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Risk Assessment of Professional Emotional Burnout Development in School Teachers With Different Activity Profiles

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Abstract
Introduction. The relevancy of the study is attributed to the increase of professional and social requirements for teachers work in the course of school education reforming, which is accompanied, undoubtedly, by their high emotional tension. In this study, we aimed to assess the risk of professional emotional burnout in school teachers with different activity profiles. It is the first time that the authors make a comparative study of phase development and pronounced burnout symptoms in primary school teachers, subject teachers and school authorities. Analysis of correlation relationships between age, teaching experience, neuropsychic adaptation performance and emotional burnout in school teachers with different activity profiles is carried out.
Methods. The study included 145 teachers at the age of 24–68 years old from 6 Magadan schools. In the course of the study, the teachers were divided into three groups taking into account teachers' activity profile. Emotional burnout indices were measured using questionnaire "Diagnostics of Emotional Burnout Level" by V. V. Boyko. To determine the level of neuropsychic adaptation, the questionnaire by I. N. Gurvich was used.
Results and Discussion. Stage formation and evidence of burnout symptoms in school teachers with different activity profiles are studied in comparative aspect. Correlation relationships between age, teaching experience and emotional burnout in school teachers with different activity profiles are found out. The level of teachers' neuropsychic adaptation is studied. Correlation relationships between neuropsychic adaptation and emotional burnout in school teachers with different activity profiles are found out. It is shown that the development of emotional burnout syndrome in school teachers takes place against the background of neuropsychic adaptation disorder and neuroticizm formation.

Keywords
primary school teachers, subject teachers, school authorities, activity profile, emotional burnout syndrome, neuroticizm, neuropsychic adaptation

Highlights
► In three groups of survey teachers with different activity profile, "tension" and "exhaustion" phases are not developed; "resistance" phase is in the development stage.
► A great number of correlation relationships between age, teaching experience and emotional

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burnout symptoms are found out in the group of subject teachers, less – in the group of primary school teachers, no such are found in the group of school authorities.
► Ascertained positive correlation relationships between neuropsychic adaptation level and emotional burnout phases and symptoms testify to the risk of syndrome development in teachers with psychic adaptation disorder.

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Introduction

In the context of education reform in Russia, the role of professional and social requirements to teachers' activity has been increasing. The profession of a teacher belongs to the job cluster with heightened risk of development of neuropsychic disorders, psychosomatic and other diseases (Mitina & Asmakovets, 2001; Sorokina & Popova, 2012). Professional activity of a school teacher is accompanied by an increased emotional tension and is associated with continuous effect of conflicting, intensive emotional stress factors on the nervous system (Akhmerova, 2010). At a certain level of organism tension, numerous symptoms of professional burnout syndrome tend to appear (Boyko, 2004; Maslach & Leiter, 2008; Maslach, Schaufeli, & Leiter, 2001).

Literary data testify to the fact that neurotic behaviour, irritability, anxiety, and emotional lability increase along with an extension of teaching experience. Thus, statistically significant relation between burnout and age, sex and marital status has been stated in the course of research studies (Al-Asadi, Khalaf, Al-Waaly, Abed, & Shami, 2018). It is shown that age has inverse correlation with emotional burnout (Russell, Altmaier, Van Velzen, 1987; Lackritz, 2004). Teachers with long-term professional teaching experience (from 10 to 20 years) are most vulnerable to burnout (Molchanova, 2009). The following risk factors have the greatest impact on teachers' psychological health: psychological discomfort, social disadaptation, life-organization pattern, and emotional disorders (Sorokina & Popova, 2012).

Teaching profession profile defines the degree of risk of psychological burnout development (Molchanova, 2009, 2011). L. N. Molchanova and other research fellows (Molchanova, 2009, 2011; Tsigilis, Zournatzi, & Koustelios, 2011) have shown that the most stressful is the work of primary school teachers. The environment of their educational work is associated with a relatively constant group of pupils of the same age, paperwork overload, obligatory homework checking and preparation for the lessons, in many cases at the expense of both family and personal life and of leisure time. Vice versa, subject teachers have mixed age enrolment and periodic frequency of contacts with one and the same pupil enrolment (Molchanova, 2009, 2011; Tatar & Horenczyk, 2003).

Some of the researchers have found out that primary school teachers are more susceptible to severe emotional exhaustion and less – to depersonalization, than their secondary school colleagues (Unterbrink et al., 2007; Vercambre, Brosselin, Gilbert, Nerrière, & Kovess-Masféty, 2009). The others have shown that secondary school teachers do not differ from their primary school

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colleagues in emotional exhaustion (Byrne, 1991; Van Horn, Schaufeli, Greenglass, & Burke, 1997). There are reports that burnout is more prevailing among secondary school pedagogues than among primary school teachers (Anderson & Iwanicki, 1984; Schwab, Jackson, & Schuler, 1986). In the course of the research, no significant differences are found between school principals and teachers in the following burnout aspects: emotional exhaustion, depersonalization and job satisfaction (Sari, 2004). On the other hand, managers are more susceptible to burnout than subordinate employees, since they have to be in charge of many issues. This results in fatigue from responsibility (Friedman, 2002). Work overload and interaction with staff are among the predictors of job dissatisfaction and psychogenic disorders (Friedman, 2002; Cooper & Kelly, 1993).

