Modeling factors of professional-personality competence of a nurse valuable in the scope of prevention of arterial hypertension

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ABSTRACT
In recent decades the tasks of a nurse in the scope of prevention of arterial hypertension (AH) has been considerably complicated and become valuable, which requires extending and improving professional competence and professional-personality aspects in particular. Meanwhile, studies focused on the distinguishing relevant factors of professional-personality competence (PPC) of a nurse preventing AH are lacking. Analysis of the answers of nurses on the questionnaire enabled to distribute all the respondents into three groups concerning their complete and correct awareness of the bases of preventive work with AH patients: 1) inadequate level – 22%, 2) relatively satisfactory level – 48%, adequate level – 30%. System-forming factors of the professional-personality competence of nurses were developed considering their utmost correlation workload. The patterns suggested represent the level of sociability, empathy, optimism and lack of self-confidence as the most relevant factors in the scope of implementation of tasks concerning AH prevention by the nurses of the Therapeutic Department. The patterns of competence can be used as working structures focused on the staff, instruments of evaluation and design of advanced professional courses for nurses of a therapeutic area.

Keywords: professional competence of a nurse, preventive work of a nurse, prevention of arterial hypertension, personal characteristics.

1. INTRODUCTION
Arterial hypertension is fairly estimated by the professionals in the field of medicine and physiology as a serious and dangerous condition due to the risk of severe complications. WHO official website records 1.13 billion people in the world suffering from essential hypertension, the majority of them were (two thirds) residing in the countries with a low and average income level. Less than in one out of five individuals suffering from essential hypertension the disease is controlled. Hypertension is the major cause of an untimely death in the whole world. Therefore, one of the global purposes concerning non-infectious diseases the WHO
determines to decrease hypertension occurrence 25% as much till 2025 (WHO, 2019). Clinical preventive services, and common screening of diseases in particular, educational work with the population are the key measures for reduction of mortality rate, loss of capability and improvement of national health. Primary health care including a team of nurses with family doctors plays an important role in this process. The importance of the nurse can scarcely be overestimated.

Long ago scientists such as Bengtson & Drenenhorn (2003) indicated that the program of examination for essential hypertension should be developed considering the integral and psychosocial approaches of nurses and their skills. The authors indicated that an active participation of a nurse in a team of medical professionals focused on giving medical aid to AH patients promoted decrease of AP resulting from changing lifestyle, more accurate taking medicines and more frequent repeated examinations. Bayrak & Tosun, (2018) indicate that such severe diseases as heart attack and stroke can be prevented by a regular learning of a correct attitude to life style changes, which should be explained to patients with essential hypertension by nurses. Himmelfarb et al., (2016) pay attention to the fact that in recent 50 years the tasks of a nurse concerning AH prevention have been considerably complicated. These tasks include finding, referring and following up; diagnostics and management of drugs; education of patients, consulting and advanced training; coordination of care; management of a clinic or an office; management of health care of the population; evaluation of efficacy, improvement of the quality of medical aid and clinical and social studies. Such comprehensive tasks require expansion and intensification of professional competence of a nurse, and her professional-personality aspects in particular. Valizadeh et al., (2019) define a professional competence of a nurse as a multidimensional concept including physical, mental, psychological and social aspects. Many authors, for example, Heydari et al., (2016) emphasize the importance of personal competence in the structure of professional competence of a nurse in the area of her preventive work.

Review of scientific publications is indicative of the following: although there are many studies dealing with the development of nursing strategies promoting control over AH among patients (Himmelfarb et al., 2016; Israfil & Making, 2019), there are many variants of modeling professional competence in their general structure (Standards for competence for registered nurses. NMC) or competence for nurses in a certain area, for example, in professional rehabilitation (Vaughn et al., 2016) or prevention of infectious diseases, the investigations focused on isolation of relevant factors of professional-personality competence (PPC) of a nurse preventing AH are still lacking.

2. MATERIALS AND METHODS
The study was conducted on sampling of 156 nurses working at the Therapeutic Department in a team with physicians at the municipal non-profit establishment (MNE) «Municipal Polyclinic Nr 1», Chernivtsi, Ukraine, and participating in the organization and implementation of preventive studies with AH patients. The study was carried out according to all the ethical requirements keeping to the principles of voluntariness, confidentiality, and research virtue.

