Psychiatr. Pol. 2016; 50(2): 445–455
PL ISSN 0033-2674 (PRINT), ISSN 2391-5854 (ONLINE)
www.psychiatriapolska.pl
DOI: http://dx.doi.org/10.12740/PP/45089

Autotelic vs. instrumental motivation of doctors and their medical specialty choice in relation to sense of coherence

Marcin J. Jabłoński[1], Magdalena Szot-Parda[2], Tomasz Grzegorek[1], Jacek Prusak[1], Robert Jach[3], Ewa Posadzka[3]

[1] Institute of Psychology, Faculty of Philosophy, University of Philosophy and Education Ignatianum in Krakow

[2] Chair and Department of Haematology, Jagiellonian University Medical College, Krakow

[3] Chair of Gynaecology and Obstetrics, Jagiellonian University Medical College, Krakow

Summary

Aim. Analysis and comparison of two types of motivation (autotelic and non-autotelic) which are behind the choice of medical specialisation by doctors in relation to their sense of coherence.

Method. Questionnaire method was used in the study. The study included a group of 86 graduates of the Faculty of Medicine of the Jagiellonian University, who have completed postgraduate internships at the Department of Haematology and Oncology, Department of Gynaecology of the Jagiellonian University and the L. Rydygier hospital in Krakow in 2010–2012. Statistical analyses were performed using the IBM SPSS Statistics 21. The level of significance was alpha = 0.05.

Results. It has been shown that doctors are more frequently characterised by the autotelic type of motivation. It has also been proven that there is a relationship between the male sex of the surveyed doctors and their autotelic type of motivation. Moreover, it has been demonstrated that there is a correlation between the comprehensibility component of the sense of coherence and the male sex. It has been also demonstrated that there is a correlation between meaningfulness component of the sense of coherence and the choice of surgical specialisation

Conclusions. Autotelic motivation prevails when choosing a medical specialty and this tendency is more noticeable in men than in women. The meaningfulness component of SoC plays a regulatory role in making career decisions related to the greater physical and mental pressure put on doctors. The observed differences in the types of motivation and the size of the components of the sense of coherence in groups of surveyed doctors – men and women – encourage further observations of these relationships on a larger population.

Key words: motivation of doctors, sense of coherence (SoC), choice of medical specialisation

The study was not sponsored

Introduction

The issues connected with young people's motivation in choosing the medical profession, as well as medical graduates' motivation in choosing a medical specialisation, are discussed both in the psychological literature and ethical discourse [1–8]. "Professional development" is a broad term, but gaining the title of specialist in the chosen field is much more often (by 65% of respondents) considered to be the most important form of professional development (according to the report issued by the Polish Chamber of Physicians and Dentists Council in 2012) [9]. It is understandable that a young doctor who is choosing a specialisation is influenced by a number of factors, including: psycho-physical predispositions (general state of health and physical condition, temperament, personality traits), kinaesthetic predispositions (manual dexterity), needs and intellectual capacities as well as economic conditions (financial attractiveness of the specialisation, the possibility of finding a job in the future). Another important factor is the availability of the specialisation in the field of medicine [10].

Among several classification systems concerned with motivation, the division between the autotelic and instrumental motivation seems to be useful in the study of doctors' motivation behind their choice of a particular medical specialty as the next step in their career and personal development [11]. It refers directly to the concept of the autotelic personality [12], and other classifications of motivation, e.g. the division between the intrinsic motivation corresponding with the autotelic motivation and the extrinsic as well as extraprofessional motivation which are analogous to the instrumental motivation [4, 7]. Autotelic motivation reflects values for their own sake as they are the opposite of instrumental values. Such values include, among others, the desire to help others, passion, interest in medicine as a science, as well as the high social status and prestige of the medical profession. Instrumental motivation is, however, associated with benefits not arising from the professional ethos. It reflects benefits which help to achieve more immediate, often mercantile goals. These include, among others, security of employment after graduation, higher salary, lower occupational risk, simpler system of specialisation, greater comfort in work organisation or less workload (no necessity to be on duty), as well as the possibility to use the obtained money to pursue personal, non-professional interests, e.g. a costly or time-consuming hobby [7]. The importance of instrumental motivation is emphasised by the Polish report issued by the Polish Chamber of Physicians and Dentists (NIL) [9], in which the surveyed doctors clearly appreciated opportunities resulting from obtaining a specialisation in general – almost all respondents expressed the opinion that gaining a specialisation is synonymous with greater opportunities of finding an additional job (96 %). A vast majority also felt that obtaining a specialisation ensures a higher position in the medical environment, the ability to change one's job to a more prestigious one and the possibility of promotion. The problem of motivation described in this paper belongs to the general trend of cognitive psychology and as such can be considered in terms of beliefs and values professed by man [13].

