

**MINISTRY OF HEALTH OF UKRAINE
NATIONAL UNIVERSITY OF PHARMACY
faculty for foreign citizens' education
department of management, marketing and quality assurance in pharmacy**

QUALIFICATION WORK

**on the topic: "ANALYSIS OF THE IMPACT OF PROFESSIONAL
BURNOUT ON THE PRODUCTIVITY OF PHARMACISTS"**

Prepared by: higher education graduate of group
Phm20*(4,10) eng-02

specialty 226 Pharmacy, industrial pharmacy
educational program Pharmacy

Houssam JABRANE

Supervisor: associate professor of higher education
institution of department management, marketing and
quality assurance in pharmacy, PhD, associate professor
Olga GERASYMOVA

Reviewer: head of department social pharmacy, PhD,
associate professor Alina VOLKOVA

АНОТАЦІЯ

У кваліфікаційній роботі досліджено вплив професійного вигорання на ефективність праці фармацевтів. Розроблено рекомендації щодо зменшення негативного впливу психосоціальних чинників. Загальний обсяг роботи становить 40 сторінок, містить 14 рисунків та 3 таблиці. Також наведено список літератури, що включає 30 джерел.

Key words: працездатність, стрес, наслідки вигорання, заходи щодо зменшення впливу, рівень вигорання, причини.

ANNOTATION

In the qualification work, the influence of professional on the work efficiency of pharmacists was investigated. Recommendations for reducing the negative impact of psychosocial factors have been developed. The total volume of work is 40 pages, contains 14 figures and 3 tables. A bibliography including 30 sources is also provided.

Key words: work efficiency, stress, effects of burnout, measures to reduce the impact, level of burnout, causes.

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INTRODUCTION

Relevance of the research topic. The study of the impact of professional burnout and psychosocial factors on the effectiveness of pharmaceutical workers is extremely relevant in modern conditions. The pharmaceutical industry plays an important role in the health care system, providing the population with the necessary medicines and medical products. At the same time, pharmaceutical workers face a high level of stress, a large amount of responsibility and frequent contact with patients, which can lead to professional burnout [6].

Professional burnout of pharmacists negatively affects their productivity, quality of patient care, as well as their physical and mental health. This, in turn, can reduce the effectiveness of pharmaceutical activity in general, lead to an increase in errors in work and increase risks for the health of patients [1].

Psychosocial factors, such as the work environment, interpersonal relationships with colleagues, the level of support from management and workload, also significantly affect the state of pharmacists. The study of these aspects will help to better understand the causes of professional burnout and find effective ways to prevent and overcome it [9].

Studying the impact of professional burnout and psychosocial factors on pharmacists' work efficiency is necessary for developing strategies for improving working conditions in pharmaceutical institutions, increasing the level of professional training and support for pharmacists, as well as for ensuring high-quality pharmaceutical care for the population. This study will contribute to the improvement of the health and well-being of pharmacists, which, in turn, will positively affect the efficiency of their work and the quality of patient care [19].

The purpose of the qualification work is to analyze of the impact of professional burnout on the productivity of pharmacists.

To achieve the goal of the qualification work, it is necessary to solve the following **tasks**:

- to study the principles, fundamental causes, and repercussions of work-related burnout in pharmacists;

- to study psychosocial elements influencing the job performance of pharmacists;
- to study of the degree of professional burnout in pharmacy professionals;
- to conduct evaluation of the strategies employed by pharmacists to address burnout;
- to research on the role of psychosocial factors in stress and burnout;
- to develop of interventions to counteract the negative impact of psychosocial elements.

The object of the research is pharmaceutical workers.

The subject of the study is the analysis of the impact of professional burnout on the productivity of pharmacists.

The methods were used in the study, including questionnaires to collect responses from participants, analysis to process the received data, a systematic approach to comprehensive study of the object, a graphic method to visualize information, and observation to collect objective data during real situations or events.

Practical significance of the obtained results. Using the results of this study will allow practical application of the received recommendations in the management of pharmaceutical organizations in order to improve the quality of work and improve the working conditions of pharmacists.

Approbation of research results and publication. The qualification work was tested on IV International Scientific and Practical Conference "Fundamental and applied research in the field of pharmaceutical technology". The summaries of the reports were published: Gerasymova O.O., Bondarieva I.V., Jabrane Houssam. Study of psychosocial elements influencing the job performance of pharmacists. Fundamental and applied research in the field of pharmaceutical technology : Collection of scientific materials of the IV International Scientific and Practical Conference (Kharkiv, November 25, 2024). Kh.: View of NUPh, 2024.- P. 255.

Structure and scope of qualification work. The qualification work includes an introduction, a literature review, an experimental part, general conclusions, a list of used literary sources and appendices. The total volume of the work is 40 pages, which include 14 figures and 3 tables. In addition, the work lists 30 sources of literature that were used for research and analysis.

CHAPTER 1

THEORETICAL ASPECTS OF WORK-RELATED BURNOUT AND PSYCHOSOCIAL FACTORS

1.1. Principles, fundamental causes, and repercussions of work-related burnout in pharmacists

Executives, sales managers, medical and social workers, consultants, teachers, police officers and other professionals who, by their job, have to communicate a lot with other people, are prone to professional burnout. Also, at risk are those who balance between family and work, as well as those who live in constant fear of losing a job or not finding a new one due to age or lack of self-confidence. Especially vulnerable are people who find themselves in new circumstances and on whom great expectations and responsibilities are placed, because such employees can "burn out" in six months. Residents of megacities, who are forced to interact with a large number of strangers, also fall into the risk group [7].

According to research, seven out of ten pharmacy employees experience burnout. It destroys not only their professional skills, career, success, but also their health. And it is necessary to start the fight against this problem immediately [33].

First of all, it is worth explaining what is meant by burnout. This is a syndrome that occurs in response to the effects of chronic stress factors at work that cannot be coped with. Pharmaceutical professionals have enough triggers, just like other health care workers, so according to some data, up to 50% of those associated with pharmacy suffer from burnout, and here we can distinguish three symptoms [10].

Fatigue is the main symptom. Physical, emotional and cognitive fatigue undermines the ability to work effectively and be positive about what an employee does. This may be due to the high demands on pharmaceutical specialists, as well as lack of time and multitasking [5].

Cynicism is not the most obvious, but inevitable companion of burnout. For the body, this is a way to psychologically distance oneself from work. Instead of being involved in a common cause, the "burnt out" pharmacist becomes disengaged.

From the outside, it may seem that he doesn't care. He is heartless and indifferent. In fact, it's just a shell that arises in case of overloads, frequent conflict situations, and the feeling of being unable to fix something [4].

Inefficiency is another sign of burnout. It is manifested by a feeling of own incompetence, lack of achievements and a decrease in productivity, a person feels that he is losing skills. Often this happens in combination with exhaustion and cynicism. And all because people physically cannot work at the peak of their capabilities, they run out of strength. All this leads to a state where work-related stressors (for example, difficult clients, high workloads, long working hours, etc.) cannot be effectively eliminated with the help of regular rest-breaks and days off. The signs of burnout are presented in fig. 1.1 [10].

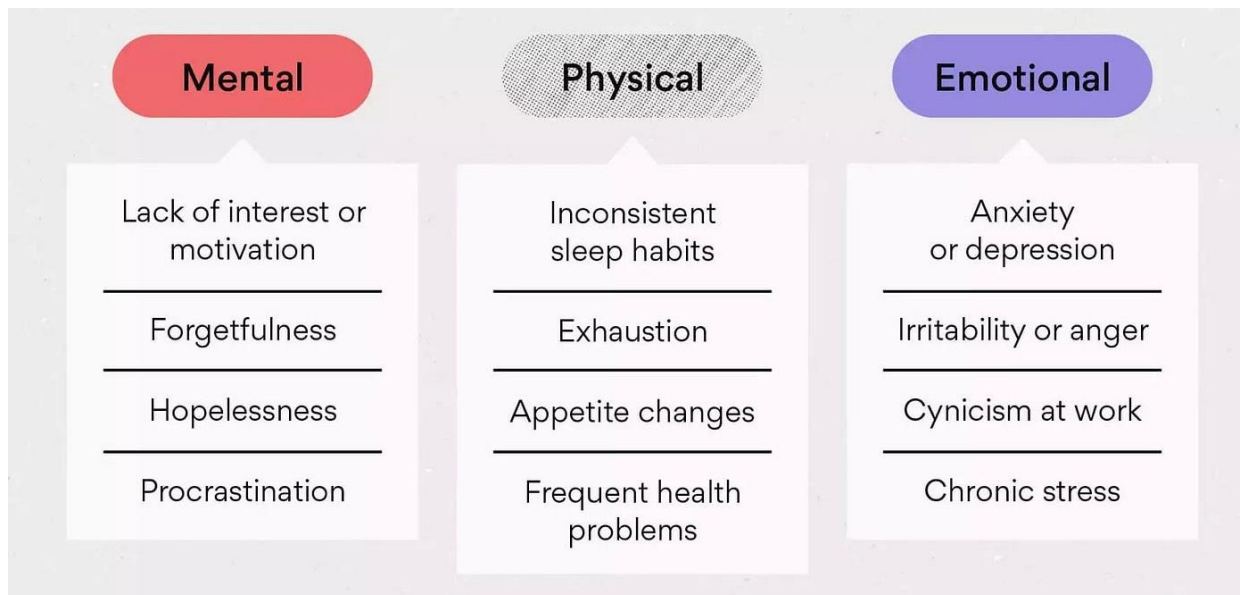


Fig. 1.1. The signs of burnout

The term "burnout " appeared in 1974, it was used by Herbert Freudenberger in the book "Burnout: The High Price of High Achievement". The author defined this concept as the disappearance of motivation or incentive, especially when commitment to a task or relationship does not lead to the desired results [2].

Four steps to healthy work are worth considering. The greatest contribution to burnout is made by situational factors, their correction often requires changes at the level of the pharmaceutical organization, which, unfortunately, is not always

possible. However, there are steps you can take on your own, and the sooner the better. First, the most important thing is to take care of yourself. Very often, pharmaceutical workers try to do everything at once, forgetting about an important principle – the "mask rule". First you need to put an oxygen mask on yourself, and then on your child. If you imagine that our busy, complex life is a difficult plane flight, where we take care of everyone around us. But we completely forget about our mask. But in order not to be overloaded, pharmacists need to replenish physical and emotional energy, take care of themselves [8].

Pharmacists need to do what fills them. View nutrition, physical activity, sleep. Training, rest and simply enjoying nature should be included in the schedule. If it seems impossible for pharmacists to squeeze such little things into their busy work schedule, it is necessary to start a diary or an electronic calendar. For each period of time, you need to write down what to do, who you are with, how you feel (for example, on a scale from 1 to 10), and be sure to rate the importance of each activity. Then analyze the results and establish what is superfluous in the pharmacist's schedule, and what is important [4].

Secondly, you need to change your point of view. Rest, relaxation, and recharging can relieve fatigue, increase efficiency, and reduce the strain of cynicism. But it is impossible to completely eliminate the real causes of burnout with their help. When returning to work even after a "healthy person" weekend, pharmacists can face the same unhealthy workloads, conflicted customers, and resource shortages. It is worth taking a close look inside and analyzing what they can fix. Correctly – the situation or, in extreme cases, the attitude of pharmacists to it [11].

If fatigue is a key problem for pharmacists, you need to ask yourself what tasks, including critical tasks, pharmacists could delegate to free up time and energy for other work. You need to find ways to change your business processes so that you gain more control over them or focus on the most useful tasks. Of course, delegating tasks to the first-person is simply to no one, he is the last link in a complex chain. But here too there is a field for activity. For example, it is important to correctly

distribute the load between pharmaceutical specialists in the same shift or colleagues-partners with whom one joint work has to be performed [5].

If the pharmacist's problem is cynicism, it is worth considering whether he can protect himself from those processes within the pharmaceutical organization that cause his hands to drop, and focus on what brings joy. At first it may seem unrealistic, but in such a complex matter as plans, if you wish, you can reach an acceptable solution that will suit both the pharmacist, the employer, and the client.

Thirdly, it is necessary to reduce work stress. It may be necessary to admit that the management's expectations of the pharmacist may be overstated, and he is not able to perform as many tasks as are assigned to him [1].

Conflict-free counseling does not exist, and the pharmaceutical specialist unwittingly has to build an invisible barrier between him and a difficult client to protect himself from bullying. It is necessary to prepare morally for the fact that the management will not be satisfied if, for example, a pharmacist refuses to go on the shift of his only day off. But it can be the first step to improving your long-term performance and protecting your health. The goal is to look at his results in perspective and, if the pharmacist needs it, to say "no" in time [30].

Fourth, the pharmacist must seek support. The best antidote to burnout, especially when it's caused by cynicism and ineffectiveness, is to seek out interpersonal interactions and continuous development [19].

It is necessary to find interest groups – today there are many communities in social networks that help to overcome professional burnout. You also need to look for trainers, psychologists – everyone involved in the fight against this problem.

Considering that professional burnout is most often the result of the influence of situational factors, it is quite possible that the employees of the pharmacy enterprise also need help [8].

If the pharmacy comes together to offer mutual support, brainstorm and come to optimal solutions together, it is more likely that employees will be able to move things from a dead point and achieve drastic positive changes [16].

1.2. Psychosocial elements influencing the job performance of pharmacists

Psychosocial factors can have a significant impact on the work of pharmacists. These factors include social, psychological, and organizational aspects that affect the professional life of pharmacists. Let's consider some of them in more detail. Pharmacists often work in high-stress environments where they need to process large amounts of information quickly and accurately. This can lead to stress and burnout, especially if working conditions are not conducive to reducing stress [20].