PPC communicative component of nurses was examined by means of the test “Sociability” developed by V.F. Riakhovskyi, the test “Diagnostics of the level of communicative culture development”, developed by S.V. Znamenska, and methodology “Diagnostics of emotional barriers in interpersonal communication” developed by V.V. Boyko. Personality-behavioural component was examined by means of V.V. Boyko’s method “Diagnostics of the level of empathic abilities” and activity and optimism scale (AOS) by Schuller I.S. and Comunian A.L. adapted by N.Vodopyanova and M. Schtein; motivation component – by means of the methodology “Motivation to choose medical profession” modified by A.A. Vasylykova and questionnaire “Self-concept as a professional” developed by A.S. Borysiuk. The methods indicated are valid and reliable psycho-diagnostic instruments enabling to carry out comprehensive evaluation of formation of various elements selected for examination of components of professional-personality competence of nurses even in a limited time. In order to learn how nurses know the issues of AH prevention, the author’s questionnaire was developed of a combined type. The results obtained were processed by means of the package STATISTICA 12.6, Spearman’s rank correlation coefficient in particular rs.

Ethical committee approval code & details
The research protocol and informed consent form were approved by the Commission on Biomedical ethics in biomedical scientific research of the Higher State Educational Establishment of Ukraine “Bukovinian State Medical University” (Protocol #3, 21/11/2019).

3. RESULTS
To achieve the purpose first those elements of PPC of nurses should be singled out that are system-forming, and other competences develop and “grow” around them. For this purpose statistical analysis was made by means of Spearman’s criterion which showed that the following PPC elements of therapeutic nurses are most loaded with correlations:
- motivation to choose medical profession «possibility to take care of one’s own health» (interrelated with the level of communicative culture \( r_s = 0.28 \) with \( p = 0.03 \), according to Spearman’s criterion; empathic abilities \( r_s = -0.41 \) with \( p = 0.001 \); development of empathy rational canal \( r_s = -0.41 \) with \( p = 0.001 \); self-concept as a professional \( r_s = -0.36 \) with \( p = 0.005 \); auto-sympathy as a professional \( r_s = -0.30 \) with \( p = 0.02 \); expected attitude from other people \( r_s = -0.32 \) with \( p = 0.01 \)); this reason is the third among those promoting the choice of medical profession. In general PPC motivation of a nurse is characterized by prevailing such altruistic reasons as «possibility to take care of health of relatives» (1 place), «desire to relieve sufferings of severely sick people, elderly people and children» (2 place);

- sociability level (interrelated with such barriers of communication as inadequate manifestation of emotions \( r_s = -0.31 \) with \( p = 0.001 \); dominating negative emotions \( r_s = -0.26 \) with \( p = 0.004 \); development of empathy emotional canal \( r_s = -0.58 \) with \( p = 0.000001 \); guidelines promoting empathy \( r_s = -0.27 \) with \( p = 0.04 \); activity \( r_s = 0.61 \) with \( p = 0.00000001 \); optimism \( r_s = 0.28 \) with \( p = 0.03 \); self-comprehension as a professional \( r_s = 0.27 \) with \( p = 0.04 \)). In general, inadequate formation of communicative competence of therapeutic nurses can be mentioned here, first of all in the sphere of communicative culture. In sampling among an average level of communicative culture combined with a high level of sociability, a nurse, who is excessively talkative, compulsive, intolerant, not always tactful and unable to influence upon the process of communication, is described. It correlates with “barriers” in communication available among nurses, including those which complicate interaction with a patient to some extent (50.82%), and those which disorganize the process of treatment considerably (40.98%): unwillingness to become closer to people, inflexibility, underdevelopment of emotions, inability to control emotions, dominating negative emotions; and less – inadequate manifestation of emotions;

- optimism (interrelated with such a communication barrier as unwillingness to become closer to people \( r_s = -0.25 \) with \( p = 0.05 \); self-comprehension as a professional \( r_s = -0.37 \) with \( p = 0.003 \); negative self-concept as a professional \( r_s = -0.30 \) with \( p = 0.02 \); reason «desire to treat people» \( r_s = -0.28 \) with \( p = 0.03 \); “realists” prevail among therapeutic nurses concerning manifestation of activity and optimism (49.18%) as well as “enthusiasts” (36.07%), that is, such kinds that to our mind are the most optimal for the representative of this professional group;