According to the data in literature, both individual and personal characteristics of the teachers and stress at work are associated with burnout indices (Cano-Garcia, Padilla-Muñoz, & Carrasco-Ortiz, 2005). However, neuroticism is a general predictor of all burnout aspects (Kokkinos, 2007). Emotional burnout results in the increased risk of both formation of different psychogenic-conditioned disorders and disadaptation processes (Maslach & Leiter, 2008; Schaufeli, Leiter, & Maslach, 2009). Our studies have shown (Bartosh, Bartosh, & Mychko, 2018) that professional activity and social dissatisfaction are among the components of teachers' psychic adaptation disturbance. The teachers of the Magadan Region are characterized by increased fatigability, weakness, inactivity, and instability of nervous processes (Bartosh & Bartosh, 2010). However, comparative study of teachers of different disciplines is insufficient. In view of the foregoing, the study of health disorder risk of Magadan school teachers with different activity profiles is of our main interest.

In this research, we *aim* to assess the risk of professional emotional burnout in school teachers with different activity profiles.

Methods

Totally 145 female teachers from 6 Magadan schools aged from 24 to 68 years old were included in the study, of which 36 individuals were primary school teachers (Group 1). The mean age was 43,7 ± 1,75 years, teaching experience – 20 ± 1,82 years. We also included in the study 95 subject teachers (Group 2) with the mean age 44,4 ± 1,17 years and teaching experience of 21 ± 1,14 years. The study included 14 school authorities representatives: school principals and deputy principals (Group 3); the mean age – 48,2 ± 2,40 years, professional service – 27 ± 2,39 years. The study was carried out at the end of the school year (in May). Participation in the study was voluntary, with informed consent and in compliance with biomedical ethics requirements of the Declaration of Helsinki.

To evaluate the risk of professional emotional burnout formation, we used questionnaire "Diagnostics of Emotional Burnout Level" proposed by V. V. Boyko (Boyko, 2004; Raygorodsky, 2011). G. Selye's theory of stress formation and development was taken as a methodological basis. Syndrome of emotional burnout (SEB) development includes 3 phases ("tension", "resistance", and "exhaustion"); each of these includes 4 symptoms. The intensity of each symptom varies within 0–30 scores: 9 or less – symptom has not developed; 10–15 scores – symptom is developing; 16 scores or more – symptom had developed. In each of the phases, estimation within range of 0–120 scores can be made: 36 scores or less – phase has not formed; 37–60 scores – phase is forming; 61 scores or more – phase had formed. The total: 108 scores or less – low values, 109–108 scores – mean value, 181 scores or more – high values (Boyko, 2004; Raygorodsky, 2011). Neuropsychic adaptation (NPA) was analyzed using the questionnaire which allows to diagnose prenosological, subclinical status similar to neurosis-like disorders (Gurvich, 1992).

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Statistical analysis of the data was carried out using license software packages Excel-97 and Statistica-10. The parameters were processed by the methods of parametric and nonparametric statistics. Sampling check for normalcy of distribution was made using the Shapiro–Wilk test. Reliability of differences between the scores was analyzed using the Student's t-test (under conditions of normal distribution) and the Mann–Whitney test (under conditions of abnormal distribution). Calculations of the arithmetic mean (M), its error (± m), median (Me) and interquartile range at 25th and 75th percentiles (C25 и C75) were made. The differences were considered statistically significant at $p < 0,05$. Dependence of the parameters was stated using Spearman's correlation coefficient.

Results and Discussion

Comparative analysis of mean values of emotional burnout level in survey groups of teachers with different activity profile is shown in Table 1.

Table 1

Indices of emotional burnout symptoms manifestation among teachers of different groups

Groups	Emotional burnout syndrome: Tension phase, symptoms *M ± m* (*Me*; *C25*, *C75*)				Total score
	t 1	t 2	t 3	t 4	
1	11 ± 1,5(10;3,8,20)	6 ± 0,8(6;3,10)	5 ± 0,1(2;0,7)	8 ± 1,3(5;2,8,12)	30 ± 4,0(25;14,41)
2	12 ± 0,9(12;3,5,20)	7 ± 0,5(8;3,10)	6 ± 0,7(5;0,10)	8 ± 0,6(5;3,11)	33 ± 2,0(33;17,45)
3	12 ± 2,3(10;6,18)	5 ± 1,1(4;0,8,8)*2–3	5 ± 1,4(4;0,6)	8 ± 2,4(6;0,15)	30 ± 5,6(27;14,41)
Groups	Resistance phase, symptoms				Total score
	r 1	r 2	r 3	r 4	
1	14 ± 1,1(15;10,19)	10 ± 0,1(10;5,15)*1–3	13 ± 1,5(12;5,19)	15 ± 1,5(17;7,22)	51 ± 3,3(50;39,67)
2	16 ± 0,7(17;12,21)*1–2	11 ± 0,6(10;7,15)	10 ± 1,1(7;2,5,20)	14 ± 0,8(15;7,20)	52 ± 2,2(49;37,67)
3	16 ± 1,4(17;13,17)	14 ± 1,8(16;8,19)	13 ± 2,3(11;5,20)	15 ± 2,2(17;8,22)	58 ± 4,1(60;46,66)

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Table 1

Indices of emotional burnout symptoms manifestation among teachers of different groups

Groups	Exhaustion phase, symptoms				Total score
	e 1	e 2	e 3	e 4	
1	9 ± 1,3(7;2,8,13)	6 ± 0,9(4;3,10)	7 ± 0,1(5;0,10)	12 ± 1,2(10;8,14)	34 ± 3,1(32;21,42)
2	9 ± 0,8(10;3,14)	8 ± 0,6(5;3,12)	7 ± 0,7(5;0,10)*2–3	10 ± 0,8(8;5,15)	35 ± 2,1(31;20,46)
3	7 ± 1,4(8;2,8,10)	6 ± 0,1(5;3,8)	4 ± 1,2(5;0,5)*1–3	8 ± 1,1(8;6,10)*1–3	26 ± 3,2(26;16,33)*1–3

Emotional burnout symptoms: t 1 – psychological traumatic experience; t 2 – dissatisfaction with oneself; t 3 – feeling of "being trapped in a cage"; t 4 – anxiety and depression; r 1 – inadequate emotional specific reaction; r 2 – emotional and moral disorientation; r 3 – widening of emotional thriftiness area; r 4 – professional duties reduction; e 1 – emotional deficiency; e 2 – emotional isolation; e 3 – personal detachment or depersonalization; e 4 – psychosomatic and psycho-vegetative disorders.

