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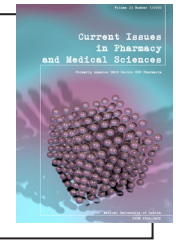

Personal and higher-level values of pharmacy students declaring work with patients as a preferred career path – preliminary results

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ABSTRACT

Introduction and Aim. The study aims to review the premise according to which a specific set of personal values is characteristic of pharmacy students indicating work in direct contact with the patient and building a therapeutic relationship as a preferred area of professional activity. The theoretical basis for the study draws on the Schwartz model of personal values.

Material and Method. The research was conducted among 211 students at the Faculty of Pharmacy, Medical University in Lublin, aged 21-30 years (M=23.17; SD=1.26). The reference group (n=83) was composed of respondents declaring preference for a professional activity implying direct contact with patients (mainly retail pharmacy). The control group included students declaring preference for a professional path not entailing direct contact with patients. The study employed the Polish version of the Schwartz Value Survey, as well as the authors' own questionnaire pertaining to career path preference.

Results. Students declaring preference for direct contacts with patients as their chosen career path, compared to respondents declaring preference for the other alternatives were more likely, as compared to the control, to express preference for the personal values of "security" and scored higher in terms of the higher-level value "conservation". In addition, a higher preference (oscillating around statistical significance) for the personal value "benevolence" of the control group was demonstrated.

Conclusions. The preference for the values revealed by pharmacy students declaring a choice of retail pharmacy gives rise to concern about the possibility of implementing a new model of pharmaceutical care in Poland.

INTRODUCTION

Two major trends can be distinguished in the research on values conducted in the context of problems occurring in medical professions. They refer, first, to professional values, derived from healthcare law and "soft laws" such as regulations and guidelines [1], and, second, to personal values, understood as individual concepts or beliefs about desirable behaviors [2]. The research reported in the paper belongs to the latter trend of studies.

Correlation between personal values and medical decision-making [3], susceptibility to professional burnout [4] and job satisfaction [5] are the subject matter of the research. First of all, however, personal values have mainly been identified as important determinants of physicians' and nurses' choice of specialization [6]. For example, the authors' earlier research on medical students showed the predictive significance of such values as achievement and power for the decision to specialize in surgery [7,8], whereas in the case of nursing students, the values "self-direction", "stimulation" and "openess to change" were connected with preference for surgical specialities [9]. In addition, a highly adaptive dimension of the respondents' preferred values was demonstrated, which showed they could meet the professional requirements of the studied groups (future surgeons and surgical nurses). It should be noted that the approach focused on discovering personal predictors of different aspects

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of pursuing a pharmacy career is only marginally reflected in the world literature [10-13].

Similarly to the earlier publications [7-9,13], the authors stress that the approach to personality with the "big five" model (Five Factor Model, FFM) [14], which is most frequently applied in studies on personality predictors of choosing a career path in different medical professions, does not fully reflect the motives of human choices. In the model, a personality trait is understood as a predisposition to consistent thinking patterns, feelings and actions. We can form opinions on what people are like by identifying personality traits, however, this approach is of little use to explain why people do what they do [15] as it does not take a motivational aspect of personality into account [16]. The authors of the present study suggest considering personal values referring to individual intentional goals proposed by the Schwartz model of basic personal values [16-20] as a representation of the motivational aspect of personality.

Schwartz defines personal values as beliefs concerning everything that is desirable and important to an individual. Personal values determine the directions of selecting actions, assessment of people and events, they also explain our own behavior and they differ in the importance of the principles guiding human life [21]. In this approach, values are treated as the cognitive representation of motives for achieving goals [16,20]. Herein, the kind of goals that are set by a person reflects an individual reaction to universal challenges that must be dealt with by all individuals and societies. They refer to the organism's basic needs, the necessity of coordinating interpersonal reactions or performing tasks indispensable for common good. From these three universal challenges, Schwartz [21] derives categories of values that are linked to different motives. In other words, the values differ with respect to the type of motivation they express [17].

