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The impact of professional activity on the health status of healthcare managers

Abstract

Introduction. Currently, the work of managers is characterized by a number of factors having an unfavorable impact on human health. Stress as the main risk factor related to the professional activity is considered to be the major cause of possible poor health among the managers. Depression may result from a stress overload of managers.

Aim. The authors wanted to determine the vulnerability to depression related to professional stress among healthcare managers and to assess gender and managerial work experience-specific differences.

Materials and methods. A total of 235 healthcare managers working in the Republic of Belarus with various length of managerial work experience (women n=142, men n=93; mean age 45.7±1.21 years) underwent a psychological testing aimed at determining their vulnerability to depression. The results of the study were analyzed using the STATISTICA 7.0 software.

Results. The vulnerability to depression in men differed from that in women (p=0.002). The predisposition to depression had significant differences between the groups with various experience of managerial work (p=0.03). The vulnerability to depression among healthcare managers increased with the length of managerial work. The highest level of vulnerability to depression was in healthcare managers with >20 years of experience (p=0.02) both in men (p=0.003) and in women (p=0.04).

Conclusion. Thus, acquiring professional competences as a factor contributing to stress resistance, skills of coping with stress and alleviating its impact on the health status is very important through the whole professional activity. Healthcare managers with the length of work experience of 1-5 years are especially in need of the appropriate knowledge and skills.

Keywords: health of managers, professional stress, vulnerability to depression.

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INTRODUCTION

Currently, the managerial work in modern organizations is characterized by a number of factors having an unfavorable impact on human health. Stress as the main risk factor related to the professional activity is considered to be the major cause of possible poor health among the managers.

The most important external factors leading to the emotional overload are extra-organizational changes, activity of superiors, and family changes and tension due to managerial performance [1,2]. Work-specific factors include responsibility for people, material and financial resources as well as bureaucracy, organizational culture and lack of guarantees to sustain a job [3,4]. Managerial process contributes to developing the professional stress due to emotional, informational and physical overload. These factors include expectations of the staff from the leader, social isolation, relations with colleagues and subordinates, work overload, lack of physical activity. The rhythm of managerial work is accelerated by simultaneous or consecutive challenges occurring in limited time intervals. Managers tend to work between 2 and 5 extra hours every day. Appointment to a managerial position is accompanied by an unpaid overtime caused by an insufficient level of professional

competences, including knowledge and skills in personal management [1,5].

Severe (prolonged), moderate or even mild stress contributes to the depletion of the mechanisms of adaptation. Constant emotional stress leads to psychosomatic diseases [6,7]. The negative character of emotional stress deteriorates the health leading to neurosis, with depression, loneliness and unexplained anxiety being its main manifestations. The managerial work can contribute to cardio-vascular and digestive systems diseases as an outcome of a prolonged central nervous system overload.

The burnout syndrome results from a continued impact of stress related to professional activity, exhaustion and accumulated fatigue [4,6]. Healthcare managers with a higher qualification level and leaders with managerial work experience of 10 years and more are less prone to the burnout [8].

Depression is a disadvantageous outcome of a stress overload among managers. Uncontrolled anxiety, anticipation of unfavorable events, lack of joy, psychological discomfort, and fears are consequences of a continuous stress. Anxiety caused by the fear becomes an obstacle to achieving the goals [9]. More frequently managers experience the fears to fail at work, to make a mistake and to lose the job.

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Depression is the most common reaction to stress. Unjustified expectations, unsatisfied ambitions, history of defeat and punishment, conflicts with superiors result in prolonged psychological pressure affecting the normal private life and work performance. Up to 10% of managers are vulnerable to the risk of depression [4].

During 2013-2014, the authors have done a research study a research exploring the predisposition to depression among healthcare managers in the Republic of Belarus.

AIM

The aim of the study was to determine the vulnerability to depression related to professional stress among healthcare managers and to assess gender- and managerial work experience-specific differences.

MATERIAL AND METHODS

Psychological questionnaires and statistical methods were used in the study. The investigative tool was the 20 “yes” or “no”-item questionnaire “Are you vulnerable to depression?” [10]. The conclusion about the health status of respondents was made after scoring the answers. The scores from 0 to 7 testified to minimal depression vulnerability showing the respondents to be quite happy and satisfied with their life. The scores from 8 to 15 demonstrated an increased vulnerability to depression and moderate depression, when negative emotions may result in a suppressed mood but with a potential to cope with this state. The scores of more than 15 indicated

the depression, which may be stable and requires the professional assistance.

