

ORIGINAL ARTICLE

## *Personality predictors of surgical specialties choice among students of nursing*

*Dorota Turska*<sup>1-A,B,C,D,E,F</sup>, *Michał Skrzypek*<sup>2-A,B,D,E,F,G</sup>, *Irena Wrońska*<sup>3-B,D</sup>, *Teresa B. Kulik*<sup>4-B,D</sup>

1: Department of Educational Psychology, Institute of Psychology, Maria Curie-Skłodowska University, Lublin, Poland

2: Department of Clinical Dietetics, Faculty of Health Sciences, Medical University of Lublin, Poland

3: Chair of Development of Nursing, Faculty of Health Sciences, Medical University of Lublin, Poland

4: Chair of Public Health, Faculty of Health Sciences, Medical University of Lublin, Poland

### BACKGROUND

Holland's theory of congruence, according to which one's career choice is an expression of personality traits common to a given profession, constitutes a theoretical background for this research. The construct of the Distinct Surgical Personality (DSP) is an exemplification of the idea of a congruent match between one's personality and the requirements of the medical environment. In previous studies the authors revised their proposition concerning the DSP concept to include not only personality traits but also preferred values. This paper aims at verifying the proposition that this concept may also refer to students of nursing who select surgical specialties.

### PARTICIPANTS AND PROCEDURE

The study involved 163 students of nursing at the Medical University of Lublin aged 21-29 ( $M = 23.19$ ,  $SD = 3.67$ ). Students who opted for surgical specialties constituted the criterion group ( $N = 98$ ). The study employed the Polish versions of the Personality Inventory NEO-FFI and the Schwartz Value Survey.

### RESULTS

There are two significant predictors of surgical specialties choice in nursing: a higher-level value of openness to change and extraversion. The tested model, which incorporates personality traits and preferred values, has proved congruent with the data, and allows for the proper classification of 79% of students who declared surgical specialties.

### CONCLUSIONS

The results suggest the existence of a specific personality of surgical nurses. While clear adaptability to the specific environment has been determined, there are differences with respect to the concept of DSP, referring to doctors, widely discussed in the literature. In both cases these constructs look different, and are dependent on various types of professional activities within the therapeutic team.

### KEY WORDS

John L. Holland's theory of congruence; specialty in nursing; personality traits; preferred values

---

CORRESPONDING AUTHOR – Michał Skrzypek, Ph.D., Department of Clinical Dietetics, Faculty of Health Sciences, Medical University of Lublin, 1 Chodźki Str., 20-093 Lublin, Poland, e-mail: [michal.skrzypek@umlub.pl](mailto:michal.skrzypek@umlub.pl)

AUTHORS' CONTRIBUTION – A: Study design · B: Data collection · C: Statistical analysis · D: Data interpretation · E: Manuscript preparation · F: Literature search · G: Funds collection

TO CITE THIS ARTICLE – Turska, D., Skrzypek, M., Wrońska, I., & Kulik, T. B. (2017). Personality predictors of surgical specialties choice among students of nursing. *Current Issues in Personality Psychology*, 5(2), 123–131.

RECEIVED 30.09.2016 · REVIEWED 30.11.2016 · ACCEPTED 22.12.2016 · PUBLISHED 30.01.2017

## BACKGROUND

Holland's theory of career choice (1997) constitutes the theoretical basis for the studies presented. According to this theory, choosing one's career is an expression of one's personality; consequently, people who do the same job may demonstrate similar personality characteristics and, as a result, they can react in a similar manner to the challenges of the working environment (Antony, 1998). The value of Holland's theoretical proposition lies in his integrated psychological and sociological approach which accounts for not only the personality type but also characteristics of the workplace environment, and, specifically, characteristic types of activities that make a good match (congruence) and translate into professional success and satisfaction (Pike, 2006). It is underlined that such congruence may be particularly important in medical professions preventing professional burnout and being conducive to continued practice of a given profession (Kennedy, Curtis, & Waters, 2014a).

A review of the world literature (e.g., Bellodi, 2004) and vernacular one (e.g., Pawełczyk, Pawełczyk, & Bielecki, 2007) on the subject indicates that empirical results of studies concerning personality predictors of specialties in medical professions refer primarily to medical school graduates focusing on the personality traits of physicians of various clinical specialties. Studies on the Distinct Surgical Personality (DSP) (Cares, 1961) conducted for over half a century provide the best example of this. Early DSP studies, dating back to the 1970s, led to creating a combined list of psychological traits of surgeons including immunity to stress and a general mental "toughness" in the emotional sphere (Zeldow & Daugheerty, 1991), a realistic approach in the cognitive sphere (Stilwell, Wallick, Thal, & Burselson, 2000), and low empathy with a general inclination towards domination in the interpersonal sphere (Borges & Osmon, 2001). Modern research into the surgical personality was intensified with the adoption of a standardised theoretical framework based on the Five-Factor Model (FFM) and the subsequent implementation of the Five Factor Inventory (FFI) (Costa & McCrae, 1992). Such an approach made direct comparisons of the results obtained possible using unambiguous and operationalised personality traits: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. The results of many studies (e.g. McGreevy & Wiebe, 2002) invariably show a higher level of extraversion and conscientiousness and a lower degree of agreeableness of surgeons relative to the general population and to non-surgical physicians, residents or students of medicine. Arguably, the data presented in the world literature on the subject obtained by means of the FFI confirm the DSP concept. Specific personality traits come to the fore already

