

STUDIES IN PHYSICAL CULTURE AND TOURISM  
Vol. 17, No. 4, 2010

MARIA BRUDNIK  
Chair of Physical Education Theory and Methodology,  
University School of Physical Education, Kraków, Poland

## MACRO-PATHS OF BURNOUT IN PHYSICAL EDUCATION TEACHERS AND TEACHERS OF OTHER GENERAL SUBJECTS

**Key words:** teacher, burnout, macro-path, problems with discipline, self-efficacy.

### ABSTRACT

The aim of the study was to ascertain to what degree work-related stress, self-efficacy and professional personality determine burnout in general subjects teachers, and to verify a hypothesis that PE teachers burn out in keeping with a macro-path specific for their profession. The study was carried out in 2005 on a sample of 395 subjects (women N = 301, men N = 94). Burnout was diagnosed using the *Maslach Burnout Inventory* (MBI). The analysis was based on a four-phase typological model (Noworol, 2000). The course (discontinuity) of burnout in GS teachers (N = 333) suggested a need to consider the specific character of a taught subject while analyzing burnout. A case analysis confirmed the course of a plotted burnout macro-path of male PE teachers (N = 29), while female teachers (N = 33) were shown to burn out in a less homogenous manner. Problems with discipline facilitate, while self-efficacy protects GS teachers against burnout; the degree of match with their profession (J. Holland's theory) only slightly affects the course of the phenomenon.

### INTRODUCTION

Considering the versatility of factors that induce three independent symptoms, i.e. emotional exhaustion, diminished sense of self-accomplishment and a tendency to depersonalize, burnout syndrome is a phenomenon that is difficult to pinpoint. The syndrome develops in individuals who practice professions requiring numerous contacts with other people, much involvement and care about their charges, coping with their emotions as well as in individuals who occupy positions calling for a high degree of responsibility for decisions they reach (e.g. social services, business). According to Maslach, burnout is the body's response to chronic emotional stress resulting from

a breakdown of processes of adaptation to the work environment [27].

With its multidimensional structure, burnout syndrome may be manifested in various ways. According to Maslach, emotional exhaustion develops first, followed by a decreased sense of self-accomplishment and loss of meaning in one's work, and then the affected individual proceeds to distance himself from specific stressors, such as a pupil, a patient or a customer. In her subsequent works, Maslach adopts the view that increasing emotional exhaustion leads to depersonalization and cynicism, while decreased self-accomplishment develops independently, simultaneously with a concomitant sense of low effectiveness of one's activities [27].

---

**Correspondence should be addressed to:** Maria Brudnik, ul. Włoska 17/131, 30-638 Kraków, Poland, e-mail: majabru@interia.pl

Building his views on Maslach's works, Golembiewski [19] determines a reversed direction of the burnout path. In his opinion, a tendency to depersonalize one's subjects of work – as a consequence of stress that lowers one's threshold of sensitivity – is the first signal of the syndrome. The reaction of others from one's circle to the increasing distance in interpersonal contacts with the person undergoing burnout leads to a decrease in his sense of self-value and self-efficacy. In consequence of intensifying symptoms, the employee begins to react in the emotional sphere, thus reaching emotional burnout.

The burnout process described by Maslach and Golembiewski can be represented as paths leading in contrary directions. These seemingly contrary theories have been termed the *facing theories* and have been merged into a four-phase typological model of professional burnout [29]. In this model [34, p. 263], the phenomenon of burnout consists of four basic stages: T0 (*non-burned-out*), T1, T2 (*partially burned-out*) and T3 (*burned-out*), with phases T1 and T2 being complex. The progressive process may take various courses, specific to a given individual (micro-path) or a professional group (macro-path). It should be emphasized that in the four-phase model, the *facing theories* constitute two separate paths: *Maslach's path* describes the phenomenon of burnout in social professions, while *Golembiewski's path* explains the syndrome development mainly in managerial professions [29].

In Poland, studies on the dynamics of burnout in teachers were published by Sęk [32] and Tucholska [36]. Brudnik employed the four-phase typological model formulated by Noworol to determine the burnout macro-path in physical education teachers [5, 7]. According to Noworol [29], within each professional group there may be individuals who undergo burnout at a relatively fast rate, contrary to the macro-path characteristic of their profession. This group includes employees with inadequate psychosocial competences (including intellectual abilities) or individuals who practice a profession which is against their vocational personality [2, 23]. Holland's theory of vocational personality types in the context of burnout in teachers was verified by Forey et al. [15].

Working with pupils may provide a teacher with a strong sense of work-related satisfaction and at the same time be a source of stress and anxiety that decrease his sense of quality of life. In his

review of studies on factors associated with stress in teachers, Terelak [35] observed that social expectations were high and generally not adequate to the abilities of teachers who were constantly subjected to daily public judgment, worked in poor conditions, and had a low social and economic status. An additional source of stress can be found in changing traditions and morals, exemplified by a decreasing distance in contacts with pupils and increasing problems associated with maintaining discipline.

Increasingly more often, pupils intentionally disturb the course of a lesson, ignoring the teacher's remarks and commands [9, 37]. It is difficult to manage a group of youngsters facing increasing demands they openly voice and easy availability of alternative and attractive sources of knowledge. Decreased discipline has also been observed during physical education classes [4, 9, 22]. A consequence of psychological stress experienced by teachers generated by inappropriate behavior of a pupil is development of burnout symptoms [11, 20, 21, 33, 36].

In the model developed by Lazarus, which explains stress-associated psychological mechanisms, stress is presented as cognitive assessment by an individual of potential stress-inducing stimuli. In this perspective, stress is understood as a kind of a *transaction* between the individual and the environment. The level of experienced stress and the character of emotional reactions to a stressor are determined by two mental processes: cognitive assessment and coping abilities. The "assessment" denotes a dynamic process of determining the importance of a given situation and the available coping resources [3].

Among factors protecting an individual from developing burnout syndrome, the role of *self-efficacy* is stressed, i.e. the belief in "one's ability to act effectively in new, ambiguous, unpredictable or ever stressing situations" [30; p. 213], [1, 12]. According to Cherniss (1980; quoted after Grzegorzewska [21]), a sense of uncertainty associated with doubts as to one's competences is among the most potent stressors that lead to burnout syndrome among teachers. A preventive role of self-efficacy in teachers in the context of burnout was confirmed in Polish studies [6, 17, 32]. Investigations on relations between burnout and self-efficacy in teachers, adjusted for work environment, were carried out by Skaalvik and Skaalvik [33]. Pas et al. [31] and Egyed & Short

[13] analyzed the problem of self-efficacy and actions undertaken by teachers undergoing burnout aimed at disciplining unruly pupils.