Schwartz's theory refers to 10 primary value categories (the "Big Ten"), including: power (gaining prestige, high social status, wielding control over others), achievement (related to personal success), hedonism (seeking pleasure and enjoyment), stimulation (seeking novelties and new challenges), self-direction (independence of thought and action), universalism (concern for the good of humankind), benevolence (preserving and enhancing the welfare of those one is in close contact with), tradition (respect for traditions perpetuated in a given group), conformity (restraint with regard to behaviour that could constitute a violation of social norms), and security (desire for harmony and stability). The listed primary value categories can be organised under two bipolar dimensions. Firstly, the juxtaposition of the meta-categories of "openness to change" vs. "conservation" and secondly, the juxtaposition of the meta-categories of "self-transcendence" vs. "self-enhancement" [7,16,20].

The abovementioned categories of values form a circular structure based on the relations of conflict or concordance between the motivation they express [17]. The circular approach emphasizes that the adjacent values are similar and can be realized within the same action; on the other hand, the values in opposite fields are contradictory and cannot be realized in the same actions as they represent contradictory motives [16]. The correlations are shown in Figure 1.

The presented research approach was applied to the present study on the specifics of the motivational aspect of personality of pharmacy students' declaring preference for direct work with patients as a preferred form of a career path in a retail pharmacy setting in community pharmacies. By accounting for personal values of respondents, one is able to more accurately predict the factors that motivate particular human choices and behaviours [22]. Relative to the postulated implementation of the pharmaceutical care (PhC) model, we venture that the career paths chosen by pharmacists imply certain styles of professional practice that either do or do not entail direct contacts with patients and development of a therapeutic relationship, which requires certain personality-related predispositions. In doing so, we aimed to satisfy the postulated need to empirically analyse the personal motivation of people choosing to pursue a career in pharmacy, particularly in the context of its PhC related aspects [23].

The extent of data available in literature with regard to personality predictors for the choice of a career path in pharmacy is relatively narrow, particularly in terms of factors conditioning the choice of these forms of professional practice that imply participation in patient care and development of a therapeutic relationship. For the purposes of this study, the author's classification (typology) of pharmacy career paths was developed which corresponds to the taxonomy of medical specialties distinguishing between person-oriented and technique-oriented specialties with the defining factor being the significance of the interpersonal dimension of the therapeutic process [24].

The contemporary vision of working as a retail pharmacist, at the pharmacy counter, thus implying direct contact with the patient, is evolving towards indicating PhC as an optimum model of pursuing a pharmaceutical career path; however, in Polish realities these changes remain mostly in the sphere of expectations.

The historical analysis of the PhC concept and its evolution will be omitted here as it is not inherently pertinent to

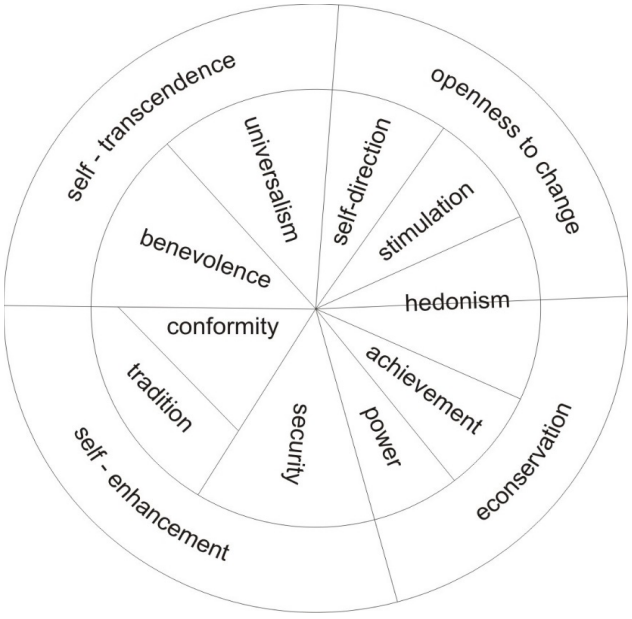

Figure 1. Structure of personal values and higher-level values according to Schwartz's conception [16]

the subject matter of this study [for a review of various PhC conceptualizations see 25]. According to Pharmaceutical Care Network Europe (PCNE) PhC

> " *[…] is the pharmacist's contribution to the care of individuals in order to optimise medicines use and improve health outcomes.*" [25].