A selective one-stage cross-sectional study has been carried out. A total of 235 healthcare managers took part in the survey. Women managers prevailed making 60.4% (142/235). The proportion of men managers amounted to 39.6% (93/235).

The mean age of managers was 45.7 ± 1.21 years, including 45.9 ± 1.44 for women and 45.3 ± 2.1 for men. The number of managers aged < 30 years was 7.2% (17/235), 31-40 years accounted for 23% (54/235), 51-60 years amounted to 23.4% (55/235) and >60 years – 6% (14/235). The persons ranging in age from 41 to 50 years prevailed in the study group and accounted for 40.4% (95/235) (Table 1).

Regarding the length of work experience, the respondents were divided into the following groups: <1 year – 12.8% (30/235), 1-5 years – 35.7% (84/235), 6-10 years – 19.1% (45/235), 11-15 years – 12% (28/235), 16-20 years – 10.6% (25/235) and >20 years – 9.8% (23/235). 48.5% (114/235) of respondents had the Experience as managers of <5 years amounting 52.8% (75/142) for women and 40.6% (39/93) for men. Every tenth participant of the study had the managerial experience of >20 years (23/235). The differences in men and women with respect to years of their managerial work experience were significant. The median length of managerial work experience made 6 years (Table 2).

The statistical analyses were carried out using the STATISTICA 7.0 software (StatSoft, Inc., Tulsa, Okla., U.S.A.).

TABLE 1. Gender- and age-specific distribution of healthcare managers (abs., %, M(95%CI)).

Age/years	Gender				Total		Significance n=235
	Men		Women				
	Abs.	%	Abs.	%	Abs.	%	
<30 years	6	4.2	11	11.8	17	7.2	Pearson Chi-square: 7.34, p=0.12
31-40 years	35	24.6	19	20.4	54	23	
41-50 years	61	43	34	36.6	95	40.4	
51-60 years	34	24	21	22.6	55	23.4	
>60 years	6	4.2	8	8.6	14	6	
Total	142	100	93	100	235	100	
Mean age (years)	45.3		45.9		45.7		K-S d=0.049 p>0.2 Shapiro-Wilk W=0.993 P=0.398
M(95%CI)	(44.9-45.7)		(45.8-46)		(45.6-45.8)		

TABLE 2. Gender- and length of managerial work-specific distribution of healthcare managers (abs., %, Me(25%-75%)).

Experience as managers in years	Gender				Total		Significance n=235
	Men		Women		Abs.	%	
	Abs.	%	Abs.	%			
<1 year	12	12.7	18	13	30	12.8	Pearson Chi-square: 7.22, p=0.2
1-5 years	27	40	57	29	84	35.7	
6-10 years	18	19	27	19.3	45	19.1	
11-15 years	10	12.7	18	10.7	28	12	
16-20 years	12	9,3	13	13	25	10.6	
>20 years	14	6.3	9	15	23	9.8	
Total	93	100	142	100	235	100	
Experience as managers in years Me(25%-75%)	8 (2-16)		5 (1.5-14)		6 (2-14)		Kolmogorov-Smirnov test d=0.16 p<0.01

RESULTS

In the study group, the vulnerability to depression (median and interquartile range) made 5 (2;7) scores, including 4 (2;6) for men and 5 (3;8) for women. Significant differences for depression vulnerability among men and women were identified (Mann-Whitney U-Test $z=3.03, p=0.002$).

Some 78% (183/235) of respondents demonstrated low depression vulnerability. Every fifth participant presented with moderate depression vulnerability. Yet, the proportion of women with moderate vulnerability was lower, making 72.5% (103/142) versus 86% (80/93) in men. The state of depression was identified only in women and accounted for 0.85% (2/235) from the total of the respondents and to 1.4% among all women (Figure 1). Significant differences for depression vulnerability among men and women were found (Pearson Chi-square: 6.48, $p=0.04$).

In the groups with various levels of depression vulnerability, the percentage of men and women differed. The ratio changed in favor of women who had progressively higher level of vulnerability to depression. In the group with low vulnerability to depression, the difference in the number of women and men was not significant, amounting to 56% (103/183) and 44% (80/183), respectively. In the group with moderate vulnerability to depression, the men to women ratio changed in favor of women (1 to 3). Two participants-women had a high level of vulnerability (Table 3).

The scores of depression vulnerability in healthcare managers with the length of experience as managers of <1 year (median and interquartile range) made 6 [3;10], in those with <5 years: 4 (2;6), 6-10 years: 4 (2;7), 11-15 years: 5 (2;5;8,5), 16-20: 4 (3;7), and >20 years: 7 (4;10). The analysis of predisposition to depression with respect to years of managerial work experience showed significant differences between the groups with various managerial experience (Kruskal-Wallis test: $H=12.38, p=0.03$).