The aim of the present study is an attempt at determining the macro-path of burnout in teachers of general subjects and verifying to what degree such factors as professional stress in school, vocational personality, self-efficacy and job seniority decide the course of the said macro-path. An attempt has been also made at verifying the hypothesis that teachers of physical education undergo burnout in a manner that is unique to this school subject.

## METHODS

The study was carried out between April and June 2005 among non-vocational school teachers from the Małopolskie and Śląskie Provinces in Poland (from schools in province capitals, county seats and districts). Diagnostic pooling was carried out in 22 schools (II-IV education stage). The number of subjects was  $N = 395$  (PE teachers:  $N = 62$ ), incl.  $N = 301$  female teachers (PE female teachers:  $N = 33$ ; 76.2%), and  $N = 94$  male teachers (PE male teachers:  $N = 29$ ; 23.8%).

The diagnosis of burnout was performed with the *Maslach Burnout Inventory* (MBI) [28] adapted to Polish conditions by Noworol (manuscript). The MBI questionnaire included 22 items grouped into three sub-scales: I. Emotional exhaustion (EE) – 9 items; II. Negative professional accomplishment (NPA) – 8 items (a reversed scale); III. Depersonalization (DP) – 5 items. In their statements, the examinees referred to a 7-point frequency scale: 0 – *never*, to 6 – *every day*, with intermediate scores: *several times a year*, *once a month*, *several times a month*, *once a week*, *several times a week*. Burned-out individuals were defined as teachers demonstrating a triad of high-score factors of the multidimensional syndrome.

The mental strain of teachers of general subjects was diagnosed using the *Stress in the Teacher Profession* (Stres w zawodzie nauczyciela – SWZN) questionnaire [18], consisting of 26 items grouped into six sub-scales: I. Inadequate financial compensation for work – 7 items; II. Loneliness in professional activities – 5 items; III. Inappropriate school management – 5 items; IV. Experiencing didactic difficulties – 8 items; V. Difficult working conditions – 5 items; VI. Experiencing disciplining

difficulties – 5 items. The general stress indicator is the sum of scores based on a 5-point scale: *no stress*, *mild*, *moderate*, *strong* and *very strong stress* (scores 1-5). Physical education teachers were investigated with the aid of *Scale of Mental Strain* (H. Sęk, M. Brudnik – a version for physical education teachers) consisting of 16 items [8]. It is based on a 5-point scale: *perceived stress* – *none*, *mild*, *moderate*, *strong*, *very strong* (score 1-5). The total score is the general index of professional stress in physical education teachers.

The sense of coping competence of teachers while facing professional stress was measured using the Polish version of *General Self-Efficacy Scale* (GSES) developed by Schwarzer, Jerusalem, Juczyński [24]. The scale consists of 10 items; the interviewees choose their answer on a 4-point scale: *no*, *basically no*, *basically yes*, *yes* (score 1-4); the sum of all scores is the general index of self-efficacy should there occur a need to cope with difficult situations.

The vocational personality of teachers was determined using the *Self Direct Search* by J. Holland [25], which is a method for diagnosing professional preferences as a personality trait of an individual who makes a decision as to his educational path or seeks a work environment that would be in line with his interests. This assessment tool allows determining the profile of individuals who practice a given profession. In a series of items, the interviewee selects his answer: *yes* – 1, or *no* – 0. While performing self-evaluation, the respondents have at their disposal a 6-point scale (score 1-6). The sum of scores (activities, competences, professions, self-evaluation I, self-evaluation II) in six categories provides the basis for determining the examinee's individual professional profile.

Statistical analysis: cluster analysis (K-means clustering – Mac Queen), non-parametric Kruskal-Wallis and Man Whitney tests, test  $\lambda^2$  Pearson's with correction for continuity, Duncan's test, forwards stepwise discrimination analysis. Calculations: Rutkowski (GEM Kraków); statistical software SPSS/12 and 14PL.

## RESULTS

The majority of interviewed teachers of general subjects ( $N = 333$ ) had university master degrees and a history of schooling in didactics  $N = 315$  (94.6%) (university vocational education:

N = 16; high school: N = 2); mean age: M = 38.4 years; job seniority: M = 13.5 years. All the investigated physical education teachers (N = 62) had university master degrees (age M = 38.2 years; seniority M = 14.2 years).

The obtained data was processed in two parallel manners. The analysis started by plotting the macro-path of burnout for teachers of general subjects (N = 333), testing to what degree selected factors determined its course. Subsequently, the burnout macro-paths of physical education teachers for men and women [7] were verified. In view of the number of interviewees N = 62 and the necessity of taking into consideration the gender variable, the analysis was a case study.

Having established four homogenous clusters (a similar pattern of the tri-dimensional syndrome) (Table 1), based on the four-phase typological model [29], the author developed a burnout macro-path of teachers of general subjects common for female and male teachers<sup>1</sup> (Fig. 1). The statistical

description of the clusters of non-burned-out teachers, teachers signaling various stages of the syndrome and burned-out teachers is presented in Table 2.

Non-burned-out teachers who fully fulfill themselves while working in schools constitute cluster II (N = 135; phase T0) (Fig. 1). Their work and contact with pupils give them satisfaction, at the same time not causing an excessive mental and physical strain, which is supported by low mean values of the three burnout syndrome dimensions: emotional exhaustion (EE), negative professional accomplishment (NPA) and tendency to depersonalize pupils (DP) (Table 2).

The first phase of the burnout process is explained by the cluster of relatively young teachers who are disappointed by working in school (cluster I; N = 63; M = 36.3 years; M<sub>NPA</sub> = 21.78). Phase T2 is illustrated by cluster IV (N = 59), which groups profoundly emotionally exhausted teachers who protect themselves against pro-

**Table 1.** Burnout in teachers of general subjects (N = 333); characteristics of clusters in association with gender, age and job seniority

Cluster	Sex				Age		Job seniority	
	Women		Men		M	SD	M	SD
	N	%	N	%				
I. N = 63	49	77.8	14	22.2	36.33	10.000	11.78	9.608
II. N = 135	112	83.0	23	17.0	39.47	8.574	14.44	8.964
III. N = 76	59	77.6	17	22.4	35.99	9.191	10.91	8.654
IV. N = 59	48	81.4	11	18.6	41.22	8.626	16.46	8.937
Total: N = 333	268	80.5	65	19.5	38.39	9.190	13.49	9.195

**Table 2.** Burnout in teachers of general subjects (N = 333); cluster analysis (EE – emotional exhaustion, NPA – negative professional accomplishment, DP – depersonalization)