This approach can be treated as a broadened interpretation of the original concept by Hepler and Strand [26] where the professional tasks of a pharmacist were not related exclusively to the "*provision of drug therapy*", but also entailed the pharmacist's participation and contribution to the process of patient care with regard to its elements inherently related to the pharmaceutical profession, i.e. the administration and optimisation of pharmacotherapy ("*to optimise medicines use*"). It should be noted here that the Polish legislation pertinent to the pharmaceutical profession leans towards the more traditional, original concept of PhC as suggested by Hepler and Strand in 1990. The concepts stipulated in the 1991 Act on Pharmaceutical Chambers narrows the scope of pharmacists' professional obligations to issues related to pharmacotherapy, and their goals to the improvement of the QoL of their patients. As follows from the Act on Pharmaceutical Chambers from 1991:

> "*the goal of a pharmacist is to protect public health through the provision of pharmaceutical services", which includes the provision of PhC understood as "a documented period during which the pharmacist, in collaboration with the patient and the physician, and, where necessary, also other health care professionals, oversees the correct administration of pharmacotherapy with the aim of improving specific aspects of the patient's QoL.*" [27].

AIM

The aim of the study is to present the specificity of personal values professed by pharmacy students who indicate working with the patient as their preferred professional career. With reference to the literature on the subject, the following hypothesis was formulated:

> **H.** Students of pharmacy who opt for career paths that entail direct contacts with the patient will demonstrate differences in preferred values compared to respondents who declare the choice of career paths not requiring direct contacts with the patient. They will show higher scores in the higher-level values "openness to change" (personal values: stimulation and self-direction) and "self-transcendence" (personal values: benevolence and universalism).

MATERIAL AND METHODS

The presented research was conducted in a group of 211 students at the Faculty of Pharmacy, Medical University in Lublin, Poland (165 females and 46 males, aged 21-30, M=23, SD=1.26). The study was approved by the Bioethics Committee at the Medical University in Lublin, permit no. KE-0254/289/2017. The study sample was composed of 4th and 5th year pharmacy students at the Medical University in Lublin. The survey was conducted in November and December during the 2017/2018 academic year. Participation in the study was voluntary and anonymous. The questionnaires were filled in correctly by 193 students (91% of all respondents) and the subsequent analyses pertained solely to this data. Purposive sampling was used.

To measure value preferences, the Polish version of the Schwartz Value Survey was used [28]. This is an operationalization of Schwartz's model [19] where 10 basic values are listed including: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security [19,28]. Values are evaluated on a 9-point scale, from -1 (contradictory to one's preferred values), through 0 (associated with insignificant values), to 7 (the most important values). Cronbach's alpha reliability coefficients for the scale employed in the study were from 0.53 (hedonism) to 0.78 (benevolence).

The respondents were also subject to the declaration concerning the preferred choice of a career path in pharmacy. They were asked to indicate one of the following options:

a) retail practice (community chemist's);
b) retail practice (hospital pharmacy);
c) pharmaceutical inspector;
d) researcher (research institute, research and development facility);
e) lecturer (medical institute, university);
f) employment at a herbal medicine store, drugstore, medical equipment store;
g) employment in the pharmaceutical industry (quality control, production supervision, clinical research monitoring, industrial laboratories, medicine production, research, verification and testing);
h) employment at a pharmaceutical wholesale centre (owner, manager, employee) validation expert/quality assurance expert (control and measurement units and laboratories specialising in general hygiene, food control and testing, environmental protection);
i) employment in the chemical and cosmetic industry (production facilities, research laboratories);
j) harmaceutical/medical consultant, pharmaceutical/medical sales representative;
k) analytical laboratory.