while choosing the surgical specialty, and, as Drosdeck et al. (2015) suggest, they become more intense at different career points. This specific intensity of personality traits (lower agreeableness and higher conscientiousness) among students of medicine who chose surgery as their major (relative to those who opt for other specialties) was also confirmed in vernacular studies (Skrzypek & Turska, 2015; Turska, Skrzypek, Tychmanowicz, & Baran, 2016). In these studies the authors' own understanding of the DSP, which went beyond identifying the analysed construct with a specific intensity of personality traits, constituted the theoretical basis. Since this proposition is also used in the studies presented, it is here described in brief.

The universal adoption of the FFM in contemporary research comes from the recognition of its advantages (simplicity and universality). However, this does not relieve researchers from noticing inherent limitations of the system. In fact, any surgical personality test will merely indicate the intensity of basic personality traits (McCrae & Costa, 1990). Given the leading classic definition developed by Allport (1937, p. 48) according to which "personality is something and does something", we believe that the five broad personality traits *are this something*, i.e. its structure (see also Ciecuch, 2013). These personality traits describe fairly accurately what people are like, but they do not explain why people do what they do (Epstein, 1994). The latter part of Allport's definition, which asserts that personality *does something*, proposes the inclusion of its motivating facet, on a par with the structural one. The traits and motives behind achieving set goals put together will thus offer a full description of one's personality (Ciecuch, 2013). In psychology values are perceived as cognitive representations of motivational goals (Schwartz, 1992). While personality traits refer to the activity of the individual without indicating his/her intention, values refer to singular intentional aims which humans are aware of (Bilsky & Schwartz, 1994). Similarly to the Five-Factor Model ("the Big Five") of personality (McCrae & Costa, 1990) which describes the universality of personality traits, there exists a theory of values that describes the universality of motives, i.e.. the Schwartz model of universal human values (Schwartz, 1992). This theory derived 10 basic values ("Big Ten" – Ciecuch, 2012) from universal requirements of the human condition: self-direction, stimulation, hedonism, power, security, conformity, tradition, benevolence, universalism, and achievement. Basic values constitute four higher-level value types, brought together under two dimensions. The first one covers 'openness to change' (self-direction, stimulation) versus 'conservation' (conformity, tradition, and security). The other dimension contrasts 'self-transcendence' (benevolence and universalism) and 'self-enhancement' (achievement and power).

Despite their inherent diversity, these traits and personal values affect one another. People who consistently exhibit certain traits attach more importance to corresponding values. Values, in turn, affect traits, since people tend to behave in line with the values they cherish. It follows that personality traits and values are key in predicting choices people make. Moreover, the relative strength of the effect that personality traits and values have on the choices people make depends on whether a given choice is made spontaneously or under intentional control. A particular effect of traits is manifested in habitual patterns of perception of reality. Where a decision falls under intentional control, it seems that values come to the fore (Roccas, Sagiv, Schwartz, & Knafo, 2002).

Based on the review presented above, we believe that the studies on the personality of surgeons conducted heretofore are limited in scope. We propose that the concept of the DSP include personality traits as well as personal values. We also suggest that both these variables be placed within the universal psychological models of personality traits (Five-Factor Model) and motives (the Schwartz model of basic personal values). We further proposed, based on the studies by Roccas et al. (2002), that the choice of a surgical specialty depends more on values than personality trait variables of a similar level of universality. The results obtained (Skrzypek & Turska, 2015; Turska et al., 2016) confirmed our assumptions indicating that the higher-level value of self-enhancement and power are twice as strong as personality traits such as agreeableness (negative predictor) and conscientiousness (positive predictor).