A considerable number of respondents in each group distributed with respect to managerial work experience were not susceptible to depression. The share of respondents resistant to depression varied in the groups with various length of managerial experience, being the highest (85.5%) in groups of 1-5 years (71/84) and 6-10 years (38/45). The lowest scores were found in the groups with the length of managerial experience of <1 year and of 11-15 years accounting for 70% (21/30) and 68% (19/28), respectively. In the group of managers with the length of managerial work experience of >20 years, the number of persons with low depression vulnerability made 60.9% (14/23). On the contrary, the highest percentage among persons with moderate level of depression vulnerability was seen in the group with work experience of <1 year making 30% (9/30). In the groups with the length of work experience of 1-5 and 5-10 years, the proportion of persons with moderate vulnerability to depression decreased accounting for 15.5% (13/84 and 7/45, respectively). The proportion of managers presenting with a moderate vulnerability to depression increased to 25% (7/28) in the group with work experience of 11-15 years, then dropped to 17.8% (5/28) in the group of 16-20 years and then raised again reaching its maximum of 39.1% (9/23) for the group of >20 years (Figure 2). There were significant differences for depression vulnerability between the groups of managers with various length of work experience (Pearson Chi-square: 23.72, $p=0.008$).

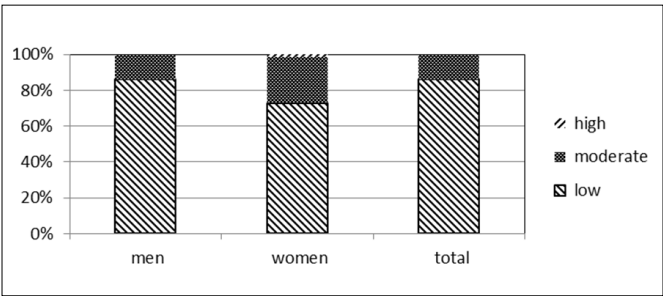


FIGURE 1. Gender-specific distribution of healthcare managers with respect to depression vulnerability (%).

TABLE 3. Gender-specific level of depression vulnerability among healthcare managers (abs., %).

Gender (n=235)	Level of depression vulnerability					
	Low		Moderate		High	
	Abs.	%	Abs.	%	Abs.	%
Men	80	44	13	26	0	0
Women	103	56	37	74	2	100
Total	183	100	50	100	2	100

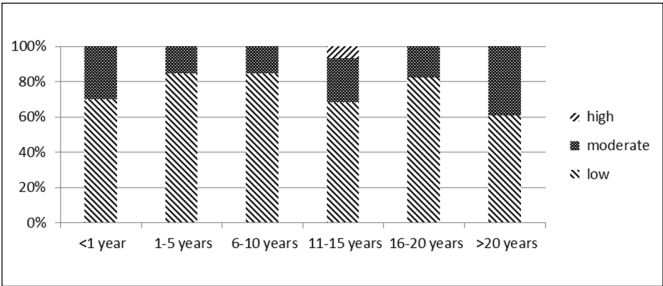


FIGURE 2. Length of work experience-specific distribution of healthcare managers with respect to depression vulnerability (%).

TABLE 4. Length of work experience-specific level of depression vulnerability among healthcare managers (abs., %).

Managerial work experience/years (n=235)	Level of depression vulnerability					
	Low		Moderate		High	
	Abs.	%	Abs.	%	Abs.	%
<1 year	21	11.5	9	18	0	0
1-5 years	71	38.8	13	26	0	0
6-10 years	38	27.8	7	14	0	0
11-15 years	19	10.4	7	14	2	100
16-20 years	20	10.9	5	10	0	0
>20 years	14	7.6	9	18	0	0
Total	183	100	50	100	2	100

Managers with the length of work experience of 1-5 years presented the largest proportion in all the groups with different depression vulnerability. They made 38.8% (71/183) of persons with low depression vulnerability and 26% (13/50) among those with increased level. Two cases of high depression vulnerability were identified in the group of 11-15 years of managerial experience making 100% (Table 4).

Significant differences for depression vulnerability were revealed in the following groups of managers with various length of work experience: <1 year and 1-5 years (Mann-Whitney U-Test $z=2.22, p=0.03$), 1-5 and >20 years (Mann-Whitney U-Test $z=-2.83, p=0.004$), 6-10 and >20 years (Mann-Whitney U-Test $z=-2.28, p=0.02$). The vulnerability to depression

among healthcare managers grew with increased length of managerial experience. The changes in the vulnerability to depression were identified in managers with work experience of <1 year, 1-5 years and >20 years. The managers with the length of work experience >20 years have the highest vulnerability to depression.

