

STUDY ON THE INCIDENCE AND PROFILE OF RISK FACTORS IN THE FIELD OF HEALTHCARE PRACTICE IN PHARMACEUTICAL CARE DURING THE COVID-19 PANDEMIC PERIOD

CLAUDIA-CAMELIA BURCEA ^{1#}, DUMITRU FERECHEDE ², CONSTANTIN CIUCUREL ³, DANIELA GEORGESCU ^{4*}, SPERANȚA SCHMITZER ^{5#}, ALINA GHEORGHE ^{6#}, FLORENTINA GHERGHICEANU ⁷, LUMINIȚA GEORGESCU ⁸

¹University of Medicine and Pharmacy "Carol Davila" Bucharest, Faculty of Midwives and Nursing, Department 1 Fundamental Disciplines, Bucharest, Romania

²University of Medicine and Pharmacy "Carol Davila" Bucharest, Faculty of General Medicine, Department 1 Functional Sciences, Bucharest, Romania

³University of Pitești, Faculty of Science, Physical Education and Informatics, Department of Health Care, Physical Therapy and Occupational Therapy, Pitești, Romania

⁴University of Medicine and Pharmacy "Carol Davila" București, Faculty of Midwives and Nursing, Department 2 Specific Disciplines, Bucharest, Romania

⁵University of Medicine and Pharmacy "Carol Davila" Bucharest, Department 12 Ophthalmology, ENT, Emergency Ophthalmology Hospital Bucharest, Bucharest, Romania

⁶University of Medicine and Pharmacy "Carol Davila" Bucharest, Department 12 Ophthalmology, Emergency Ophthalmology Hospital Bucharest, Bucharest, Romania

⁷University of Medicine and Pharmacy "Carol Davila" Bucharest, Department 3 Complementary sciences, Marketing and Medical Technology, Bucharest, Romania

⁸University of Pitești, Faculty of Science, Physical Education and Informatics, Department of Physical Education and Sports, Pitești, Romania

*corresponding author: daniela.georgescu@umfcd.ro

#Authors with equal contribution.

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Abstract

The profession of pharmacist involves a continuous effort to combat diseases and preserve social health in various urban and rural communities. Pharmacists are exposed to a variety of risk factors while performing their professional activity. The COVID-19 pandemic period introduced an additional risk among occupational risk factors. The aim of the study is to identify occupational risk factors among pharmacists and the health problems they face at work. The study also seeks to propose some recommendations for risk prophylaxis and to facilitate the activity in conditions of good professional practice and to minimize exposure to occupational risk factors. The proposed questionnaire aims to highlight the level of health and habits, lifestyle practices and perceptions of the typology of healthy living in this professional group. The application of the questionnaire can also be the sign for the transition point from the state of health to the pathological status. The correlation of professional and non-professional factors led to the profiling of relationships between all risk factors induced by the specific of the profession and theorizing a set of prophylactic or curative intervention measures. Compliance with a physical activity program and a lifestyle according with the standards of relevant domestic and international bodies will increase the quality of life of these specialists as well as the quality of professional acts in the service of public health.

Rezumat

Profesia de farmacist este o profesie medicală direct implicată în menținerea sănătății populației. Farmaciștii sunt expuși la o varietate de factori de risc în timpul desfășurării activității lor profesionale. Pandemia de COVID-19 a adus cu sine un cumul de riscuri suplimentare. Scopul studiului a fost identificarea factorilor de risc profesional în rândul farmaciștilor și problemele de sănătate cu care aceștia se confruntă la locul de muncă. De asemenea, studiul a urmărit conturarea unor recomandări pentru profilaxia riscurilor, desfășurarea activității în condiții de bună practică și minimizarea expunerii la factorii de risc profesional. Chestionarul propus a evaluat nivelul de sănătate, obiceiurile, practicile stilului de viață și percepțiile asupra tipologiei de viață sănătoasă în acest grup profesional. Corelarea factorilor profesionali cu cei neprofesionali, a condus la conturarea relației între toți factorii de risc induși de specificul profesiei și teoretizarea unui ansamblu de tratamente profilactice sau curative. Respectarea unui program de activitate fizică și a unui stil de viață conform standardelor va crește calitatea vieții acestor specialiști, precum și calitatea actelor profesionale în serviciul sănătății publice.