** – significant difference of survey indices between teachers from corresponding groups at p < 0.05*

Let us note that in three groups, tension phase is not developed. It is only the symptom of psychological traumatic experience that is formed. The rest of the three symptoms of tension phase are not developed. At that, significantly lower indices of "dissatisfaction with oneself" symptom among the representatives of Group 3, as compared with Group 2 ($p < 0,05$), can be observed. It can be expected that the representatives of school authorities are satisfied with their job and cope with the duties at the current position.

In all three groups, resistance phase is at the stage of development, and 4 symptoms of the phase are present (Table 1). Moreover, we have recorded a developed symptom of inadequate emotional specific reaction among the representatives of Groups 2 and 3, which was statistically significant and exceeded the mean value of Group 1 ($p < 0,05$). The symptom of emotional and moral disorientation was the most severe among school authorities representatives ($p < 0,05$) (Table 1).

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In all three groups, exhaustion phase is not developed; its component symptoms are not present. At the same time, there were reliable differences in the expressed values. The lowest score of exhaustion phase index is registered in the representatives of Group 3 ($p < 0,05$). Significantly lower indices of both depersonalization and psychosomatic and psycho-vegetative disorder symptoms were confirmed in the same group ($p < 0,05$) (Table 1).

Figure 1 displays the data of percentage distribution of the developed burnout phases (61 scores and more) and emotional burnout syndrome in the teachers with different activity profile.

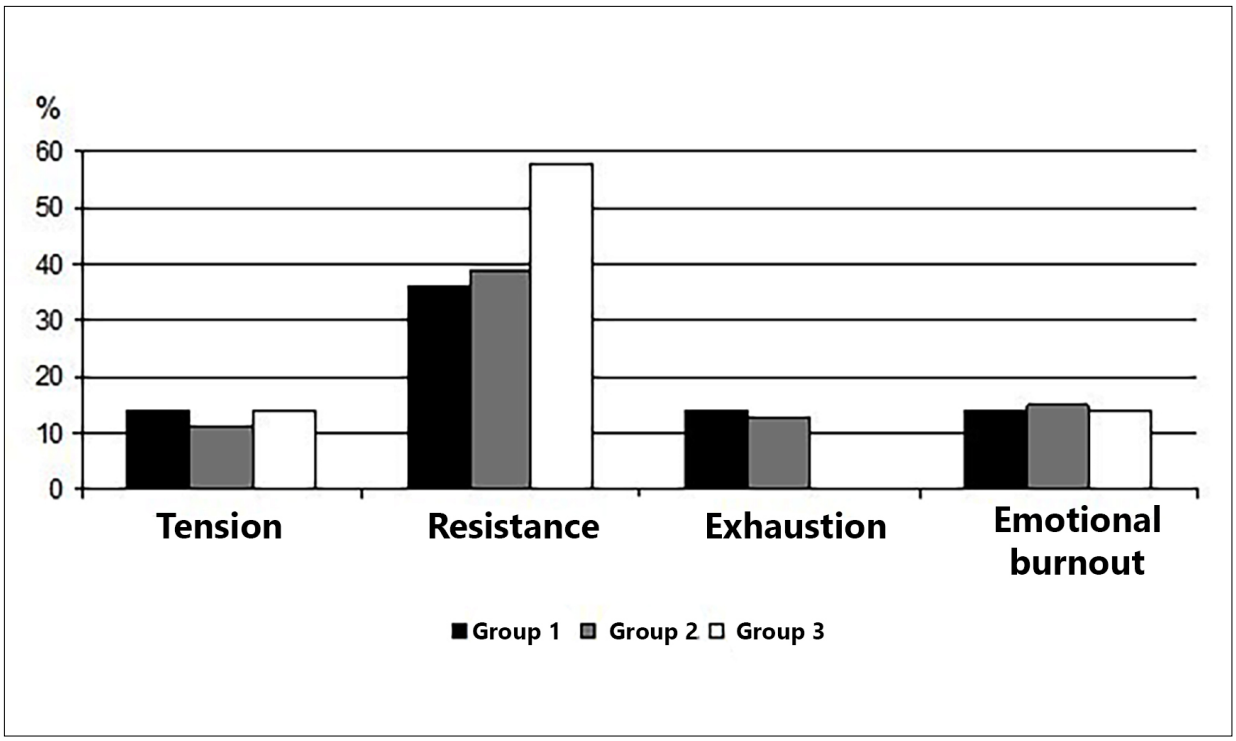

Figure 1. Percentage distribution of the developed phases and emotional burnout state in the teachers with different specialties

Conventional notation: group 1 – primary school teachers, group 2 – subject teachers, group 3 – school authorities representatives

Figure 1 illustrates that 11–14 % of teachers (except school authorities) suffer from tension and exhaustion phases. The syndrome of emotional burnout is diagnosed in 14–15 % of individuals of the three groups (had more than 181 scores in total), viz. 5 primary school teachers, 14 subject teachers, and 2 representatives of school authorities (school principal and deputy principal) (Fig. 1). Resistance phase is developed in more than a half of school authorities representatives, and in more than a third of individuals of other groups. They are characterized by a search for psychological comfort by means of emotional defenses, resulting in psychoemotional resources exhaustion.

