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RESEARCH OF GENDER FEATURES OF PHARMACISTS

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The aim of the study is to determine the gender characteristics of pharmacists.

Materials and methods. To study gender characteristics, a survey of pharmacy specialists was conducted using a specially designed questionnaire and psychological methods: “Locus of control” (J. Rotter test modified by O. Ksenofontova), study of volitional personality qualities (questionnaire of N. Stambulova); Cattell test 16 PF; diagnostics of interpersonal relations (T. Leary test in modification by L. Sobchuk), express diagnostics of resistance to conflicts, methods of studying personality orientation (test of V. Smekal and M. Kucher).

Results. The relevance of the study of gender characteristics of pharmacists is substantiated. The level of involvement of women in management in the economy, politics, education, in law enforcement and health authorities in Ukraine has been analyzed, which indicates gender identity. The essence of gender analysis according to specifics of pharmacy is determined. The manifestations of masculinity-femininity in pharmacists have been studied. The level of subjective control of pharmacists is analyzed. Characteristic features of men and women pharmacists are estimated. The volitional qualities of pharmacists have been studied. Conflict resistance was diagnosed. The types of interaction between men and women pharmacists are studied.

Conclusions. It has been proven that women pharmacists are feminine and prone to gender stereotypes. Male pharmacists have a low level of subjective control and do not associate actions with subsequent events, as well as show themselves as independent, determined, courageous, purposeful, proactive, persistent professionals with endurance and self-control. It was found that both women pharmacists and men pharmacists show an average level of conflict resistance. The personal orientation is revealed, so at men-pharmacists motives of own well-being and aspiration to prestige prevail

Keywords: pharmacy, gender features, socio-psychological characteristics, pharmacist, locus of control, volitional qualities, interpersonal relations, resistance to conflicts, masculinity-femininity, personal orientation

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1. Introduction

In the context of the economic and social crisis, the issue of the effectiveness of the work of both a pharmaceutical institution as a whole and of each pharmacist separately is especially relevant. Investigating the effectiveness of the activities of pharmacy specialists, it is advisable to investigate not only professional qualities, skills and knowledge, but also their gender characteristics. According to the Law of Ukraine “On ensuring equal rights and opportunities for women and men”, both men and women in Ukraine have equal rights and opportunities [1]. The International Organization of the World Economic Forum in the annual report “The Global Gender Gap Report 2020” [2] determined that Ukraine ranks 59th out of 153 according to the index that determines the level of involvement of women in management in economics and politics, education, security for life and health (score – 0.721 with a maximum of 1.000), Gender Gap Index in the areas of state functioning (economy, education, health care and politics) in comparison with 2006 is shown in Fig. 1, which testifies to the relative gender equality (Identity) in Ukraine.

In social psychology, gender analysis is understood as the determination of the level of personality, social interaction, interpersonal and intergroup relations

through the study of the socio-psychological characteristics of the activities of specialists, including pharmaceutical specialists with different levels of masculinity and femininity [3, 4].

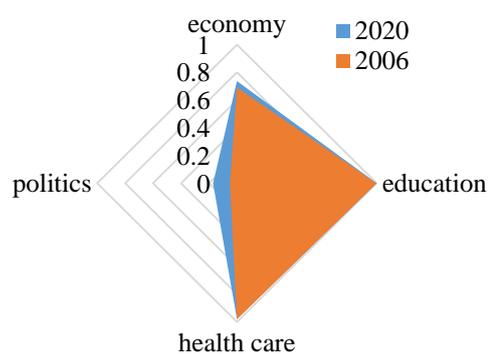


Fig. 1. Ukrainian score card

Today, scientists pay considerable attention to the study of stress in men and women [5, 6]; gender pay gap [7]; job satisfaction [8, 9]; empathy in students of pharmacy [10].

The aim of the study is to determine the gender characteristics of pharmacists.