Another construct, often considered in the same context, is the concept of "the Sense of Coherence" (SoC) introduced by Antonovsky in the late 1980's [14–17].

Antonovsky defines "the Sense of Coherence" as "a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable; the resources are available to one to meet the demands posed by these stimuli; and these demands are challenges, worthy of investment and engagement" [15, p. 34]. The sense of coherence develops throughout life and, according to Antonovsky, it reaches a relatively constant value when a person is between the age of 20–30 years old. It is shaped by both processes dependent on the organism, i.e. its biological and psychological structure (sex, physical resistance, intellectual capabilities, interpersonal skills, personality, etc.) and an individual's economic and social situation (education, occupational status, economic, social and cultural status, etc.). An important role in shaping the sense of coherence is also performed by the life experience, acquired through one's own actions and by the fact of being placed in a particular socio-cultural and politico-economic context [15, 18].

In Antonovsky's formulation, the sense of coherence has three components: comprehensibility, manageability and meaningfulness [15]. The sense of comprehensibility refers to a person's cognitive functions and is a measure of the ability to perceive the incoming information as orderly and coherent. In relation to the future, the sense of comprehensibility implies that it will be possible to put things in order and bring under control future unfavourable situations. The sense of manageability is an expression of a person's belief in the possibility of coping with the demands of life, actively and effectively influencing particular situations and drawing from past experiences as far as overcoming personal crises is concerned. Authors of similar studies focusing on the relationship between the sense of coherence and the type of doctors' motivation in making decisions about their career emphasise the direct role of the sense of coherence in shaping an individual's resistance to stress [4]. The average level of SoC indicated by a survey conducted in groups of healthy participants in Poland was 126–142 pts and was higher in men than in women [19–23]. Public and academic interest in factors which have a potential impact on doctors' motivation in choosing both their profession as such and their particular specialisation is associated with constant high social expectations concerning the medical profession, which is placed consistently in the group of occupations of public trust. This interest is also connected with the perception of doctors in terms of a specific mission (the so-called "vocation"), which is associated with the exercise of the medical profession. Knowledge of the factors determining the choice of a medical specialisation can be valuable for the medical system, for doctors themselves and for institutions providing health care [6]. The issue is also part of a wider debate on possible changes in mentality, goals and behaviour of doctors in the countries undergoing capitalist transformation as well as in the context of the ongoing changes in social relations, which may be a consequence of the global process of financialisation [24, 25].

Aim

In the light of the above assumptions, the aim of this study is to understand, analyse and compare two types of motivation (autotelic and non-autotelic) in choosing the future medical specialisation by graduates of the Faculty of Medicine at the Jagiellonian University Medical College (CMUJ) in Krakow in relation to their sense of coherence.

Materials and methods

The study was conducted using the questionnaire technique. It included a group of 86 graduates of the Faculty of Medicine of the Jagiellonian University Medical College in Krakow who were taking part in postgraduate internship programmes at the Department of Haematology and the Department of Oncological Gynaecology of the Jagiellonian University Medical College and at the Ludwik Rydygier's Hospital in Krakow in the years 2010–2012. The survey was anonymous. Statistical analysis excluded six incomplete questionnaires. The study asked the doctors in training to declare their choice of medical specialty and to identify five of its advantages which, in their opinion, were essential for the selection. The indicated advantages were categorised and described as autotelic or instrumental in accordance with the definitions proposed by Waszkiewicz et al. [7]. The kind of motivation was determined according to the rule that a pure autotelic or instrumental (A or I) motivation corresponds with the domination of advantages related to one category at the ratio of 5:0 or 4:1, while the roughly equal proportions of 3:2 mean that the motivation can be defined as balanced. Due to the limited number of respondents reporting pure instrumental motivation (n = 2), which in itself is an interesting result, these individuals were combined, for the purposes of statistical analysis, with a group of people declaring balanced motivation. This group is collectively referred to as "non-autotelic motivation". Finally, the statistical analysis compared two groups which varied in terms of the dominant motivation (autotelic or non-autotelic) and two major general types of specialisation (surgical and non-surgical), which is in line with the proposals of other authors [6]. The study also evaluated the sense of coherence of young doctors by using Antonovsky's SOC-29 questionnaire. Statistical analyses were performed using the IBM SPSS Statistics 21 programme. The adopted significance level was alpha = 0.05.