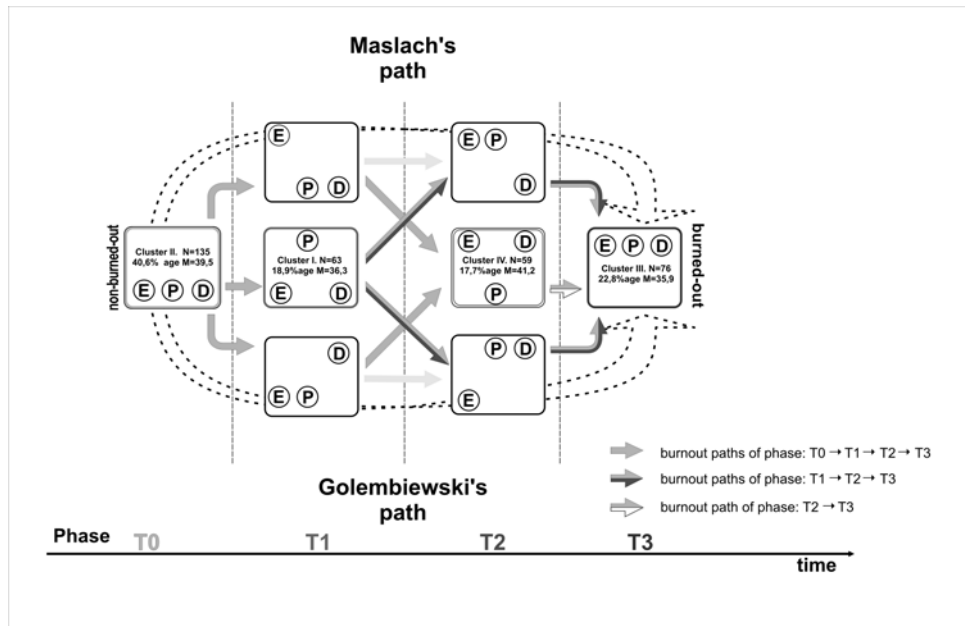
Dimensions of burnout	Burnout among teachers of general subjects									
	non-burned-out		partially burned-out				burned-out		Total	
	cluster II		cluster I		cluster IV		cluster III			
	M	SD	M	SD	M	SD	M	SD	M	SD
EE	10.73	5.509	10.48	4.227	31.92	6.487	22.37	4.439	17.09	9.879
NPA	7.04	3.887	21.78	6.267	13.83	7.084	21.09	5.716	14.24	8.499
DP	2.84	2.686	2.76	2.650	6.93	4.770	6.28	4.368	4.33	3.994
N	135; 40.6%		63; 18.9%		59; 17.7%		76; 22.8%		333; 100%	

<sup>1</sup> The gender variable does not significantly discriminate between the three burnout dimensions; Mann-Whitney EE: Z = -0.855; NPA: Z = -1.158; DP: Z = -1.628; p > 0.05.

fessional stress by distancing themselves from the their pupils' problems ( $M_{EE} = 31.92$ ;  $M_{DP} = 6.93$ ). Burned-out teachers form cluster III ( $N = 76$ ; phase T3); in this group, the moderate values of the syndrome dimensions are above average (Table 2, Fig. 1).

Hypothetical course of the burnout macro-path: *phase T0* → *phase T1* → *phase T2* → *phase T3*:

- burnout process (phases T2 → T3) runs in keeping with *Maslach's emotional path*: at a negative sense of professional accomplishment (NPA) of the



**Figure 1.** Hypothetical course of burnout macro-paths in teachers of general subjects. Letters denote burnout dimensions: E – emotional exhaustion (EE), P – negative professional accomplishment (NPA), D – depersonalization (DP) (subscript letter – low level of dimension; superscript letter – high level of dimension); T0, T1, T2, T3 – subsequent phases (stages) of professional burnout (cf. [29], p. 58)

The analysis of the four-cluster system which illustrates burnout among teachers, and a comparison of the obtained picture with the existing path variants (the typological model) demonstrate a lack of continuity of the burn-out macro-path (Fig. 1). The picture suggests two independent burnout patterns among the interviewees, with two variants each (cf. Fig. 1). In the case of non-burned-out teachers (cluster II), one needs to take into consideration all the variants of path courses anticipated in the model, providing that the sequence of clusters of the developed path included one of the empirically verified clusters. The lack of continuity of empiric macro-paths may indicate various burnout patterns of particular groups of teachers<sup>2</sup>, or else it may result from a too small number of subjects in the sample.

teachers (cluster I; T1), emotional exhaustion (EE) increases (T2), leading to the emergence of tendencies towards depersonalization of pupils (DP), and resulting in the manifestation of the fully-symptomatic syndrome (T3) – high mean values of the three dimensions: EE, NPA, DP.

- burnout process (phases T2 → T3) runs parallel to *Golembiewski's path*: in consequence of teachers' decreasing sense of professional accomplishment (NPA) (cluster I, T1), there occurs a gradual loss of care for pupils DP

skills, religion, pedagogy and history of education, arts, music:  $N = 124$ ; 37.2%); sciences (mathematics, physics, IT, technical science:  $N = 87$ ; 26.1%), biology, chemistry and associated subjects (biology, geography, chemistry:  $N = 54$ ; 16.2%), foreign languages (English, French, German, Russian, Italian, Latin:  $N = 68$ ; 20.4%).

<sup>2</sup> Teachers of general subjects ( $N = 333$ ): humanities (Polish, history, social sciences, military training, life

(T2); whereas increasing emotional exhaustion of teachers (EE) leads to burnout (T3).

Hypothetical course of the burnout macro-path: *phase T0* → *phase T1* → *phase T2* → *phase T3*:

- burnout process (phases T0 → T1) begins in keeping with *Maslach's path*: the first symptom (T1) is increasing emotional exhaustion EE (T1); in phase T2, the path changes its course – with increasing mental and physical exhaustion (EE), there emerge defense mechanisms such as a tendency to depersonalize pupils (DP), which is illustrated by the burnout pattern in cluster IV (T2); subsequently, an inadequate, diminished assessment of professional accomplishment (NPA) develops, leading in consequence to the fully-symptomatic syndrome (T3), which is supported by high mean values of the three dimensions: EE, NPA, DP.
- burnout process (phases T0 → T1) progresses based on *Golembiewski's path*: the first symptom is a gradual loss of caring for pupils DP (T1); in phase T2, the path changes its direction, as the tendency towards depersonalization of pupils (DP) is accompanied by increasing mental and physical exhaustion (EE) – the burnout pattern in cluster IV (T2); in effect, the teacher develops an inadequate, negative sense of professional accomplishment (NPA), which leads to burnout (T3).