Support from colleagues and management can greatly improve the work environment. Having effective communication channels and opportunities for social interaction helps reduce stress and increase job satisfaction [9].

The biopsychosocial model is presented in fig. 1.2.

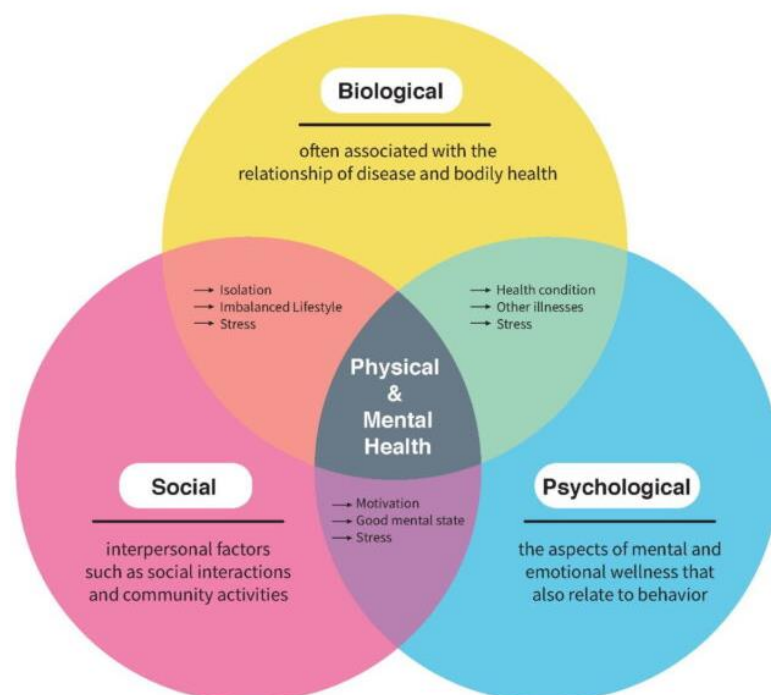


Fig. 1.2. The biopsychosocial model

A sense of professional fulfillment and the possibility of career growth are of great importance for pharmacists. Recognition of their achievements and the opportunity to improve their qualifications contribute to a positive attitude towards work [3].

Failure to maintain a healthy balance between professional and personal life can negatively affect the overall health of pharmacists. Flexible work schedules and leisure opportunities help maintain this balance [4].

A workplace culture that supports openness, collaboration and innovation can have a positive impact on motivation and job satisfaction. Conversely, a toxic culture can lead to conflict and dissatisfaction [6].

Effective communication with patients is important to ensure patient satisfaction and trust in pharmacists. Interpersonal communication skills, empathy and listening skills help in building positive relationships [15].

The physical environment, including working conditions, the comfort of the workplace and the availability of necessary resources, also affects the work of pharmacists. Safe and comfortable working conditions contribute to increased productivity and job satisfaction [8].

In table 1.1. phases of emotional burnout of a pharmaceutical worker are presented.

Table 1.1

Phases of emotional burnout

High-voltage	Resistance	Exhaustion
<ul style="list-style-type: none"> • experiencing psycho-traumatic circumstances; • dissatisfaction with oneself; • "backed into a corner"; • anxiety and depression 	<ul style="list-style-type: none"> • inadequate selective emotional response; • emotional and moral disorientation; • expansion of the sphere of economy of emotions; • reduction of professional duties 	<ul style="list-style-type: none"> • emotional deficit; • emotional alienation; • personal alienation (depersonalization); • psychosomatic and psychovegetative disorders

The syndrome of professional burnout does not appear suddenly - it develops gradually, reaching its peak when an excessive amount of negative emotions accumulates. If a pharmaceutical worker is no longer interested in anything, does not want to communicate with anyone at home or at work, and feels unsupported, these may be signs of emotional burnout, which often occurs in the background of everyday life. This is not surprising, because almost every day pharmacists face stressful situations and challenges posed by society and the surrounding environment. Burnout can manifest itself through psychophysical and socio-psychological symptoms. Psychophysical symptoms include chronic fatigue, decreased activity, emotional exhaustion, sleep disturbances and insomnia, headaches, nausea, loss of appetite, and stomach or intestinal problems [5].

All these factors interact with each other and shape the overall work experience of pharmacists. Understanding and managing these psychosocial aspects can help create a more supportive work environment and improve the quality of patient care [2].

CONCLUSIONS TO CHAPTER I

1. The main causes and consequences of professional burnout among pharmacists are analyzed.
2. Psychosocial factors influencing the work of pharmacists were analyzed.

CHAPTER II

ANALYSIS OF THE INFLUENCE OF PROFESSIONAL BURNOUT ON THE WORK EFFICIENCY OF PHARMACISTS

2.1. Research on the level of professional burnout among pharmacists

The profession of a pharmacist, which involves constant interaction with people, especially in wartime, has become extremely stressful. Long working days, constant contact with clients, logistical problems and emotional stress associated with war lead to a high risk of professional burnout. This not only negatively affects the pharmacist's health, but also worsens the quality of customer service [7].

We conducted a survey of 57 pharmacists from different regions to study the level of their professional burnout (Appendix A).

We established that 85% of respondents are pharmacists and 15% – heads of pharmacies (Fig. 2.1).

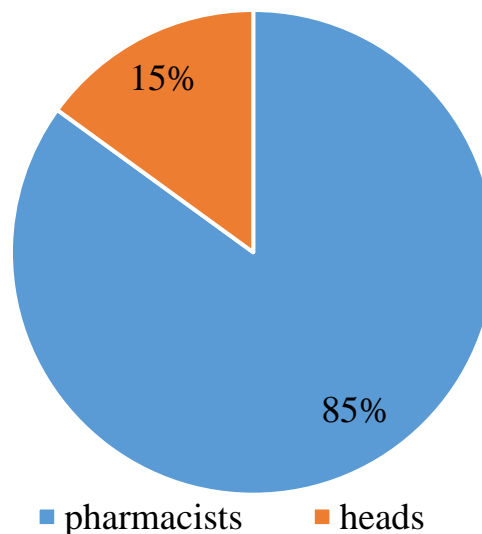


Fig. 2.1. Research of the positions held by pharmaceutical employees who took part in the survey

Professional burnout is a complex psychological condition that develops gradually as a result of long-term stress at work. It is characterized by three main features: emotional exhaustion, depersonalization, and decreased professional

effectiveness. Burnout differs from stress in that it is more persistent and associated with feelings of hopelessness and despair. Fatigue, although it can be a symptom of burnout, is not its main characteristic [19].

The work experience of pharmaceutical workers was studied (Fig. 2.2). It was found that the largest share of pharmacists (52%) has work experience from 11 to 20 years. This shows that there are many experienced specialists working in the industry. Only 7% of pharmacists have up to 5 years of work experience. This may indicate that young specialists are not too willing to choose this profession or quickly leave it. A fairly high percentage of pharmacists with a long experience (more than 21 years) indicates that many specialists have been working in this field for a long time.

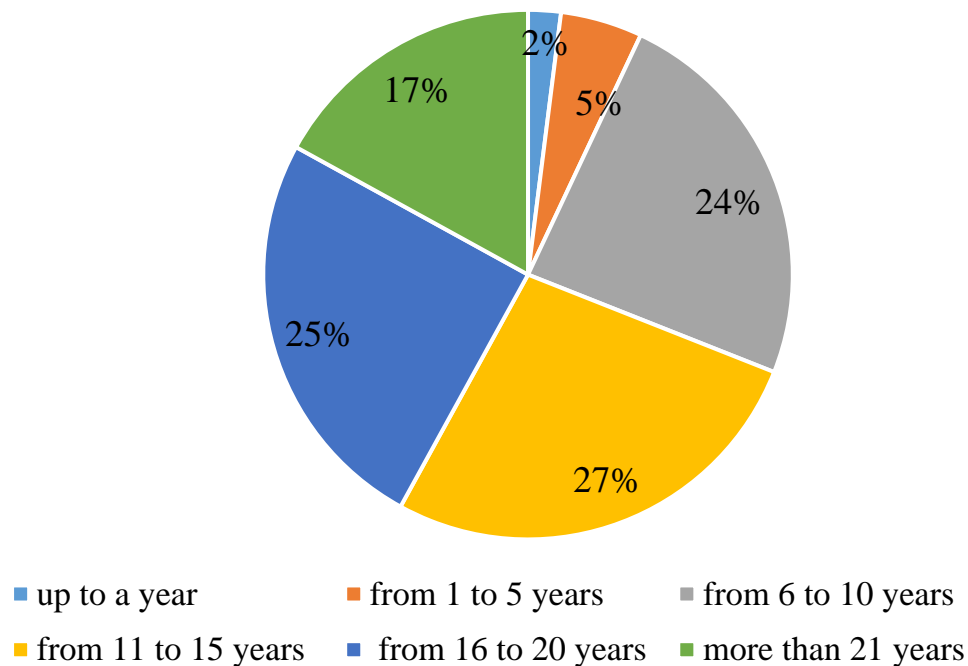


Fig. 2.2. Study of work experience of pharmaceutical workers

Further, we established that 70% of the respondents have a family (Fig. 2.3). This indicates that family responsibilities are an important aspect of many pharmacists' lives.

The proportion of pharmacists without family (30%) also needs attention, as their needs and motivations may differ from family ones.

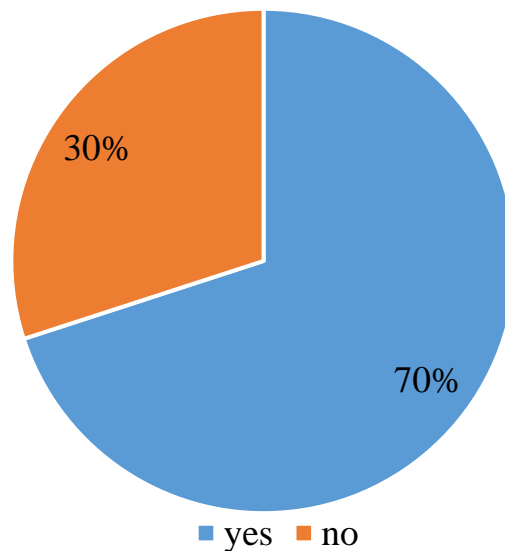


Fig. 2.3. Analysis of family presence among pharmaceutical workers who took part in the survey

Next, we analyzed the gender of the respondents (Fig. 2.4). It is established that 90% are women and 10% are men. This is a typical phenomenon for many areas of health care.

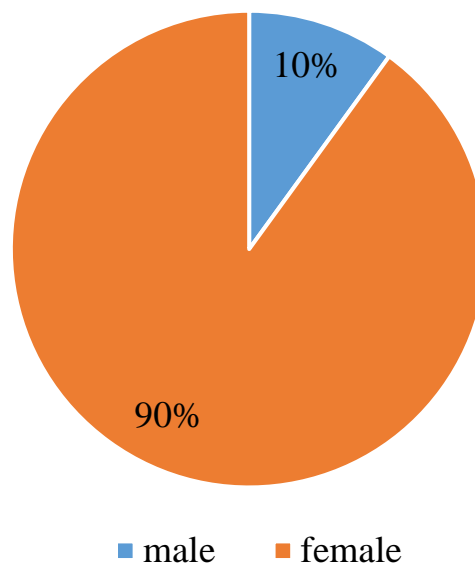


Fig. 2.4. Analysis of respondents' gender

At the next stage, we assessed the level of professional burnout of pharmacists. Based on the data obtained after surveying pharmacists, the following conclusions can be drawn about the level of professional burnout among

pharmacists. Only 1% of respondents never feel tired after work. 18% feel tired rarely, 54% – sometimes, 20% – often, and 7% – always.

Therefore, the vast majority (81%) of respondents feel tired at least sometimes, which indicates a significant workload at work.

It was established that 10% of respondents never feel a decrease in interest in their work. 15% experience a decrease in interest rarely, 30% – sometimes, 20% – often, and 25% – always.

In general, 75% of respondents feel a decrease in interest in work at least sometimes, which can be a sign of burnout.

It was found that 2% of respondents never experience difficulty waking up. 19% rarely, 47% sometimes, 7% often, and 25% always.

Overall, 79% of respondents have difficulty waking up, which may be related to fatigue and burnout.

It was found that 4% of respondents never feel irritated or angry. 30% rarely, 27% sometimes, 34% often, and 5% always. 66% of respondents at least sometimes feel irritated or angry, which can be another sign of burnout.

It found that 7% of respondents never feel that their efforts are not appreciated. 20% rarely, 30% sometimes, 41% often, and 2% always. 73% of respondents feel that their efforts are not appreciated at least sometimes, which can significantly affect their motivation and job satisfaction.

Of the pharmacists surveyed, most experienced signs of burnout, including fatigue, decreased interest in work, difficulty waking up, irritability or anger, and feeling that their efforts were not appreciated.

These factors indicate a high level of stress and the need to take measures to improve working conditions and support the emotional well-being of employees (Fig. 2.5).

Next, we assessed the psychological state of pharmacy workers (Fig. 2.6).

It was found that 8% of respondents never feel emotionally exhausted. 8% feel emotional exhaustion rarely, 57% – sometimes, 24% – often, and 3% – always.