Keywords: pharmacists, risk factors, health, COVID-19

Introduction

Most of the chronic diseases have in aetiology as important factors - the adoption of an unhealthy lifestyle that includes improper diet, tobacco consumption, excessive alcohol consumption, insufficient physical activity, sedentary behaviour, both occupational and leisure; personal or professional stress. The list of chronic pathology is constantly being completed, associating, in addition to the untreatable factors (age, sex, heredity) other conditions related to the neglect of medical and laboratory control periodically and non-compliance with the aspects and norms of prophylaxis established by the competent bodies.

The profession of pharmacist, a healthcare profession, involves a continuous effort to combat the disease and preserve social health in various urban and rural communities [1]. The specificity of this profession consists of a series of special features related to the implications and complications of relationships, with a variety of health problems and disease of a multitude of patients. Theoretical and practical solution of these complex addressability requires a high consumption of physical and mental energy, as well as a special responsibility for mediating the human and professional relationship between patient - doctor - pharmacist. To the professional practice must be added the need and utility of constantly updating the area of medical documentation, in the magnitude of recent acquisitions of medical research and innovation. The degree of permanent intellectual effort to adapt to new algorithms and treatment schemes in various medical specialties is amplified by the effort to be empathetic with all patients, which implies a high psycho-emotional consumption. Another task to which the pharmaceutical specialist is subjected is the physical effort of working in fixed positions (static effort - orthostatism) or locomotor effort of continuous movement between various locations [2, 3]. Prolonged maintenance of a position is one of the main factors of occupational ergonomic risk causing professional overload syndromes with various somatic and neurological localizations. An example would be lumbar root syndrome manifested by pain in the lower limbs, which may or may not be associated with motor deficits. Another example is venous insufficiency syndrome due to varicose veins of the lower limbs manifested by oedema and muscle fatigue. Being a profession with prolonged orthostatism, in addition to orthostatic oedema, the risk of chronic fatigue syndrome (myalgia encephalomyelitis - ME/CFS) can be mentioned. This somatic functional syndrome is characterized by severe fatigue, which can last for several months, not improved at rest and which can be associated with a degree of disability [4-10]. Therefore, pharmacists are exposed to a variety of risk factors in the workplace while performing their professional activity. The period of the COVID-19 pandemic introduced

additional occupational risk factors, like all those in the medical field, in addition to the risk of SARS-CoV-2 virus contamination and related stress (infectious disease with new virus and medical, social impact, emotional, media and statistical special). These were closely related to the fact that they were usually the first line of contact with patients, often giving the first indications and recommendations regarding COVID-19 or other viral diseases (lung or not) which they presented. As intermediaries between physician and patient, pharmacists were forced to read and acknowledge the diversity of symptoms produced by COVID-19, as well as the severity and complications of the disease, the ad hoc legislation and the decisions issued by the National Committee for Emergency Situations and other domestic and international health agencies and to adapt rapidly to the changes in strategy to address the disease that have followed one another at an extremely fast pace.

Many studies, such as those in the literature [11-16], point out that pharmacists have experienced high levels of exhaustion, predominantly in the young age group and in the female-affiliated group.

The key component (first step) of a health program in the pharmaceutical field is the identification and praxiological evaluation of the professional activity [17-19].

The aim of this study is to identify occupational risk factors among pharmacists and the health problems that this occupational group faces at work. This study also seeks to propose some recommendations for risk prophylaxis and activity facilitation in terms of good practice and minimizing exposure to occupational risk factors.

Materials and Methods

The proposed questionnaire entitled "*Identification of risk factors among specialists in the pharmaceutical field*" aims to highlight the level of health and habits, lifestyle practices and perceptions of the typology of healthy living in this professional group. The application of the questionnaire can also be the transition point from health status (physiological status) to pathological status (installation of diseases by occupational overload). Correlation of professional factors (age of exposure, position/function in the organization chart, course and related occupational demands) with non-professional ones (age, sex, heredity, behavioural skills/practices, personal pathological history), as well as a minimal clinical interview (respiratory rate, heart, blood pressure), aimed at profiling relationships between all risk factors induced by the specifics of the profession in a normal state of health/epidemic and theorizing a set of prophylactic or curative intervention measures.