While testing the degree to which the selected factors might play a decisive role in burnout in teachers of general subjects, the author employed the discrimination analysis. The model took into consideration the following variables: mental strain associated with professional work, general sense of one's effectiveness, age and job seniority. The author also tested whether the degree of match with the practiced profession, place of residence and place of work discriminated between burned-out and non-burned-out individuals (cluster III: N = 79, cluster II: N = 135;  $\lambda^2$  Pearson's test).

The examined teachers were predominantly exhausted by disciplining problems encountered while working with their pupils (Wilks'  $\Lambda = 0.883$ ), which facilitated burnout (Tab. 3). The sense of self-efficacy – a preventive factor – protects an individual from burnout syndrome (Wilks'  $\Lambda = 0.78$ ). The value of the general discriminative power index – Wilks'  $\Lambda$  – indicates that the variables taken into consideration in the model do discriminate the phenomenon of burnout among teachers of general subjects ( $\Lambda = 0.825$ ) (Tab. 3).

Discipline problems encountered by teachers during their work show that such problems play a destructive role in the second phase of the burnout process (Tab. 3; T2). Growing difficulties in managing pupils (high level of stress: M = 17.62) lead to considerable mental and physical exhaustion

**Table 3.** Mean values and significance of differences between discriminants of burnout in teachers of general subjects employed at II-IV education levels (discriminative power coefficients Wilks'  $\Lambda$ , Duncan's test, Kruskal-Wallis test)

No.	Discriminants of burnout path course – discriminative power coefficient Wilks' Lambda = 0.825	Burnout phases	Clusters N	M	Homogenous groups	Significance Kruskal-Wallis test
1.	Mental strain - problems with discipline Wilks' Lambda = 0.883	T0	II. N = 135	15.61	1	$\chi^2 = 29.828$ ; df = 3 p < 0.001
		T1	I. N = 63	15.79		
		T2	IV. N = 59	17.62	2	
		T3	III. N = 76	18.20		
2.	Sense of efficacy Wilks' Lambda = 0.878	T0	II. N = 135	32.15	2	$\chi^2 = 21.913$ ; df = 3 p < 0.001
		T1	I. N = 63	30.73	1	
		T2	IV. N = 59	30.75		
		T3	III. N = 76	29.75		
3.	Age Wilks' Lambda = 0.864	T0	II. N = 135	39.47	2	$\chi^2 = 19.610$ ; df = 3 p < 0.001
		T1	I. N = 63	36.33	1	
		T2	IV. N = 59	41.22	2	
		T3	III. N = 76	35.99	1	

( $M_{EE} = 31.92$ ); there is also a concomitant tendency towards depersonalization ( $M_{DP} = 6.93$ ). In the cluster of burned-out teachers (III;  $N = 76$ ), the arithmetic mean of mental strain reached its highest value (Tab. 3).

Teachers who fulfill themselves at work are characterized by a high (significantly higher) level of general sense of self-efficacy. Together with the first burnout symptom, i.e. loss of sense of working in school ( $M_{NPA} = 21.78$ ; phase T1), there occurs a decrease in recognition of one's professional abilities. Parallel with the progressing process, falling in the lower range of high values, the general sense of self-efficacy in coping with challenges associated with working with pupils reveals lower values.

In the burnout process, the age variable is difficult to interpret. The youngest teachers are by individuals who experience their first professional crisis (age:  $M = 36$  years; phase T1; cluster I) as well as burned-out teachers (T3; cluster III). Another group consists of teachers who found fulfillment in their profession, and the oldest individuals aged above 40 years, who are on the verge of burnout (phase T2).

Place of residence and place of work may play a decisive role in syndrome development. A high percentage of non-burned-out teachers is employed in district schools ( $N = 50$ ; 37.1%); every other burned-out teacher works in a province capital ( $N = 67$ ; 49.6%; district:  $N = 15$ ; 19.7%) ( $\lambda^2 = 7.363$ ;  $df = 2$ ;  $p < 0.05$ ). In junior high school teachers, burnout occurs somewhat more frequently ( $N = 34$ ; 44.7%); non-burned-out individuals are mostly employed in elementary or high schools ( $N = 22$ ; 28.9%;  $N = 20$ ; 26.3%) ( $\lambda^2 = 6.560$ ;  $df = 2$ ;  $p < 0.05$ ).

While verifying the importance of vocational personality of teachers of general subjects in the burnout process, three-letter profiles of the interviewees were compared with the defined profession code: SIA. The degree of match between individual codes and the professional code was calculated based on Iachan's index<sup>3,4</sup>. Two agreement classes were assumed: a) good – a good match,

<sup>3</sup> Good congruence: score 23-28, moderate: score 16-22, no match: score 0-15 ( $N = 321$ ;  $\min = 0$ ;  $\max = 28.0$ ;  $M = 18.991$ ;  $SD = 7.062$ ).

<sup>4</sup> Physical education teachers – profession codes: females – SIA, males – SRE [10]; reference ranges: good agreement: score 20-28; moderate: score 9-19; no match: score 0-8 (Brudnik, manuscript).

b) average – a moderate match and no match with profession code<sup>5</sup>. Vocational personality determines the course of burnout process in the interviewees to a small degree e ( $\lambda^2 = 4.382$ ;  $df = 1$ ;  $p = 0.036$ ): non-burned out teachers – a good agreement with their profession:  $N = 59$ ; 46.1%; an average agreement –  $N = 69$ ; 53.9%. Among the burned-out teachers, individuals with an average match constitute almost 70% of the group ( $N = 51$ ; 68.9%).

The macro-paths of burnout are presented as sequences of homogenous clusters ordered in keeping with the theoretical assumptions of the four-phase model of professional burnout [29]. While verifying the burnout macro-paths of physical education female and male teachers [7], the examinees ( $N = 62$ ) were divided into groups characterized by parameters defined while determining the model paths<sup>6</sup>. The author determined first the position of each interviewed PE teacher in the set of the examinees, which was defined by the three dimensions of the syndrome (EE, NPA, DP). In this case, the reference point was the center of homogenous clusters that constituted a basis for establishing macro-paths for this group [7]. In keeping with their situation (a negative syndrome pattern), the PE teachers were ascribed to a cluster whose center was the closest (at the shortest distance). In view of the low number of examinees in the sample (females:  $N = 33$ ; males:  $N = 29$ ), the gender analysis was treated as a case study.