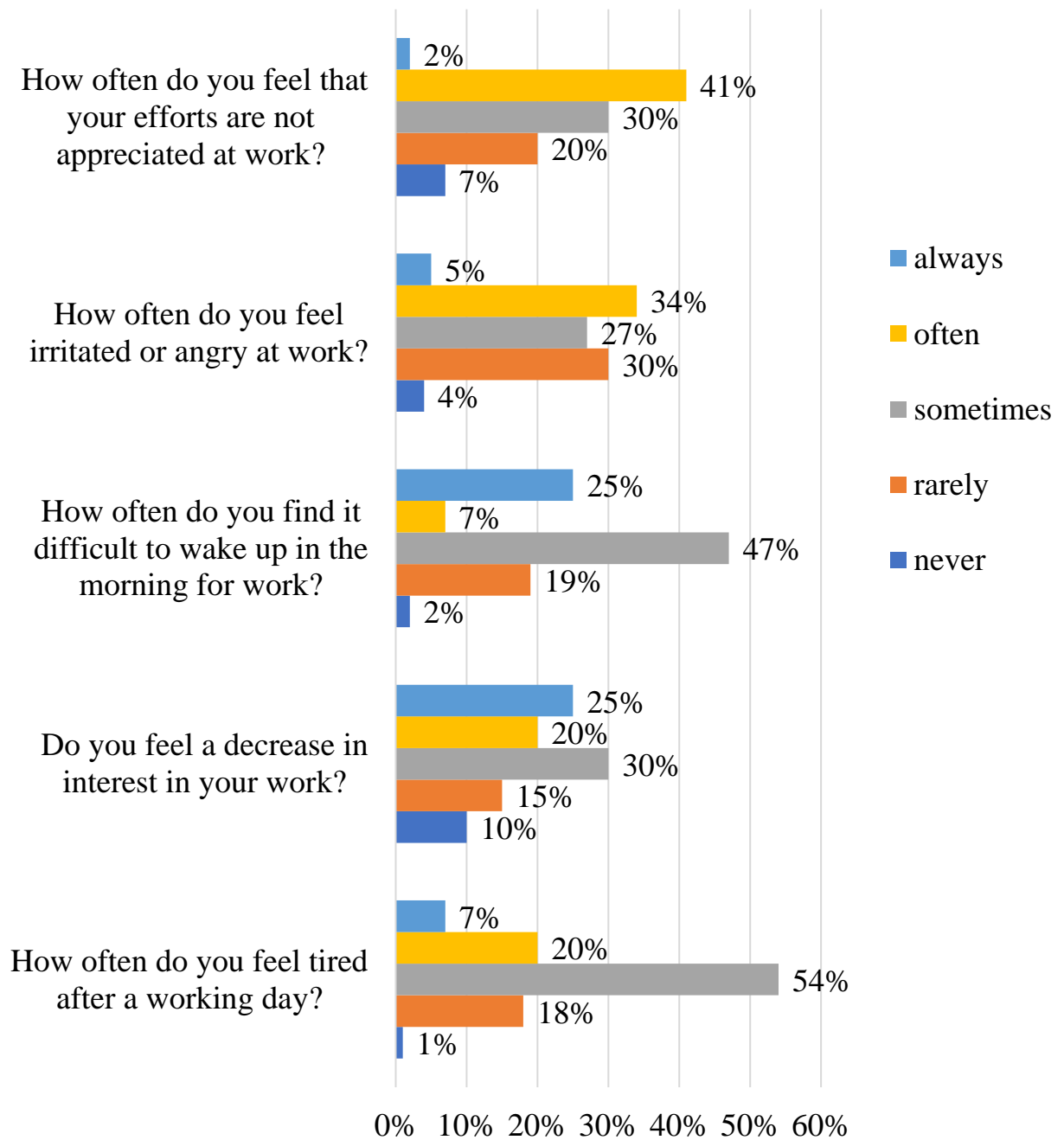


Fig. 2.5. Assessment of the level of professional burnout of pharmacists

Therefore, the vast majority (84%) of respondents feel emotional exhaustion at least sometimes, which indicates a high emotional burden on employees.

It was found that 37% of respondents never feel depressed or hopeless. 13% rarely experience these conditions, 40% – sometimes, 9% – often, and 1% – always. In general, 63% of respondents at least sometimes feel depressed or hopeless, which can be a sign of burnout or other psychological problems.

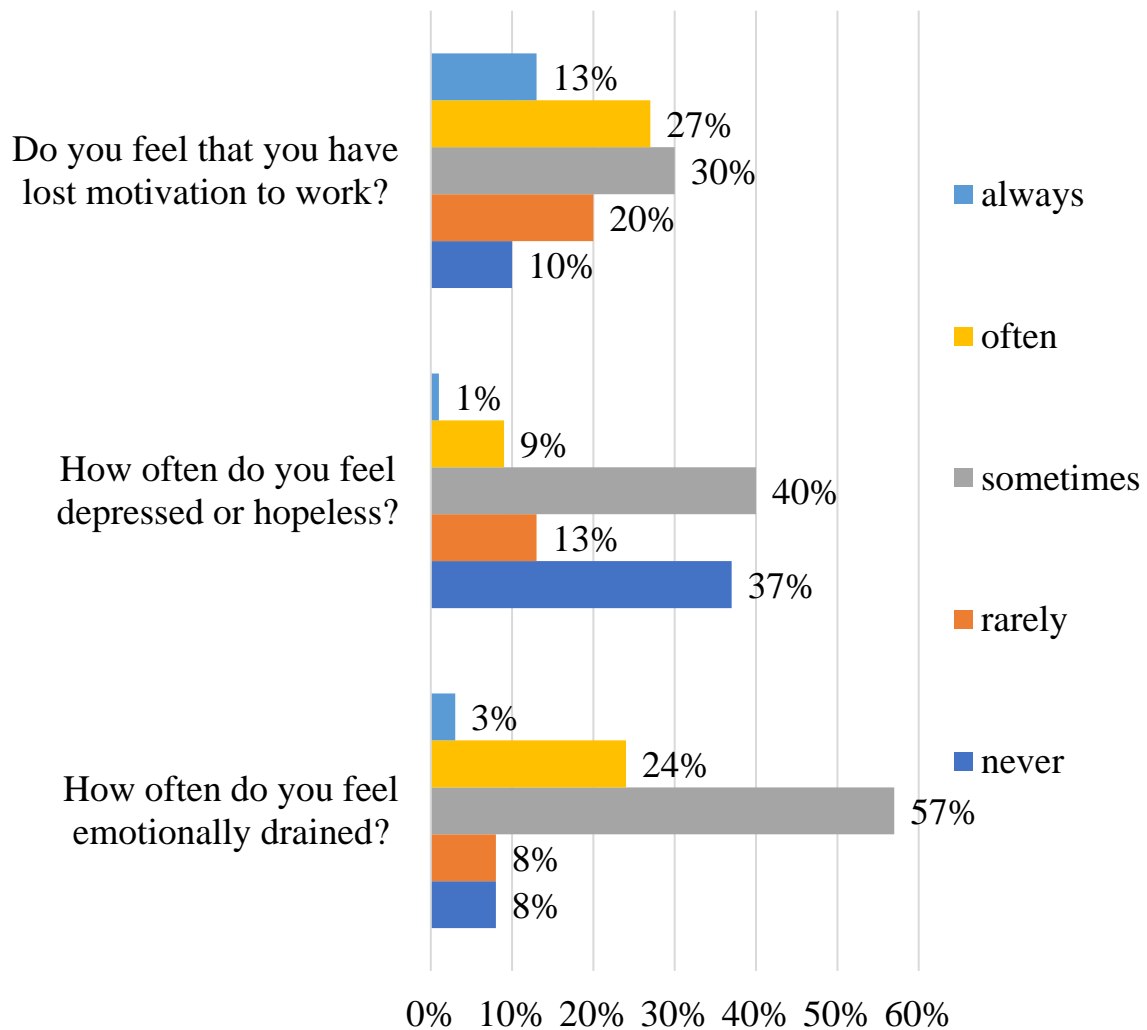


Fig. 2.6. Assessment of the psychological state of pharmacy workers

It was found that 10% of respondents never experience a loss of motivation for work, 20% – rarely, 30% – sometimes, 27% often, and 13% always. Therefore, 70% of respondents experience a loss of motivation to work at least sometimes, which may also indicate burnout and dissatisfaction with working conditions.

Thus, a large part of the surveyed pharmacy workers feels signs of psychological exhaustion, depression or hopelessness, as well as loss of motivation to work. This may indicate a high level of stress and professional burnout among employees, which requires taking measures to improve their psychological state and create more favorable working conditions [7].

There are various methods for assessing the degree of burnout. One of these methods is the "Maslach Burnout Inventory". The original version of this survey was

developed by American psychologists Christina Maslach and Susan E. Jackson, and it was first published in 1981. Subsequently, new versions appeared, adapted for representatives of various professional groups, in particular for those who work in areas related to the provision of services (tables 2.1 and 2.2).

Table 2.1

Test for professional burnout according to Maslach

Scale	N	How often do you experience the following feelings (number of points in brackets)	Never (0)	Several times a year (1)	Once a month (2)	Several times a month (3)	Once a week/day (4)	Several times a week (5)	Daily (6)
I. Emotional exhaustion	1	I feel completely drained after work							
	2	After work, I feel as if all the juices have been squeezed out of me							
	3	In the morning, I feel apathy towards work							
	4	I understand all the difficulties that customers face							
	5	Sometimes I communicate with clients formally							
	6	I feel exhausted from constant contact with people							
	7	I can quickly find solutions to customer problems							
	8	I lost interest in my work							
	9	I enjoy being able to help others							
II. Depersonalization	10	Work has made me less sensitive to other people's problems							
	11	I am afraid that my work is depopulating me							

	12	I feel a surge of strength							
	13	I lose interest in my work							
	14	I am overloaded with work							
III. Reduct ion of person al achiev ements	15	Sometimes I feel emotionally detached from some clients							
	16	Constant communication with people exhausts me							
	17	I can quickly establish contact with clients							
	18	Working with people gives me energy							
	19	My work has a positive impact							
	20	I am on the verge of exhaustion							
	21	I have a high resistance to stress							
	22	I feel guilty about customer problems							

We conducted a survey on Maslach and the results are presented in fig. 2.7. It was established that the vast majority of employees (67%) are at an average level of emotional exhaustion, which indicates the presence of significant stress, but without critical manifestations. 13% of workers experience high emotional exhaustion, which is an alarming signal for the need for intervention to prevent serious consequences.

Table 2.2

Presentation of survey results for Maslach

Scales	Low level	Average	High level
I. Emotional exhaustion	<17	18–29	>30
II. Depersonalization	<5	6–11	>12
III. Reduction of personal achievements	>40	34–39	<33

Most employees (54%) found that they have an average level of depersonalization, indicating that they may sometimes treat customers as impersonal objects. 19% of employees have a high level of depersonalization, which may indicate a strong alienation and negative attitude towards their work and customers.

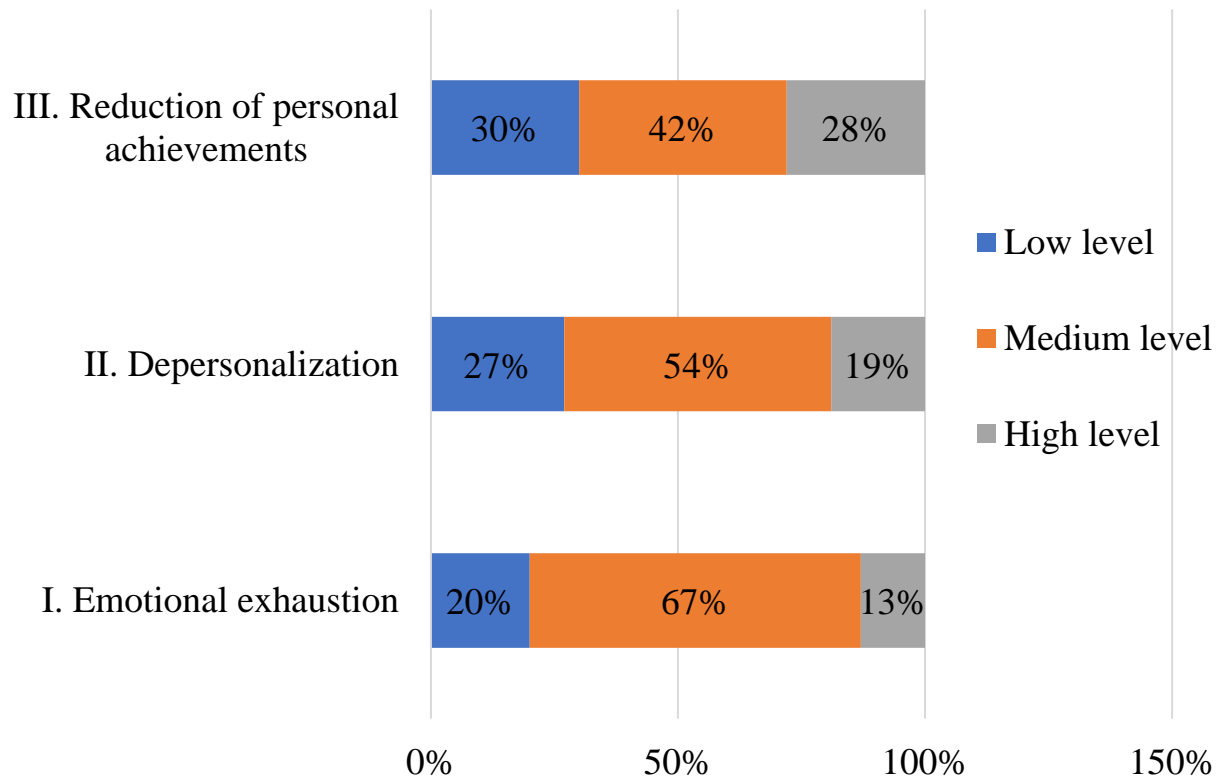


Fig. 2.7. Results of the Maslach survey of pharmacists

The distribution according to the reduction of personal achievements is more even, but the average level prevails (42%). This suggests that the respondents are generally satisfied with their achievements, however, some have a decrease in motivation and a sense of professional significance.