The results were analysed statistically with the use of the Statistical Package for Social Sciences (SPSS) software version 24. In all the conducted analyses, the significance threshold of $p<0.05$ was adopted. The presence of initial prerequisite for the t-test for independent groups: the normal distribution of analysed variances was evaluated by applying the Shapiro-Wilk test. The equality of variances in sample groups was evaluated with the Levene test. The results obtained through statistical inference were complemented by employing the Cohen's d effect size [29].

RESULTS

Students most commonly selected retail practice in a community pharmacy as their preferred career path (45% of all respondents). Those respondents, as well as five respondents who selected employment at an herbal medicine store/drugstore (which also implies direct contacts with patients) comprised the reference group (N=83,

of which 84% were women and 16% men). The control group composed of 110 respondents (77% women, 23% men) most of whom reported preference for employment in the pharmaceutical industry (22% of respondents) and research work (14.5% of the respondents).

The review of the hypothesis validity was conducted by employing the t-test for independent groups composed relative to the declared future career path (A. professional practice entailing contacts with patients; B. other forms of professional practice). The data obtained with respect to the personal values and higher-level value types are presented in Table 1.

Table 1. Descriptive statistics and results of test for significance of difference for personal values and higher-level value types with regard to declared way of practising pharmacy

Personal values/ HIGHER-LEVEL VALUES	A. Work with the patient		B. Other		Group differences
	M	SD	M	SD	
Power	3.26	1.70	3.11	1.02	t=0.98; p=0.33; A=B
Achievement	4,73	0.98	4.84	1.02	t=-0.81; p=0.42; A=B,
Hedonism	5.18	1.10	5.04	1.11	t=0.94; p=0.35; A=B
Stimulation	4.02	1.29	4.03	1.45	t=-0.08; p=0.96; A=B
Self-direction	4.99	0.84	5.05	1.12	t=-0.42; p=0.26; A=B
Universalism	4.67	0.86	4.60	1.20	t=-0.44; p=0.66; A=B
Benevolence	5.45	0.81	5.22	0.79	t=1.91; p=0.057; A=B
Tradition	4.72	1.03	4.49	0.99	t=0.43; p=0.66; A=B
Conformity	4.67	1.03	4.65	0.97	t=1.51; p=0.13; A=B
Security	5.23	0.77	4.98	0.80	t=2.17; p=0.03; A>B Cohen's d=0.32
SELF-TRANSCENDENCE	5.06	0.92	4.92	0.82	t=1.28; p=0.21; A=B
SELF-ENHANCEMENT	4.19	1.41	4.15	1.49	t=0.36, p=0.75; A=B
OPENNESS TO CHANGE	4.66	0.89	4.72	1.01	t=-0.33; p=0.74; A=B
CONSERVATION	5.82	0.82	5.38	0.85	t=3.55. p=0.035; A>B Cohen's d=0.53

Students declaring the choice of a career path that implies direct contacts with the patient were more likely, as compared to the control, to express preference for the personal value of "security" (t=2.17; p=0.03; small effect – Cohen's d=0.32). The reference group respondents scored relatively higher in terms of the higher-level value of "conservation" (t=3.55; p=0.035; medium effect – Cohen's d=0.53). Furthermore, a higher preference of the control group students for the personal value "benevolence" oscillates around the boundary of statistical significance (p=0,057).

DISCUSSION

This study was inspired by a suggestion made by Rosenthal *et al.*, according to whom in the search for barriers to effective PhC implementation, one should go beyond institutional and legal conditioning by also accounting for individual factors, including those related to personality ("*… the actual barrier is pharmacists' own psyche and culture*") [10]. A similar thesis was proposed by Luetsch [11] who suggested that the attitudes and personality traits of pharmacists are a key factor hindering efforts aimed at enhancing the professional capacity of pharmaceutical practitioners.