The teacher's belonging to a given cluster was also decided by the scores of the syndrome dimensions (EE, NPA and DP); the author assumed the said scores should lie within the minimum and maximum range of values for the defined clusters. And thus, while verifying the burnout pattern for a given person, his position in the path-forming clusters was checked. If the individual was within the range of minimum and maximum values, but one burnout dimension went beyond the normal range determined for the dimension, the examinee

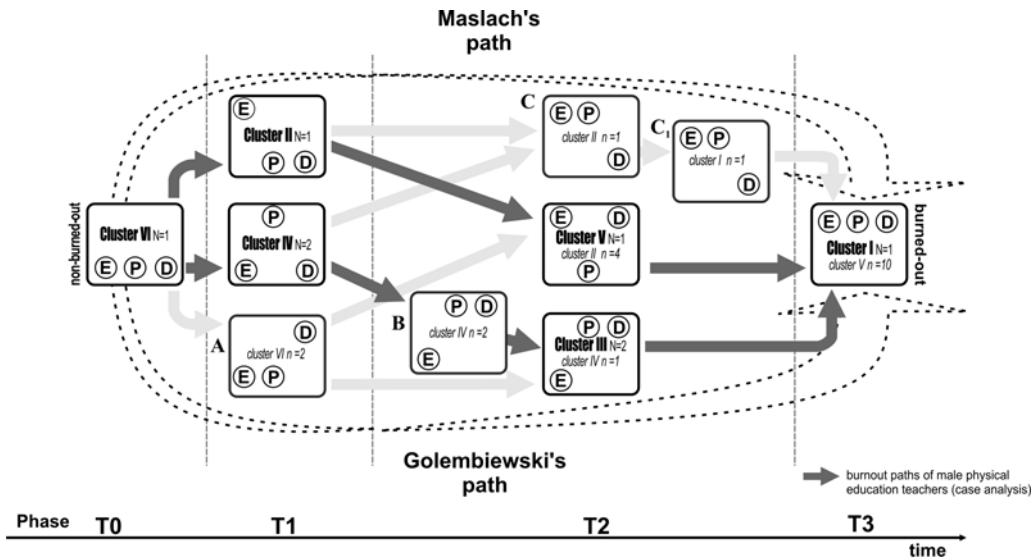
<sup>5</sup> Teachers of general subjects – good match:  $N = 187$  (58.3%), moderate match:  $N = 108$  (33.6%), no match:  $N = 26$  (8.1%); physical education teachers – good match:  $N = 59$  (66.1%), moderate match:  $N = 16$  (27.1%), no match:  $N = 4$  (6.8%).

<sup>6</sup> M. Brudnik, Professional burnout of male and female physical education teachers: a four phase typological model, *Human Movement*, Table I-II.; report submitted for publication.

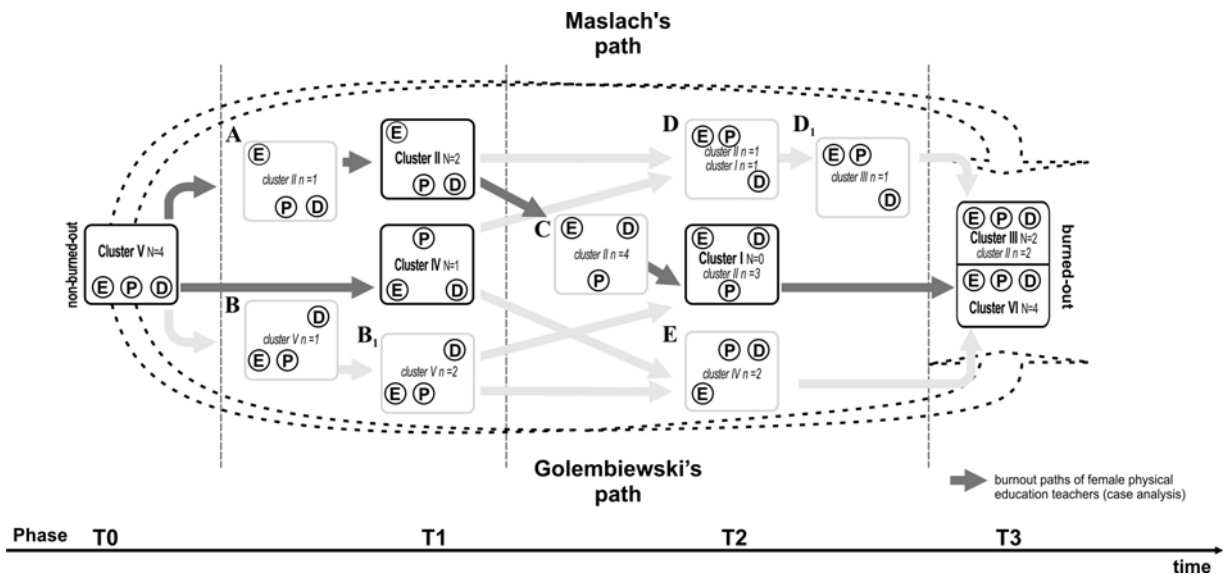
was included in a cluster with an adequate syndrome pattern. When needed, additional clusters were created, which provided intermediate sub-phases in subsequent burnout phases, as well as clusters with a different pattern as compared to the macro-path clusters (satellite clusters). The least degree of homogeneity, both for females and males, was noted in clusters marked as II (*Maslach's path*;

T1); in view of their burnout pattern, female and male physical education teachers were additionally checked and then included in an appropriate cluster.

The clusters of teachers with a given configuration of the three syndrome dimensions were arranged in keeping with the course of the verified macro-path. Each time, the number of teachers in cluster N was given, along with the



**Figure 2.** Macro-path of burnout in male physical education teachers with a path illustrating burnout in teachers included in the sample N = 29 (B: additional cluster; A, C, C<sub>1</sub>: satellite clusters). Letters denote burnout dimensions: E – emotional exhaustion (EE), P – negative professional accomplishment (NPA), D – depersonalization (DP) (subscript letter – low level of dimension; superscript letter – high level of dimension); T0, T1, T2, T3 – subsequent phases (stages) of professional burnout (cf. [29], p. 58)



**Figure 3.** Macro-path of burnout in female physical education teachers with a path illustrating burnout in teachers included in the sample N = 31 (A, C: additional clusters; B, B<sub>1</sub>, D, D<sub>1</sub>: satellite clusters). Letters denote burnout dimensions: E – emotional exhaustion (EE), P – negative professional accomplishment (NPA), D – depersonalization (DP) (subscript letter – low level of dimension; superscript letter – high level of dimension); T0, T1, T2, T3 – subsequent phases (stages) of professional burnout (cf. [29], p. 58)



number of the cluster and the number of examinees added from adjacent clusters in the case of satellite clusters in terms of their individual burnout pattern; the author also provided information on the cluster from which they originated. The paths for physical education female and male teachers that illustrated their burnout are presented in Figs. 2 and 3.