Results

1. It has been shown that young doctors are more often characterised by the autotelic type of motivation.
   It has been demonstrated that a vast number of respondents (n = 54) possess the autotelic type of motivation, which amounts to 62.8 %. According to the adopted criteria, the remaining 24 respondents (27.9%) have been shown to possess the balanced type of motivation, whereas only 2 respondents (2.3%) declared the pure

instrumental motivation. According to the previous assumption, the people with instrumental and balanced motivation were collectively identified as those with "non-autotelic" motivation (n = 26). It can be reasonably argued that the prevalence of autotelic motivation has not been revealed in the study by accident and truly characterises the population of young Polish doctors (χ^2 (1; 80) = 9.8, p < 0.002). The analysis of demographic data revealed no correlation between sex, marital status, place of residence (urban/rural), the planned emigration, parents' occupation (in categories such as medical profession, legal profession, education, engineering and technical professions, economics-business) and a choice of specialisation both in general categories defined collectively as surgical or non-surgical and specifically listed specialisations.

2. It has been revealed that there is a relationship between the sex of the male respondents and the autotelic type of motivation.
   In case of male doctors who are choosing their specialisation (but regardless of the specialisation chosen) it has been shown that the autotelic motivation has superiority over the non-autotelic motivation. Although this is not a very close relationship ($\varphi = -0.23$), it turned out to be statistically significant: χ^2 (1; 80) = 4.27, p < 0.040. However, in case of women doctors, it was not possible to determine their dominant motivation in choosing a specialisation.
3. It has been proven that there is a connection between the sense of coherence, its comprehensibility component and the male sex of the respondents.
   On the basis of the tested sample it can be estimated that the average overall score of SoC among young Polish doctors ranges between 144 and 153 points (for the confidence level p = 95%). Women obtained on average a total of 143 points in the SoC questionnaire, while men got on average of 153 points. This difference turned out to be statistically significant: t(84) = – 2.29, p < 0.026. It results mainly from the discrepancy in the comprehensibility dimension, which amounted to about 5 points in favour of men and was the only difference related to specific details which turned out to be statistically significant t(84)= – 2.75, p < 0.008).
4. It has been proven that a correlation exists between the meaningfulness component of SoC and the choice of surgical specialization.
   In the analysis of the relationship between the values of the components of SoC and the choice of the general type of specialisation (i.e. surgical or non-surgical specialisation), due to the distribution of the variable which differs from the normal variable distribution and because of various numbers of respondents in particular groups, it has been deemed advisable to use the Mann-Whitney U test. Those who chose a surgical specialisation were characterised by a higher average value of the meaningfulness component of SoC than those who reported the choice of a non-surgical specialisation. Although it was a minor difference (on average 48.4 pts vs. 45.3 pts), it was statistically significant: U = 517.5, p < 0.027. The study did not show a connection between the overall sense of coherence or any of its components and a dominance of the autotelic or non-autotelic motivation. There was no significant correlation between the type of motivation or SoC and the specific specialisation indicated by respondents.

Discussion

Waszkiewicz et al. studied the autotelic and instrumental motivation in a group of medical students. The study proved that as far as the choice of medical studies was concerned, autotelic motives associated with the desire to help others, passion, interest in medicine, as well as the desire to achieve a high occupational prestige, were reported by 60% of respondents, whereas the opposite (non-autotelic) motives related to the implementation of other values and goals (e.g. the guarantee of finding employment after graduation and the good economic situation of doctors) accounted for 30% of all answers [7]. These figures are consistent with the data obtained in our study, which showed a domination of the autotelic motivation in the surveyed doctors (n = 54; 62.8%) with a small percentage of pure instrumental motivation (n = 2; 2.3%) and a significantly smaller percentage of balanced motivation (n = 24; 27.9%). This result may indicate predominance in young doctors of a system of motivation based on professional ethos, which is traditionally defined as "a vocation to the medical profession". This attitude prevails over the mercantile approach aimed at bringing the immediate personal benefits and regarding the specialisation mainly in terms of economic and organisational values.

Our results do not support previous reports by other authors who indicate the predominance of instrumental (non-autotelic) motivation in doctors choosing a surgical specialisation [4]. Another interesting result, which is statistically significant, reveals the predominance of the autotelic motivation in male doctors, while there is no clear confirmation of this relationship in case of women doctors. This result may indicate that male doctors are more likely than women doctors to be guided by the professional ethos and the so-called vocation instead of rational analysis and instrumental treatment of their careers.