2. Planning (methodology) of research

The study of the gender characteristics of pharmacists was carried out in stages: Stage 1 – determination of the manifestations of masculinity-femininity; Stage 2 – analysis of the level of subjective control; Stage 3 – research of volitional qualities; Stage 4 – diagnostics of resistance to conflicts; Stage 5 – identification of personal orientation; Stage 6 – study of personal qualities and properties of men and women pharmacists using the Cattell test; Stage 7 – determining the type of interaction; Stage 8 – processing the results and preparing the report.

3. Materials and methods

385 respondents from all regions of Ukraine took part in the survey, 49 of them were men. The study was conducted in January – September 2020.

To study gender characteristics, a survey of pharmacy specialists was carried out using a specially developed questionnaire and psychological methods: “Locus of control” (J. Rotter's test modified by E. G. Ksenofontova); research of volitional qualities of personality (questionnaire of N.E. Stambulova); Cattell test 16 PF; diagnostics of interpersonal relations (T. Leary test as modified by L. N. Sobchik); express diagnostics of

resistance to conflicts, as well as a method for studying the orientation of the personality (test of V. Smekal and M. Kucher).

4. Result

At the first stage, with the help of specially developed questionnaires, the characteristics of men and women pharmacists were studied. The index of manifestation of androgenicity (main index IS = 0.12) determines the ability to vary behaviour depending on the situation, to form resistance to stress, to achieve success in various spheres of life [11, 12]. The results obtained indicate that female pharmacists are inherent in femininity, that is, the presence of purely female character traits (IS=1.54).

Analysis of the behaviour model of male pharmacists revealed that they are not inclined to stereotypes of masculinity-femininity, androgenicity is inherent in them (Fig. 2). On the other hand, female pharmacists have strongly expressed feminine qualities and a tendency towards gender stereotypes. Thus, male pharmacists are more socially adapted and motivated for success and self-esteem than female pharmacists, and they are also able to influence other people and have situational flexibility.

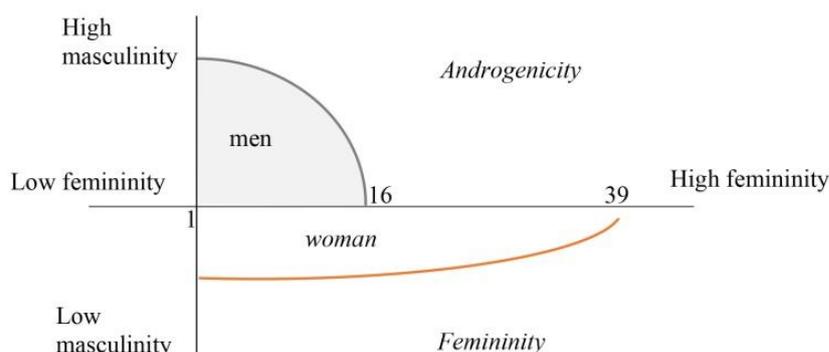


Fig. 2. Graphic interpretation of the results of assessing the femininity and masculinity of pharmacists

The results of the survey showed that male pharmacists are more principled in changing their decisions (83.4 % of respondents do not change their decisions, while women pharmacists – only 23.7 %), regarding the veracity of the majority of male pharmacists are able to change their decisions (75.8 % of respondents), women – only 34.6 % of respondents. As for the issues of responsibility and justice, men do not change their earlier decisions (80.6 % and 76.4 % of respondents, respectively), while women pharmacists are able to change their decisions (78.9 % and 82.6 % of respondents, respectively).