Figures 2–4 display the data of percentage distribution of the developed symptoms (16 scores and more) of the three phases of emotional burnout syndrome in teachers of different groups.

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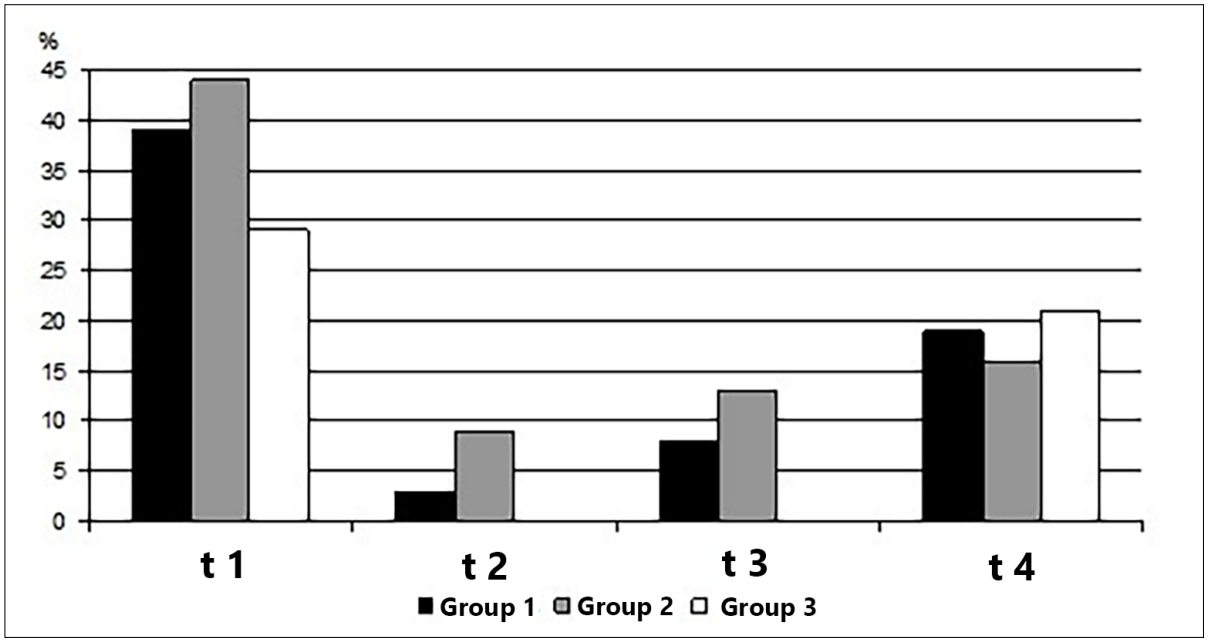

Figure 2. Percentage distribution of tension phase developed symptoms in teachers of different groups

Conventional notation: group 1 – primary school teachers, group 2 – subject teachers, group 3 – school authorities representatives; t 1 – psychological traumatic experience, t 2 – dissatisfaction with oneself experience, t 3 – "being trapped in a cage" experience, t 4 – anxiety and depression experience

Figure 2 shows data on psychological traumatic experience syndrome having been diagnosed in most survey teachers in the three groups. This is indicative of the fact that frustration, indignation and annoyance at professional activity factors are being accumulated; worry and dissatisfaction with oneself are being formed. Subsequently, anxiety and depression symptoms are beginning to develop. The symptoms of "being trapped in a cage" and dissatisfaction with oneself are not formed in the group of school authorities representatives. The latter is practically not pronounced in primary school teachers.

Figure 3 shows how "deeply" the symptoms of resistance phase in survey individuals are pronounced. Teachers' mental state is mostly burdened by the symptoms of inadequate emotional specific reaction and professional duties reduction. They are developed in 51–71 % of individuals. The formation of psychological defense takes place mainly through "the limitation of the range and intensity of involving emotions into professional communication against the background of emotional callosity, indifference, and attempt to simplify or reduce emotions-consuming responsibilities" (Boyko, 2004). The symptom of emotional and moral disorientation is diagnosed in more than a half of school authorities representatives. At the same time, in other groups this symptom is manifested at an average in 30 % of individuals. More than one-third of the teachers from three survey groups complain of communication fatigue, reporting the symptom of widening of emotional thriftiness area (Fig. 3).