Among men managers with work experience (median and interquartile range) of <1 year, the depression vulnerability scores made 4 (2;6), <5 years: 4 (2;6), 6-10 years: 4 (2;6), 11-15 years: 4 (2;6), 16-20 years: 4 (2;6), and >20 years: 3 (2;6). There was a significant difference for depression vulnerability among men managers with various length of work experience (Kruskal-Wallis test: $H=10$, $p=0.04$).

In all the groups distributed with respect to managerial work experience, a considerable proportion of respondents had low depression vulnerability. In the group of men managers with 16–20 years of work experience, the highest percentage of persons with high level of resistance to depression was identified accounting for 100% (12/12). The proportion of managers with high resistance to depression was rather large in the groups with <1 year of experience making 83.3% (10/12), amounting to 92.6% (25/27) in the group of 1-5 years and to 89% (16/18) in the group of 6-10 years. The largest proportion of men managers with increased vulnerability to depression was seen in the group of 11-15 years and in the group of >20 years of experience accounting for 30% (3/10) and 28.5% (4/10), respectively (Figure 3). The difference for vulnerability to depression in men managers with various managerial work experience lacked significance (Pearson Chi-square: 7.73, $p=0.17$).

Among men managers, 31.3% (25/80) of persons with low vulnerability to depression had the length of managerial work experience of 1-5 years. Men with >20 years of work experience made 30.8% (4/13) among persons with increased depression vulnerability. The participants from the groups of <5, 1-5 and 6-10 years of work experience had equally low proportion of 15.4% (Table 5).

Significant vulnerability to depression was found among men managers with various managerial work experience: groups with 1-5 and >20 years (Mann-Whitney U-Test $z=-2.56$, $p=0.01$) and groups with 11-15 and >20 years (Mann-Whitney U-Test $z=-2.12$, $p=0.003$). Among men managers, with increased work experience, the resistance to depression fell and reached its minimum after 20 years of managerial work.

Women managers had the scores (median and interquartile range) as follows: 5 (3;8) for those with managerial work experience <1 year, 5 (4;9) for <5 years, 5 (3;8) for 6-10 years, 5 (3;8) for 11-15 years, 5 (3;8) for 16-20 years, and 5 (3;8) for >20 years. The differences for depression vulnerability among women managers with various experience of managerial work lacked significance (Kruskal-Wallis test: $H=7.13$, $p=0.13$).

Women managers having low vulnerability to depression prevailed in all the groups distributed with respect to length of their work experience. Their largest proportion of 81.5% (22/27) was noted in the group of 6-10 years of work experience, 80.7% (46/57) were identified in the group of 1-5 years. The highest proportion of 38.5% (5/13) among participants with increased vulnerability to depression was revealed in the group of >20 years of work experience. The group of 11-15 years included 2 participants with the high predisposition to depression making 11.2% (2/18). The number of women managers with low vulnerability to depression was the smallest

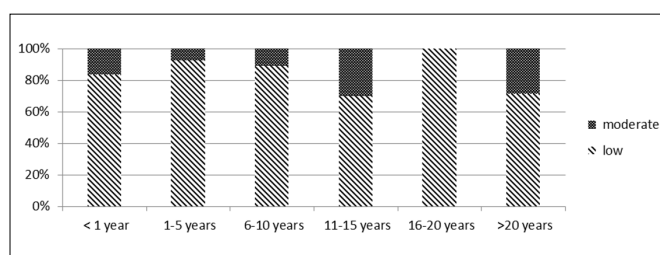


FIGURE 3. Length of work experience-specific distribution of men healthcare managers with respect to depression vulnerability (%).

TABLE 5. Length of work experience-specific level of depression vulnerability among men healthcare managers (abs., %).

Managerial work experience/years (n=93)	Level of depression vulnerability					
	Low		Moderate		High	
	Abs.	%	Abs.	%	Abs.	%
<1 year	10	12.5	2	15.4	0	0
1-5 years	25	31.3	2	15.4	0	0
6-10 years	16	20	2	15.4	0	0
11-15 years	7	8.7	3	23	0	0
16-20 years	12	15	0	0	0	0
>20 years	10	12.5	4	30.8	0	0
Total	80	100	13	100	0	0

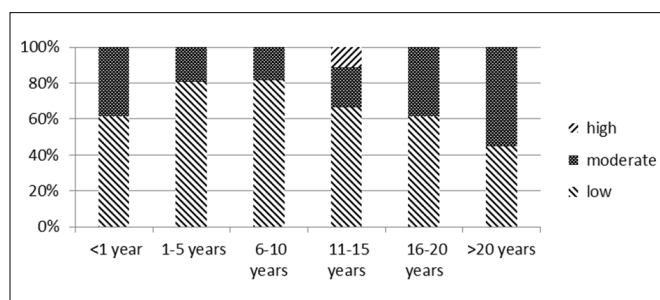


FIGURE 4. Length of work experience-specific distribution of women healthcare managers with respect to depression vulnerability (%).

