'. The second stage – stagnation, is characterized by lower involvement in work and greater awareness that excessive concentration on work results in neglecting other personal needs. The third stage – frustration brings about some doubts and thoughts concerning the effectiveness and value of the profession as well as the sense of actions. The final stage is apathy in which the protective mechanisms are mobilized to be able to cope with professional burdens, which exceeded the adaptive abilities (1,2,10). The process of burnout is usually progressive, however the return to the earlier stage is possible (6). A high incidence of PBS among physicians is associated with disproportion between substantial, emotional and physical stress and insufficient satisfaction (6,9). The cause of this syndrome is increased pressure of work and stress related to it, which lead to unfavorable consequences, i.e. gradually decreasing work effectiveness, health deterioration and shortening of professional activity time (1,5,8).

In her empirical studies, Maslach (4) distinguished three characteristic features of PBS: emotional exhaustion, depersonalization viewed as protective distancing and decreased work involvement and satisfaction. A different division of structural factors of burnout was presented by Okła and Steuden (5,6,10). On the basis of the factor analysis, they distinguished 5 elements:

reduced emotional control, loss of subject's commitment, decreased effectiveness, limited interpersonal contacts and physical fatigue.

The aim of the study was to assess the level of burnout and to identify its structural factors among radiologists.

MATERIAL AND METHODS

The studies were performed among 70 radiologists of the Lublin region (46 women and 24 men aged 27–61) using 2 questionnaires: one prepared by the authors dealing with the conditions of work, stress sources and work satisfaction, and the Burnout Scale by Steuden and Okła (10). The scale consists of 66 multiple choice questions (one out of five answers) evaluating a given symptom which enables us to estimate the severity of burnout and to identify 5 structural factors of the syndrome, i.e. 1) reduced emotional control (REC), 2) loss of subject's commitment (LSC), 3) decreased effectiveness (DE), 4) limited interpersonal contacts (LIC), and 5) physical fatigue (PF). The participation was voluntary and anonymous; 70 out of 100 individuals who were sent the questionnaires responded to them.

According to the 10-degree sten scale (designed on the basis of the questionnaire's normalization) the individuals were assigned to 3 groups of PBS severity low (1–3 stens), medium (4–6 stens) and high (above 7–10 stens). The global indices of syndrome severity for each individual and the whole group of radiologists were calculated. In the analysis of average sten values, the values up to 3.33 were considered to be low, between 3.34–6.66 – medium and above 6.67 – high. The results were analyzed comparatively according to sex, age, length of work and professional burden. The correlation coefficient (Spearman's) was calculated and variance analysis was performed (the Kruskal-Wallis test). The length of work in the studied group ranged from 1 to 33 years (average 11.7 years as a physician and 11.4 years as a radiologist). Additionally to their main place of work, i.e. hospitals (68 persons) and outpatient departments (2 persons), 33 physicians (47.1%) were employed in one other place, 17 (24.4%) in two places, 6 (8.5%) in three places and 2 – in more than 3 places. The analysis of results distinguished 3 groups of radiologists according to the criterion of the 10-years-long work.

RESULTS

The global index of burnout for the group was 5.8 stens approaching the upper limit of the medium level. The analysis of individual indices enabled us to distinguish the groups of low, medium and high levels of PBS features (Tab.1). The fully symptomatic PBS with high levels of all structural factors was found in 11 individuals (15.7%), eight of whom worked for 10–20 years.

Tab.1. Distribution of structural results of burnout syndrome for the whole group

Level Structural factors of burnout	Low N (%)	Moderate N (%)	High N (%)
Reduced emotional control	13 (18.6)	29 (41.4)	28 (40.0)
Loss of subject's commitment	9 (12.9)	36 (51.4)	25 (35.7)
Reduced effectiveness of action	13 (18.6)	28 (40.0)	29 (41.4)
Limited interpersonal contacts	13 (18.6)	29 (41.4)	28 (40.4)
Physical fatigue	11 (15.7)	22 (31.4)	37 (52.9)

The general index of burnout for this group ranged from 7.0 to 9.8, average 8.4 stens. The high level of 4 structural factors of PBS was observed in 9 radiologists – the last lacking factors were: physical fatigue (PF) and loss of subject's commitment (LSC) in one case, reduced emotional control (REC) in 3 and decreased effectiveness (DE) in 4 cases. There was no correlation between PBS, sex and length of work. It is noteworthy, however, that among those working 10–20 years only one radiologist had a low PBS index and 71.4% were in the high index group (Tab. 2).