This result should be interpreted with caution, not least because of the limitation imposed by the relatively small size of the study group and the inconclusive result in case of women. It is also in stark opposition to the stereotypes of male and female attitudes described in literature, where rationality and instrumentalism are more often attributed to men, whereas women are associated with expressiveness, selflessness and focus on the needs of others [26]. This observation may indicate the presence in women doctors of a more balanced and thus more rational system of motivation. Perhaps it is connected with the need to reconcile the beginning of their careers with other goals which are important at this stage of the development of a woman's life, e.g. starting a family and raising children, as also pointed out by other researchers [1, 3]. The ambiguity of the presented results, coupled by the lack of similar studies in specialist literature, can be an incentive for further research in this area. The sense of coherence is credited as playing an important role in the maintenance of a holistically understood homeostasis in a confrontation with the requirements of life, including the professional life [27]. People with a strong sense of coherence perceive the world as more understandable. They believe that their resources (e.g. beliefs, experiences, skills, contacts) are sufficient to meet both the internal and external needs, that their life has a purpose and their tasks in life are worth the expenditures and investments planned

by them [17, 28]. Doctors with a strong sense of coherence are likely to choose more effective defence strategies in response to stress [14]. The study results confirm that people with a strong sense of coherence focus more sharply on the implementation of tasks, and their behaviour at work is more beneficial to health [27, 29]. It is also believed that the high value of SoC is associated with higher levels of education and income. Whereas a positive correlation has been revealed between the SoC and a wide range of other psychosocial qualities of an adaptive character, such as high self-esteem, internal localisation of control and strong motivation, a negative correlation has been established with e.g. negative emotionality, distress, depression, anxiety and poor social adaptation [30]. A high average score of SoC obtained in our study does not differ significantly from the results obtained in the work of other authors [31]. It can be interpreted in at least two ways. On the one hand, it indicates a positive, functional and socially expected attitude ("orientation in life") of young doctors, whose world, at the beginning of their careers, seems to be consistent and full of challenges, whereas the personal resources perceived by them, as well as the experience gained through their studies, appear to be sufficient to meet the demands posed by life. On the other hand, Antonovsky himself spoke of the existence of a so-called "seemingly strong" sense of coherence, which means that he admitted his test scores might be high and indicate falsely positive results [15]. This result can be incorrectly interpreted as a strong sense of coherence, although in reality it is an expression of more or less conscious wishful thinking, as well as defensive negation or denial as a consequence of low life competence and limited adaptability. It is because doubts can be raised by the attitude of the so-called "uncritical optimist", who says that everything is understandable and all the problems can be easily solved [32].

The analysis which was included in this study and which measured the level of SoC in young doctors did not show any correlation between its value or the value of its particular components and the place of residence, specific medical specialisation being planned, declared plans of emigration after the completion of the specialisation and the occupation of respondents' parents. However, a correlation was demonstrated between the level of both the overall SoC and its comprehensibility component and the male sex of respondents. A connection was also revealed between the isolated meaningfulness component of SoC and the declared choice of a surgical specialisation, regardless of the sex of respondents. This result seems to be particularly interesting since it is the sense of meaningfulness which is, according to Antonovsky, the most important motivational component of the overall SoC and is a measure of the human capacity for giving meaning to the events taking place, for understanding them and treating them as challenges rather than threats [14]. According to Antonovsky, meaningfulness is the most important element of SoC, also due to the enhancement of the ability to find and adequately use available resources [14, 15]. This claim, though, has been criticised by some authors who emphasise that it is the comprehensibility component of SoC which plays an important role in this process [33–35]. Tartas et al. attribute a deep predictive meaning to SoC and its comprehensibility component of the medical students participating in the survey not only because they show greater satisfaction with life and career, are less prone to occupational burnout and emotional

disorders, but also (in a more direct manner) achieve a higher income within 5 years after graduation [36]. Buddeberg-Fischer et al. demonstrated that doctors choosing surgical specialties and anaesthesiology possess a stronger sense of coherence, higher self-esteem and instrumentalism as features of motivation [4].