- uncertainty as a professional (interrelated with such a communication barrier as unwillingness to become closer to people \( r_s = 0.32 \) with \( p = 0.01 \); such reasons to choose medical profession as “occupational prestige” \( r_s = 0.28 \) with \( p = 0.03 \); «desire to solve scientific-medical issues» \( r_s = 0.28 \) with \( p = 0.03 \); «possibility to take care of one’s own health» \( r_s = 0.41 \) with \( p = 0.001 \); «possibility to influence on other people» \( r_s = -0.36 \) with \( p = 0.004 \); in general therapeutic nurses are rather self-critical as professionals or they do not dare to demonstrate high self-esteem;

- empathic abilities (interrelated with such reasons to choose medical profession as «occupational prestige» \( r_s = -0.39 \) with \( p = 0.002 \); «possibility to take care of one’s own health» \( r_s = -0.41 \) with \( p = 0.001 \); «possibility to influence on other people» \( r_s = 0.43 \) with \( p = 0.0006 \); as well as with professional evaluation of a nurse by a nurse supervisor \( r_s = -0.39 \) with \( p = 0.002 \) and qualification category \( r_s = -0.27 \) with \( p = 0.04 \)). Characterizing PPC personality-behavioural component of therapeutic nurses their reduced level of empathy (75.41%) should be mentioned due to insufficient development of empathy understanding, emotional and intuitional canals of empathy.

Quantitative and qualitative analyses of answers given by nurses enable to see how the respondents understand the major issues of AH prevention, what they usually do to solve the tasks of prevention in their everyday professional work. It enabled to distribute all the respondents into three groups on the basis of their awareness of the fundamentals of preventive work with AH patients. The 1\textsuperscript{st} group included those therapeutic nurses whose level of realization of the preventive-educational work could be described as inadequate (20% - \( n = 31 \)). They estimate their knowledge of AH as insufficient, but at the same time they are ready to develop and enrich their skills; the majority of them experience difficulties in training and organizing preventive measures; they usually do not teach their patients to feel the pulse and measure AP with further self-control; these nurses not always inform their patients about risk factors of AH and methods to prevent the disease; they are not very good at the norms of AP, PR values and possible AH complications. Among difficulties to conduct preventive measures the nurses from the 1\textsuperscript{st} group indicate the lack of appropriate information and literature in Ukrainian, methodical literature on preventive work for nurses, lack of time and patience in communication with patients.

The main factors of professional-personality competence of nurses from the 1\textsuperscript{st} group were modeled according to the results obtained (Fig. 1).
Figure 1 Pattern of factors of professional-personality competence of therapeutic nurses relevant in the context of implementation of tasks concerning AH prevention (1st group – inadequate level of realization of preventive-educational work)

PPC communicative component of nurses in the first group is characterized by prevailed (77%) low level of sociability (23% - average level) and emotional barriers preventing to some extent (52%) or considerably (48%) effective communication. In the structure of the personality component of PPC low (58%) and very low (42%) empathy attracts our attention, but at the same time, high (61%) and average level (39%) of optimism. Marked optimism with low sociability, empathy and inadequate knowledge and skills of preventive work is most likely a risk factor but not a resource, since it does not allow seeing problems with a patient or in the work of a nurse, which can be harmful for the patient himself. Motivation component of PPC of nurses from the first group is characterized by varied self-concept of the respondents as professionals: a part of them (39%) demonstrate high self-doubt, another part (42%) – low self-doubt, that is, they are rather confident in themselves and 19% – demonstrate average self-doubt. On the one hand, self-doubt as a professional blocks initiative of nurses complicates the process of decision making considerably, affects considerably her ability to convince other people, motivate them to certain behavioural pattern, which is a very important thing in preventive work. On the other hand, self-doubt should promote a professional to self-improvement, advancing professional skills. Therefore, an average level of its manifestation must be the most optimal. As to the prevailing reasons to choose medical profession, this group of nurses as well as the whole sampling in general considers the following leading reasons: «possibility to take care of health of relatives», «desire to relieve sufferings of severely sick people, elderly people and children», «possibility to take care of one’s own health». The latter one has become system-forming concerning its multiple correlations with other elements of PPC. Ability and desire to take care of one’s own health is a part of general human culture, the sign of maturation and responsibility. Only a healthy specialist can work with high quality. This notion has become of a special value within the health care system, since patients often perceive a medical worker as a pattern of healthy behavior.