2.2. Evaluation of the strategies employed by pharmacists to address burnout

Employees who experience burnout at work have an increased risk of: absence from the workplace for more than 2 weeks due to illness – by 63%, depressive disorders – by 210%, the development of type 2 diabetes – by 94%, the development of arterial hypertension – by 70%.

To reduce the risk of emotional burnout, it is important to learn not to be manipulated in the style of "who if not you". Here it is worth lowering the level of empathy of pharmacists and being aware of their own emotional state. Then it will be much easier to notice both the manipulations themselves and the price that pharmacists pay for it [18].

If the pharmacist suddenly thinks that doing what the manipulator wants from him is actually easy and "it's not worth anything." It does not. Doing something for someone else always has its price – the pharmacist's time, strength, attention, emotions, which he could turn to something else: family, hobbies, quality rest.

This does not mean that now you should never do anything at the request of others. But it is important that it is a conscious choice by the pharmacist [19].

For example, today a pharmacist has enough resources and wants to invest them in working overtime, but the next day he has his own plans and interests and wants to spend his energy on his tasks, and not on helping others achieve their goals [30].

The conducted research among 57 pharmacists revealed a high level of professional burnout in this professional group, especially in wartime conditions.

Most of the surveyed pharmacists experience constant fatigue, reduced interest in work, difficulty waking up, and irritability, which indicates a significant emotional burden.

A significant part of respondents feel that their efforts are not appreciated, which leads to a decrease in motivation and job satisfaction. Many pharmacists feel emotionally drained, depressed and hopeless, which can negatively affect their overall well-being and quality of life.

Martial law increases the professional burnout of pharmacists due to increased responsibility, unstable working conditions and emotional stress.

We analyzed measures taken by pharmacists in case of emotional burnout (Fig. 2.8).

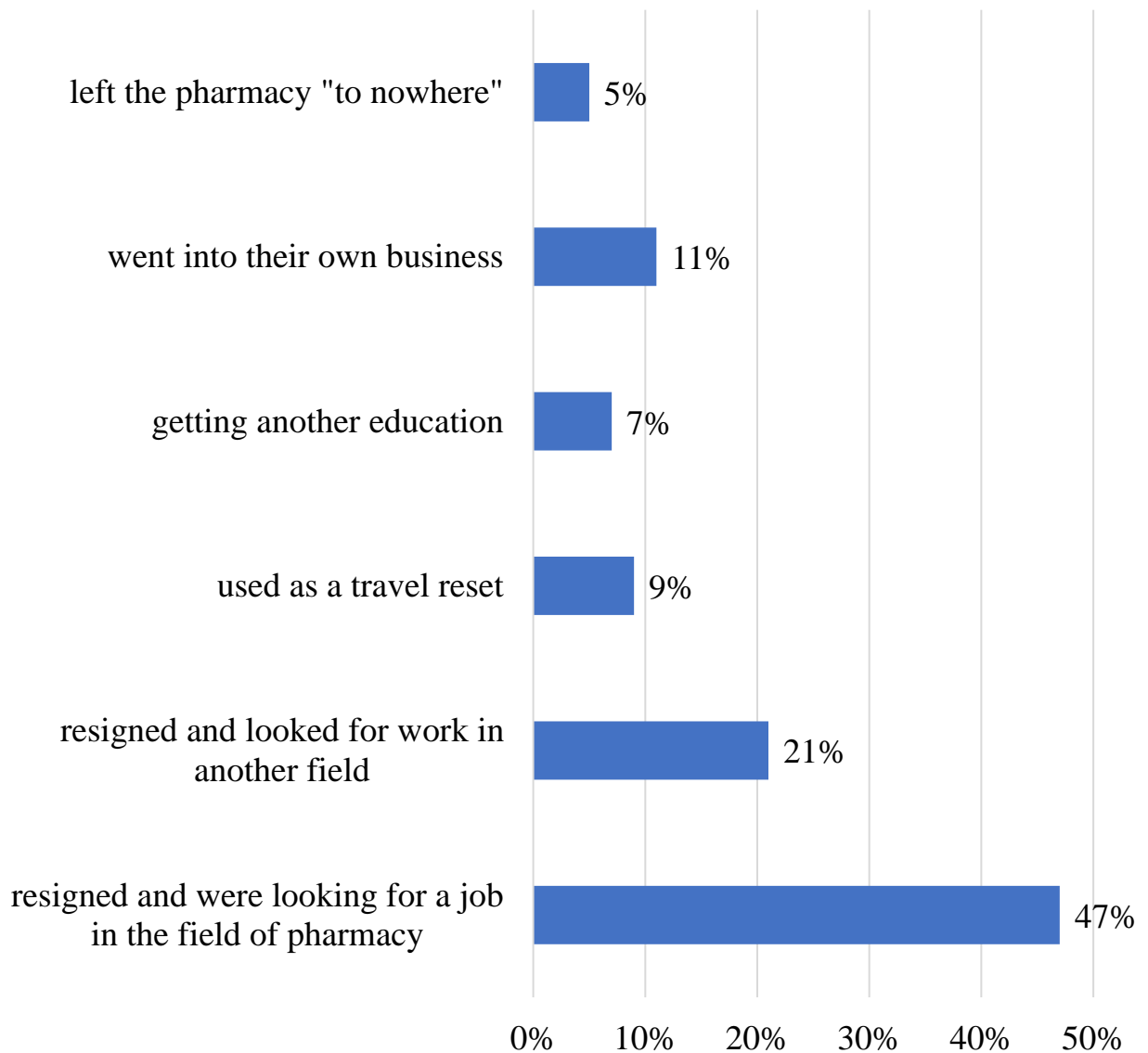


Fig. 2.8. Analysis of measures taken by pharmacists during burnout

It was found that the largest part of pharmacists (47%) chose to change job within their professional sphere, hoping to find a more favorable working environment. 21% of respondents changed their field of activity, leaving pharmacy to look for new opportunities in other fields. 9% of pharmacists chose travel as a way to recharge and reduce stress.

11% of respondents obtained additional education, possibly with the aim of changing career direction or improving their qualifications. 11% of respondents started their own business, which could be both in the field of pharmacy and in other fields. 5% of pharmacists left their jobs without concrete plans for the future, looking

for a break or new opportunities. These measures reflect a variety of approaches to coping with burnout among pharmaceutical workers.

Next, we analyzed the factors contributing to burnout (Fig. 2.9). It was found that the largest part of pharmacists (18%) noted the monotony of work as the main factor causing emotional burnout. Insufficient financial remuneration took second place, as indicated by 11% of respondents.

Conflicts with colleagues or management caused burnout for 10% of pharmacists, and lack of opportunities for professional growth for 9%. Pressure from terms and deadlines was indicated as an important factor by 8% of respondents.

Feeling overwhelmed by responsibility and high workload were reported by 6% of pharmacists each, while emotional strain was also reported by 6%. Instability of working conditions, lack of support, unfair treatment and lack of balance between work and personal life each accounted for 4%.

The lack of recognition and awards was also noted by 4% of respondents. Uncertainty of roles and responsibilities and high demands and expectations were indicated by 3% of respondents each.

These findings suggest that burnout among pharmacists is caused by a variety of factors, from job monotony to lack of support and recognition.

Next, we analyzed the consequences of professional burnout (Fig. 2.10).

It was established that the largest part of respondents (43%) noted the deterioration of the quality of customer service, which indicates a decrease in efficiency and productivity. 15% of respondents noted an increase in the number of errors at work, which may be associated with increased stress and decreased concentration.

An increase in staff turnover due to professional burnout was indicated by 18% of respondents, which indicates a high level of dissatisfaction with working conditions and a desire to change the place of work.

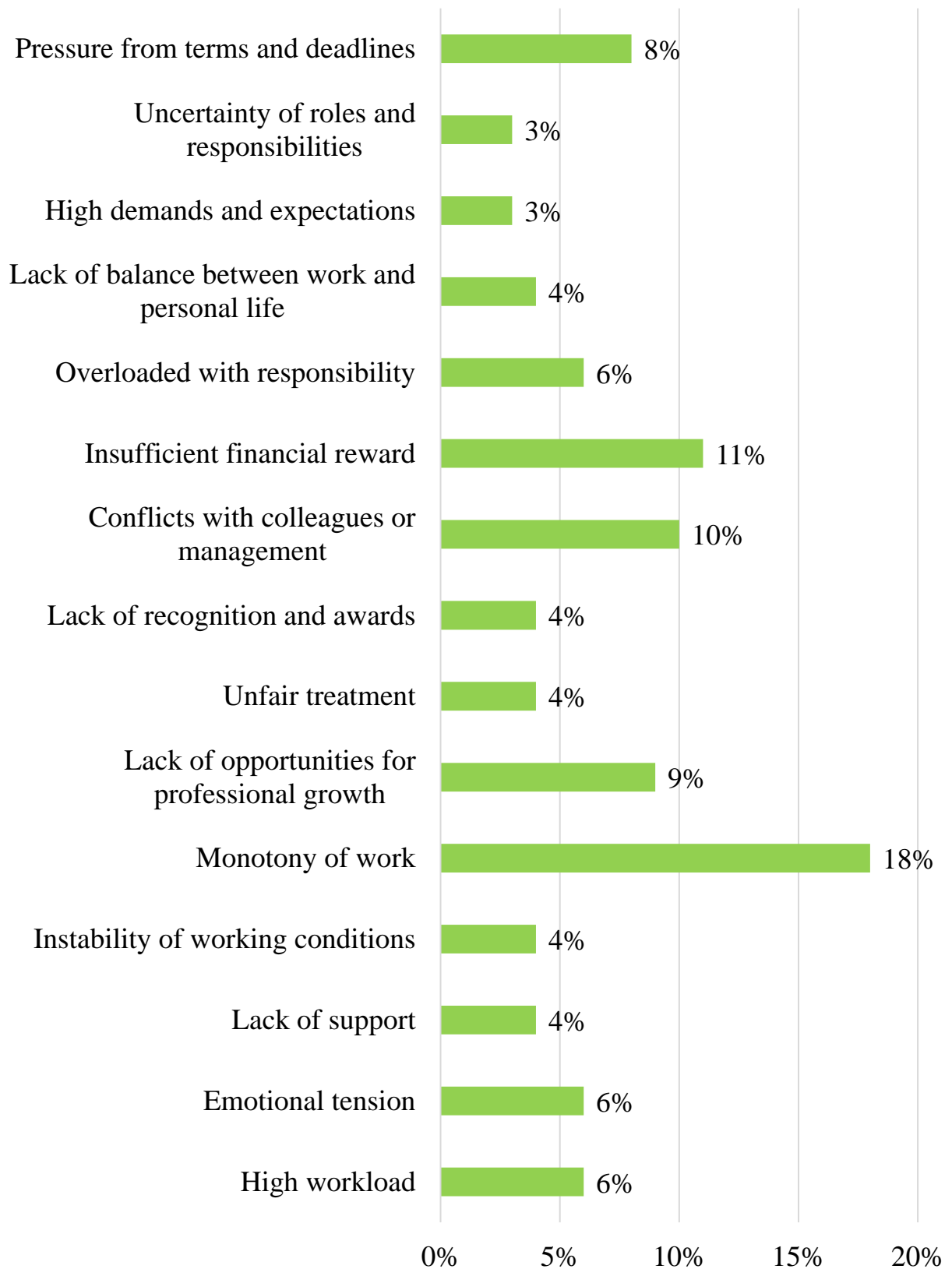


Fig. 2.9. Analysis of factors causing emotional burnout in pharmacists

24% of pharmacists experienced deterioration of their health due to constant stress and overload, which negatively affects both the physical and psychological condition of employees.

These consequences demonstrate the serious impact of professional burnout on pharmacists, emphasizing the need to develop and implement measures to prevent and overcome this condition in work teams.

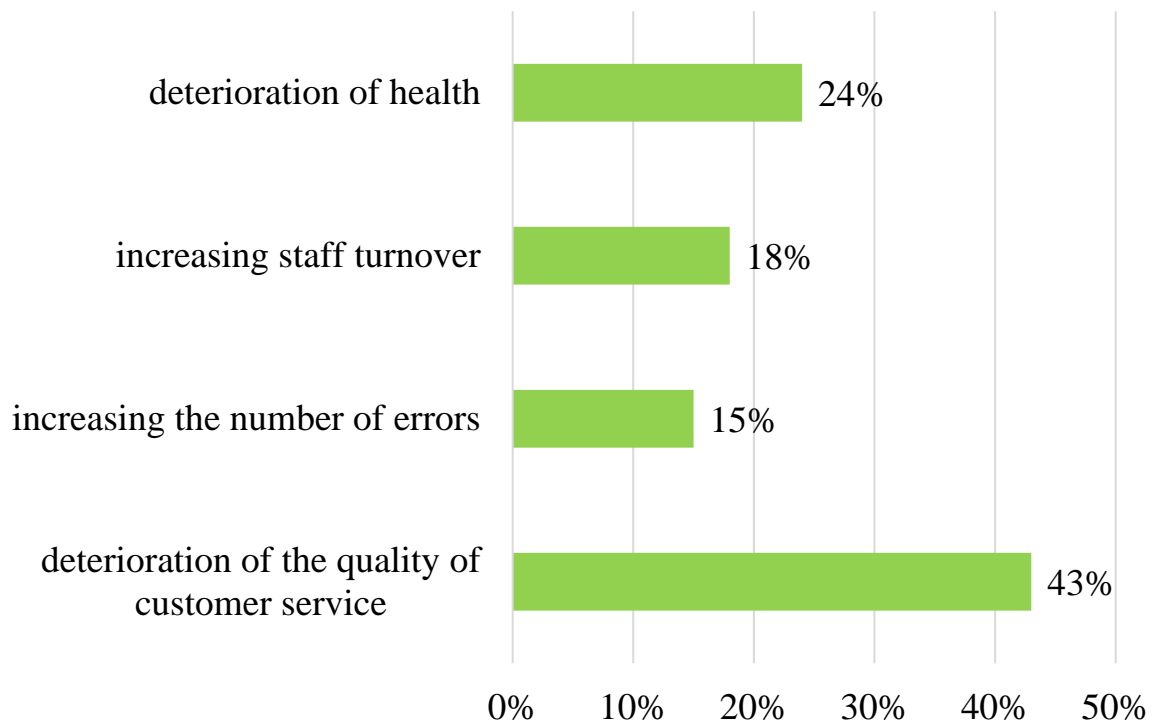


Fig. 2.10. Analysis of the consequences of professional burnout

Professional burnout among pharmacists is a serious problem that needs an immediate solution. The implementation of measures aimed at reducing the level of stress, increasing motivation and improving the psychological well-being of pharmacists is necessary to ensure the quality of pharmaceutical care and preserve the health of employees.