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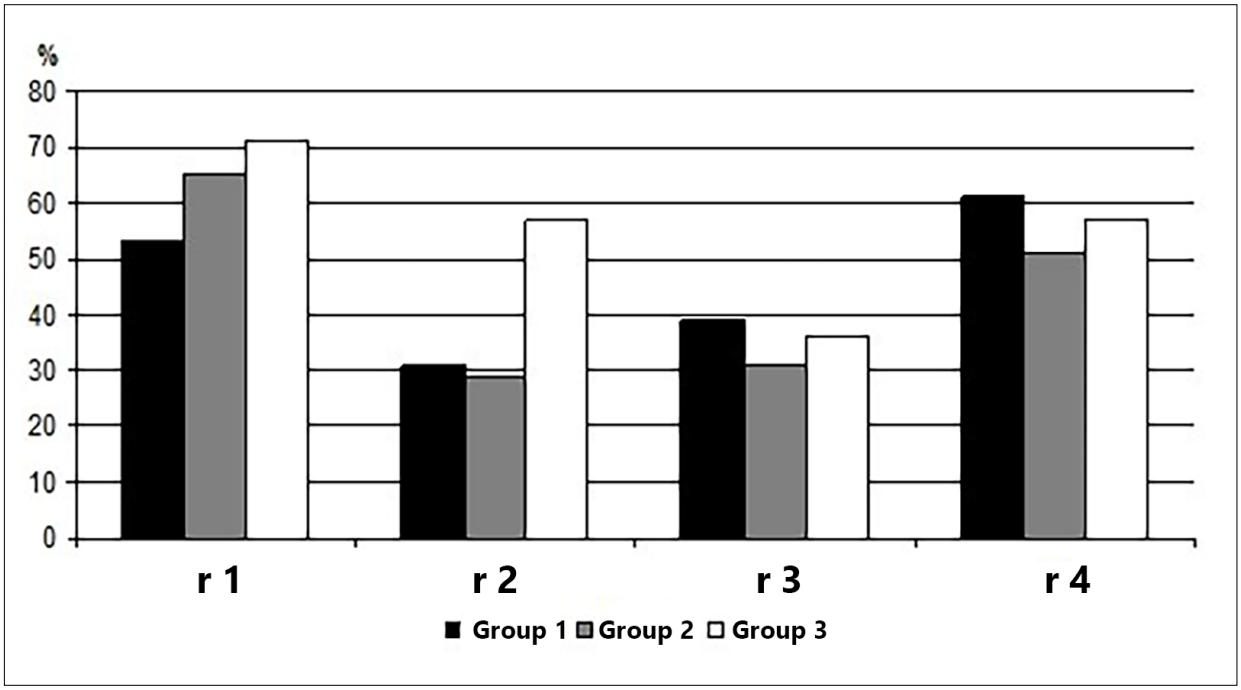

Figure 3. Percentage distribution of resistance phase developed symptoms in teachers of different groups

Conventional notation: group 1 – primary school teachers, group 2 – subject teachers, group 3 – school authorities representatives; r 1 – inadequate emotional specific reaction, r 2 – emotional and moral disorientation, r 3 – widening of emotional thriftiness area, r 4 – professional duties reduction

Figure 4 illustrates percentage distribution of pronounced exhaustion phase symptoms. One can see that the symptoms of emotional deficiency and psychosomatic and psycho-vegetative disorders are found in 25 % of primary school teachers. Positive emotions are observed more and more seldom, whereas negative – in increasing frequency. The change-over of the reactions from emotional level to psychosomatic level becomes apparent. The symptoms of personal detachment or depersonalization are diagnosed in 17–18 % of individuals. In this particular case, burnout, as an emotional protection, doesn't cope with the burden.

No high scores of emotional isolation and depersonalization symptoms are registered among the representatives of school authorities; emotional deficiency symptom is of little frequency as well. However, in 21 % of teachers from Group 3 there have been registered high scores of psychosomatic and psycho-vegetative disorders within exhaustion phase (Fig. 3). It is notable that although we hadn't found out individuals with developed exhaustion phase among school authorities representatives, emotional burnout was registered in 15 % of individuals chiefly owing to the pronounced resistance phase symptoms (Fig. 1–2).

Study of correlation relationships between teaching experience and age in all groups showed positive, reliably high and strong interconnection (0,92–0,94) ($p < 0,001$). Figure 5 (a, b) presents correlation pleiads of age and teaching experience indices in connection with burnout syndrome

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indices. The following number of relationships between age and SEB indices is found out: 6 negative relationships – in Group 1; 6 negative relationships and 1 positive with psychosomatic and psycho-vegetative disorders symptom – in Group 2. No correlation relationships between age, teaching experience and SEB symptoms are found in Group 3.