## THE CURRENT STUDY

The scope of data concerning personality predictors of surgical specialty choice in nursing is relatively small. The meta-analysis by [Kennedy et al. (2014a)] incorporates the data from only 13 scientific articles published in the years 1965-2010. The data were analysed from various theoretical and methodological viewpoints, which makes relevant comparisons almost impossible. The subsequent work by Kennedy, Curtis, and Waters (2014b), which analyses personality traits of Australian emergency nurses ( $n = 73$ ) by means of the FFM model, is worth noting. However, the results obtained were compared to the data on the general population and not to the nurses of other specialties. The authors demonstrated that emergency nurses have a higher level of extraversion, openness to experience, agreeableness, and conscientiousness. The only Polish comparative study known to us (Herman, Rotter, Kemicer-Chmielewska, Karakiewicz, & Laszczyńska, 2013), i.e., surgical nurses ( $n = 37$ ) versus psychiatric nursing practitioners ( $n = 35$ ), employed the 16PF test de-

veloped by Cattell. It was determined that there are no differences in the personality traits of the subjects examined who represented the two groups.

The aim of this study is to verify the assumption that the concept of a distinct personality holds true also for the students of nursing who choose surgical specialties. The rationale behind this study comes from the fact that the final specialty choice by nursing students is significantly modified by external factors unrelated to the subject matter, and specifically by the opportunities of employment in a desired specialty.

Following Holland's theory of career choice (1997), it can be assumed that surgical nurses, operating theatre nurses, as well as anaesthesia and intensive care nurses, work in the same workplace environment as surgeons: they are members of the same therapeutic team and they establish relations with the same patients. Nevertheless, evidently the workplace environment is different in terms of the professional activities undertaken. The whole therapeutic team is dominated by the physician, since he/she takes the decisions concerning the manner of medical treatment. The nurse, in turn, puts the guidelines of the physician into practice (Kennedy et al., 2014b), albeit maintaining autonomy in his/her expertise. The clinical activity of surgical nurses consists in the application of certain procedures and courses of action and, to a lesser degree, in performing care-related activities focused on the patient. In other words, the nature of "being a nurse" or nursing in the case of surgical specialties is dominated by the technical and instrumental aspect (Lentz & Michaels, 1965). For this reason, the authors of this study included in the criterion group students of nursing who opted for one of the listed specialties (surgical nursing, operating theatre nursing, anaesthesia and intensive care nursing), since in terms of professional practice, these specialties have a great deal in common. Students who opted for medical, non-surgical specialties constituted a control group. These specialties are dominated by people-minded activities and by providing care to patients. This dichotomy of nursing specialties reflects the typology proposed by Manuel, Borges, and Jones (2009) concerning medical specialties, i.e., person-oriented and technique-oriented specialties.

The following research hypotheses were formulated:

- H1. Students of nursing who opt for surgical specialties will demonstrate different intensity levels of personality traits and differences in preferred values compared to respondents who declare the choice of medical specialties.
- H2. Referring to our own theoretical stand, we expect the choice of surgical specialties made by students of nursing to owe more to values than to personality traits.

## PARTICIPANTS AND PROCEDURE

### PARTICIPANTS

The study was conducted with the participation of 163 volunteers (159 females and 4 males), students of nursing in the Department of Health Sciences at the Medical University of Lublin. Their age averaged 23.19 ( $SD = 3.67$ ). The respondents were students of the final year of their undergraduate studies (25%) and graduate studies (75%). Both groups were included in the study because specialties can be chosen in both types of study courses. Fifty-four percent of respondents ( $n = 89$ ) preferred surgical specialties (criterion group). The remaining participants ( $n = 74$ ) who declared the choice of medical specialties were assigned to the control group (internal medicine nursing – 34%, paediatric, oncology and family nursing – 14% each, and the remaining specialties – approx. 5% each).

Research was carried out at the Medical University of Lublin. All participants were subjected to the same research procedure. Given the type of studies, compliance with the Code of Ethics of the Polish Psychological Society was maintained.

### MEASURES

*Personality traits.* To measure personality traits, the Polish version of the NEO-FFI by Costa and McCrae was used (Zawadzki, Strelau, Szczepaniak, & Śliwińska, 1998). The relevant questionnaire contained 60 statements representing the five factors. *Neuroticism* refers to emotional stability versus instability. *Extraversion* denotes intensity of inter-personal relations, a need for stimulation, and a level of activity. *Openness to experience* encompasses searching for activity and new experience. *Agreeableness* refers to the quality of interpersonal relations ranging from sympathy to animosity. *Conscientiousness*, in turn, defines a tendency to organise oneself, his/her determination and motivation (McCrae & Costa, 1990). Reliability coefficients, evaluated by means of Cronbach's  $\alpha$ , were as follows: from .82 (Conscientiousness) to .68 for Openness to Experience and Agreeableness (Zawadzki et al., 1998).