CONCLUSIONS TO CHAPTER II

1. According to the results of a survey of 57 pharmacists from different regions of Ukraine, the impact of professional burnout on the efficiency of pharmacists' work was analyzed. It was found that 85% of the respondents are

pharmacists; 15% are heads of pharmacies. 52% of respondents have experience from 11 to 20 years, which indicates the presence of experienced specialists. 7% have up to 5 years of experience, which may indicate the reluctance of young specialists to work in this field. 70% of respondents have a family, and 30% do not. It was found that 90% of respondents are women, 10% are men.

2. The level of professional burnout was studied: 81% of respondents feel tired at least sometimes; 75% feel a decrease in interest in work at least sometimes; 79% have difficulty waking up; 66% feel irritated or angry at least sometimes; 73% feel that their efforts are not appreciated at least sometimes. The psychological state of pharmacists was assessed: 84% of respondents at least sometimes felt emotional exhaustion; 63% at least sometimes felt depressed or hopeless; 70% felt a loss of motivation to work at least sometimes.

3. An assessment of the burnout of pharmacists according to Maslach was conducted and it was found that 67% of employees have an average level of emotional exhaustion, 13% have a high level; 54% of employees have an average level of depersonalization, 19% have a high level; 42% of respondents have an average level of reduction of personal achievements. A high level of professional burnout among pharmacists affects their productivity and quality of work, increases the risk of absence from the workplace due to illness, depression, diabetes and hypertension.

4. We have analyzed the measures taken by pharmacists in case of emotional burnout. It was found that the largest part of pharmacists (47%) chose to change jobs within their professional sphere, hoping to find a more favorable working environment. 21% of respondents changed their field of activity, leaving pharmacy to look for new opportunities in other fields. 9% of pharmacists chose travel as a way to recharge and reduce stress. 11% of respondents obtained additional education, possibly with the aim of changing career direction or improving their qualifications. 11% of respondents started their own business, which could be both in the field of pharmacy and in other industries. 5% of pharmacists left their jobs without concrete plans for the future, looking for a break or new opportunities.

5. Factors contributing to burnout were analyzed. It was found that the largest part of pharmacists (18%) noted the monotony of work as the main factor causing emotional burnout. Insufficient financial remuneration took second place, as indicated by 11% of respondents. Conflicts with colleagues or management caused burnout for 10% of pharmacists, and lack of opportunities for professional growth for 9%. Pressure from terms and deadlines was indicated as an important factor by 8% of respondents. Feeling overwhelmed by responsibility and high workload were reported by 6% of pharmacists each, while emotional strain was also reported by 6%. Instability of working conditions, lack of support, unfair treatment and lack of balance between work and personal life each accounted for 4%. The lack of recognition and awards was also noted by 4% of respondents. Uncertainty of roles and responsibilities and high demands and expectations were indicated by 3% of respondents each.

6. The conducted study revealed that professional burnout among pharmacists leads to a significant deterioration in the quality of customer service (43%), an increase in the number of errors (15%) and an increase in staff turnover (18%). In addition, more than a quarter of the respondents experienced deterioration of health due to constant stress.

CHAPTER III

ASSESSMENT OF THE EFFECTS OF SOCIAL AND PSYCHOLOGICAL FACTORS ON PHARMACISTS' WORK

3.1. Research on the role of psychosocial factors in stress and burnout

We conducted a study of psychosocial factors (Fig. 3.1).

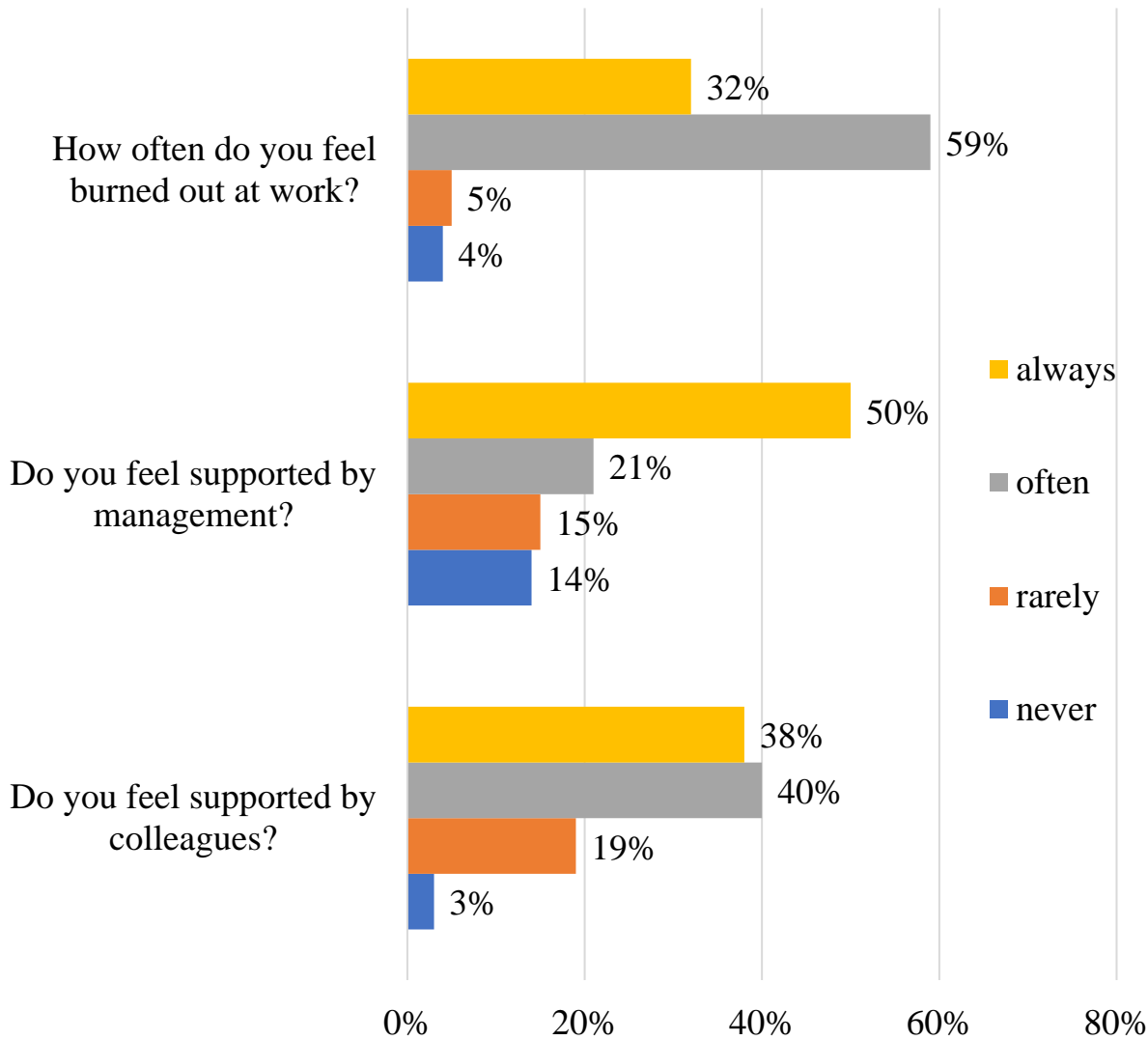


Fig. 3.1. Study of psychosocial factors

The following results were revealed during the survey of 57 pharmacists from pharmacies in different regions of Ukraine. The largest part of respondents (40%) often feel support from colleagues, and 38% always feel this support. Only 19% of respondents rarely feel support from colleagues, and only 3% never feel it (Fig. 3.1).

It was found that half of the respondents (50%) always feel support from management, and 21% feel this support often. However, 15% rarely feel support from management, and 14% never feel it (Figure 3.1).

It was found that the largest share of respondents (59%) often feel burnout at work, and 32% always feel this burnout. Only 5% of respondents rarely experience burnout, and only 4% never experience burnout at work.

These results highlight the importance of support from both colleagues and management in reducing stress and burnout among employees [3].

Next, we analyzed the main factors that contribute to pharmacists' stress and burnout (Fig. 3.2).

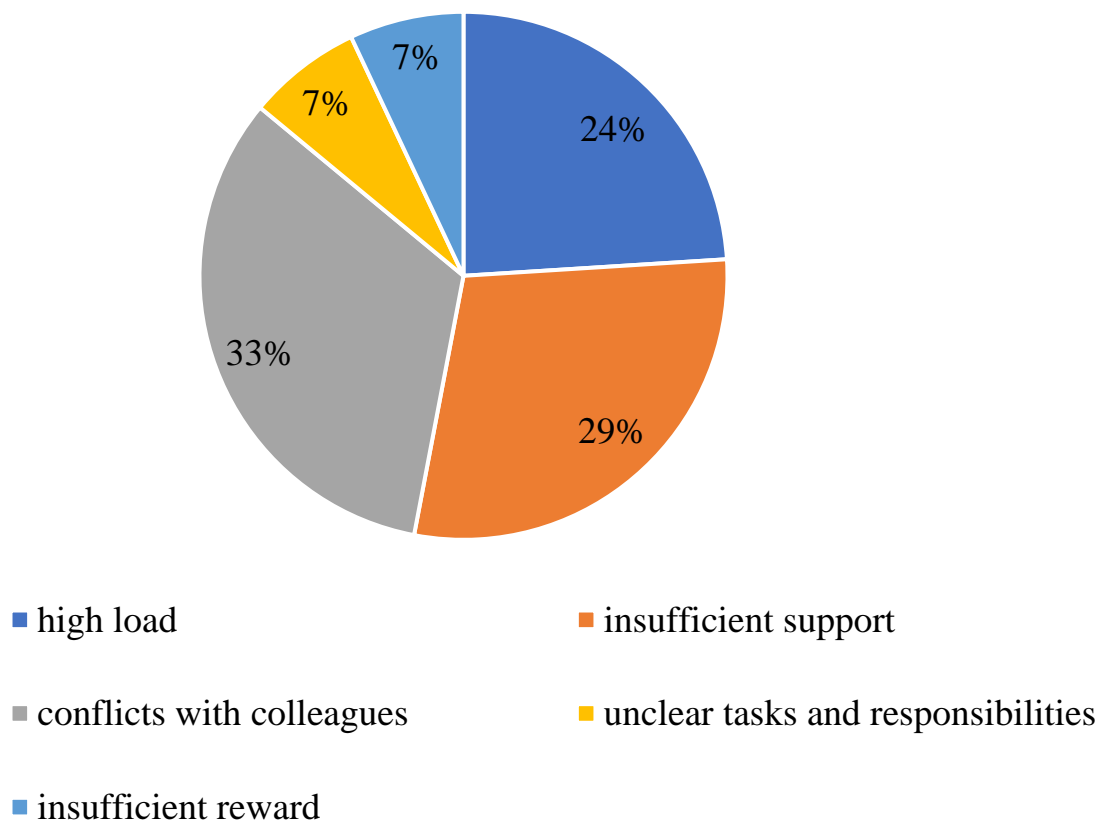


Fig. 3.2. Analysis of the main factors that contribute to stress and burnout of pharmacists

The largest share of respondents (33%) indicated that conflicts with colleagues are the main factor contributing to stress and burnout. 29% of respondents indicated that insufficient support is a significant factor affecting their stress and

burnout. 24% of respondents believe that high workload is the cause of their stress and burnout at work. 7% of respondents noted that unclear tasks and responsibilities are a factor contributing to stress and burnout. Another 7% of respondents indicated that insufficient remuneration is one of the factors of stress and burnout at work.

These results highlight the importance of effective management of the work environment and communication among employees to reduce stress and burnout.

By implementing these strategies, organizations can create a more positive and supportive work environment that helps to reduce employee stress and burnout, leading to improved job satisfaction, productivity, and overall well-being.

3.2. Development of interventions to counteract the negative impact of psychosocial elements

If a pharmacist often feels that he does not want to go to work at all, you are constantly tired, feel hopeless and broken. Small things are annoying, and he avoids communication with colleagues and tries to isolate himself from everything related to work. If this condition continues constantly, then the pharmacist has faced the syndrome of professional burnout. Burnout is a specific type of work-related stress that manifests itself in physical or emotional exhaustion, feelings of dissatisfaction, and loss of personal identity. It is important to note that "burnout" is not a medical diagnosis. Some experts believe that other problems, such as depression, or individual factors, such as personality traits or family circumstances, may also play a role in the development of burnout [19].