The questionnaire was created by us using as sources of inspiration and guidance studies from the specialized literature that promoted significant conclusions regarding

the application of the questionnaire survey. It complies with the performance requirements, contains enough items (26 items, with 6 general questions and 20 specific questions) and is not as long as the respondents to lose motivation in completion the survey [6, 13, 20].

The data in the questionnaire were anonymous and confidential and the statistical processing was done without individual reference. The self-administered questionnaire type CAPI (computer assisted, personal interviewing) was applied only in the online environment, only at pharmacists, by the “snowball” method. Because we did not have a database for sampling, it was unlikely, when disseminating the link where the questionnaire could be completed. We used closed single or multiple choice questions and the application period of the questionnaire was October 15, 2020 - March 15, 2022 (COVID-19 pandemic period). 600 people answered the questionnaire, which were fully validated.

Results and Discussion

The predominant gender of respondents was female, 68.16%. More than half of the respondents were young people, the most representative age group (58.33%) being the one in which the respondents did not turn 30 years old.

Depending on the declared marital status, most of the respondents were unmarried, the high percentage

(75.5%) can be explained by the fact that the respondents were young. The profession of pharmacist involves years of study which, in conjunction with the current trend of starting a family late (after pursuing a professional career) explains the result. The next percentage, 15.17%, was represented by married respondents. A percentage of 9.33% declared divorced or widowed was present in the study.

The declared domicile was mainly in urban areas (87%), this result being influenced by the application of this questionnaire, the internet accessibility being lower in rural areas. To this majority we assume that the predominant distribution of pharmacies in urban areas has been added.

In terms of work, most of the pharmacists surveyed work in pharmacies (49.33%), about 6.67% in hospital pharmacies, the rest (44%) declaring “others” (for offices such as: plafar or health food store, education, drug companies - medical representative, laboratory). The distribution according to the declared seniority of the respondents at the workplace was in accordance with the distribution by age groups. Most of those who answered the questionnaire were young, with a declared age of under 30, so they could not have a long seniority at work. Most of the answers, over 63.5%, came from those who were less than 5 years old at work.

The six conclusions presented above are shown in the column chart type (Figure 1).