Male pharmacists also differ from women in their desire to compete with other people (71.3 % and 27.4 % of respondents, respectively), while the intensity of competition in pharmacies, according to the surveyed women, is 6 points, for men – 4 points (out of 7 possible). According to women, they often encounter conflicts in relations with competitors (4 points), according to men – rarely (2 points). The level of implementation of the goals set for themselves is assessed by male pharmacists as average (4 points), women – to a small extent, are

achieving their goals (2 points). The material standard of living of men is considered average (4 points out of 7 points), women – low (2 points). Male pharmacists are less satisfied with the economic results of their activities (3 points out of 7) than women (5 points). At the same time, they are not satisfied with the results of their own expectations (69.4 % of the respondents); among women pharmacists, the results correspond to ideas (76.8 % of the respondents). But in families, both women and men, their professional activity influences relations rather positively than negatively (62.8 % and 70.2 % of respondents, respectively), while the family treats male problems at work with understanding (75.3 % of respondents) and does not support women (60.8 % of respondents).

Male pharmacists are proactive and introduce innovations in their work (the average level is 4 points out of 7), women are less proactive (2 points out of 7). According to men, the activity of a pharmacist is characterized as creative (61.4 % of respondents), women-pharmacists believe that there is no place for creativity in

pharmacy (73.9 % of respondents). Men assess their success in work as average (4 points out of 7), but, in their opinion, they have high personal opportunities to improve it (6 points out of 7). The success of women pharmacists has a low level (3 points out of 7), they also have limited assessments of their capabilities (3 points out of 7). Both women and men are moderately satisfied with the sphere of activity, while they equally consider themselves “ideal” pharmacists (75 % of the respondents).

The level of subjective control (“Locus of control” methodology) determines the degree of responsibility of pharmacists for their own actions and its locus [13, 14]. When comparing the results it can be concluded that male pharmacists have a low level of subjective control, and do not associate the action with the following events for them. With regard to the sphere of achievements (Ia), men have a maximum score (8), which exceeds both the industry average and the score inherent in female pharmacists (5), which indicates the tendency of men to go with success towards the intended goal. On the scale of internality in the sphere of failures (In), male pharmacists have a score slightly lower than women, which characterizes the pharmacist’s ability to realistically assess certain actions and take responsibility for them. With regard to family relations (If), male pharmacists are not inclined to take responsibility for events in the family. In industrial relations, on the contrary, male pharmacists attach great importance to management, colleagues, etc. In the field of interpersonal relations (Ii), both male and female pharmacists feel capable of arousing the respect and sympathy of other people. Internality in relation to health and illness (Ihi) of both male pharmacists and female pharma

cists is expressed at an average level and determines responsibility for their own health, but sometimes they assign responsibility for recovery to other people (Fig. 3).

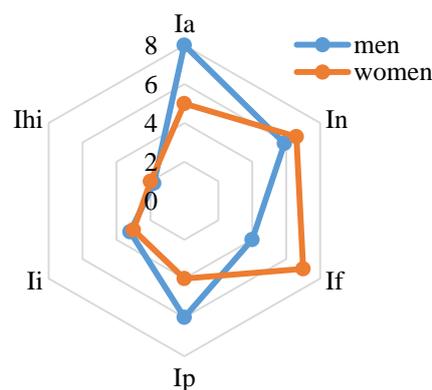


Fig. 3. Results of assessing the level of subjective control according to the “Locus of control” method

According to the research methodology of the volitional qualities of the personality [15, 16], it was determined that for all components – “purposefulness”, “courage”, “persistence”, “initiative” and “self-control” – male pharmacists have the highest score, that is, they show themselves as independent, decisive, bold, purposeful, proactive, persistent specialists possessing endurance and self-control (Table 1).

With regard to resistance to conflicts, both female pharmacists and male pharmacists show an average level of conflict tolerance (36 points), which may be due to professional burnout, emotional tension of work and identified character traits (Table2).