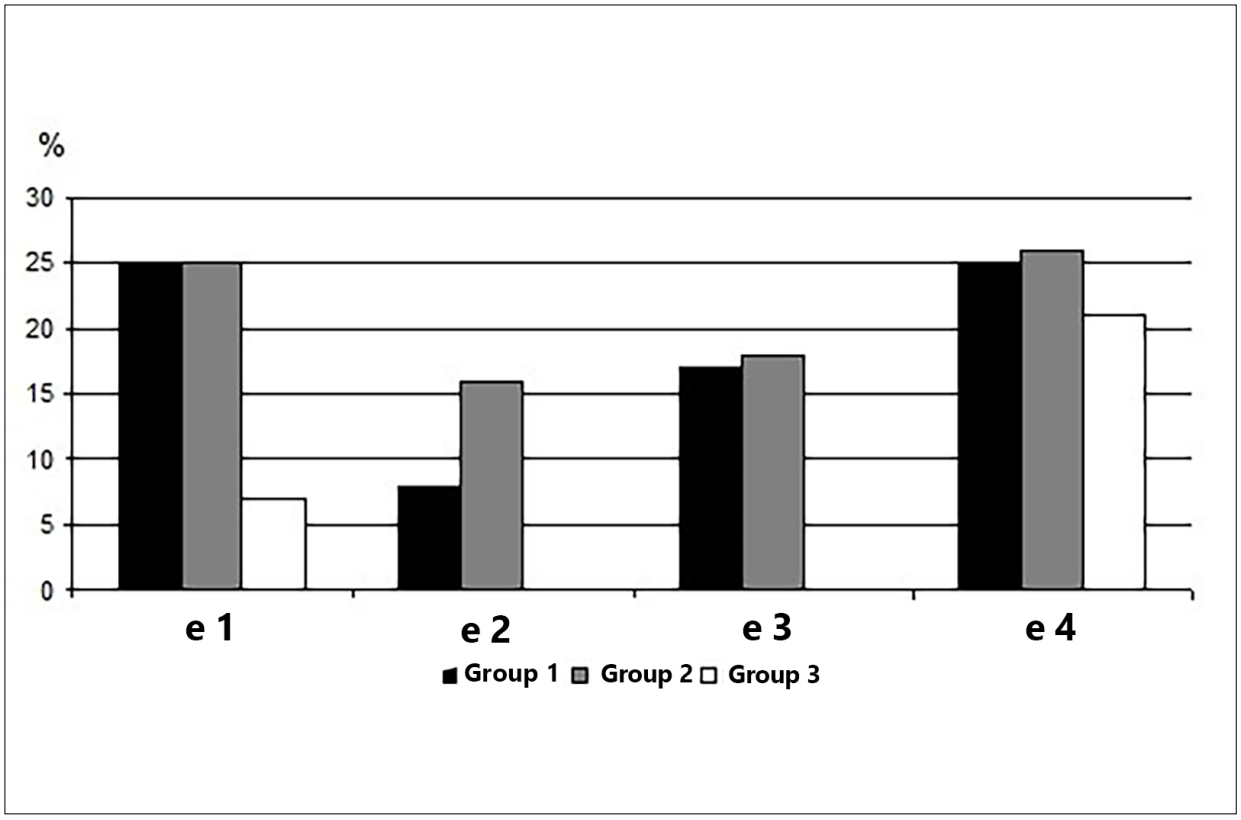

Figure 4. Percentage distribution of exhaustion phase developed symptoms in teachers of different groups

Conventional notation: group 1 – primary school teachers, group 2 – subject teachers, group 3 – school authorities representatives; e 1 – emotional deficiency; e 2 – emotional isolation; e 3 – personal detachment or depersonalization; e 4 – psychosomatic and psycho-vegetative disorders

In Group 1, age index has negative correlation relationship with tension and resistance phases, as well as with the symptoms of psychological traumatic experience, widening of emotional thriftiness area, personal detachment or depersonalization.

In Group 2, as shown in Figure 5a, age index is associated predominantly with 4 symptoms of exhaustion phase and 2 symptoms of tension phase: psychological traumatic experience and feeling of "being trapped in a cage".

In Group 1, correlation analysis of teaching experience index and SEB symptoms (Fig. 5b) showed a positive relationship to tension phase and single correlation relationships to the symptoms of different phases: psychological traumatic experience, inadequate emotional specific reaction, personal detachment or depersonalization ($p < 0,05$).

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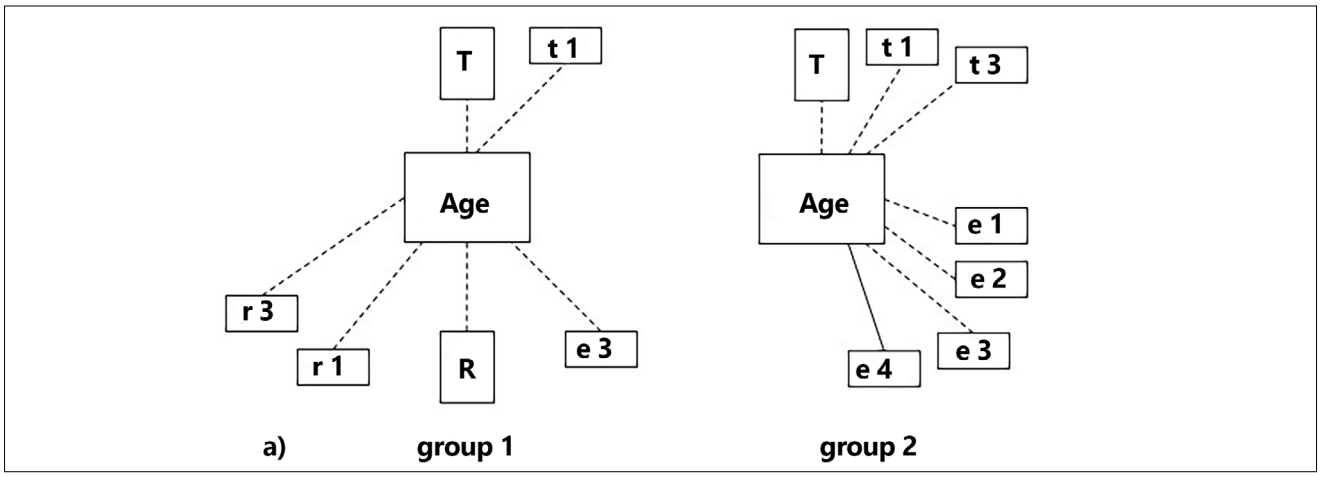