Stress and emotional burnout are common problems among pharmaceutical workers, affecting their productivity, health and overall well-being. Psychosocial factors such as high workloads, insufficient support from colleagues and management, workplace conflict, unclear tasks and responsibilities, and insufficient compensation can significantly exacerbate these problems. In this regard, the development of effective measures to reduce the negative impact of psychosocial factors is extremely important [5].

According to the conducted research, the majority of pharmaceutical workers feel supported by colleagues and management. However, there are those who never or rarely experience this support, which can lead to increased levels of stress and burnout. Support from colleagues (40% often, 38% always) and management (21% often, 50% always) is critical to creating a healthy work environment [22].

Our research found that conflicts with colleagues (33%), insufficient support (29%), high workload (24%), unclear tasks and responsibilities (7%), and insufficient compensation (7%) are the main factors that contribute to stress and burnout of employees. These results highlight the need for intervention to reduce the negative impact of these factors.

We have developed measures to reduce the negative impact psychosocial factors:

- 1) Organization of regular team events and trainings to improve interaction between pharmaceutical workers.
- 2) Introducing mentorship programs where experienced pharmaceutical professionals can support and train newcomers.
- 3) Ensuring open and honest communication between pharmaceutical workers and pharmacy management to create an atmosphere of trust and support.
- 4) Continuous analysis of workload and fair redistribution of tasks between employees of pharmacy enterprises to prevent overload.
- 5) Development of clear job descriptions for each pharmaceutical employee to avoid confusion and reduce stress.
- 5) Introduction of a flexible work schedule, which will allow pharmacy employees to better balance work and personal life.
- 6) Implementation of conflict management training to teach pharmaceutical workers how to effectively resolve conflicts.
- 7) Revision of the reward system and provision of additional bonuses or other forms of recognition for high achievements.
- 8) Providing employees with opportunities for professional development, such as professional development courses and training.

Reducing the negative impact of psychosocial factors is a key task for any organization seeking to maintain the health and well-being of its employees. Development and implementation of measures aimed at increasing support, managing workload and improving working conditions will help reduce stress and burnout, increase productivity and employee satisfaction with their work [1].

Professional burnout develops against the background of chronic stress, gradually depleting a person's emotional, energy and personal resources. This leads to the accumulation of negative emotions that do not find a way out, which ultimately leads to burnout. This condition can be caused by a number of factors, including a lack of control, where the pharmacist feels unable to influence important work decisions such as scheduling, assignments, or workload, and lacks resources to do the job. Unclear job expectations can also cause discomfort and stress when a person is unsure of their authority or does not understand what is expected of them. A toxic work environment, with pharmacy conflicts, toxic colleagues, or an overly controlling manager, can greatly increase stress. The monotony or chaos of work that requires constant attention can also lead to fatigue and burnout. A lack of social support at work or in your personal life increases stress levels, and a work-life imbalance where work takes up too much of your time and energy, leaving no room for family and friends, makes burnout even more likely [4].

Psychosocial factors such as stress, trauma, social isolation and economic hardship can have a significant impact on a person's mental health and well-being. The development of effective interventions to mitigate these negative effects is an important area of research and practice [19].

Key strategies for the development of such interventions we will study more detail. Understanding the Roots of the Problem – conducting a comprehensive assessment to identify specific psychosocial stressors affecting individuals or communities. Analysis of risk factors (poverty, discrimination, violence) and protective factors (social support, resilience, coping skills).

Individualized approaches – designing interventions that meet the unique needs and experiences of individuals or groups.

Cultural sensitivity – ensuring that interventions are culturally appropriate and consider the specific context of the target audience [15].

Evidence base – implementation of evidence-based practices and therapeutic techniques, the effectiveness of which has been proven to solve psychosocial problems.

Comprehensive approaches – combining different intervention strategies, such as cognitive-behavioral therapy, mindfulness practices, social support programs.

Community-based initiatives – promoting community-based initiatives that increase mental health awareness, reduce stigma and provide support services.

Systemic change – advocating for systemic change that addresses the roots of psychosocial stressors such as poverty, inequality and discrimination.

Promoting resilience and coping skills – teaching people to develop resilience, coping skills and problem-solving strategies [18].

Mindfulness and meditation – encouraging mindfulness and meditation practices to reduce stress, improve emotional regulation and overall well-being.

Social support – fostering social networks and connections to help people cope with adversity and build resilience [19].

Addressing trauma and violence – implementing trauma-informed approaches that recognize the prevalence of trauma and include trauma-sensitive practices.

Violence Prevention – developing and implementing violence prevention programs to address the root causes of violence and reduce its prevalence.

Crisis Intervention – providing immediate crisis intervention services to individuals who have experienced traumatic events.

Evaluation and continuous improvement – evaluating the effectiveness of interventions to assess their impact on mental health and well-being outcomes. Using data to make decisions and make necessary adjustments to improve the effectiveness of interventions. Applying these strategies allows for the development of effective interventions that can counteract the negative impact of psychosocial

factors and promote the mental health and well-being of individuals and communities [3].

Pharmaceutical workers experiencing burnout need to make some changes to their work environment. In particular: improve your qualifications and develop professionally. Communicating with representatives of other professions and social groups will help a pharmacist gain a broader understanding of the world, expand his horizons and grow as a person. It is also necessary to minimize unnecessary competition in the pharmacy team, especially in teamwork. It is important for a pharmacist to set priorities and goals correctly, to calculate his workload wisely. Do not always try to be the best in everything, proving your superiority. It is worth contacting the personnel department or discussing problems with the manager. Sometimes it may take a job change or finding a new job to stop burnout. It is necessary to develop clear strategies for dealing with stress. Taking care of yourself, such as eating a healthy diet, exercising regularly, and getting enough sleep can help reduce the effects of a stressful job. A vacation may provide temporary relief, but a few weeks away from work won't be enough to overcome burnout. Taking regular breaks and daily recovery exercises can help combat burnout [24].

If a pharmacist is experiencing burnout and is struggling to find a way out, or if they suspect they may have a mental disorder such as depression, they should seek professional help. If a pharmacist shows signs of professional burnout, it is important to take immediate steps to overcome this condition. First, you should not hide your emotions – it is better to discuss problems with the head of the pharmacy, which can help adjust expectations, find compromises or solutions [16].

Pharmacists and pharmacy staff often face significant psychosocial stressors that can negatively impact their mental health and well-being. To mitigate these challenges, it is crucial to create a supportive work environment that prioritizes employee well-being. This includes fostering a positive and inclusive culture, promoting open communication, and providing adequate staffing to reduce workload stress. Implementing stress management programs, such as mindfulness training and counseling services, can also be beneficial. Additionally, organizations

should encourage a healthy work-life balance by offering flexible work arrangements and time off policies [22].

On an individual level, pharmacists can develop coping mechanisms like deep breathing exercises, mindfulness, or seeking support from colleagues or mental health professionals. Setting boundaries between work and personal life is essential to prevent burnout [1].

Systemically, the pharmacy industry should address industry-specific challenges by advocating for policies that support pharmacists' well-being, such as workload limits and fair compensation. Reducing the stigma associated with mental health issues and promoting continuous professional development are also crucial [12].

By taking a comprehensive approach that addresses organizational, individual, and systemic factors, pharmacies can create a more supportive and healthier work environment for their staff, ultimately improving patient care and reducing the negative impact of psychosocial stressors [6].

It is also important to seek support from colleagues, friends or loved ones, because the opportunity to share your experiences and receive support can significantly alleviate the condition. It is no less important to maintain your physical health by regularly exercising, eating right, and getting enough rest. Physical activity helps to cope with stress and serves as a relief from work. A pharmacist must also observe a sleep regime, because quality sleep restores strength and helps maintain good health. Being creative or finding a hobby that you enjoy can also be helpful. This will relieve tension and add stability to life. Learning self-regulation and stress management techniques, such as yoga, meditation or walks in the fresh air, will help the pharmacist find effective ways out of difficult situations and reduce stress levels [19].

CONCLUSIONS TO CHAPTER III

1. We conducted a study of psychosocial factors. It was found that 40% of respondents often feel support from colleagues, and 38% always feel this support.

Only 19% of respondents rarely feel support from colleagues, and only 3% never feel it. It was found that half of the respondents always feel support from management, and 21% feel this support often. However, 15% rarely feel support from pharmacy management, and 14% of pharmacists never feel it. It was established that the largest share of respondents (59%) often feel burnout at work, and 32% always feel it. Only 5% of respondents rarely experience burnout, and only 4% never experience burnout at work.

2. The main factors contributing to stress and burnout of pharmacists were analyzed. The largest share of respondents (33%) indicated that conflicts with colleagues are the main factor contributing to stress and burnout. 29% of respondents indicated that insufficient support is a significant factor affecting their stress and burnout. 24% of respondents believe that high workload is the cause of their stress and burnout at work. 7% of respondents noted that unclear tasks and responsibilities are a factor contributing to stress and burnout. Another 7% of respondents indicated that insufficient remuneration is one of the factors of stress and burnout at work.

3. To reduce the negative impact of psychosocial factors, we have developed several measures, in particular: organizing regular team events and trainings to improve interaction between employees, introducing mentoring programs, ensuring open and honest communication between employees and management, constant analysis of workload and fair redistribution of tasks, development clear descriptions of job duties, introduction of flexible work schedule, conflict management training, revision of the remuneration system and provision of additional bonuses, provision of opportunities for professional development.

GENERAL CONCLUSIONS

1. The main causes and consequences of professional burnout among pharmacists, as well as psychosocial factors affecting their work, are analyzed.
2. According to the results of the survey of 57 pharmacists from different regions of Ukraine, 85% of the respondents are pharmacists, and 15% are managers of pharmacies. 52% of respondents have experience from 11 to 20 years, 7% – up to 5 years, 70% have a family, and 90% of respondents are women.
3. The level of professional burnout was studied: 81% of respondents at least sometimes feel tired, 75% – decreased interest in work, 79% – difficulty waking up, 66% – irritation or anger. 84% of respondents felt emotional exhaustion, 63% – depression or hopelessness, 70% – loss of motivation to work.
4. The burnout assessment of pharmacists according to Maslach showed that 67% have an average level of emotional exhaustion, 54% have an average level of depersonalization, and 42% have an average level of reduction of personal achievements. A high level of burnout affects the productivity, health and quality of work of pharmacists.
5. It was found that 47% of pharmacists chose to change jobs within their professional field, 21% changed their field of activity, 9% chose travel, 11% obtained additional education, 11% started their own business, and 5% resigned without concrete plans for the future.
6. It was found that 18% of pharmacists noted the monotony of work as the main factor of burnout, 11% – insufficient financial remuneration, 10% – conflicts with colleagues, 9% - lack of opportunities for professional growth. Other factors include high workloads, emotional stress, unstable working conditions, lack of support, unfair treatment, lack of recognition and rewards, and unclear roles and responsibilities.
7. Professional burnout among pharmacists leads to a deterioration in the quality of customer service (43%), an increase in the number of errors (15%), an increase in staff turnover (18%) and a deterioration in health (24%).

8. It was found that 40% of respondents often feel support from colleagues, 38% – always, and 50% of respondents always feel support from management. At the same time, 59% often experience burnout, and 32% always.

9. The main factors contributing to stress and burnout include conflicts with colleagues (33%), insufficient support (29%), high workload (24%), unclear tasks and responsibilities (7%) and insufficient compensation (7%).

10. Measures are proposed to reduce the negative impact of psychosocial factors: organization of regular team events, introduction of mentoring programs, provision of open communication, analysis of workload, development of clear descriptions of job duties, introduction of flexible work schedule, conflict management training, revision of the reward system and provision of opportunities for professional development.

REFERENCES

1. Богданова І. В. Напрямки корекції синдрому хронічної втоми та синдрому емоційного вигорання. *Український медичний часопис*. 2021. № 1. С. 38–45.
2. Вежновець Т. А. Особливості професійного розвитку керівників установ охорони здоров'я. *Лікарська справа*. 2016. № 5/6. С. 156-162.
3. Олійник М. Ю. Дослідження синдрому вигорання. КПТ-орієнтована модель допомоги при емоційному вигоранні. Львів, 2021. 51 с. URL: <https://icbt.org.ua/wp-content/uploads/2021/08/Oliynyk-M.-KPT-oriyentovana-modeldopomogy-pry-emotsiynomu-vygoranni.pdf> (дата звернення: 04.10.2024).
4. Потаскалова В. С. Тренінги комунікативності і асертивності як способи попередження професійного вигорання медичного персоналу та підвищення якості надання медичної допомоги населенню. *Сімейна медицина*. 2015. № 3. С. 71-73.
5. Пестун І. В., Мнушко З. М. Про адаптацію емоційного інтелекту фармацевта до роботи в умовах війни в Україні URL : <https://sciconf.com.ua/wp-content/uploads/2022/11/PROGRESSIVE-RESEARCH-IN-THEMODERN-WORLD-2-4.11.22.pdf> (дата звернення: 04.10.2024).
6. Саламатіна Є. Профілактика професійного вигорання. *Психолог*. 2013. № 8. С. 26–28.
7. Синдром «професійного вигорання»: у сфері ризику – аптекари URL: <https://fp.com.ua/articles/syndrom-profesiynoho-vyhorannya/> (дата звернення: 04.10.2024).
8. Чеканська Л. М. Емоційне вигорання під час війни та методи саморегуляції особистості. *Психологічна допомога: від кризи до ресурсу* : матеріали V Всеукр. наук.-практ. форуму, 13-17 квіт. 2022 р. URL: <http://www.soippo.edu.ua/images/> (дата звернення: 04.10.2024).
9. Чеканська Л. М. Особливості психологічної профілактики професійного вигорання у педагогів. *Освітні інновації: філософія, психологія,*

педагогіка : матеріали VII Міжнар. наук.-прак. конф., м. Суми, 10 груд. 2020 р. Суми : ФОП Цьома С.П., 2020. Ч. 2. С. 211–217.