Table 1

Indicators of the severity of volitional qualities of male pharmacists and female pharmacists

Characteristics of volitional quality	male		female	
	severity	generalization	severity	generalization
Purposefulness	30	30	22	21
Courage	40	40	22	18
Persistence	40	40	33	23
Initiative	40	40	22	19
Self-control	40	40	24	22

With the help of the Smekal-Kucher method [17, 18], the personal orientation of male pharmacists was revealed, the predominance of their motives of their own well-being, the desire for prestige. Women pharmacists have a business orientation, are passionate about the work process, strive to master new knowledge and skills

and cooperate with colleagues. For a more detailed study of the personality of women and men pharmacists, their character, temperament, intelligence, emotional, volitional, moral, communicative and other characteristics, the Cattell test 16 PF was carried out [19, 20] (Table 3).

Table 2

Conflict Resilience Profile of a Modern Pharmacist by Gender

Component	5	4	3	2	1	Component
Dodging dispute		●	●			I'm breaking into an argument
I treat a competitor without bias		●	●			Suspicious
I have adequate self-esteem		●	●			I have high self-esteem
I listen to the opinions of others		●	●			I do not accept other opinions
I do not give in to provocations		●	●			Easy to get angry
I concede in an argument, I compromise		●	●			I do not concede in a dispute: victory or defeat
I feel guilty after the “explosion”		●	●			If I explode, then I think that without it is impossible
I maintain the correct tone in the dispute, tact		●	●			I admit a tone that does not tolerate objections, tactlessness
I believe that in a dispute you do not need to show emotions		●	●			I believe that in a dispute you need to show a strong character
I believe that a dispute is an extreme form of conflict resolution		●	●			I believe that the dispute is necessary to resolve the conflict

Note: — female pharmacists; ····· male pharmacists

Table 3

Summary results of studying the behavioural features of male pharmacists and female pharmacists using the method of R. Cattell's multifactorial study 16PF

Factor	Average indicators																			
	female										male									
	«-»					«+»					«-»					«+»				
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
A: sociability																				
Q: intelligence																				
C: emotional stability																				
E: dominance																				
F: careless																				
G: moral normative																				
H: courage																				
I: emotional stability																				
L: suspicious																				
M: daydreaming																				
N: diplomacy																				
O: anxiety																				
Q1: perception of new																				
Q2: independence																				
Q3: self-discipline																				
Q4: tension																				

Note: 1-3 stans – low level; 4-7 stans – average level; 8-10 stan – high level

So, female pharmacists are characterized by openness, sociability, activity in establishing both interpersonal and social contacts (high scores for factors A and H (8 stans)), focus on people, extroversion. Average scores for factors L and N characterize independence in making intellectual decisions, a developed sense of duty and responsibility, submission to the demands and opinions of society.

High scores for factor E (8 stans) and average scores for factor Q2 (5 stans) testify to the presence of leadership potential in female pharmacists, combined with dependence on the opinion and requirements of society. They are able to achieve success in solving simple problems (average scores for factors B and C), while women pharmacists achieve maximum success in solving practical problems, they are

inclined to develop the ideas of other people in detail. They quickly navigate problem situations, but do not always calculate possible options for their solution (average values of factors N and Q1, while emotional balance in familiar situations, but strong emotions are possible in situations concerning their personal needs (average values of factors C and I), the emergence of feelings of anxiety, helplessness and dissatisfaction with oneself (average scores for factors O and Q4). Women pharmacists are characterized by optimism and a tendency to take risks that are not always justified (high scores for factors H and F). The results of the conducted testing indicate a high level of self-mobilization and organization (high score for factor Q3) subject to adaptation to the situation (average level of factor G), as well as responsibility and openness towards people.