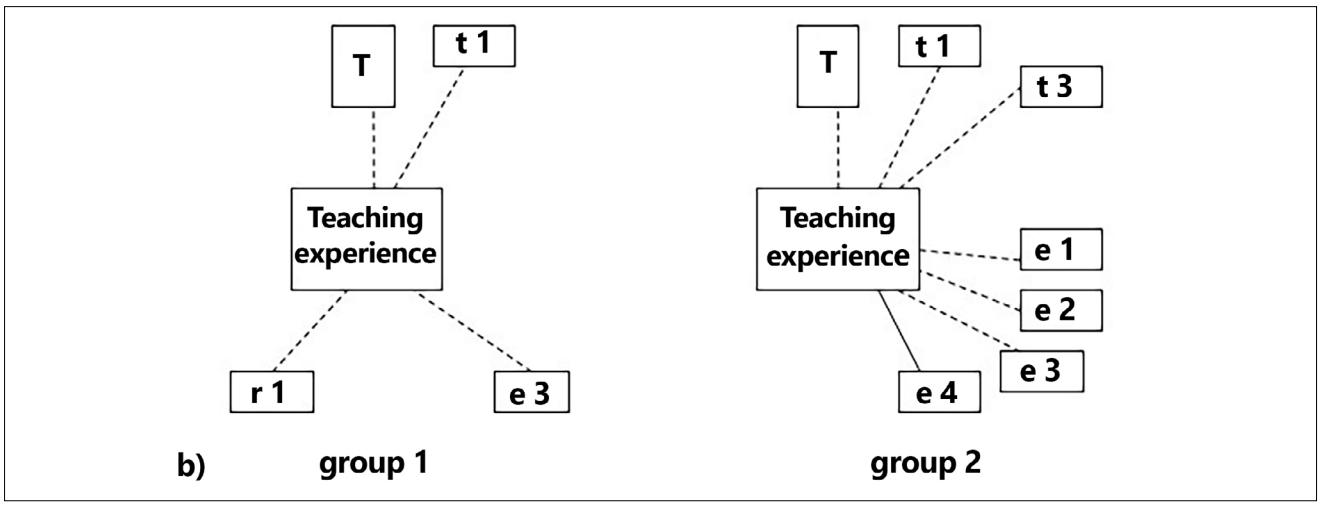

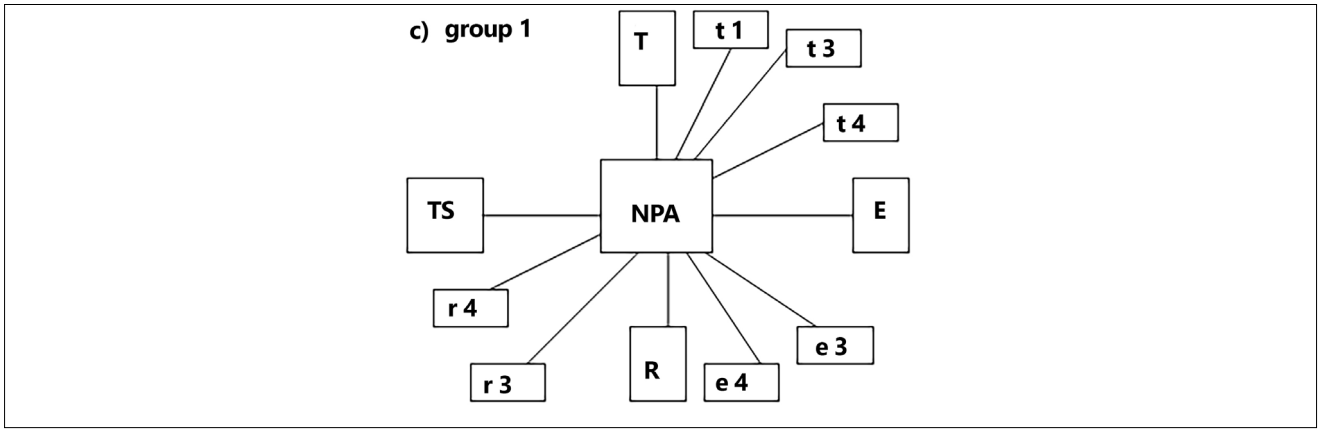

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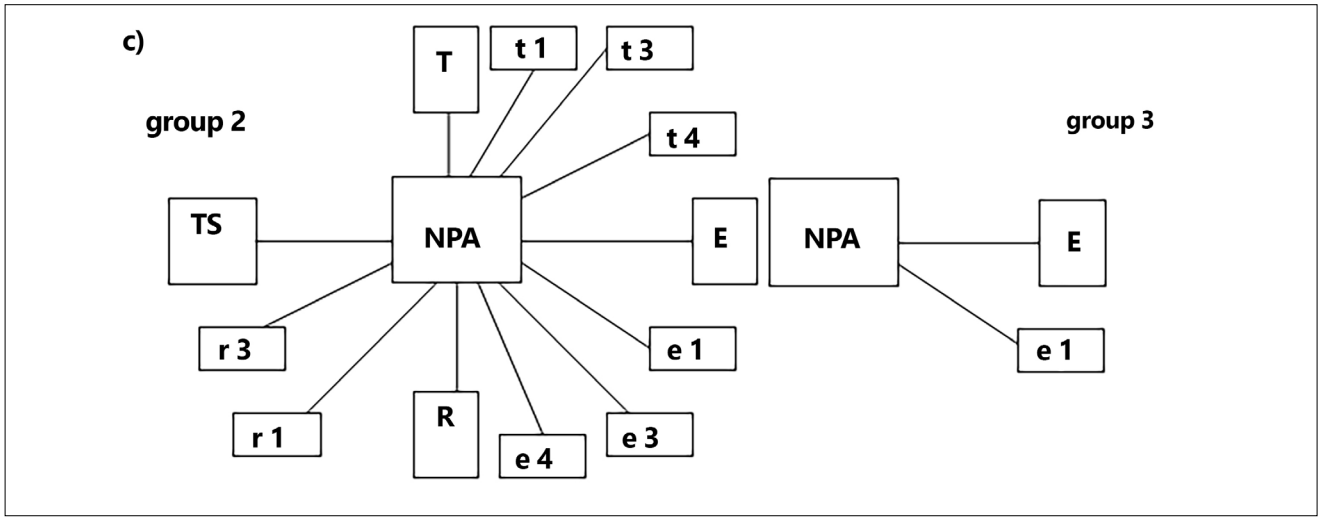

Figure 5. Correlation relationships between age (a), teaching experience (b), NPA (c) and burnout syndrome indices