On the basis of our studies conducted to date [13], as well as a review of the few available publications pertaining to the psychological determinants of various aspects of a pharmaceutical career [10-12, 30-32], it was hypothesised that pharmacy students declaring preference for career paths that entail working directly with the patient (primarily retail pharmacy) will show differences in terms of the value preferences when compared to respondents declaring preference for work not requiring direct contacts with the patient. It was assumed that the students would demonstrate a higher intensity of higher-value types – "openness to change" and "self-transcendence". As a result, the intergroup comparison demonstrated a direction of diverse attitudes towards "openness to change", contrary to the one assumed in the hypothesis. It appears, however, that the respondents from the criterion group, indicating working with patients as their preferred career path, are unexpectedly characterized by a stronger preference for the value "security" and higher conservatism. The "motivational advantage" of the students from the criterion group was not confirmed with reference to the value "self-transcendence", yet a tendency towards a higher intensification of "benevolence", which belonged to the same category, was observed. Nevertheless, the revealed diversities, although very few in number, should be treated as significant, since they occurred in a homogenous group of students of the same medical school.

In the light of earlier reports [13] indicating the significance of the personal trait "openness to experience" as a negative predictor of choosing a pharmaceutical career path involving direct work with the patient, it is legitimate to claim that the previously published data on personal values [13] and the data on preferred values reported in the present paper are consistent. Considered together, they indicate a strong personality predisposition of the members of the criterion group to respect, accept, or cultivate customs and long standing traditions [19]. Consequently, in view of these findings, measures aimed at self-protection from changes can be expected among the participants in the study. Considering the recommendations to accept PhC as an optimum target model of pursuing the retail pharmacy, it can mean that pharmacy graduates will prefer its more traditional formula, limited to distribution of medicines.

However, it seems that the subjects in the criterion group show a predisposition to expanding the traditional formula of working with the patient by adding individual consultations and building therapeutic relations. This is confirmed by a high preference for the personal value "benevolence", which means motivation for doing good and ensuring the well-being of others. Nevertheless, no preferences were demonstrated for the personal value "universalism", the second in the category of higher-value "self-transcendence". The difference between those personal values lies in the level of abstraction of an addressee of "good actions". In the case of "universalism" it is humankind, whereas in the case of "benevolence" it is a real person with whom an individual interacts. Working as a retail pharmacist involves establishing relations with the patient, and in this sense, the preference for the value "benevolence" plays

an adaptive role for the requirements of this type of "people-oriented" profession. While formulating this argument, an earlier study should be referred to in which the importance of low neuroticism was demonstrated as a predictive value for the declared choice of career in retail pharmacy [13]. The data obtained there, i.e. the high preference for the value "benevolence" and low neuroticism, show a consistent picture of pharmacy graduates choosing retail pharmacy as, first, motivated by the welfare of the patient and, second, effectively handling difficult situations arising from the contact with irritated, ill and suffering patients. It should be stressed, however, that the demonstrated preferences for a high quality contact with the patient are linked to strong motivation to maintain a traditional formula of this contact. In the context of these findings, a question should be asked whether the pharmacy graduates characterized by the constellation of the preferred values shown in our study will actively implement the PhC model, which is innovative in Polish reality. Taking into account the results of the study, it seems that they would rather remain anchored to the traditional formula of working in retail pharmacy. This assumption is confirmed by Waszyk-Nowaczyk *et al.* [33] who believe that a major obstacle to implementing PhC in Poland is *"opportunism and aversion to change showed by the pharmacists themselves".* The Canadian research conducted in Alberta proved that one of the predictors of implementing an extended model of pharmacist's role was the pharmacists' innovativeness [12]. Rosenthal *et al.* [11], commenting on the barriers that hinder modernization of work at the pharmacy counter, suggest that "*the actual barrier is pharmacists' own psyche and culture*", while in the personality sphere a key role is played by, among others, fear of new responsibility and risk aversion [10]. In our own research, we were able to empirically show that the pharmacy students surveyed are likely to lean towards established procedures and traditionally accepted forms/models of pharmaceutical practice, rather than innovative endeavours aimed at involving pharmacists in an extended professional capacity.