Table 2. The general index of burnout syndrome in radiologists of various work length based on the average value in stens

Level \ Work length	Low N (%)	Moderate N (%)	High N (%)	Total
Up to 10 years	3 (9.1)	24 (72.7)	6 (18.2)	33
10 to 19 years	1 (4.7)	5 (23.8)	15 (71.4)	21
20 and more years	4 (25.0)	7 (43.7)	5 (31.3)	16
Total	8 (11.4)	36 (51.4)	26 (37.1)	70 (100.0)

Tab. 3. The level of structural factors of professional burnout syndrome in relation to the work length (based on average values in stens)

Structural factors of burnout \ Work length	Group I – Less then 10 years	Group II – 10 – 19 years	Group III – 20 and more years	Average for n = 70
Reduced emotional control	5.2	6.5	5.1	5.7
Loss of subjects commitment	5.4	6.8	4.6	5.6
Reduced effectiveness of action	5.3	7.0	5.1	5.4
Limited interpersonal contacts	5.1	7.5	5.6	5.7
Physical fatigue	5.9	7.4	5.6	6.3

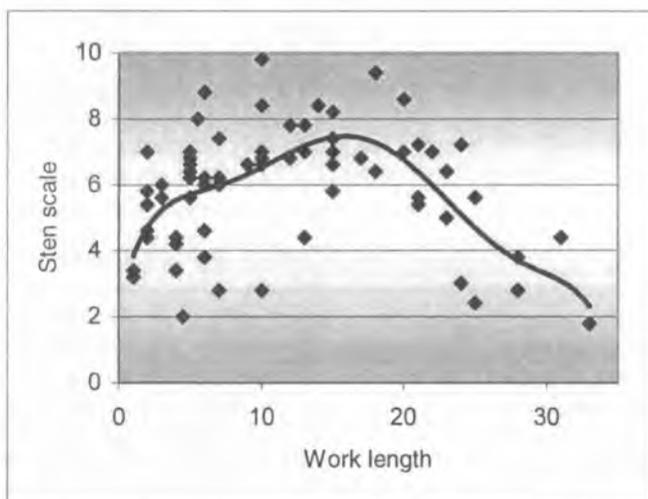


Fig. 1. A global burnout index (in sten scale) according to the length of work as a radiologist

The indices for 5 structural factors of PBS ranged from 5.4 to 6.3 stens; the highest level was found for physical fatigue. The intensification of the individual factors according to the length of work was presented in Figures 1, 2 and Table 3. The highest indices (6.5–7.7 stens) were observed in the group working shorter than 10 years and longer than 19 years. The majority of indices in the group working shorter than 10 years and longer than 19 years reached the average values (4.6–5.9 stens). The highest values concerned physical fatigue and limited interpersonal contacts. The lower values of 5 factors of burnout observed in the group of radiologists with the longest period of work seem optimistic. A correlation was found between the burnout index and number of workplace.

In the group of 70 radiologists, the distribution of results was as follows: the individual PBS index was low in 8 (11.4%), medium – in 36 (51.4%) and high in 26 cases (37.1%). High values were found in 37% of the total group, which clearly indicates strong effects of stress and difficulties in coping with it. Another 51% are the individuals with moderate symptoms of burnout. Only 11% of radiologists had low results, which shows that they can cope with professional stress in such a way that the risk of burnout is minimum.