*Value preferences.* To measure value preferences, the Polish version of the *Schwartz Value Survey* was used (Brzozowski, 2007). This is an operationalisation of Schwartz's model (1992) where 10 basic values are listed, i.e. *Self-direction* (independent thought and action), *Stimulation* (search for novelty and challenge in life), *Hedonism* (pleasure and joy of life), *Power* (over people and prestige), *Security* (harmony and stability of society), *Conformity* (restraint of socially unaccepted social conduct), *Tradition* (customs of one's culture), *Benevolence* (preserving and enhanc-

ing the welfare of those one is in close contact with), *Universalism* (care for the welfare of all people), and *Achievement* (personal success) (Brzozowski, 2007; Schwartz, 1992) and two bipolar dimensions: 'openness to change' versus 'conservation', 'self-transcendence' versus 'self-enhancement'. The testers assessed the degree with which individual values determined their life principles. Values were assessed on a 9-point scale from -1 (contradictory to the values preferred by the individual) through 0 attributed to unimportant values to 7 (crucial values). Cronbach's  $\alpha$  reliability coefficient for the instrument employed ranged from .53 (Hedonism) to .78 (Benevolence) (Brzozowski, 2007).

### STATISTICAL ANALYSIS

Statistical analysis of the results was performed by means of the Statistical Package for Social Sciences (SPSS), version 22. It was also assumed for all analyses that a statistically significant result had a  $p$ -value  $< .05$ . The Shapiro-Wilk test was employed to determine the normality of the distribution of variables. The presence of initial prerequisites for a regression analysis was confirmed: normal distribution of residuals (statistically insignificant  $\chi^2$  value) and absence of strong inter-correlations between the predictors (Durbin-Watson statistic value varying around 2).

## RESULTS

In order to verify Hypothesis 1, a  $t$  test was employed for independent groups established in view of future specialty choice declarations (A. surgical specialties; B. medical specialties). Table 1 shows the data obtained relating to five personality traits.

Statistically significant differences among the analysed personality traits appear only within one dimension. Compared to students who choose other specialties, those who opt for surgical specialties demonstrate a higher degree of extraversion ( $t(161) = 2.17, p = .031$ ). The effect of inter-group diversity is small (Cohen's  $d = .35$ ) (Cohen, 1988).

Table 2 shows the results of the analogous analysis relating to personal values and higher-level value types.

The students who opt for surgical specialties prefer more than their counterparts from the control group such personal values as self-direction ( $t(161) = 2.83, p = .049$ , moderate effect size; Cohen's  $d = .47$ ) and stimulation ( $t(161) = 2.91, p = .010$ , moderate effect size; Cohen's  $d = .47$ ). Consequently, the respondents from the criterion group obtained higher results in the Openness to change meta category ( $t(161) = 3.11, p = .010$ ) (moderate effect size; Cohen's  $d = .56$ ).

Table 1

*Descriptive statistics and results of test for significance of difference for personality traits by declared specialty*

Specialty declared	Neuroticism		Extraversion		Openness to Experience		Agreeableness		Conscientiousness	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
A. Surgery	36.17	4.02	42.13	4.15	34.93	3.80	38.48	4.59	38.45	3.36
B. Medical	36.34	4.43	40.66	4.10	35.03	3.02	37.63	3.71	38.75	3.70
Group differences	$t = -0.25$ $p = .812$ A = B		$t = 2.17$ $p = .034$ A > B		$t = -0.17$ $p = .864$ A = B		$t = 1.23$ $p = .213$ A = B		$t = -0.54$ $p = .579$ A = B	
Cohen's $d = .35$										

Table 2

*Descriptive statistics and results of test for significance of difference for personal values and higher-level value types by declared specialty*

Values	A. Surgery		B. Medical		Group differences
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Benevolence	5.53	0.78	5.40	0.73	$t = 1.08, p = .282, A = B$
Self-direction	5.02	0.84	4.63	0.83	$t = 2.83, p = .049, A > B$ Cohen's $d = .47$
Hedonism	5.02	1.07	4.74	1.43	$t = 1.96, p = .059, A = B$
Achievement	4.61	0.94	4.42	0.98	$t = 1.13, p = .189, A = B$
Security	5.20	0.74	5.05	0.78	$t = 1.20, p = .233, A = B$
Conformity	4.75	0.99	4.82	0.94	$t = -0.45, p = .648, A = B$
Universalism	4.73	1.04	4.50	0.78	$t = 1.51, p = .132, A = B$
Stimulation	4.03	1.32	3.41	1.33	$t = 2.91, p = .010, A > B$ Cohen's $d = .47$
Tradition	4.24	1.07	4.42	0.98	$t = -1.12, p = .257, A = B$
Power	2.99	1.07	2.96	1.21	$t = 0.54, p < .878, A = B$
Self-transcendence	5.13	0.79	4.95	0.65	$t = 1.52, p = .119, A = B$
Self-enhancement	4.02	0.85	3.80	0.96	$t = 1.09, p < .273, A = B$
Openness to change	4.67	0.91	4.22	0.90	$t = 3.11, p = .010, A > B$ Cohen's $d = .56$
Conservation	5.62	0.87	5.63	0.95	$t = -0.37, p = .966, A = B$

Note. Names typed in small print denote basic values, names in capitals denote higher-level value types after Schwartz's theory.