Legend: T – «tension», R – «resistance», E – «exhaustion», NPA – neuropsychic adaptation; TS – total score of emotional burnout syndrome; t 1 – psychological traumatic experience; t 2 – dissatisfaction with oneself experience; t 3 – feeling of "being trapped in a cage" experience; н t – anxiety and depression experience; r 1 – inadequate emotional specific reaction; r 2 – emotional and moral disorientation; r 3 – widening of emotional thriftiness area; r 4 – professional duties reduction; e 1 – emotional deficiency; e 2 – emotional isolation; e 3 – personal detachment or depersonalization; e 4 – psychosomatic and psycho-vegetative disorders; (p < 0,05)

It is interesting to note that in teachers from Group 2 correlation relationships between age, teaching experience and burnout symptoms coincide completely, whereas in the group of primary school teachers a partial coincidence is found (Fig. 5a,b). We can see that pronounced psychosomatic and psycho-vegetative disorders will be developing with the increase of years and teaching experience, and this is a regular process. But as for subject teachers, in our particular case, professional stress may worsen teachers' general health status and lead to the faster development of emotional burnout syndrome, psychosomatic diseases and pathological disadaptation disorders.

In the course of the study of neuropsychic adaptation (NSA), it has been stated that teachers are diagnosed, at the average, with neuropsychic lability and evidence of stress: 27 ± 2,8; 28 ± 1,7; 22 ± 2,9 scores (in Groups 1–3, respectively). However, individual indices in survey Groups 1 and 2 varied from 2 to 60 scores, in Group 3 – 9–42 scores.

Correlation analysis of NPA and SEB index data is shown on pleiads (Fig. 5c). We can see a large number (11 и 12, respectively) of correlation relationships of NPA index to the three burnout phases and total score of burnout syndrome in teachers from Groups 1 and 2 ($p < 0,05$). In Group 3, there are only two correlation relationships viz. to exhaustion phase index and emotional deficiency symptom ($p < 0,05$). No correlation relationships between NPA and age and teaching experience are found out in all three groups of teachers.

Survey results showed that in all three groups of teachers with different activity profile, tension phase had not been developed. In this phase, the symptom of psychological traumatic experience begins to appear. In 29–44 % of teachers from three groups this symptom had already been developed.

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Resistance phase in three groups is at formation stage, and all 4 symptoms peculiar to this phase already begin to appear. Of these, the symptoms of inadequate emotional specific reaction and professional duties reduction are developed in 51–71 % of teachers from three groups. Exhaustion phase, at the average, is not developed; the symptoms peculiar to this phase are not formed. In this phase, the symptoms of emotional deficiency and psychosomatic and psycho-vegetative disorders are pronounced in 25 % of primary school and subject teachers. The latter is also present in 21 % of representatives of school authorities. Furthermore, they are distinguished by the lowest score of exhaustion phase. This reflects their greater psychological well-being as related to other groups of teachers. Emotional burnout syndrome is diagnosed in 14–15 % individuals from the survey groups; notably, in Group 3 the development of the syndrome is due to high scores of resistance phase symptoms.

The difference between the representatives of school authorities and compared groups of teachers lies in the fact that the former are not characterized by tension phase symptoms of dissatisfaction with oneself and feeling of "being trapped in a cage", as well as exhaustion phase symptoms of emotional isolation and depersonalization. On the whole, both decrease in the total energy tone and weakening of the nervous system are not pronounced. However, they differ by the most pronounced symptoms of anxiety and depression, emotional and moral disorientation. In this context, one can say that they "experience state or personal anxiety, permit oneself to be rude or inconsiderate to their colleagues, allow self-justification of cynical, emotionless attitude towards professional duties" (Boyko, 2004).

Study of correlation relationships between age, teaching experience and emotional burnout symptoms proved their maximum in the group of subject teachers, less – in the group of primary school teachers, and a total absence – in the group of school authorities. Accordingly, one can assume considerably high emotional tension in subject teachers. As far as the group of school authorities is concerned, perhaps, other factors (viz. subjective, personal) are likely to play role in burnout development. The research by Demyanchuk (2015) also reflected occurrence of single, strong and reliable relationships between the symptoms of emotional burnout, age and teaching experiences of the pedagogues.

Our data have shown that, at the average, three survey groups of teachers are diagnosed with neuropsychic lability. We have found out a considerable number of positive correlation relationships of neuropsychic adaptation level with 3 burnout phases and a large number of burnout symptoms in teacher groups 1 and 2.

Lack of correlation relationships of NPA index to age and teaching experience may testify that psychic adaptation disorders are not always associated with the latter; the leading part is rather attributed to personality determinant (e.g., emotional lability) and, probably, working conditions (objective factors, e.g., drawbacks in organizing teaching activities), which is supported by the literary data (Mitina & Asmakovets, 2001; Cano-Garcia et al., 2005). Consequently, emotional burnout syndrome development in teachers takes place at the background of neuropsychic disorder, neuroticism and pathological psychic disadaptation development, which has been proved by other researchers (Kokkinos, 2007).

Conclusion

In summary, our study showed similar pattern of emotional burnout state in primary school and subject teachers, while the group of school authorities representatives had its own peculiar features.

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However, in all three groups, resistance phase was the most pronounced. Teachers in their main have already developed individual ways of psychological defense against everyday stress at work.

Pronounced symptoms of emotional burnout may further depletion of psychoemotional resources, as well as affect adversely not only the professional performance but also lead to psychic adaptation disorder and neuroticism development.

Taking into account a considerable number of correlation relationships of NPA scale to emotional burnout indices, one can suggest that this scale should be used for express diagnostics of the risk of emotional burnout in teachers. The results of the study may be used both for working out psychohygienic arrangement and for prevention of emotional burnout among school teachers. Professional risk for teachers' health in the course of their working career needs further study.

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No conflict of interest

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