The presented study sought to address postulates formulated, among other scholars, by Schafheutle *et al.* [32], in whose opinion analyses pertaining to factors that influence a pharmacist's performance ought to account not only for system-related factors, but also individual-related concerns, including personality. Schafheutle *et al.* emphasise the need to research factors conditioning performance that reflect the particular specificity of pharmaceutical practice, as well as the real-life context of the same, which in the case of a community pharmacy are a combination of business and patient related aspects [32]. In the opinion of said authors, the data currently available in this respect are largely insufficient. They claim that:

> *"The influence of personality type or personal attitudes on performance is an area that is very under-researched in pharmacy, despite evidence from other health professionals to suggest that values, attitudes and beliefs can all have an influence on performance"* [32].

The effective practical implementation of PhC principles understood as reorientation of pharmacy from the "product" and towards the patient [26] necessitates the introduction of multidirectional changes of not only legal or organisational, but also academic character, in an effort to develop a new vision of the professional identity of pharmacy practitioners in which promoting the values enhancing openness to change will be taken into consideration.

CONCLUSIONS

The preferred values declared by future retail pharmacists make it possible to predict a traditional style of pursuing a pharmaceutical career which is characterized by a higher focus on the distribution of medicines rather than its more innovative aspects associated with building a pharmacist-patient relationship. The structure of the values preferred by future pharmacy graduates will not be a factor conducive to the innovative changes aimed at implementing PhC.

Limitations of the study

The respondents were recruited exclusively among students of the Medical University in Lublin. The uniform curricula and recruitment standards adopted by the particular pharmacy faculties do not, however, guarantee reproducibility of the obtained results in the context of other medical universities in Poland due to the fact that students may present preference for other personal values.

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REFERENCES

1. Wright AL, Zammuto RF, Liesch PW. Maintaining the values of a profession: institutional work and moral emotions in the emergency department. *Acad Manage J.* 2017;60(1):200-37.
2. Añaña Da Silva E, Nique WM. Personal values in relation to graduate career choices. *IJPSM.* 2010;23(2):158-68.
3. Lynøe N, Helgesson G, Niklas J. Value-impregnated factual claims may undermine medical decision-making. *Clinical Ethics.* 2018;13(3):151-8.
4. Altun I. Burnout and nurses' personal and professional values. *Nurs Ethics.* 2002;9(3):269-78.
5. Eliason BC, Guse C, Gottlieb MS. Personal values of family physicians, practicesatisfaction, and service to the underserved. *Arch Fam Med.* 2000;9(3):228-32.
6. Hojat M, Brigham TP, Gottheil E, Xu G, Glaser K, Veloski JJ. Medical students' personal values and their career choices a quarter-century later. *Psychol Rep.* 1998;83(1):243-8.
7. Skrzypek M, Turska D. Personality of medical students declaring surgical specialty choice among students of nursing. *Prz Lek.* 2015;6:295-301.
8. Turska D, Skrzypek M, Tychmanowicz A, Baran T. Concept of distinct surgical personality revisited. Personality traits and personal values as surgical specialty choice predictors. *Eur J Med Technol.* 2016;1:38-46.
9. Turska D, Skrzypek M, Wrońska I. Kulik TB. Personality predictors of surgical specialty choice among students of nursing. *Curr Iss Personal Psychol.* 2017;5(2):123-31.
10. Rosenthal M, Austin Z, Tsuyuki R. Are pharmacists the ultimate barrier to pharmacy practice change? *Can Pharm J.* 2010;143(1):37-42.