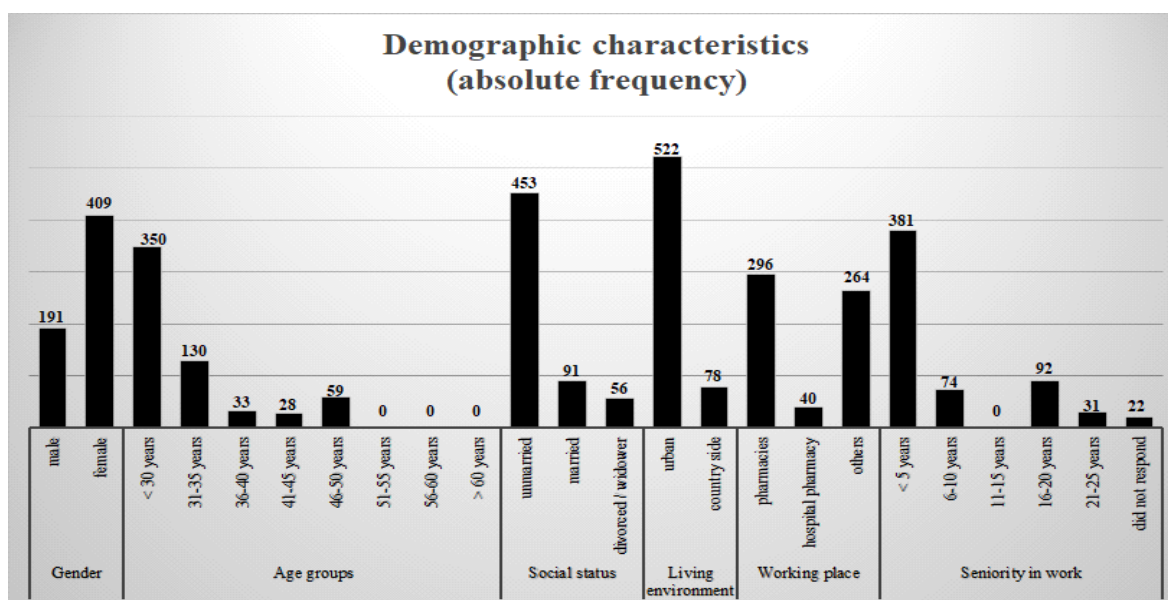


Figure 1.
Distribution of respondents according to demographic characteristics

The following questions addressed to behavioural aspect related to healthy lifestyle parameters, including practices, skills, proper diet and personal adoption or personal deviations or deviations from this style, as well as individual personal relationship with the adoption of these healthy lifestyle rules. Simultaneously

with the answers obtained, the questions were asked about the self-assessment of the degree of deviation (abnormality) from the healthy lifestyle.

The consumption of alcoholic beverages revealed that none of the respondents have this daily habit. The majority (approximately 72.83%) reported consuming

alcoholic beverages only once a month. Only 5% of respondents reported consuming alcoholic beverages 3 - 4 times/week and 22.17% declared themselves totally abstinent.

In the distribution of the number of cigarettes smoked/day, it was noteworthy that higher values were at 10, respectively 20 cigarettes/day, with heavy smokers representing 27.33%. The type of tobacco products used revealed that most respondents consumed commercial tobacco products (40.67%) in the form of cigarettes. Electronic cigarettes were used by 14.33% of respondents. The diversity of smoking-related products and skills led to the following conclusions: although pipe and cigar, as independently used tobacco products, were not checked, 5.33% of pharmacists still use regular commercial cigarettes and cigars at the same time. It should be observed that 39.67% denied the use of these products.

Consumption of coffee or energy drinks was confirmed in 81.33% of pharmacists who responded to the questionnaire.

Regarding the parameters and aspects related to the healthy lifestyle in general and in particular of the group of 600 respondents, the questions included: qualitative and quantitative diet (diet) (we did not take into account the standard recommendations), compliance with the physiological duration of sleep, physical activity recommended by the WHO (World Health Organization). The professional specificity involved a thorough analysis of the physical activity of travel to work and the respective positions, orthostatism and sitting.

The estimated level of movement (the assessment was probably done, according to the telephone pedometer) declared by the respondents was mainly considered average - normal (58.67%), the low level of movement was 16.83%, high was 7.67%, and a level very high movement was reported by only 1.5% of pharmacists. Sedentary lifestyle was declared in 15.33% of those surveyed.

In order to obtain more information on the physical activity of pharmacists, the questionnaire included questions on the regularity of physical activity. Most of them (57%) do physical activities with a frequency of 2 - 3 days/week. The extremes are represented by the persons who do not do physical activities in any day/week, respectively 15.33%, and who confirm the answer to the previous question in which they declared themselves sedentary and the other extreme of 5% of the respondents who have physical activities every day. 17% of those declared active have physical activities once/week, and 5.67%, four to five times *per* week.

Respondents considered physical activity including walking or running in the park. Most people went for a walk or ran in the park 2 - 3 times/week, representing more than half of the respondents. About 30% of

pharmacists who answered this question stated that they rarely go for a walk or run in the park.

Concerning the physical activity, the predominant position of the body during the work schedule is very important. Most of the pharmacists answered that the position during the work schedule combines the two positions: orthostatism-walking and orthostatism-sitting (65%). A quarter of the respondents mentioned (ticked) the orthostatism-sitting position, and a percentage of 10% selected orthostatism-walking. Both the time spent in orthostatism and the time sitting on the chair can influence the appearance of diseases of the musculoskeletal system or neurological, which can also have a professional component.