10. Шульга Л. І. Проблема стресу та емоційного вигорання в умовах життя сучасної молоді. *Фармацевтична наука та практика: проблеми, досягнення, перспективи розвитку* : матеріали II наук.-прак. інтернет-конф. з міжнар. участю, м. Харків, 27 квіт. 2018 р. Харків : НФаУ, 2018. С. 424-426.

11. Шульга Л. І., Зарічкова М. В. Вивчення проблематики синдрому професійного вигорання у фахівців фармації. *Соціальна фармація: стан, проблеми та перспективи* : матеріали VI Міжнар. наук.-прак. інтернетконф., м. Харків, 23–24 квіт. 2020 р. Харків : НФаУ, 2020. С. 371–374.

12. Barker A. Burned Out Pharmacists: Understanding the Job's Negative Health Effects. *Pharmacy Times*. October. 2017. URL: <http://www.pharmacytimes.com/contributor/alex-barker-pharmd/2017/10/burnedoutpharmacists-understanding-the-jobs-negative-health-effects>. (Date of access: 04.10.2024).

13. Bridgeman P. J., Bridgeman M. B., Barone J. Burnout syndrome among healthcare professionals. *The Bulletin of the American Society of Hospital Pharmacists*. 2018. Vol. 75, № 3 P. 147–152.

14. Cassella C. «Burn-Out» is now a legitimate syndrome according to the WHO. Here are the symptoms. URL: <https://www.sciencealert.com/burn-out-is-nowofficially-recognised-as-a-legitimatesyndrome-by-the-world-health-organisation>. (Date of access: 04.10.2024).

15. Connor K. M., Davidson J. R. Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). *Depression and anxiety*. 2003. Vol. 18, № 2. P. 76-82.

16. Davidson J. R. Explorative study of psychosocial stress factors that cause professional burnout among teachers, who leave near the front-line zone in the East of Ukraine. *Mental Health: global challenges of XXI century* : International Conference. Kyiv, 2018. P. 19.

17. Freudenberger H. J. Staff burn-out. *Journal of Social Issues*. 1974. Vol. 30, № 1. P. 1591-65.
18. Garcia G. P., Marziale M. H. Indicators of burnout in Primary Health Care workers. *Revista Brasileira de Enfermagem*. 2018. Vol. 71. P. 2334–2342.
19. Jovic D. D., Krajnovic D. M., Lakic D. M. Job Burnout Predictors In Community Pharmacists In Serbia. *Value in health*. 2016. Vol. 19. P. 475.
20. Kahill S. Interventions for burnout in the helping professions: A re-view of the empirical evidence. *Canadian Journal of Counseling Review*. Vol. 22, № 3. P. 162–169.
21. Kosyaschnikova T. V., Puzac N. A. Professional burnout syndrome employees of pharmaceutical production. *Topical issues of new drugs development : Abstracts of International Scientific And Practical Conference Of Young Scientists And Student*, April 23, 2015. Kharkiv : Publihing Office NUPh, 2015. P. 486–487.
22. Lheureux F. The maslach burnout inventory – Human services survey (mbihss): factor structure, wording effect and psychometric qualities of known problematic items. *Le travail humain*. 2017. Vol. 80, № 2. P. 161-186.
23. Maslach C. Burnout Encyclopedia of Stress / ed. by G.Fink. San Diego : Academic Press. 2000. Vol. 1. A-D. 758 p.
24. Maslach C. Burnout in health professionals. *Cambridge handbook of psychology, health and medicine*. 2 ed. Cambridge : Cambridge University Press, 2007. 968 p.
25. Maslach C. Prevention of burnout: New perspectives. *Applied and preventive Psychology*. 1998. Vol. 7. P. 63–74.
26. Maslach C., Jackson S. The measurement of experienced burnout. The measurement of experienced burnout. *Organ Behavior*. 1981. Vol. 2, № 2. P. 99-113.
27. Maslach C., Jackson S., Leiter M. Maslach Burnout Inventory: Third edition. *Evaluating stress : A book of resources*. Scarecrow education. Washington, 1997. P. 191-218.

28. Maslach C., Leiter M. P. Understanding the burnout experience: Recent research and its implications for psychiatry. *World Psychiatry*. 2016. № 15. P. 103-111.
29. The effects of exercise program on burnout and metabolic syndrome components in banking and insurance workers / H. H. Tsai et al. *Industrial Health*. 2013. № 51. P. 336-346.
30. Burn-out an «occupational phenomenon»: International Classification of Diseases. World Health Organization. 2019. 28 May. URL:[who.int/news/item/2805-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases](https://www.who.int/news/item/2805-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases) (Date of access: 04.10.2024).

APPLICATIONS

Questionnaire for pharmacists

Dear colleagues! We conduct scientific research on the level of professional burnout. In order to obtain objective information about the state of this problem, we ask you to answer to the following questions:

1. Your position

- | | |
|--------------------------------------|--------------------------------------|
| <input type="checkbox"/> manager | <input type="checkbox"/> pharmacist |
| <input type="checkbox"/> deputy head | <input type="checkbox"/> other _____ |

2. Work experience in the specialty:

- | | |
|---|--|
| <input type="checkbox"/> up to a year | <input type="checkbox"/> from 11 to 15 years |
| <input type="checkbox"/> from 1 to 5 years | <input type="checkbox"/> from 16 to 20 years |
| <input type="checkbox"/> from 6 to 10 years | <input type="checkbox"/> more than 21 years |

3. Do you have a family:

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

4. Gender:

- ☐ Male ☐ Female ☐ Other

Evaluation of the level of professional burnout

5. How often do you feel tired after a working day?

- ☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

6. How often do you find it difficult to wake up in the morning for work?

- ☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

7. Do you feel a decrease in interest in your work?

- ☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

8. How often do you feel irritated or angry at work?

- ☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

9. Do you feel like your work is becoming less productive?

- ☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

10. How often do you feel that your efforts are not appreciated at work?

- ☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Psychological state

11. How often do you feel emotionally drained?

- ☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

12. How often do you feel depressed or hopeless?

- ☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

13. Do you feel that you have lost motivation to work?

- ☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

14. Choose what you did when you were emotionally burned out?

- ☐ resigned and were looking for a job in the field of pharmacy
- ☐ resigned and looked for work in another field
- ☐ used as a travel reset
- ☐ getting another education
- ☐ went into their own business
- ☐ left the pharmacy "to nowhere"

15. What factors cause you emotional burnout?

- ☐ high workload
- ☐ emotional stress
- ☐ lack of support
- ☐ instability of working conditions
- ☐ monotony of work
- ☐ lack of opportunities for professional growth
- ☐ unfair treatment
- ☐ lack of recognition and awards
- ☐ conflicts with colleagues or management
- ☐ insufficient financial reward
- ☐ overloaded with responsibility
- ☐ lack of balance between work and personal life
- ☐ high demands and expectations
- ☐ uncertainty of roles and responsibilities
- ☐ pressure from terms and deadlines
- ☐ working conditions and support

16. What consequences of professional burnout did you experience?

- ☐ deterioration of the quality of customer service
- ☐ increasing the number of errors
- ☐ increasing staff turnover
- ☐ deterioration of health

17. Do you feel supported by colleagues?

- ☐ Never ☐ Rarely ☐ Often ☐ Always

18. Do you feel supported by management?

- ☐ Never ☐ Rarely ☐ Often ☐ Always

19. How would you rate the level of stress in your workplace?

- ☐ Low ☐ medium ☐ high ☐ very high

20. How often do you feel burned out at work?

- ☐ never ☐ rarely ☐ often ☐ always

21. What are the main factors, in your opinion, that contribute to your stress and burnout ? (you can choose several)

- ☐ high load
- ☐ insufficient support
- ☐ conflicts with colleagues
- ☐ unclear tasks and responsibilities
- ☐ insufficient reward
- ☐ other (specify): _____

Thank you for your time and participation in this study!

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ
КАФЕДРА ПРОМИСЛОВОЇ ТЕХНОЛОГІЇ ЛІКІВ ТА КОСМЕТИЧНИХ ЗАСОБІВ
КАФЕДРА АПТЕЧНОЇ ТЕХНОЛОГІЇ ЛІКІВ

MINISTRY OF HEALTH OF UKRAINE
NATIONAL UNIVERSITY OF PHARMACY
DEPARTMENT OF INDUSTRIAL TECHNOLOGY OF MEDICINES AND COSMETICS
DEPARTMENT OF DRUG TECHNOLOGY



Матеріали

IV міжнародної науково-практичної конференції
Proceedings of the IV International Scientific and Practical Conference

ФУНДАМЕНТАЛЬНІ ТА ПРИКЛАДНІ ДОСЛІДЖЕННЯ
У ГАЛУЗІ ФАРМАЦЕВТИЧНОЇ ТЕХНОЛОГІЇ

FUNDAMENTAL AND APPLIED RESEARCH IN THE
FIELD OF PHARMACEUTICAL TECHNOLOGY

25 жовтня 2024 р.

October 25, 2024

Харків, Україна

Kharkiv, Ukraine

УДК:615.014.2:615.2

Редакційна колегія: проф. Котвіцька А. А., проф. Владимірова І. М., проф. Вишневська Л. І., проф. Рубан О. А., проф. Ковалевська І. В., проф. Семченко К. В., доц. Солдатов Д.П.

Відповідальні секретарі : проф. Ковалевська І. В., проф. Семченко К. В.

Фундаментальні та прикладні дослідження у галузі фармацевтичної технології: Збірник наукових матеріалів IV Міжнародної науково-практичної конференції (м. Харків, 25 листопада 2024 р.). Х.: Вид-во НФаУ, 2024.- С. 361 (Серія «Наука»)

Збірник містить матеріали IV Міжнародної науково-практичної конференції «Фундаментальні та прикладні дослідження у галузі фармацевтичної технології».

Розглянуті теоретичні аспекти та перспективи розробки лікарських препаратів, висвітлені напрямки наукової роботи спеціалістів фармацевтичної галузі, що стосуються питань сучасної технології створення лікарських препаратів, контролю їх якості, організаційно-економічних аспектів діяльності фармацевтичних підприємств, маркетингових досліджень сучасного фармацевтичного ринку, фармакологічних досліджень біологічно активних речовин.

Для широкого кола наукових, науково-педагогічних і практичних працівників, що займаються питаннями розробки та впровадження сучасних лікарських препаратів.

*Матеріали подаються мовою оригіналу.
За достовірність матеріалів відповідальність несуть автори.*

УДК:615.014.2:615.2

НФаУ, 2024

STUDY OF PSYCHOSOCIAL ELEMENTS INFLUENCING THE JOB PERFORMANCE OF PHARMACISTS

Gerasymova O.O., Bondarieva I.V., Jabrane Houssam
National University of Pharmacy, Kharkiv, Ukraine

Introduction. In the rapidly evolving pharmaceutical industry, the performance of pharmacists plays a critical role in ensuring the delivery of quality healthcare services. Understanding the factors that influence job performance is essential for optimizing both individual and organizational outcomes. This study aims to explore the psychosocial elements that impact pharmacists' job performance, emphasizing the significance of motivation, job satisfaction, and workplace relationships. By examining these factors, we can gain valuable insights into how to enhance pharmacists' performance, which is vital for improving patient care and organizational effectiveness.

The aim of the study is to analyze psychosocial elements influencing the job performance of pharmacists.

Methods of research. The following research methods were used in the work: content analysis, survey, system, graphic.

Main results. Psychosocial factors significantly influence the work of pharmacists, encompassing social, psychological, and organizational elements that impact their professional lives. We examined some of these factors in more detail. Pharmacists often operate in high-pressure environments that require them to process vast amounts of information quickly and accurately. This pressure can lead to stress and burnout, particularly when working conditions do not effectively mitigate stress.

Support from colleagues and management plays a crucial role in enhancing the work environment. Effective communication channels and opportunities for social interaction can help alleviate stress and boost job satisfaction. A sense of professional fulfillment and opportunities for career advancement are vital for pharmacists. Acknowledgment of their accomplishments and chances for professional development contribute to a positive work attitude. Failing to maintain a healthy work-life balance can adversely affect pharmacists' overall well-being. Flexible schedules and leisure opportunities can help sustain this balance.

A workplace culture that promotes openness, collaboration, and innovation positively influences motivation and job satisfaction. In contrast, a toxic work environment can lead to conflict and dissatisfaction.

Effective communication with patients is essential for ensuring patient satisfaction and fostering trust in pharmacists. Strong interpersonal skills, empathy, and active listening are key to building positive relationships.

The physical work environment, including working conditions, workplace comfort, and access to necessary resources, also impacts pharmacists' performance. Safe and comfortable working conditions enhance productivity and job satisfaction.

Conclusions. In conclusion, the study highlights the significant role of psychosocial factors in influencing the job performance of pharmacists within the rapidly evolving pharmaceutical industry. The findings underscore that both individual and organizational outcomes are deeply affected by elements such as motivation, job satisfaction, and workplace relationships.

Ministry of Health of Ukraine
National University of Pharmacy
Department of Industrial Technology of Medicines and Cosmetics
Department of Pharmaceutical Technology of Drugs



Certificate

This is to certify that

Jabrane Houssam

has participated in the IV International Scientific and Practical Conference

**"FUNDAMENTAL AND APPLIED RESEARCH IN THE FIELD OF
PHARMACEUTICAL TECHNOLOGY"**

October 25, 2024, Kharkiv, Ukraine



Vice-Rector for scientific and
pedagogical work of NUPh, prof.