11. Luetsch K. Attitudes and attributes of pharmacists in relation to practice change – A scoping review and discussion. *Res Social Adm Pharm*. 2017;13:440-55.
12. Rosenthal M, Tsao NW, Tsuyuki RT, Marra CA. Identifying relationships between the professional culture of pharmacy, pharmacists' personality traits, and the provision of advanced pharmacy services. *Res Social Adm Pharm*. 2016;12:56-67.
13. Skrzypek M, Turska D, Marzec A, Szczygieł K. Personality traits and personal values as retail pharmacy choice predictors in the context of pharmaceutical care requirements. *Res Social Adm Pharm.* 2020;16:68-73.
14. Costa PT, McCrae RR. *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI)*. Psychological Assessment Resources, Odessa FL; 1992.
15. Epstein S. Trait theory as personality theory. *Psychol Inq.* 1994;2:120-2.
16. Cieciuch J. Pomiar wartości w zmodyfikowanym modelu Shaloma Schwartza. *Psych Społ.* 2013;8(1):22-41.
17. Schwartz SH, Boehnke K. Evaluating the structure of human values with confirmatory factor analysis. *J Res Pers.* 2004;38:230-55.
18. Bilsky W, Schwartz SH. Values and Personality. *Eur J Pers.* 1994; 8:163-81.
19. Schwartz SH. Universals in the content and structure of values: Theoretical Advances and empirical tests in 20 countries. In: *Advances in experimental social psychology*. New York: Academic Press;1992:1-65.
20. Cieciuch J. *Kształtowanie się system wartości od dzieciństwa do wczesnej dorosłości.* Warszawa: Wydawnictwo Liberi Libri; 2013:35-103.
21. Schwartz SH. A theory of cultural values and some implication for work. Appl Psychol.1999;48:23-47.
22. Roccas S, Sagiv L, Schwartz SH, Knafo A. The Big Five personality factors and personal values. *Pers Soc Psychol Bull.* 2002;28:789-801.
23. Jasińska-Stroschein M, Kurczewska U, Orszulak-Michalak D. Motivations surrounding the pursuit of a pharmacy career – the case of Polish students. *Acta Pol Pharm Drug Res.* 2017;74(3):1001-10.
24. Manuel RS, Borges NJ, Jones BJ. Person-oriented versus technique-oriented specialties: Early preferences and eventual choice. *Med Educ Online*. 2009;14(4):1-6.
25. Allemann SS, Foppe van Mil JW, Botermann L, Berger K, Griese N, Hersberger KE. Pharmaceutical Care – the PCNE definition 2013. *Int J Clin Pharm*. 2014;36:544-55.
26. Hepler CD, Strand LM. Opportunities and responsibilities in pharmaceutical care. *Am J Hosp Pharm*. 1990;47(3):533-43.
27. *Ustawa z dnia 19 kwietnia 1991 r. o izbach aptekarskich*. Dz.U. 1991 nr 41 poz. 179. Opracowano na podstawie: Dz.U. z 2016 r. poz.1496, z 2018 r. poz.1669. Stan prawny aktualny na dzień: 04.10.2018.
28. Brzozowski P. *Wzorcowa hierarchia wartości: polska, europejska czy uniwersalna*? Lublin: Wyd. UMCS; 2007.
29. Cohen J. *Statistical Power Analysis for the Behavioral Sciences*. New Jersey: LawrenceErlbaum Associates; 1988.
30. Rosenthal MM, Houle SKD, Eberhart G, Tsuyuki RT. Prescribing by pharmacists in Alberta and its relation to culture and personality traits. *Res Social Adm Pharm*. 2015;11:401-11.
31. Noble C, O'Brien M, Coombes I, Shaw PN, Nissen L, Clavarino A. Becoming a pharmacist: Students' perceptions of their curricular experience and professional identity formation. *Curr Pharm Teach Learn*. 2014;6:327-39.
32. Schafheutle EI, Seston EM, Hassell K. Factors influencing pharmacist performance: A review of the peer-reviewed literature. *Health Policy.* 2011;102:178-92.
33. Waszyk-Nowaczyk M, Simon M. Problemy związane z wdrażaniem opieki farmaceutycznej w Polsce. *Farm Pol*. 2009;65(10):713-6.