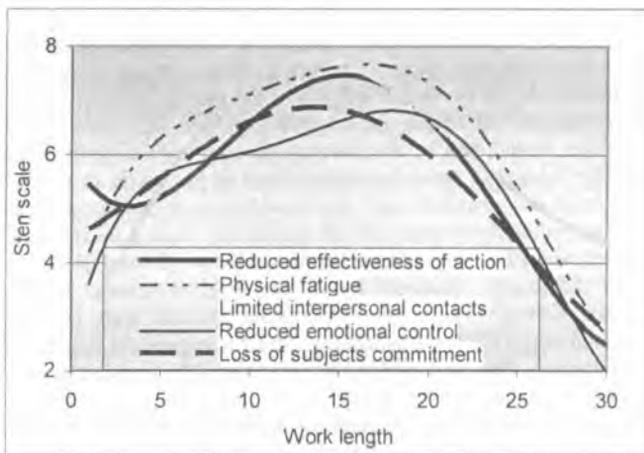


Fig. 2. Lines of trends of the structural factors of burnout syndrome in relation to the radiologists' length of work

The distribution of findings may be treated as the diagnostic index of professional stress for radiologists; it may also be used as the basis for improving our knowledge concerning the sources and intensification of structural factors of this phenomenon. In the groups of radiologists working shorter than 10 years and longer than 20 years, all the burnout indices are within the medium values, which proves the effective coping with professional stress. In the group working between 10 and 20 years, the average indices are high; physical fatigue and considerably limited interpersonal contacts are the predominant complaints.

It is also noteworthy that the radiologists in the group working for 10–20 years were aged 35–45 years and the problems connected with the family, stability and prestige, which they experience intensively are likely to increase the number of stressors, which are often difficult to overcome.

DISCUSSION

The professional burnout syndrome initially referred only to the staff of psychiatric institutions dealing with chronic patients, at present is viewed as a consequence of emotional burdens and inadequate coping with them in many medical specialties, including the professions providing help to other people (teachers, social workers, policemen, psychologists) (3,9). Pines and Kafry believe that the sources of burnout in the care providing professions are likely to be asymmetrical interpersonal relations characterized by the disproportion between giving and taking with the tendency towards one-sidedness (7). This kind of system is characteristic of the medical profession and becomes more intense when the physician, being emotionally and intellectually involved constantly improving his qualifications and strictly identifying himself with his work, cannot find proper satisfaction in the patient's respect or adequate salary. In the case of radiologists, often treated by their patients anonymously without awareness of the burdens connected with this specialty, the symmetry of the system may be achieved thanks to the appreciation showed by the co-workers and other specialists. In our group, the radiologists very often mentioned these factors (about 70%) as a source of satisfaction and found them extremely important.

In 1996 Ramirez et al. conducted studies comparing the burnout syndrome intensification among English physicians of 4 specialties: surgeons, gastrologists, oncologists and radiologists. The highest intensification of the syndrome was found not among surgeons most burdened with professional stress symptoms but among radiologists in whom the stress symptoms were the lowest ones. The authors explain this by the fact that the high level of professional autonomy in surgeons acts protectively leveling the unfavorable effects of overwork; in radiologists, however the high level of the syndrome correlated with poor satisfaction in contacts with patients and low self-evaluation of their professional status. In all specialties studied by them, the independent factor, which correlated with PBS, was found to be the age below 55 years (8).

In the group of radiologists examined by us, the level of burnout should be treated as alarmingly high since almost 40% of the individuals showed high individual indices of professional burnout and only 10% had low indices. This finding should induce some attempts to prevent such a phenomenon. However, our results concerning the satisfaction achieved at work differ from the findings presented above. In our group, over 80% of radiologists declared their satisfaction at work despite the feeling of financial underestimation and stress related to their status compared to other specialties (about 73%) In Poland, the radiologists belong to these few specialties in which the weekly length of work is limited to 26 hours, therefore, the factors of physical fatigue and necessity of limiting interpersonal contacts should only be slightly intensified. However, our results reveal that the 5-hour day of work is purely fictional; only 17% of radiologists worked in one place, while 30% had more than two jobs. In this respect, the feeling of their own competence definitely stabilizes their image and professional identification. Similarly to the group of English radiologists, the highest risks of PBS were observed among the middle-aged Polish radiologists (which corresponds to 10–20 years of work), and only one physician in this group showed a low general index of burnout.