TABLE 6. Length of work experience-specific level of depression vulnerability among women healthcare managers (abs., %).

Managerial work experience/years (n=142)	Level of depression vulnerability					
	Low		Moderate		High	
	Abs.	%	Abs.	%	Abs.	%
<1 year	11	10.7	7	18.9	0	0
1-5 years	46	44.7	11	29.7	0	0
6-10 years	22	21.3	5	13.6	0	0
11-15 years	12	11.6	4	10.8	2	100
16-20 years	8	7.8	5	13.5	0	0
>20 years	4	3.9	5	13.5	0	0
Total	103	100	37	100	0	100

in the group of >20 years of work experience accounting for 45.5% (4/9) (Figure 4). Significant differences for depression vulnerability among women managers with various length of work experience were found (Pearson Chi-square: 22.8, $p=0.01$).

Women managers with the length of experience of 1-5 years showed low depression vulnerability amounting to 44.7% (46/103). The largest number of persons with low resistance to depression was seen in the group of >20 years making 3.9% (4/6). Increased vulnerability to depression was typical for participants of the study with the work experience of 1-5 years (Table 6).

Significant differences for depression vulnerability among women managers with respect to various length of their managerial experience were identified between the groups of <1 year and 1-5 years (Mann-Whitney U-Test $z=2.36$, $p=0.02$); groups of 1-5 and 16-20 years (Mann-Whitney U-Test $z=-2.03$, $p=0.04$); groups of 1-5 and >20 years (Mann-Whitney U-Test $z=-2.08$, $p=0.04$). With an increased length of managerial experience, the resistance to depression grows until 10 years of work, then gradually decreases and reaches its minimum after 20 years of experience.

CONCLUSION

1. Some 3/4 of healthcare managers among respondents were resistant to depression related to their professional activity. Every fifth manager had moderate depression vulnerability.
2. The vulnerability to depression among healthcare managers was gender-specific. Women managers were more vulnerable to depression. Every fourth woman manager and only every seventh man manager had moderate depression vulnerability.
3. The highest resistance to depression related to their professional activity was noted in managers with work experience of 1-10 years: five or six were resistant to depression.
4. The vulnerability to depression among healthcare managers grew with increased length of managerial work experience. This was particularly typical for the period of <1 and 1-5 years and >20 years. Increased vulnerability to depression was the highest in managers with the length of work experience of >20 years independent of their gender.

Thus, acquiring professional competences as a factor contributing to stress resistance, skills of coping with stress and alleviating its impact for preventing the depression is very important through the whole professional activity. Managers with the length of work experience of 1-5 years are especially in need of the appropriate knowledge and skills.

REFERENCES

1. Daft R. Management. 8th edition. Translated from English. Edited by S. K. Mordvinov. Saint Petersburg: Piter; 2009. p.800.
2. Cole J. Human Resource Management in Modern Organisations. Translated from English by N. G. Vladimirov. Vershina. 2004;352.
3. Katkov SV. Professional Diagnostics of Managers at an enterprise using the Kettle test 11-PF. Hum Res Manag. 2001;8:56.
4. Quick JC, Kupper CL, Quick JD, Gavin JX. Health of a Manager: Viewed by Financial Times. Translated from English. Dnepropetrovsk: Balance-Club; 2003. p. 208.
5. Amirov NK. Labour and Health of Managers: Monograph. Kazan: Geotart-Med. 2002. p. 136.
6. Valakhanovich SA. The Prophylaxis of Stress and Psychological Health of a Manager. Iss Manag. 2014;3(52):78-81.
7. Voevodina NA, Danilova IA, Nurieva RN. Sociology and Psychology of Management: textbook. Moskwa: Omega-L; 2010. p.199.
8. Shchavaleva MV. Burnout Syndrome in Healthcare Managers. Issues of organization and informatisation of healthcare system. 2009;3:73-7.
9. Tvorogova, NL. Psychology of Management. Lectures. Moskwa: Geotart-Med; 2001. p.384.
10. Your Business Qualities. Yekaterinburg: U-Factoria; 2003. p.304.

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