In order to verify Hypothesis 2, a multivariable logistic regression analysis was conducted. The declaration of choice (dependent variable) was coded as surgical specialties = 1, other options = 0. In addition to all personality traits, only higher-level value types were introduced into the model. Such an approach was prompted by the need to maintain the relation between the size of the sample and the number of independent variables, as required in statistics (Danieluk, 2010), and Schwartz's conviction that higher-level value types (and not individual basic values)

are more efficacious to predict behaviour (Schwartz & Boehnke, 2004). Relevant results are presented in Table 3.

Taking into account the odd ratio (OR), there are two significant personality predictors of surgical specialty choice among students of nursing: extraversion (positive predictor), and a higher-level value of openness to change (positive predictor). The OR determines the ratio of the likelihood that a given phenomenon will occur to the likelihood that it will not (Danieluk, 2010). The analysis of OR (Column OR in

Table 3  
*Logistic regression model explicating declared choice of surgical specialties*

Predictors	<i>B</i>	Wald ( <i>Z</i> )	<i>p</i>	OR	OR for change by 1 <i>SD</i> <sup>1</sup>
Neuroticism	0.05	1.02	.313		
Extraversion	0.11	4.40	.034	1.12	1.55
Openness to experience	-0.07	1.76	.184		
Agreeableness	-0.00	0.05	.973		
Conscientiousness	-0.02	0.17	.671		
Self-enhancement	-0.50	2.54	.111		
Conservation	-0.62	3.15	.076		
Openness to change	1.17	10.61	.001	3.23	2.95
Self-transcendence	0.29	0.57	.452		
Constant	-3.52	0.96	.319		

Note. <sup>1</sup>calculations as per formula: OR (*SD*) = exp (*B* × *SD*). Nagelkerke *R*<sup>2</sup> = .22.

Table 3) informs that if the value of a given predictor increases by 1 point, the odds for choosing a surgical specialty increases by 12% in the case of extraversion (OR = 1.12) and by 223% in the case of openness to change (OR = 3.23).

The predictors introduced into the model are quantitative in nature. It is worth bearing in mind that in such a case the OR for a singular change will not visibly reflect the analysed effect because a rise in value of such a variable by one unit is of little significance. In such a case it is suggested that the OR be calculated for any change in the value of the predictor (Hosmer & Lemeshow, 2000). Because in our research a considerable range refers to personality traits and this range is significantly lower with respect to values, we decided to calculate the OR for a change by a single standard deviation (*SD*) in order to ensure comparability of results. The data presented in the last column in Table 3 inform that where extraversion and a higher-level value of openness to change rise by 1 *SD*, the odds for a declared choice of a surgical specialty rises by 55% (OR = 1.55) and 195% (OR = 2.95) respectively.

The tested model, which contained personality traits and value meta categories, proves effective in distinguishing specialty declarations depending on a specific set of personality traits. This is borne out by the correct classification index at 79%. The model is well calibrated, as the Hosmer-Lemeshow statistical test for goodness of fit confirms ( $\chi^2 = 4.19, p = .829$ ).

## DISCUSSION

The results obtained allow for partial verification of Hypothesis 1 and for complete verification of Hy-

pothesis 2. As regards Hypothesis 1, a higher degree of extraversion and higher-level value type ‘openness to change’ among students of nursing who declare the choice of surgical specialties have been duly confirmed. Interestingly, the inter-group diversity regarding values, as demonstrated in the study, is even more significant given the fact that it occurred in a homogeneous group of students from the same medical school. The findings indicate the explanatory power of the model which includes personality tests and values to understand psychological mechanisms behind the choice of one’s specialty. Personality traits help explain the manner of conduct, irrespective of its content (Cieciuch, 2013). A relatively high degree of extraversion denotes an active stance, a high level of energy and intensity of social interaction. Values, on the other hand, help predict the content of conduct. For students who declare the choice of surgical specialties, the content of conduct (including professional practice) determines a focus on seeking new things and diversity and a need of competence and autonomy. The characteristics of the personality traits, and most notably a higher degree of extraversion, seem to perform an instrumental and coherent function which increases the adaptation-related activities with respect to diversity and change in a highly stimulating workplace environment. The primacy of values over traits – a four-fold advantage – was confirmed by explaining the rationale behind the choice of a specialty. It seems that, similar to the DSP, there exists a distinct surgical nurse personality, with the proviso that “the scope of content” of this construct differs from the content of the DSP. The distinct personality of future surgeons, as revealed in the previous studies (Skrzypek & Turska, 2015; Turska et al., 2016), rests on a tendency to orient

one's conduct along success and domination. This, in turn, is supported by a low level of agreeableness and a high degree of conscientiousness.