Male pharmacists are characterized by openness in interpersonal contacts, activity, sociability, readiness to join new teams, restraint (high assessment of factors A and H – 10 and 8 stans), emotional stability, self-confidence and strength, calm adequate perception of reality, the ability to control their emotions and behaviour, stress resistance. But male pharmacists are risk averse (factors H and F). They are able to understand people, but they are rarely guided by their own assessments (the average values of the factors L and N). Leadership qualities are moderately expressed in male pharmacists (average values of factors E and Q2). Other people's opinions are respected. Practically oriented thinking prevails in them (factor B - 2 of Stan), concrete imagination and orientation towards reality (average values of N and Q1); high emotional stability, self-confidence, calm perception of reality, focus on solving practical problems (pragmatism) (high values of factors C and I). According to the factors O and Q4, male pharmacists are characterized by a tendency to reflection, dissatisfaction with themselves, selectivity towards social norms and requirements (average value G). In their behaviour, there is a balance, focus on reality. Low efficiency of thinking, criticality and conservatism in the adoption of new, reduced interest in new intellectual knowledge are characteristic of male pharmacists. Adequacy (average scores for factor L – 6 stans), developed volitional qualities (average scores for factor G together with high scores for factor Q3 – 5 and 9 stans, respectively), high anxiety (average scores for factors L and Q4 – 6 and 5 stans), as well as a tendency towards dominance and conservative stubbornness (high scores for factor E and average for factor N – 7 and 5 stans) are inherent in male pharmacists.

According to the distribution of interaction types by octants (T. Leary's method, adapted by L. M. Sobchik) [7–8], male pharmacists are confident, good advisers, mentors and organizers (7.8 points), have the properties of a leader (6, 7 points), realistic in judgments and actions (7.7 points), modest, shy (5.6 points), completely dependent on the opinions of others (9.5 points). In contrast to men, women pharmacists are sincere, persistent in achieving goals (5.3 points), kind-hearted, hyper-obligatory, and super-social altruists (9.2 points). For male pharmacists, as well as for female pharmacists, the leading type of interpersonal communication is conventionality, that is, compromise behaviour, lack of restraint

in the manifestation of friendliness towards others, the desire to emphasize involvement in their interests.

In male pharmacists, the competitive strategy is manifested to the least extent. Women pharmacists, on the other hand, do not have an expressed cooperation strategy (9.5 points); they have a compromise strategy and a strategy of avoidance. Male pharmacists show a desire for self-realization, self-confidence, a tendency to compete, persistence in defending their own point of view. Women pharmacists are characterized by the need for help, trust and a friendly attitude from others, a developed sense of responsibility.

5. Discussion

The conducted studies of gender characteristics indicate the manifestation of androgenicity, resistance to stress and a desire to achieve success in various spheres of life in male pharmacists. They are more socially adapted and motivated to self-esteem than female pharmacists, are able to influence other people and have situational flexibility. Female pharmacists are feminine and feel they have little opportunity to improve their job success. At the same time, both men and women-pharmacists consider themselves “ideal” pharmacists.

The results obtained are one hundred percent in line with the data presented in the article by Manuel J Carvajal, Ioana Popovici, which indicates that female pharmacists experience more stress at work than men (Women report enduring more stress in their job than men).

Regarding the possibility of success and career growth in the profession, American researchers note that pharmacists of both sexes are pessimistic about career opportunities within their workplace, although in management positions in pharmacies there are more men than women [9].

N. Muslimov and G. Garifullin give opposite results in terms of the desire to succeed in their work: 82 % of women pharmacists and 78 % of men pharmacists show aspiration to career and professional growth [21].

Study limitations. The limitations of the study were the biological (from 25 to 55 years) and professional (from 3 to 33 years) age of the respondents.

Prospects for further research. In the future, it is planned to investigate the differences in the socio-psychological characteristics of pharmacists, taking into account gender characteristics, whose professional age exceeds 35 years, and to develop areas for their improvement in order to avoid burnout.

It is also planned to study the impact of the results of the research on improving the efficiency of pharmacies.

6. Conclusions

This article has sought to explore gender features of individual psychological characteristics of pharmacists. Temperament, intelligence, emotional, volitional, moral, communicative qualities of specialists, features of their professional orientation, manifestations of masculinity-femininity, degree of responsibility for personal actions, leading types of interactions and resistance to conflicts and stress were studied using psychodiagnostic tools.