The 2nd group of nurses demonstrated relatively satisfactory level of realization of preventive-educational work including 51% (n=80) of therapeutic nurses. The respondents of the group indicate one of the mentioned variants of effective prevention disturbance: either they evaluate their knowledge as insufficient or do not teach their patients to feel PR and AP, or they experience difficulties in preparing and conducting preventive measures. Moreover, not all of them know exactly the norms of PR and AP values (for example, they confuse the notion of optimal pressure and normal pressure). These nurses consider the main problem in
preparing and conducting preventive measures AH patient’s unwillingness to listen and obtain the information, and thus they completely refuse their responsibility for realization of such kind of work. At the same time they are aware of the methods of preventive work concerning AH.

Modeling of the main PPC factors for nurses from the second group enabled to find peculiar differences in formation of its certain elements (Fig. 2).

![Figure 2 Pattern of factors of professional-personality competence of therapeutic nurses relevant in the context of implementation of tasks concerning AH prevention (2nd group – relatively satisfactory level of realization of preventive-educational work)](image)

The communicative component of PPC of nurses from the second group who demonstrated relatively satisfactory level of realization of preventive-educational work includes low (34%), average (34%) and above the average (32%) levels of sociability. Their sociability level is a little higher than that of the first group. Although emotional barriers in communication remain rather marked: emotions obviously interfere with communication in 61% of nurses from the 2nd group, interfere to some extent in 34, and 2% of the respondents from the 2nd group are worried by only some emotional problems in communication. Personality component of PPC is characterized by reduced (89%) and average (11%) empathy. Very low empathy of the nurses in this group was not diagnosed contrary to their colleagues from the 1st group. But optimism level among the respondents from the 2nd group appeared to be lower: high optimism – 39%, average optimism – 50%, low optimism – 11%, which can be indicative of more critical and realistic attitude to people, world and events going on. Motivation component of PPC in the 2nd group possesses the hierarchy of reasons in professional activity similar to that of the 1st group. Self-doubt level as a professional among the nurses from the 2nd group was lower, that is, they are more confident in their competence than the respondents from the 1st group.

The 3rd group of nurses demonstrated a sufficient level of realization of preventive-educational work including 29% (n=45) of therapeutic nurses. Nurses from this group evaluate their knowledge concerning AH as sufficient but they are ready to expand it. They always inform their patients about risk factors promoting AH and methods to prevent AP increase. They always teach their
patients how to measure AP and feel PR as well as other methods of self-control. They know exactly normal, optimal and critical values of AP and PR, they are aware of AH complications, and differential diagnostics of AH. They do not experience any difficulties in preparing and conducting preventive measures; they are familiar with a variety of methodical means to inform and teach their patients (conversation, training of skills, poster, written rules/instructions for a patient supplied by oral explanation of a nurse, the use of Internet and mass media, e-mail messages, schools of health etc.). PPC factors were modeled for the third group of nurses as well (Fig. 3).

Figure 3 Pattern of factors of professional-personality competence of therapeutic nurses relevant in the context of implementation of tasks concerning AH prevention (3rd group – sufficient level of realization of preventive-educational work)

The communicative component of PPC of nurses from the third group with sufficient level of realization of preventive-educational work is characterized by high (40%), above average (27%), average (23%) and low (10%) levels of sociability. Therefore, their level of sociability is higher than that of the representatives from other groups. Though emotional barriers in communication still remain important: emotions obviously interfere with communication in 50% of nurses from the 3rd group, interfere to some extent in 18%, and 32% of the respondents from the 3rd group are worried by only some emotional problems in communication. As to the personality-behavioural component the level of empathy as its factor in this group is a little higher than that in the 1st group, but not much. Optimism level is a little higher than that in the 2nd group: average values are found in 82%, high values – in 18% of nurses, who conduct preventive-educational work among patients with AH sufficiently well. Motivation component of PPC is characterized by the hierarchy of reasons in professional activity similar to that of the previous groups. Self-doubt level as a professional among the nurses from the 3rd group is comparatively lower than that of the 1st one and higher than that of the 2nd group: average self-doubt with a tendency to low – 40%, average self-doubt with a tendency to high – 60%.