The study also indicated that the combination of personality traits is congruent with the requirements of a surgeons' workplace environment, and specifically administering radical treatment by way of bodily invasion (Skrzypek & Turska, 2015). However, the requirements of a workplace environment for surgical nurses are quite different. There is a need to recognise and to submit oneself to the dominant role of the physician in a therapeutic team. After all, it is the physician who bears responsibility for the course of treatment administered. Nevertheless, similar to the activities of physicians, a surgical nurse is expected to be competent in certain diagnostic and therapeutic methods and procedures, whether single-handedly or in association with the physician. These procedures are frequently performed under a heavy pressure of time and in occupational stress-inducing circumstances where one's health or life is at stake. In this context, it is worth referring to the results of seminal research by Lentz and Michaels (1965) which revealed differences in the perception of the role of professional nurses between practising medical nurses and surgical nurses. It was found that nurses who work on medical floors tend to be more people-minded and are more interested in patient care as such. Surgical nurses demonstrated a lesser interest in psychological and interpersonal aspects of care, giving preference to technical nursing procedures. This clearly indicates two disparate types of nursing practice. At the same time, the researchers cited (Lenz et al., 1965) clearly underline that irrespective of the specific nature of nursing practice, procedure-related competencies should invariably be supplemented by soft interpersonal skills. Even today it is stressed that communication between nurses and patients, based on 'soft' competencies of the former and focused on disclosing and satisfying psychological, social, and emotional needs of patients and their families, should constitute an integral part of nursing traineeship irrespective of its specialty (Clayton & Ellington, 2015).

Bearing these suggestions in mind, it can be said that a higher degree of extraversion, as found in the criterion group, has a strong adaptation value, appropriate to the workplace environment of surgical nurses. This trait is an indication of the predisposition towards effective performance of medical procedures in emergency situations, where life or health of a patient is at stake. It is further conducive to effectively handling interpersonal challenges directly linked to the nursing practice. This refers to establishing a good rapport with medical professionals from inter-disciplinary therapeutic teams and with patients alike. Arguably, in terms of personality, surgical nurses are predisposed to offer 'soft', that

is interpersonal competencies within a therapeutic team. Surgeons lack such competencies as a result of their distinct surgical personality (DSP) as they focus more on biotechnical than interpersonal aspects of the medical profession (Skrzypek & Turska, 2015).

It needs to be stressed that there exists an empirically justified conviction in the literature on the subject under which extraversion is an adaptive trait not only for one type of specialty in nursing (surgical versus medical). The data reported since the 1920s (Elwood, 1927) seem to indicate that extraversion is a characteristic feature of all nurses as a professional group. It has been evidenced that extraversion was common to nurses who work in a hospice as well as those who operate in acute settings. Furthermore, Gambles, Wilkinson, and Dissanayake (2003) indicate extraversion as a feature which is conducive to professional success and which constitutes a protective barrier against professional burnout in people-focused professions. Given the above, it seems justified to suggest that students of nursing who opt for surgical specialties and who demonstrate a higher level of extraversion compared to those students of nursing who declare the choice of medical specialties are, in terms of their personality, closer to the popular image of a nurse – a lively, warm, optimistic, and assertive person (Baldaschino & Galea, 2012). Such a personality profile is in line with the views of nurses themselves, who list seven dimensions of caring that define professional nursing practice: caring, compassion, spirituality, community outreach, providing comfort, crisis intervention, and going the extra distance (Hudacek, 2008).

Psychological implications of extraversion, a trait common to students of nursing who declare the choice of surgical specialties, are consistent with their preferred value meta category, i.e. openness to change. The personal values which are elements of this meta category, such as a need for stimulation and self-direction, are key predictors of the declared choice. It seems that the respondents who opt for surgical specialties discern an opportunity for personal stimulation while confronting clinical challenges that require quick and proper application of procedures in the context of emotional tension caused by "here and now" life-threatening situations. Self-direction causes some interpretation problems, since the scope of professional autonomy of surgical nurses seems neither broad nor well defined. Such nurses are members of therapeutic teams where the dominant role is played by physicians. Moreover, a strong focus on specific procedures is a barrier to autonomy. Such procedures require the performance of clearly defined manual tasks learnt during the course of vocational training. Apparently, with the advent of medical technology, medical procedures performed by surgical nurses are increasingly complex, and mastering them can be a way to demonstrate one's

competence. This, in turn, leads to a plea voiced by surgical nurses for recognition and for being treated as experts in their respective nursing areas (Kennedy et al., 2014b).