The distribution of nighttime sleep hours as stated by respondents shows that more than half (53.83%) sleep only 5-6 hours/night. This can be explained by the fact that the respondents are young and recovery is faster in case of lost nights or insufficient sleep. The rest, the 46.17% declared a sleep of 7 - 8 hours/night.

Regarding the diet, 42% of those surveyed have three meals/day, as recommended. The highest percentage, 53% is represented by pharmacists who declared two meals/day. As the nutrition and dietary data are analysed, the food intake in the form of a daily lunch is non-physiological, because it causes excess amounts of nutrients that act through the effects of dispensing and hypersecretion to additional stimuli in the digestive, absorptive and postabsorptive state. Overweight of various degrees, dyslipidaemia, colonic dysbiosis and hypersthenic clinical changes occur.

Nutritional disorders are known to be cardiovascular risk factors. 5% of respondents stated that for various reasons their food intake is in the form of a single lunch *per* day, which profiles them as candidates for the stated pathology.

In a qualitative analysis of the food intake stated in the questionnaire, we noticed deviations from the standard recommendations symbolically represented by the food pyramid 2021 (which is based on physical activity and at the top, meat). Regarding the indication of preferential consumption of fruits and vegetables, most of the responding pharmacists consumed daily (27%) or 3 - 5 times/week (50.17%). We found adequate adherence to the consumption of plant foods (vegetarian profile). 17% reported consuming 1 - 2 times/week. Only 5.83% consumed fruits, vegetables, greens and whole grains very rarely.

In terms of fluid intake - hydration - daily water consumption, we found that the reported responses were within the recommended limits, around the indication of 35 mL/kg body, a figure reported by most respondents (69%). 31% of those surveyed reported a water consumption of less than 1 litre *per* day.

Regarding the physico-chemical properties of the liquids consumed (qualitative aspects), found the following answers: all respondents ticked answers from the category of associated drinks (energy drinks, carbonated drinks, tea, coffee) but were associated with other types of liquids. The highest percentage (38.83%) was represented by the association of tea - different types of water. The following preferences were in order: hydration exclusively of water (21.17%), the combination of tea and carbonated drinks (20.67%) and the associated hydration alternately from the intake of water and carbonated drinks (19.33%).

In the section dedicated to the perception of self-esteemed health following the examination, we drew the following conclusions: most respondents considered that they had a "good" health condition (40%); those who chose the "satisfactory" option were 30%, and the group of those who appreciated the "very good" health condition was 25%. We noticed that among the responding pharmacists there were no people to declare a precarious state of health ("very bad"). A percentage of 5% associated the "satisfactory" and "good" options in illustrating the perception of their own health.

The next question referred to the association of certain pathological entities (comorbidities) present in the responding pharmacists. The main variants frequently encountered in the general population were introduced in the response variants: cardiovascular diseases, diabetes, hypertension, kidney diseases, respiratory diseases. In addition to the entities mentioned above for the rest of the possible diseases, we have introduced the "other" option. The statistic of the responses showed the following: 64.33% of the respondents chose the "other" option, and a quarter did not answer. About 10% mentioned cardiovascular disease (most commonly high blood pressure). People with prediabetes and diabetes were also included in this percentage. We consider the explanation of this distribution of comorbidities to be due to the young age of the group of respondents who did not develop the chronic diseases characteristic of the third age and who did not accumulate seniority in the profession covered by the study.

Concerning job satisfaction, 66.17% of the pharmacists who completed the questionnaire said they were satisfied with the job. 16.33% of people said they were dissatisfied or did not answer this question (17.5% of the total).

The satisfaction of the financial situation is satisfactory for 56.5% of those surveyed. This percentage compared to the 66.17% overall satisfaction showed a 10% deviation caused by pay. 41.33% were dissatisfied with their financial situation and 2.17% did not answer this question.

In the questionnaire item that refers to workplace stress management, respondents displayed the following answers: approximately 45% properly manage workplace

stressors; 5% report deficiency in stress management; the rest responded in a formulation to reduce resilience to stress in the form of constraint, overload, dysthymic or dysphoric behaviour (alternating periods).