Understanding the gender characteristics of the psychological characteristics of pharmacists will allow employers and managers of pharmacies to ensure the rotation of pharmacists in the workplace, which will contribute to the fullest disclosure of its potential.

Based on the study of the gender characteristics of pharmacists, it is advisable to develop trainings that con-

tribute to the development of those socio-psychological characteristics that have a low level of development, but are necessary in their professional activities.

Conflict of interests

The authors declare that they have no conflicts of interest.

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COMPARATIVE STUDY OF PHENOLIC COMPOUNDS OF THE HERB OF *BETONICA* L. GENUS SPECIES OF FLORA OF UKRAINE

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*Species of *Betonica* L. genus are widespread in Ukraine and contain different groups of biologically active substances: hydroxycinnamic acids, flavonoids, tannins, iridoids, terpenoids, steroids, essential oil, organic acids, vitamin K, nitrogen-containing compounds, phenylethanoid glycosides. Species of *Betonica* L. genus show a wide range of pharmacological activity (anti-inflammatory, antioxidant, choleric, diuretic, sedative, antitumor, antihypertensive, etc.) and phenolic compounds are one of the most important and promising groups of biologically active substances of these plants.*

The aim. The aim of the work was to conduct a comparative study of the phenolic compounds of the herb of *Betonica* L. genus species of flora of Ukraine.

Materials and methods. The object of the study was the herb of *Betonica perauca* and *Betonica brachydonta* harvested in the phase of mass flowering of the plant in Ivano-Frankivsk region. The study of phenolic compounds was carried out by paper chromatography, HPLC and spectrophotometry.

Results. 7 components of tannins, 4 flavonoids, 5 hydroxycinnamic acids, 2 coumarins were identified and quantified by HPLC in the studied raw material. The quantitative content of the main groups of phenolic compounds in the herb of *Betonica perauca* and *Betonica brachydonta* was determined by the method of absorption spectrophotometry: polyphenols – 5.96 % and 4.82 %, tannins – 1.62 % and 0.68 %, flavonoids – 2.07 % and 1.13 %, hydroxycinnamic acids – 7.01 % and 3.58 %, respectively.

Conclusions. As a result of the conducted studies it was found that the content of phenolic compounds in the herb of *Betonica perauca* is significantly higher than in the herb of *Betonica brachydonta*. Therefore, this species is promising for further research and creation of new drugs

Keywords: *Betonica perauca* Klokov, *Betonica brachydonta* Klokov, herb, phenolic compounds, HPLC, spectrophotometry

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1. Introduction

Species of the *Betonica* L. genus are widespread in Ukraine, they contain different groups of biologically active substances (BAS) and have a diverse pharmacological effect. The raw material base of *Betonica* L. species is sufficient, and at the same time these plants can be cultivated in soil and climatic conditions of the Carpathians. This indicates the prospects for the use of *Betonica* raw materials for the development of new herbal drugs.

Raw materials of the genus *Betonica* L. contain a wide range of BAS: hydroxycinnamic acids and their derivatives, flavonoids, tannins, iridoids, triterpenoids and steroids, carotenoids, essential oil, organic acids (including ascorbic acid), vitamin K, nitrogen-containing compounds (including alkaloids). Nitrogen-

containing compounds of *Betonica* are represented by betaine, trigonelline, and the alkaloids betonicin, stachidine, betonite and choline. *Betonica* contains phenylethanoid glycosides represented by six compounds of similar structure named betoniosides A, B, C, D, E, F and by acetoside. Among the terpenoids linalool, ocimene, phellandrene and terpinene are found as well as sesquiterpenoids cadinene, cadinol, caryophyllene, diterpenoid betonicolide and its glycoside betonicoside B [1–5].

There are numerous data on studies of the chemical composition of species of the genus *Betonica* L. growing in Japan, the Republic of Kosovo, Hungary, Montenegro, Romania, Bulgaria, Lithuania, Poland, the Balkans [1, 2, 4, 5]. However, the chemical composition