Interestingly, the results of our research are in line with the self-description of operating theatre nurses presented in a trade journal with a view to developing professional identity among such nurses. The document underlined that “the first trait of operating theatre nurses is their unsatisfied curiosity” and an ability to work under time pressure as a team member, an ability to work fast, physical and mental stamina, ability to concentrate on two or more things at a time, concentration, ability to take decisions quickly, kindness, courtesy, and peace of mind (Grabowska, 2013, p. 3).

Practical application is a strong point of the present study, especially in the context of choosing nursing specialties early on when nursing students do not have a full picture of what is in store for them and when they are not fully aware of their strengths and weaknesses relating to their future work (Stokowski, 2015). Conducting comprehensive research on a homogeneous theoretical basis into the distinct personality of nurses who work in different specialties is fully justified. The results of such research, so far sparse in world literature and absent in Poland, would surely become a springboard for psychological counselling in choosing specialties which match the personality of future nurses. This could effectively reduce the nurse dropout rate, a phenomenon which makes the shortage of nursing staff in Poland even more acute (Radkiewicz, Widerszal-Bazyl, Pokorska, Ogińska, & Pietsch, 2004), and counteract professional burnout among nurses.

## CONCLUSIONS

The results of our research into the personality of nursing students who declare a surgical specialty choice suggest the existence of a specific personality of surgical nurses which has the capacity to adapt to the specific workplace environment, and this specific personality is different from that discussed in the literature on the DSP. In both cases these constructs look different, and are largely dependent on various types of professional activities performed within the framework of the same therapeutic team.

## LIMITATIONS

The authors are aware of the limitations of the current study. These include a) the fact that the participants were students of nursing who declared their choice of specialty and not those who were undergoing relevant specialty training, and b) the persons chosen for the study group came from one medical school

selected from among many public and non-public institutions that offer nursing courses.

## REFERENCES

- Allport, G. W. (1937). *Personality: A psychological interpretation*. New York: Holt and Company.
- Antony, J. S. (1998). Personality-career fit and freshman medical career aspirations: A test of Holland's theory. *Research in Higher Education*, 39, 679–698.
- Baldaschino, D. R., & Galea, P. (2012). Student nurses' personality traits and the nursing profession. *British Journal of Nursing*, 7, 419–425.
- Bellodi, A. (2004). The general practitioner and the surgeon: stereotypes and medical specialties. *Revista do Hospital das Clinicas. Faculdade de Medicina da Universidade de Sao Paulo*, 59, 15–24.
- Bilsky, W., & Schwartz, S. H. (1994). Values and Personality. *European Journal of Personality*, 8, 163–181.
- Borges, N. J., & Osmon, W. R. (2001). Personality and medical specialty choice: Technique orientation versus people orientation. *Journal of Vocational Behaviour*, 58, 22–35.
- Brzozowski, P. (2007). *Wzorcowca hierarchia wartości: polska, europejska czy uniwersalna?* [Model hierarchy of values: Polish, European or universal?]. Lublin: Wyd. UMCS.
- Cares, H. L. (1961). The surgical personality: a historical perspective. *University of Michigan Medical Bulletin*, 27, 293–300.
- Cieciuch, J. (2012). Big Five and Big Ten – between Aristotelian and Galileian physics of personality. *Theory and Psychology*, 5, 689–696.
- Cieciuch, J. (2013). *Kształtowanie się systemu wartości. Od dzieciństwa do wczesnej dorosłości* [The formation of the value system. From childhood to early adulthood]. Warszawa: Liberi Libri.
- Clayton, M. F., & Ellington, L. (2011). Beyond primary care providers. A discussion of health communication roles and challenges for health care professionals and others. In T. L. Thompson, R. Parrot, & J. F. Nussbaum (eds.), *The Routledge handbook of health communication* (pp. 69–83). New York and London: Routledge.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. New Jersey: Lawrence Erlbaum Associates.
- Costa, P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI)*. Professional Manual. Odessa, FL: Psychological Assessment Resources.
- Danieluk, B. (2010). Zastosowanie regresji logistycznej w badaniach eksperymentalnych [Application of logistic regression in experimental research]. *Psychologia Społeczna*, 5, 199–216.
- Drosdeck, J. M., Osayi, S. N., Peterson, L. A., Yu, L., Ellison, E. C., & Muscarella, P. (2015). Surgeon