It is difficult to determine the stage of burnout in the individual radiologists examined by us. The stages III and IV – frustration and apathy are characterized by the doubts as to the sense of work and by the activation of protective mechanisms. We believe that in the picture of the syndrome symptoms some features of the earlier stages (I – enthusiasm and II – stagnation) may be identified, i. e. the stages in which the radiologists are still deeply professionally involved and motivated to achieve the highest possible level of professionalism.

Studen and Okla in their study concerning the structural and dynamic features of the burnout syndrome in supportive professions suggest that the fully symptomatic syndrome of burnout is likely to develop when all the factors are high (6). In our group this situation concerned only 11 individuals (15.7%), the rest generally showing lack of single features of the syndrome. The authors suggest that the syndrome dynamism depends on the fact which of the factors is originally

most intense and whether the abnormalities appear in the qualification or motivation sphere. Moreover, the development of the syndrome is greatly affected by the internal factors which depend on the individual personality traits. According to the opinions mentioned above, the natural development of the syndrome should proceed from factor 5 to 1 (5,6). Our studies confirm greater intensification of the last three factors and in most cases their growing tendency. The difference between the incidence of high values of physical fatigue (52.9%) and the frequency of loss of the subject's commitment (35.7%) is noteworthy, which indicates strong motivation of the radiologists.

CONCLUSIONS

1. The general index of professional burnout in the group of radiologists is contained within the range of average values; the individual indices, however, are high in almost 40% of radiologists.

2. The radiologists practising for 10-20 years constitute the group with the highest intensification of PBS.

3. The indices concerning 5 structural factors of PBS are of medium values, while physical fatigue and tendency to limit interpersonal contacts are found to be most strongly marked.

4. There is a strict relation between the number of workplaces of radiologists and the intensification of PBS.

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SUMMARY

The aim of the study was to assess the incidence of professional burnout syndrome among radiologists. The study was conducted in a group of 70 radiologists of the Lublin region using a questionnaire designed by the authors and Burnout Scale prepared by Steuden and Okła. In the whole group, the level of burnout was found to be moderate, the individual indices, however, showed high burnout levels in 37.1% of the radiologists, moderate levels in 51.5% and low ones in only 11.4%. The individual elements of the burnout syndrome (reduced emotional control, loss of the subject's commitment, reduced effectiveness of action, limited interpersonal contacts and physical fatigue) were moderate in relation to the whole group with the highest incidence (52.9%) of high levels in the subscale evaluating physical fatigue. No correlation was found between sex, length of work and level of burnout, yet the relationship with the number of additional jobs was significant. The highest level of burnout was observed in the radiologists working 10 - 19 years (71.4% of high indices, 23.8% of moderate indices); in this group, the levels of all structural elements of professional burnout syndrome were high.

Zespół wypalenia zawodowego u radiologów

Celem pracy była ocena źródeł satysfakcji i stresu związanego z wykonywaniem zawodu radiologa. Badania przeprowadzono w grupie 70 radiologów województwa lubelskiego za pomocą opracowanego przez autorów kwestionariusza oraz Skali Wypalenia Sił, stworzonej przez Steuden i Okłę. Dla całej grupy stwierdzono średni poziom *burnout syndrom*, natomiast w ocenie indywidualnych wskaźników poziom wysoki miało 37,1% badanych, 51,5% średni i tylko 11,4% niski. Poszczególne składniki strukturalne zespołu wypalenia (obniżenie kontroli emocjonalnej, utrata podmiotowego zaangażowania, obniżenie efektywności działania, zawężenie kontaktów interpersonalnych i zmęczenie fizyczne) miały poziom średni w odniesieniu do całej grupy radiologów z największą częstością (52,9%) występowania wysokiego poziomu w subskali oceniającej zmęczenie fizyczne pracą zawodową. Nie stwierdzono korelacji między płcią radiologów i stażem pracy a poziomem wypalenia zawodowego, ale istotny był związek z liczbą dodatkowych źródeł zarobkowania poza podstawowym miejscem zatrudnienia. Najwyższy poziom wypalenia zawodowego stwierdzono u radiologów o stażu pracy zawodowej 10-19 lat (71,4% wskaźników wysokich, 23,8% średnich). W tej grupie wysoki poziom osiągnęły także wszystkie składniki strukturalne ZWZ.