Respiratory rate, heart rate and blood pressure quantify vital functions of the body and are usually known and monitored by each person, because changes in any of them may suggest the development of a particular pathology. All respondents stated that respiratory rate is generally within normal limits. Regarding the pulse, 11.5% of those surveyed are tachycardic. No response was validated for the bradycardic pulse variant. 88.5% of respondents stated that they have a normal pulse. For blood pressure, 89.67% of the pharmacists surveyed mentioned, as a result of repeated measurements, that they are within normal limits (130/80 mmHg at rest). A percentage of 7.33% stated that they are hypertensive and undergoing treatment, and 3% fall into the category of hypotensive. The answers received in this section are explained by the young age of the respondents and the reduced possibility of being included in the pathologies of chronic cardiovascular and respiratory diseases.

Referring to an exercise test, the respondents indicated that 77.33% of them would agree to take this type of test. The rest up to 100% denied or did not respond.

All the specialists in the sample of pharmacists surveyed stated that they recognize the specifics and peculiarities of the professional relationship involved in contact with a multitude of patients with a variety of health problems that generate a number of special risk factors. Consistent with this reality, the need to maintain one's health is a vital factor for the exercise of the profession, direct involvement, maintaining a permanent contact with the permanent primary health network, regular monitoring that must be performed consistently.

Many of the relevant aspects of the health condition assessed by the applied questionnaire reveal the availability of respondents to maintain the positive aspects and to combat, prevent or delay possible complications related to the risks of the profession. We reiterate between these risks of morbidity and its prophylaxis, the following: cardiovascular, metabolic and nutritional diseases (hypertension, diabetes, dyslipidaemia, metabolic syndrome, obesity). The literature emphasizes that sedentary lifestyle is a risk factor, which associated with specific occupational stress, can be counteracted by exercising 2 or 3 hours of moderate to intense physical activity per week. Aerobic efforts should be a priority in the program, as they have proven effects on strengthening the osteoarticular, immune, cardiovascular and respiratory systems. Practically, by monitoring a general or special physical activity, the whole organism is activated nervously and endocrine, maintaining all the apparatuses and systems of the organism in conditions of sanogenesis.

Most health benefits can be obtained, according to the latest research, through an average physical activity of 30 minutes a day.

The positive effects of exercise for the individual in general and the professionals in the investigated groups in particular are reflected in: personal and psychosocial development, prevention or alleviation of mental disorders (including those related to depression, anxiety or stress), and reduction harmful behavioural habits (consumption of tobacco, alcohol, coffee, nicotine, reduced rest and sleep time, quantitative and qualitative incorrect diet, abuse of exciting foods, etc.).

Aerobic exercise or occasional exercise influence weight maintenance, reduce the risk of metabolic syndrome, normalize blood lipid levels, improve cognitive performance, prevent the risk of injury or fall, reduce and prevent sarcopenia and osteoporosis, help stabilize joints, maintain balance and proprioception and prevents the onset of neurodegenerative diseases over time.

The study aimed to highlight the impact of risk factors specific to the profession analysed on the body, the quality of life of pharmacists making a systematization, ranking and a forecast of harmful effects in case of non-compliance with healthy lifestyle.

The pandemic period had a negative impact on society as a whole and primarily on pharmacists. The data obtained from this study revealed that they present a major risk of overload, stress and decompensation, associated with the significant amount of work, experience and expertise gained during the years of social health.

Conclusions

The present study aimed to add some elements to improve the strategy of optimizing the professional work carried out by specialists in the pharmaceutical field in the conditions of risk factors that we tried to detail. The study also proposed among the means of prophylaxis of complications induced by the persistence of risk factors, as well as to support professional resilience, the implementation of a set of effective measures in which organized physical activity among professionals to play a central role and program. Adherence to a physical activity program and a lifestyle that complies with the standards of relevant domestic and international bodies will increase the quality of life of these specialists as well as the quality of professional acts in the service of public health.

The discussion and the issue continue to arouse interest due to the coexistence with new variants of the virus, which generated the need for new treatments and vaccines. All this is obviously correlated with maintaining a level of professional overload.

Conflict of interest

The authors declare no conflict of interest.

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