- and nonsurgeon personalities at different career points. *Journal of Surgical Research*, 196, 60–66.
- Elwood, R. H. (1927). The role of personality in selecting a career: the nurse and the college girl. *Journal of Applied Psychology*, 3, 199–201.
- Epstein, S. (1994). Trait theory as personality theory. *Psychological Inquiry*, 2, 120–122.
- Gambles, M., Wilkinson, S. M., & Dissanayake, C. (2003). What are you like? A personality profile of cancer and palliative care nurses in the United Kingdom. *Cancer Nursing*, 2, 97–104.
- Grabowska, E. (2013). Osobowość instrumentariuszki [Personality of the perioperative nurse]. *Magazyn Pielęgniarki Operacyjnej*, 10, 2–4.
- Herman, J., Rotter, I., Kemicer-Chmielewska, E., Karakiewicz E., & Laszczyńska, M. (2013). The analysis of a personality profile of selected groups of nurses. *Annales Academiae Medicae Stetinensis*, 2, 99–103.
- Holland, J. L. (1997). *Making vocational choices. A theory of vocational personalities and work environments*. Odessa, FL: Psychological Assessment Resources.
- Hosmer, D. W., & Lemeshow, S. (2000). *Applied logistic regression*. New York: Wiley & Sons.
- Hudacek, S. S. (2008). Dimensions of caring: a qualitative analysis of nurses' stories. *Journal of Nursing Education*, 3, 124–129.
- Kennedy, B., Curtis, K., & Waters, D. (2014a). Is there a relationship between personality and choice of nursing specialty: an integrative literature review. *BMC Nursing*, 13, 40.
- Kennedy, B., Curtis, K., & Waters, D. (2014b). The personality of emergency nurses: is it unique? *Australasian Emergency Nursing*, 17, 139–145.
- Lentz, E. M., & Michaels, R. G. (1965). Personality contrasts among medical and surgical nurses. *Nursing Research*, 14, 43–48.
- Manuel, R. S., Borges, N. J., & Jones, B. J. (2009). Person-oriented versus technique-oriented specialties: Early preferences and eventual choice. *Medical Education Online*, 14, 1–6.
- McCrae, R. R., & Costa, P. T., Jr. (1990). *Personality in Adulthood*. New York: Guilford.
- McGreevy, J., & Wiebe, D. (2002). A preliminary measurement of the surgical personality. *American Journal of Surgery*, 184, 121–125.
- Pawełczyk, A., Pawełczyk, T., & Bielecki, J. (2007). Wpływ wybranych czynników na wybór wąskich specjalizacji medycznych przez studentów wydziałów lekarskich [Influence of selected factors on the choice of narrow specializations by medical students of medical faculties]. *Polski Merkuriusz Lekarski*, 22, 575–579.
- Pike, G. R. (2006). Students' personality types, intended majors, and college expectations: further evidence concerning psychological and sociological interpretations of Holland's theory. *Research in Higher Education*, 47, 801–822.
- Radkiewicz, P., Widerszal-Bazyl, M., Pokorska, J., Ogińska, H., & Pietsch, E. (2004). Dlaczego pielęgniarki wcześniej odchodzą z zawodu? [Why do nurses prematurely leave their profession?]. *Bezpieczeństwo Pracy*, 7-8, 31–34.
- Roccas, S., Sagiv, L., Schwartz, S. H., & Knafo, A. (2002). The Big Five personality factors and personal values. *Personality and Social Psychology Bulletin*, 28, 789–801.
- Skrzypek, M., & Turska, D. (2015). Osobowość studentów medycyny deklarujących wybór specjalizacji w zakresie chirurgii w kontekście stylu przyszłej praktyki medycznej [Personality of medical students declaring surgical specialty choice in the context of prospective medical practice style]. *Przegląd Lekarski*, 6, 295–301.
- Stokowski, L. A. (2015). Does your personality match your nursing specialty? *Medscape Nurses*, Jan 29. Retrieved from [www.medscape.com](http://www.medscape.com) (access 18<sup>th</sup> July, 2016).
- Stilwell, N. A., Wallick, M. M., Thal, S. E., & Burleson, J. A. (2000). Myers-Briggs type and medical specialty choice: A new look at an old question. *Teaching and Learning in Medicine*, 12, 14–20.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical Advances and empirical tests in 20 countries. In M. Zanna (ed.), *Advances in experimental social psychology* (pp. 1–65). London: Academic Press.
- Schwartz, S. H., & Boehnke, K. (2004). Evaluating the structure of human values with confirmatory factor analysis. *Journal of Research in Personality*, 38, 230–255.
- Turska, D., Skrzypek, M., Tychmanowicz, A., & Baran, T. (2016). Concept of distinct surgical personality revisited. Personality traits and personal values as surgical specialty choice predictors. *European Journal of Medical Technologies*, 1, 38–46.
- Zawadzki, B., Strelau, J., Szczepaniak, P., & Śliwińska, M. (1998). *Inwentarz Osobowości NEO-FFI. Adaptacja polska. Podręcznik* [Personality Inventory NEO-FFI. Polish Adaptation. Manual]. Warszawa: Pracownia Testów Psychologicznych Polskiego Towarzystwa Psychologicznego.
- Zeldow, P. B., & Daugheerty, R. (1991). Personality profiles and specialty choices of students from two medical schools. *Academic Medicine*, 66, 283–287.