Inna VLADYMYROVA

National University of Pharmacy

Faculty for foreign citizens' education

Department management, marketing and quality assurance in pharmacy

Level of higher education master

Specialty 226 Pharmacy, industrial pharmacy

Educational program Pharmacy

APPROVED

**The Head of Department
management, marketing and
quality assurance in pharmacy**

Volodymyr MALYI

“02” September 2024

**ASSIGNMENT
FOR QUALIFICATION WORK
OF AN APPLICANT FOR HIGHER EDUCATION**

Houssam JABRANE

1. Topic of qualification work: «Analysis of the impact of professional burnout on the productivity of pharmacists», supervisor of qualification work: Olga GERASYMOVA, PhD, assoc. prof.

approved by order of NUPh from “06” of February 2024 № 34

2. Deadline for submission of qualification work by the applicant for higher education: October 2024

3. Outgoing data for qualification work: sources of scientific literature, directories, retail sector of the pharmaceutical market, legislative and regulatory framework, statistical and reporting data, activity of pharmacy enterprises, analysis of professional periodicals.

4. Contents of the settlement and explanatory note (list of questions that need to be developed): to study the principles, fundamental causes, and repercussions of work-related burnout in pharmacists; to study psychosocial elements influencing the job performance of pharmacists; to study of the degree of professional burnout in pharmacy professionals; to conduct evaluation of the strategies employed by pharmacists to address burnout; to research on the role of psychosocial factors in stress and burnout; to develop of interventions to counteract the negative impact of psychosocial elements.

5. List of graphic material (with exact indication of the required drawings):
Pictures – 2, tables – 12

6. Consultants of chapters of qualification work

Chapters	Name, SURNAME, position of consultant	Signature, date	
		assignment was issued	assignment was received
1	Olga GERASYMOVA, associate professor of higher education institution of department management, marketing and quality assurance in pharmacy	02.09.2024	02.09.2024
2	Olga GERASYMOVA, associate professor of higher education institution of department management, marketing and quality assurance in pharmacy	09.09.2024	09.09.2024
3	Olga GERASYMOVA, associate professor of higher education institution of department management, marketing and quality assurance in pharmacy	30.09.2024	30.09.2024

7. Date of issue of the assignment: «02» September 2024.

CALENDAR PLAN

№ з/п	Name of stages of qualification work	Deadline for the stages of qualification work	Notes
1	Collection and generalization of data from scientific literature by areas of qualification work	June 2024	done
2	Analysis of the consequences of professional burnout among pharmacists	June 2024	done
3	Research on the level of professional burnout among pharmacists	September 2024	done
4	Study of psychosocial factors contributing to stress and burnout	September 2024	done
5	Development of measures to reduce the negative impact of psychosocial factors	September 2024	done
6	Writing and design of qualification work	October 2024	done
7	Approbation of qualification work	October 2024	done
8	Submission of the qualification work to the EC of the National University of Pharmacy	October 2024	done

An applicant of higher education

_____ Houssam JABRANE

Supervisor of qualification work

_____ Olga GERASYMOVA

ВИТЯГ З НАКАЗУ № 34
По Національному фармацевтичному університету
від 06 лютого 2024 року

1. Затвердити теми кваліфікаційних робіт здобувачам вищої освіти 5-го курсу 2 циклу Фм20*(4,10д) 2024-2025 навчального року, ступінь вищої освіти «магістр», галузь знань 22 Охорона здоров'я, спеціальність 226 – Фармація, промислова фармація, освітньо-професійна програма – Фармація, денна форма здобуття освіти (термін навчання 4 роки 10 місяців), які навчаються за контрактом (мова навчання англійська)

№ з/п	Прізвище, ім'я здобувача вищої освіти	Тема кваліфікаційної роботи	Посада, прізвище та ініціали керівника	Рецензент кваліфікаційної роботи
• по кафедрі менеджменту, маркетингу та забезпечення якості у фармації				
8.	Жабран Хуссам	Аналіз впливу професійного вигорання на продуктивність праці фармацевтів	доц. Герасимова О.А.	доц. Волкова А.В

Ректор

Вірно. Секретар



ВИСНОВОК

**експертної комісії про проведену експертизу
щодо академічного плагіату у кваліфікаційній роботі
здобувача вищої освіти**

«11» листопада 2024 р. № 329576057

Проаналізувавши кваліфікаційну роботу здобувача вищої освіти Жабран Хуссам, Фм20*(4,10д)-англ-02, спеціальності 226 Фармація, промислова фармація, освітньої програми «Фармація» навчання на тему: «Аналіз впливу професійного вигорання на продуктивність праці фармацевтів / Analysis of the impact of professional burnout on the productivity of pharmacists», експертна комісія дійшла висновку, що робота, представлена до Екзаменаційної комісії для захисту, виконана самостійно і не містить елементів академічного плагіату (копіляції).

**Голова комісії,
проректор ЗВО з НПР,
професор**

Інна ВЛАДИМИРОВА



REVIEW

of scientific supervisor for the qualification work of the master's level of higher education of the specialty 226 Pharmacy, industrial pharmacy

Houssam JABRANE

on the topic: «Analysis of the impact of professional burnout on the productivity of pharmacists»

Relevance of the topic. The pharmaceutical industry is critically important for ensuring the population's access to medicines. However, workers in this field often feel the pressure of high demands, constant interaction with patients and great responsibility for their health, which can lead to the development of professional burnout syndrome.

Practical value of conclusions, recommendations and their validity. The practical significance of the conducted research lies in the possibility of using the recommendations in the practical activities of the pharmacy enterprise. The presented results are scientifically based and can be used in the implementation of measures to reduce the negative impact of psychosocial factors.

Assessment of work. Houssam JABRANE conducted a significant research work and successfully coped with it, showed the ability to analyze and summarize data from literary sources, to work independently. In the work, the research results are properly interpreted and illustrated with figures. While completing the qualification work, the higher education applicant showed creativity, purposefulness, independence, and perseverance.

General conclusion and recommendations on admission to defend. The qualification work of the 5th year applicant of higher education Phm20*(4,10) eng-02 group Houssam JABRANE on the topic: "Analysis of the impact of professional burnout on the productivity of pharmacists" is a completed scientific study, which in terms of relevance, scientific novelty, theoretical and practical significance meets the requirements for qualification works, and can be presented to the EC of the National University of Pharmacy.

Scientific supervisor

Olga GERASYMOVA

3rd of October 2024

REVIEW

**for qualification work of the master's level of higher education, specialty 226
Pharmacy, industrial pharmacy**

Houssam JABRANE

**on the topic: «Analysis of the impact of professional burnout on the
productivity of pharmacists»**

Relevance of the topic. Psychosocial factors, such as the atmosphere in the team, relationships with colleagues, the level of support from the management and the amount of workload, play no less important role in the occurrence of professional burnout in pharmacists than personal characteristics. A deep understanding of these aspects will help to develop effective strategies to prevent and overcome this problem.

Theoretical level of work. The qualification work reveals theoretical approaches to professional burnout and psychosocial factors.

Author's suggestions on the research topic. The author has developed measures to reduce the negative impact of psychosocial factors.

Practical value of conclusions, recommendations and their validity. The obtained research results are of practical importance and can be used to reduce the negative impact of psychosocial factors.

Disadvantages of work. As a remark, it should be noted that some results of the literature review, which are presented in the first chapter, need stylistic refinement. In general, these remarks do not reduce the scientific and practical value of the qualification work.

General conclusion and assessment of the work. Houssam JABRANE qualification work "Analysis of the impact of professional burnout on the productivity of pharmacists" is a scientifically based analytical study that has theoretical and practical significance. The qualification work meets the requirements for qualification papers and can be submitted to the EC of the National University of Pharmacy.

Reviewer _____ assoc. prof. Alina VOLKOVA

14 of October 2024

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ**

ВИТЯГ З ПРОТОКОЛУ № 5

22 листопада 2024 року

м. Харків

**засідання кафедри менеджменту, маркетингу
та забезпечення якості в фармації**

Голова: завідувач кафедри ММЗЯФ, доктор фарм. наук, професор
Малий В. В.

Секретар: доцент ЗВО, канд. фарм. наук, доц. Жадько С.В.

ПРИСУТНІ: зав. кафедри ММЗЯФ, доктор фарм. наук, проф.
Малий В.В., професор ЗВО, докт. фарм. наук, проф. Пестун І.В., професор ЗВО,
докт. фарм. наук, проф. проф. Літвінова О.В., професор ЗВО, докт. фарм. наук,
проф. проф. Коваленко С.М., професор ЗВО, докт. фарм. наук, проф. Крутських
Т.В., професор ЗВО, докт. фарм. наук, проф. проф. Посилкіна О.В., доцент ЗВО,
канд. фарм. наук, доц. Бабічева Г.С., доцент ЗВО, канд. фарм. наук, доц.
Бондарєва І.В., канд. екон. наук, доц. Гладкова О.В., канд. екон. наук, доц.
Глебова Н.В., канд. екон. наук, доц. Деренська Я.М., доцент ЗВО, канд. фарм.
наук, доц. Жадько С.В., канд. фарм. наук, доц. Зборовська Т.В., канд. юрид. наук,
доц. Коляда Т.А., канд. екон. наук, доц. Ковальова В.І., канд. фарм. наук, доц.
доц. Лісна А.Г., доцент ЗВО, канд. фарм. наук, доц. Малініна Н.Г., доцент ЗВО,
канд. фарм. наук, доц. Рогуля О.Ю., асистент, канд. фарм. наук Шуванова О.В.,
здобувачі вищої освіти факультету з підготовки іноземних громадян

ПОРЯДОК ДЕННИЙ: Про допуск здобувачів вищої освіти випускного
курсу факультету з підготовки іноземних громадян спеціальності 226 Фармація,
промислова фармація, освітньої програми Фармація до захисту кваліфікаційних
робіт в Екзаменаційній комісії НФаУ.

СЛУХАЛИ: Про допуск здобувача вищої освіти факультету з підготовки
іноземних громадян випускного курсу спеціальності 226 Фармація, промислова
фармація освітньої програми Фармація групи Фм20*(4,10д)англ-02 Хуссам
ЖАБРАН до захисту кваліфікаційної роботи в Екзаменаційній комісії НФаУ.
Кваліфікаційна робота на тему «Аналіз впливу професійного вигорання на
продуктивність праці фармацевтів».

ВИСТУПИЛИ: В обговоренні кваліфікаційної роботи взяли участь
проф. ЗВО Пестун І.В., доц. ЗВО Бабічева Г.С. Керівник кваліфікаційної роботи:
доц., канд. фарм. наук Герасимова О.А.

УХВАЛИЛИ: Допустити здобувача вищої освіти Хуссам ЖАБРАН до
захисту кваліфікаційної роботи на тему «Аналіз впливу професійного вигорання
на продуктивність праці фармацевтів» в Екзаменаційній комісії НФаУ.

Зав. каф. ММЗЯФ, доктор фарм. наук,
професор
Секретар,
доцент ЗВО,
канд. фарм. наук, доцент

Володимир МАЛИЙ

Світлана ЖАДЬКО

НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ

**ПОДАННЯ
ГОЛОВІ ЕКЗАМЕНАЦІЙНОЇ КОМІСІЇ
ЩОДО ЗАХИСТУ КВАЛІФІКАЦІЙНОЇ РОБОТИ**

Направляється здобувач вищої освіти Хуссам ЖАБРАН до захисту кваліфікаційної роботи за галуззю знань 22 Охорона здоров'я спеціальністю 226 Фармація, промислова фармація освітньою програмою Фармація на тему: «Аналіз впливу професійного вигорання на продуктивність праці фармацевтів».

Кваліфікаційна робота і рецензія додаються.

Декан факультету _____ / Світлана КАЛАЙЧЕВА /

Висновок керівника кваліфікаційної роботи

Здобувач вищої освіти Хуссам ЖАБРАН виконав на кафедрі менеджменту, маркетингу та забезпечення якості у фармації НФаУ кваліфікаційну роботу, яка присвячена аналізу впливу професійного вигорання на продуктивність праці фармацевтів.

У першому розділі роботи визначено поняття професійного вигорання серед фармацевтів, його причини та наслідки, а також проаналізовано психосоціальні фактори, що впливають на їхню роботу. Другий розділ присвячений дослідженню рівня вигорання та заходів, які вживають фармацевти для його подолання. У третьому - розглянуто психосоціальні фактори, що сприяють стресу та вигоранню, та запропоновано заходи для їхньої мінімізації.

У цілому подана до захисту кваліфікаційна робота Хуссама ЖАБРАНА на тему «Аналіз впливу професійного вигорання на продуктивність праці фармацевтів» відповідає вимогам, що висуваються до кваліфікаційних робіт, оцінюється позитивно і може бути рекомендована для захисту в Екзаменаційну комісію НФаУ.

Керівник кваліфікаційної роботи

Ольга ГЕРАСИМОВА

3 жовтня 2024 р.

Висновок кафедри про кваліфікаційну роботу

Кваліфікаційну роботу розглянуто. Здобувач вищої освіти Хуссам ЖАБРАН допускається до захисту даної кваліфікаційної роботи в Екзаменаційній комісії.

Завідувач кафедри ММЗЯФ

Володимир МАЛИЙ

22 листопада 2024 р.

Qualification work was defended
of Examination commission on
«28» of November 2024

With the grade _____

Head of the State Examination commission,
D.Pharm.Sc, Professor

_____ / Oleh SHPYCHAK /