Using the method of case analysis, the author was able to verify in a clearly understandable manner the burnout path for male physical education teachers (Fig. 2). In the sequence of clusters of the burnout macro-path for male physical education teachers, phase T2, and additional two-component cluster B was placed, which originated from cluster IV. Thus, three satellite clusters emerged: A, C, and C<sub>1</sub> (N = 4; 14%).

Two single-element clusters C and C<sub>1</sub> illustrate burnout of PE teachers in the second burnout phase, who undergo the burnout process in keeping with *Maslach's emotional path*. Two interviewees (cluster A; phase T1), while undergoing the burnout process, initially manifested a tendency towards depersonalization of their pupils, i.e. following *Golembiewski's path*.

Teachers undergoing the burnout process contrary to the profession pattern are characterized as follows:

- cluster A (N = 2; phase T1): a young junior high school teacher (age/job seniority: 29/3 years) and an experienced elementary school teacher (age/job seniority: 42/20 years) employed in district schools; a high level of professional stress; high self-efficacy; an average match to profession;
- cluster C (N = 1; phase T2): an experienced primary school teacher in a province capital (age/job seniority: 42/18 years); a low level of professional stress, high self-efficacy, a good match to profession (variables fail to explain the causes of burnout);
- cluster C<sub>1</sub> (N = 1; phase T2): a young high school teacher in a province capital (age/job seniority: 28/5 years); a high level of professional stress, low self-efficacy; no data on match to profession;

The burnout path determined on the basis of results achieved by female teachers confirms the macro-path characteristic of female physical education teachers only to a small degree (Fig. 3). Only 70% of interviewees undergo burnout in accordance with the existing model (Brudnik,

2008). In addition to the macro-path explaining clusters and additional clusters (A: phase T1; C: phase T2), there emerged five satellite clusters for female teachers with different burnout patterns: clusters B and B<sub>1</sub> (phase T1), clusters D and D<sub>1</sub> (phase T2), cluster E (phase T2). Two female teachers originally classified as belonging to cluster II (phase T1) were omitted.

## DISCUSSION

Based on the above investigations, the author failed to develop a complete macro-path explaining the burnout process in teachers of general subjects that could be found in the four-phase typological model [29]. Lack of continuity in the macro-path and the order of sequences of teacher clusters with various burnout patterns, which remains in accordance with the assumptions of the typological subsequent phases of the syndrome (Fig. 1), necessitates further investigations. It may be assumed that teachers of various subjects burn out differently. The first, also incomplete macro-path of burnout in physical education teachers was prepared without taking into consideration the variable of sex (N = 256) [5]. With a higher number of teachers of other general subjects, the sex variable may also reveal its importance.

The analysis of results obtained for physical education teachers (N = 62) and teachers of general subjects (N = 333) was carried out separately, which allowed verifying the thesis on a separate pattern of burnout in teachers of various subjects. Using the method of case analysis, the author confirmed that male physical education teachers (N = 29) burned out in a specific way, typical for their professional group (Fig. 1). In the sample of female teachers (N = 33), the picture was even more ambiguous (Fig. 2). Thus, the macro-paths of male and female physical education teachers have been verified.

Of the analyzed stress factors observed in the teaching profession, the highest danger in burnt-out teachers of general subjects is associated with professional stress derived from the experienced disciplining difficulties (Wilks'  $\Lambda = 0.883$ ). A general sense of self-efficacy protects the interviewees from syndrome development (Wilks'  $\Lambda = 0.878$ ). The variables show their significance at various stages of the progressing syndrome.

In phase T1 of the syndrome, teachers undergoing burnout are characterized by a significantly lower sense of self-efficacy as compared to non-burned-out individuals, with teachers from cluster I (N = 63) not signaling any significantly higher levels of stress resulting from pupil behavior. The burnout pattern of teachers in this cluster points to their disappointment with school reality, associated with inadequate assessment of their professional accomplishments (NPA) (Fig. 1, Tab. 2). Mental strain resulting from problems with discipline shows significantly higher values in cluster IV (N = 59), which illustrates the second phase of burnout in teachers (T2); a somewhat higher stress level can be noted only among burned-out teachers (IV: M = 17.62; III: M = 18.20; homogenous groups).

Teachers of various subjects react in different manners to difficult, stress-inducing situations they encounter in school. Friedman (1995) observed that Israeli humanities teachers were affected mainly by disrespect, whereas custodial teachers were affected mainly by inattentiveness. Burnout among male teachers was mainly affected by pupils' inattentiveness, whereas burnout among female teachers by pupils' disrespect. Polish female physical education teachers react to arrogant behavior, disobedience and disrespect manifested by their pupils with a negative sense of professional accomplishment (NPA). The emotional exhaustion (EE) of female teachers is facilitated by aggressive behaviors. When faced with arrogant behaviors and disrespect for the teacher's commands and his person, male physical education teachers manifest tendencies towards depersonalization of troublesome pupils (DP) [11].

It is assumed that high self-efficacy in a given area of activity is associated with situations, with which the individual successfully coped in the past. A failure increases the likelihood of a decrease in the sense of self-efficacy [3]. Emotionally exhausting disciplinary problems, with failures experienced while attempting to take control of the class, result in the teacher's losing confidence in the efficacy of his actions. Increasing professional stress accelerates burnout. According to Bandura [1], whose interpretation of the process is somewhat different, burnout is initiated by an excessively low level of self-efficacy – lack of conviction as to the possibility of successfully coping with burdens associated with practicing one's profession [33]. It has been observed [6] that

the sense of self-efficacy prevents burnout among Polish teachers of general subjects in a multi-dimensional manner, protects them against decreasing professional satisfaction, increasing emotional burnout and the tendency towards depersonalization of their pupils (teachers of humanities:  $p < 0.01$ ; teachers of humanities and physical education teachers:  $p < 0.05$ ). In the case of teachers of various subjects, the preventive role of generalized sense of one's efficacy is manifested in a diversified manner: PE teachers – all three dimensions of the syndrome; teachers of the humanities – negative assessment of professional accomplishments and emotional exhaustion; teachers of science, biology and chemistry – negative assessment of professional accomplishments; and teachers of foreign languages – emotional exhaustion.