4. DISCUSSION
The suggested patterns of professional-personality competence factors of therapeutic nurses enable to see that the level of sociability, empathy, optimism, self-doubt as a professional are the most relevant in the scope of fulfillment the tasks of AH prevention. Those nurses who possess above the average level of sociability (and at the same time, generated skills of self-control
and self-organization), empathy, an average optimism level (remaining realistic), not very high self-confidence as a professional (reserving the right to doubt and maintaining conscious desire to continue self-improvement), as a rule, demonstrate better results in conducting preventive-educational work. They are able to find an individual approach to the patient, motivate him/her to obtain new information concerning state of health and possibilities of its improvement, maintenance and enhancement of the results of treatment, prevention of relapses. They are able to select according to patient’s requirements the best means to present information and education, feel how to arrange and structure the facts better. They demonstrate by their behavior how to take care of one’s own health, skillfully encourage patients for changes, inspire confidence in themselves and form a positive turning for results and healthy life style.

Sociability and empathy of nurses can be referred to the so-called social skills. A nurse with well-developed social skills knows how to treat patients, when to smile, when to listen to attentively, when touch the hand of a patient and reassure patient’s family members when they are afraid. It seems to be paradoxical that increase of sociability level reduces emotional empathy and attitude promoting empathy of nurses. In our opinion, medical profession requires a graduated demonstration of empathy, and its emotional component in particular, which enables to perform professional duties with greater self-possession and more rationally, maintain ability to think critically and understand situations, and make decisions more effectively. Increasing optimism of nurses correlates with elimination of such communicative barrier as lack of inclination to become closer to people, with decrease of a negative self-esteem as a professional, with improvement of self-understanding as a professional, but with decreased level of the reason «desire to treat people». That is, rather high level of optimism can become a reason of carelessness, irresponsibility, superficiality and be indicative of inadequately mature personal and professional position of a nurse. Meanwhile, scientific literature contains opposite opinions. For example, (Luthans et al., 2008), on the basis of bigger sampling demonstrated extremely valuable positive relation between optimism of nurses and evaluation of their leaders concerning their attitude to the mission of treatment, their contribution into patient’s satisfaction and general quality index of the work completed.

Self-doubt as a professional possesses varied and multiple interrelations in the structure of professional-personality competence of nurses. When it is intensified such emotional barrier as unwillingness to become close to people changes, but at the same time such reasons of professional activity as «occupational prestige», «desire to treat people» and «possibility to take care of one’s own health» increase, though the reason «possibility to influence upon other people» decreases. Under contemporary Ukrainian reality of medical practice «noble» professional motivation is likely to poorly correlate with positive self-concept of the medical staff in the primary care. Nurses having similar desires and attitude might not feel completely comfortable in their occupational environment, experiencing great difference between expectations concerning self-realization in profession and real possibilities available. Such uncertainty can considerably prevent professional growth of a nurse and her performance of preventive work with patients. Confidence in one’s own position, in oneself as a carrier of adequate information and skills, in one’s own deeds allows a nurse to be convincing, become a powerful motivation factor for patient’s changes, make constructive decisions, inspire hope and courage.

5. CONCLUSION
The suggested patterns of professional-personality competence (PPC) include the level of sociability, level of empathy, level of optimism, self-doubt as a professional as the most relevant reasons in the area of fulfillment of tasks on AH prevention by therapeutic nurses. Better results of preventive-educational work of a nurse correlate with above average level of communication and empathy, an average level of optimism, not very high self-confidence as a professional. The patterns presented reflect the main PPC spheres of a nurse and appropriate the most important competence in qualitative interrelations according to the three groups: nurses whose preventive work can be assessed as 1) inadequate, 2) relatively satisfactory and 3) sufficient. Competence patterns can be used as working structures to be focused on the staff, instruments of evaluation and development of advance training courses for therapeutic nurses. Nurses as agents of strengthening health and prevention of diseases require specific education and training together with continuous professional development in order to maintain a specific combination of knowledge and competence essential for provision of high quality prevention.

Abbreviations
AH – arterial hypertension; AP – arterial pressure; WHO – World Health Organization; MM – mass media; HLS – healthy life style; MNE – municipal non-profit establishment; PPC – professional-personality competence; PR – pulse rate

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Ethical approval
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Data and materials availability
All data associated with this study are present in the paper.

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