Career is a way to self-fulfillment through practicing a given profession. Career is shaped as a result of a continuous interaction between one's personality and social environment, with a leading role in the process being played by matching the dominant professional preferences of an individual with opportunities offered by work environment [23]. If there is no congruence between the requirements posed by work environment and the abilities of an individual, professional stress begins. Hence, a good match with the practiced profession favors self-fulfillment, while inadequate professional personality accelerates burnout [29].

The results of the present study support the above statement in the case of teachers of general subjects; the correlation is not very strong, but statistically significant ( $p < 0.05$ ). Similar, not fully unambiguous results of associations between professional preferences of teachers (VPI; J. Holland) and burnout were obtained by Forey et al. [15].

Teachers as representatives of social professions burn out alongside *Maslach's emotional path* [29]. The macro-paths developed for male and female physical education teachers are twinned and illustrate two variants of burnout course: individuals with somewhat lower professional experience, while undergoing burnout triggered by school stress, first manifest their disappointment with the reality of their work (Fig. 2, 3). In the opinion of Noworol [29], individuals characterized by lack of match with their profession burn out relatively fast and contrary to the macro-path (pattern) of burnout for a given profession. Physical

education teachers, who represent a satellite cluster A (N = 2; phase T1) (Fig. 2), burn out following *Golembiewski's path*, the course of which is characteristic of managers. The male examinees are characterized by lack of match with the teaching job; hence, at a high level of professional stress being a derivative of disciplining problems, trying to cope with exhaustion, they primarily manifest tendencies towards depersonalization of their pupils. A high sense of one's self-efficacy observed in the interviewees evokes a reflection that in their mind, teachers splendidly control the situation.

The results of the present study point to the following conclusions:

1. In the burnout process of teachers of general subjects:
  - problems with discipline are the stress factors in working with pupils;
  - self-efficacy constitutes a preventive factor;
  - the degree of match with the profession (J. Holland's theory) has only a slight impact on burnout in teachers of general subjects;
  - working with junior high school pupils in a province capital accelerates development of syndrome symptoms.
2. The verified burnout macro-path in physical education teachers (case analysis) may provide material for an analysis of the course of burnout process in these teachers.
3. As compared with males, female physical education teachers burn out in a less homogeneous manner.
4. While seeking a pattern of burnout in teachers of general subjects, one should take into consideration the specific character of any given subject.

The results of studies on burnout in physical education teachers and teachers of general subjects point to the importance of self-efficacy in the work of a teacher. A high sense of efficacy favors coping with stress and burden associated with one's professional work, supporting striving for changes in one's environment and attempts at counteracting the syndrome causes. Inadequate psychological and pedagogical preparation and poor quality of teaching practice periods for students are named among the causes of lack of interpersonal professional competences among teachers. Thus, it is worthwhile to make sure that young teachers are appropriately prepared for their work and senior teachers receive ongoing education training. To use

an example, Martin et al. [26] by pointing to the role of self-efficacy now that pupils are increasingly unwilling to engage in any physical activity, proposed an effective program for developing competences in teachers of physical education [14].

## REFERENCES

- [1] Bandura A., Self-efficacy: exercise of control, Friedeman, New York 1997.
- [2] Bańka A. (1995), Praca w cyklu życia człowieka jako źródło kryzysów stwarzających zapotrzebowanie na profesjonalne doradztwo zawodowe w systemie pośrednictwa pracy (Work in human life cycle as a source of crisis creating a need for professional vocational counseling in the system of job agencies), (in:) A. Bańka, Zawodownawstwo. Doradztwo zawodowe. Pośrednictwo pracy. Psychologiczne Metody i Strategie Pomocy Bezrobotnym (Vocational counseling. Job agencies. Psychological methods and strategies of helping the unemployed), Wydawnictwo PRINT-B, Poznań 1995, pp. 121-150.
- [3] Bishop G.D., (2000) Psychologia zdrowia (Psychology of Health), Wydawnictwo Astrum, Wrocław.
- [4] Bronikowski M., Biniakiewicz B., Mroczkowska M., Grześkowiak E., Konfliktowość na lekcjach wychowania fizycznego (Abrasive ness during physical education lessons), *Wychowanie Fizyczne i Sport*, 2006, 4: 249-256.
- [5] Brudnik M., Burnout in Physical Training Teachers a Macro-path of Professional Burnout, *Acta Universitatis Palackianae Olomucensis GIMNICA*, 2004, 34 (2): 7-17.
- [6] Brudnik M., Perception of self-efficacy and professional burnout in general education teachers, *Human Movement*, 2009, vol. 10 (2): 170-175.
- [7] Brudnik M., Professional burnout of female and male Physical Education teachers: a four-phase typological model, Books of Abstracts, 13<sup>th</sup> Annual Congress of the European College of Sport Science, 9-12 July 2008, Estoril – Portugal, ed. J. Cabri, F. Alves, D. Araujo, J. Barreiros, J. Diniz, A. Veloso, Faculdade Tecnica de Lisboa, Faculdade de Motoricidade Humana, Lisboa 2008, p. 622.
- [8] Brudnik M., Skala obciążenia psychicznego (H. Sęk, M. Brudnik) – wersja dla nauczycieli wychowania fizycznego (Scale of mental strain [H. Sęk, M. Brudnik] – a version for physical education teachers), (in:) R. Bartoszewicz, T. Koszyc, A. Nowak, eds., Dydaktyka wychowania fizycznego w świetle współczesnych potrzeb edukacyjnych

- (Didactics of physical education in view of contemporary educational needs), AWF, Wrocław 2005, pp. 377-385.
- [9] Brudnik M., Uczeń podczas lekcji wychowania fizycznego – zachowania utrudniające pracę nauczyciela (A pupil during physical education lesson – behaviors that hinder teacher's work), *Forum Oświatowe*, 2009, 40 (1): 103-121.
- [10] Brudnik M., Vocational personality of a physical education teacher, *Human Movement*, 2007, 8 (1): 46-56.
- [11] Brudnik M., Zachowanie uczniów podczas lekcji a wypalenie się nauczycieli wychowania fizycznego (Behavior of pupils during a lesson and burnout among physical education teachers), *Kultura Fizyczna*, 2008, LXII (7-8): 23-28.
- [12] Chwalisz K., Altmaier E.M., Russell D.W., Casual attributions, self-efficacy cognitions, and coping with stress, *Journal of Social and Clinical Psychology*, 1992, 11: 377-400.
- [13] Egyed C.J., Short R.J., Teacher Self-Efficacy, Burnout, Experience and Decision to Refer a Disruptive Student, *School Psychology International*, 2006, 27 (4): 462-474.
- [14] Evers W.J.G., Brouwers A., Tomic W., Burnout and self-efficacy: a study on teachers' beliefs when implementing an innovative educational system in the Netherlands, *British Journal of Educational Psychology*, 2002, 72: 227-243.
- [15] Forey W.F., Christensen O.J., England J.T., Teacher burnout: A Relationship with Holland and Adlerian Typologies, *Individual Psychology*, 1994, 50 (1), Academic Search EBSCO.
- [16] Friedman I.A., Student behavior patterns contributing to teacher burnout, *Journal of Educational Research*, 1995, 88 (5): 281-289.
- [17] Gaś Z.B., Poczucie skuteczności profesjonalnej nauczycieli o różnym stażu pracy, (A sense of professional effectiveness in teachers of various job seniority), *Przegląd Psychologiczny*, 2002, 45 (1): 57-74.
- [18] Gaś Z.B., Kwestionariusz SWZN jako narzędzie analizy jakości funkcjonowania zawodowego nauczycieli w sytuacji stresowej (The SWZN questionnaire as a tool for analyzing the quality of professional teacher behavior in stressful situations), (in:) Z.B. Gaś, eds., *Badanie zapotrzebowania na profilaktykę w szkole. Poradnik dla szkolnych liderów profilaktyki (Studies of a need for prevention in school. A guide for school leaders in prevention)*, Fundacja „Masz Szansę”, Lublin 2004, pp. 61-75.
- [19] Golembiewski R.T., Mauzenrider R.F., *Stress in organizations: Toward a phase model of burnout*, New York 1986.
- [20] Górska I., Nauczyciel wobec agresji w szkole – radzenie sobie ze stresem i obciążeniem psychicznym w kontekście syndromu wypalenia zawodowego (komunikat z badań) (A teacher in face of aggression in school – coping with stress and mental strain in the context of professional burnout syndrome [a research report]), (in:) A. Rejzner, eds., *Agresja w szkole: spojrzenie wieloaspektowe (Aggression in school: a multi-aspect view)*, WSP TWP, Warszawa 2004, pp. 81-107.
- [21] Grzegorzewska M.K., Stres w zawodzie nauczyciela. Specyfika, uwarunkowania i następstwa (Stress in teacher profession. Specificity, determinants and consequences), Wydawnictwo Uniwersytetu Jagiellońskiego, Kraków 2006.
- [22] Hodges Kulinna P., Conthran D.J., Regualos R., Teacher's Reports of Student Misbehavior in Physical Education, *Research Quarterly for Exercise and Sport*, 2006 (77) 1: 32-40.
- [23] Holland J.L., *Making vocational choices: A theory of vocational personalities and work environments*, Psychological Assessment Recourses Inc, Odessa 1992, FL 1992.
- [24] Juczyński Z., Skala Uogólnionej Własnej Skuteczności – GSES (Generalized Self- Efficacy Scale), (in:) *Narzędzia pomiaru w promocji i psychologii zdrowia (Measuring tools in health promotion and psychology)*, Pracownia Testów Psychologicznych PTP, Warszawa 2001, pp. 93-98.
- [25] Łącała A., Noworol C., Beauvale A., Zestaw do samobadania – wersja S. Podręcznik dla doradców zawodowych. Polska adaptacja wersji ZdS S-1994 (Self-directed Search kit – version S. A textbook for career advisor. A Polish adaptation of S-1994 version of SDS), Ministerstwo Pracy i Polityki Społecznej, Warszawa 2002.
- [26] Martin J.J., McCaughtry N., Kulinna P.H., Cothran D., The impact of a social cognitive theory-based intervention on education teacher self-efficacy, *Professional Development in Education*, 2009, 35 (4): 511-529.
- [27] Maslach C., *A multidimensional Theory of Burnout*, (in:) C.L. Cooper, ed., *Theories of organizational stress*, Oxford University Press, New York 1998, pp. 68-85.
- [28] Maslach C., Jackson S., *Maslach Burnout Inventory*. Consulting Psychologists Press, Paolo Alto 1986.
- [29] Noworol C., *Zarządzanie wypaleniem czy wypalenie zarządzania: zespół wypalenia zawodowego (Managing burnout or burning out management)*.

- Professional Burnout Syndrome), (in:) T. Borkowski, A. Marcinkowski and A. Oherow-Urbaniec, eds., W kręgu zarządzania. Spojrzenie Multidyscyplinarne (Around management. A multidisciplinary insight), Księgarnia Akademicka, Kraków 2000, pp. 47-62.
- [30] Oleś P.K., Wprowadzenie do psychologii osobowości (Introduction to psychology of personality), Wydawnictwo Naukowe Scholar, Warszawa 2003.
- [31] Pas E.T., Bradshaw C.P., Hershfeldt P.A., Leaf P.J., A Multilevel Exploration of the Influence of Teacher Efficacy and Burnout on Response to Students Problem Behavior and School-Based Service Use, *School Psychology Quarterly*, 2010, 25 (1): 13-27.
- [32] Sęk H., Uwarunkowania i mechanizmy wypalenia zawodowego w modelu społecznej psychologii poznawczej (Determinants and mechanisms of burnout in the model of social cognitive psychology), (in:) H. Sęk, ed., Wypalenie zawodowe. Przyczyny i zapobieganie (Professional burnout. Causes and prevention), Warszawa PWN, Warszawa 2004, pp. 83-112.
- [33] Skaalvik E.M., Skaalvik S., Teacher self-efficacy and teacher burnout: A study of relations, *Teaching and Teacher Education*, 2010, 26 (4):1059-1069.
- [34] Terelak J., Człowiek i stres (Man and stress), Oficyna Wydawnicza Branta, Bydgoszcz-Warszawa 2008.
- [35] Terelak J., Górka Z., Kowalska M., Martyński M., Zub A., Nauczyciele (Teachers), (in:) J. Terelak ed., Stres zawodowy: charakterystyka psychologiczna wybranych zawodów stresowych (Professional stress: psychological characteristics of selected stress-inducing professions), Wydawnictwo Uniwersytetu Karola Stanisława Wyszyńskiego, Warszawa 2007, pp. 238-243.
- [36] Tucholska S., Wypalenie zawodowe u nauczycieli (Burnout in teachers), Wydawnictwo KUL, Lublin 2003.
- [37] Wolan T., Uwarunkowania i tendencje do brutalizacji zachowań dzieci i młodzieży (w okresie transformacji ustrojowej w Polsce) (Determinants and tendencies towards behavior brutalization in children and adolescents [during political transformation in Poland]), *Chowanna*, 2009, 32 (1): 133-153.