Pawełczyk et al. revealed the existence of different qualities of temperament among medical students choosing various medical specialties [6]. They found a significantly higher intensity of temperament traits in Endurance and Activity scales in the group of students who prefer to specialise in surgery compared with those opting for internal diseases. They also observed significantly higher average values in two scales – Liveliness and Endurance – in students preferring surgical medical specialties compared with those choosing non-surgical ones. The surgical discipline is associated with intense physical effort, mental anxiety and severe stress connected with performing surgical procedures and the need to make quick decisions in situations of uncertainty. It entails availability, hardly regulated lifestyle, frequent night duty and large time commitment [6, 37]. People with a strong sense of coherence are less inclined to perceive stressful situations as significant sources of danger and anxiety than people with a weak SoC, which may suggest that surgical specialists have a stronger SoC than non-surgical ones [30]. Similar conclusions can be drawn from the study conducted by Barbara Buddenberg-Fischer et al. [4]. In this study, doctors preferring surgical specialties, regardless of their sex, showed a stronger overall sense of coherence than those choosing non-surgical ones. This observation proved to coincide with our results in relation to the meaningfulness component of SoC, which was significantly higher in respondents declaring the choice of surgical specialties, but was not confirmed in reference to the overall value of SoC. Perhaps this is due to the methodological difference resulting from the use of a shortened version (13 points) of Antonovsky's questionnaire in the cited study instead of the full scale (29 points) used by us. These differences may be also associated with other limitations of our study, which were: a small group of respondents and profile analysis of graduates of only one medical school.

The authors are aware that the analysed issue has not been fully exhausted. Due to the small sample size one cannot draw far-reaching conclusions from the results. For better understanding of the impact of motivation on the choice of specialities by the doctors, the further research in larger population will be needed.

Conclusions

1. The predominance of autotelic motivation in young doctors demonstrated in the study indicates that, despite the political transformation and organisational changes in healthcare, the traditional motivation system based on professional ethos still plays a more important role than the instrumental approach associated with the calculation of future benefits. At the same time, this relationship is more pronounced in men than in women.
2. A higher value of the meaningfulness component of SoC in the group of doctors declaring the choice of surgical specialisation may indicate its regulatory role in

making career decisions connected with intense physical effort, mental anxiety and high occupational stress.

3. Because of their potential importance in optimising training, occupational counselling and prevention of burnout, the results indicating significant differences in types of motivation and components of SoC in groups of surveyed doctors (men and women) encourage further observations of these relationships involving a larger population.

References

1. Gjerberg E. *Gender differences in doctors' preference – and gender differences in final specialisation*. Soc. Sci. Med. 2002; 54: 591–605.
2. Vaidya NA, Sierles FS, Raida MD, Fakhoury FJ, PrzybeckTR, Cloninger CR. *Relationship between specialty choice and medical student temperament and character assessed with Cloninger Inventory*. Teach. Learn. Med. 2004; 16(2): 150–156.
3. Dorsey ER, Jarjoura D, RuteckiGW. *The influence of controllable lifestyle and sex on the specialty choices of graduating U.S. medical students, 1996-2003*. Acad. Med. 2005; 80: 791–796.
4. Buddeberg-Fischer B, Klaghofer R, Abel T, Buddeberg C. *Swiss residents' specialty choices – impact of gender, personality traits, career motivation and life goals*. BMC Health Serv. Res. 2006; 6: 137.
5. Ciechanowski PS, WorleyLL, Russo JE, Katon WJ. *Using relationship styles based on attachment theory to improve understanding of specialty choice in medicine*. BMC Med. Educ. 2006; 6: 3.
6. Pawełczyk A, Kotlicka-Antczak M, Pawełczyk T, Rabe-Jabłońska J. *Czynniki temperamentalne mogą być związane z preferencją specjalizacji lekarskiej – badanie pilotażowe*. Psychiatr. Psychol. Klin. 2010; 10(2): 73–85.
7. Waszkiewicz L, Zatońska K, Einhorn J, Połtyn-Zaradna K, Gaweł-Dąbrowska D. *Motywacje wyboru studiów medycznych na przykładzie studentów Akademii Medycznej we Wrocławiu*. Hygeia Public Health 2012; 47: 223–226.
8. Thornton J, Esposto F. *How important are economic factors in choice of medical specialties?* Health Econ. 2003; 12: 67–73.
9. *Możliwości i bariery rozwoju zawodowego lekarzy i lekarzy dentystów. Skrócona wersja raportu z badania –wyniki, wnioski i rekomendacje*. Warsaw: Studies, analyses and information Centre *of the* Polish Chamber of Physicians and Dentists; 2012.
10. Nowak JK, Adamczyk D, Żebryk P, Walkowiak J. *Analiza dostępności miejsc rezydenckich i preferencji wyboru specjalizacji przez młodych lekarzy w Polsce*. Now. Lek. 2013; 82(4): 318–328.
11. Wosnitza M, Karabenick SA, Efklides A, Nenniger P. ed. *Contemporary motivation research: from local to global perspectives*. Cambridge, MA: Hogrefe; 2009
12. Csikszentmihalyi M, LeFevre J. *Optimal experience in work and leisure*. J. Pers. Soc. Psychol. 1989; 56: 815–822.
13. Cieciuch J. *Nadzieja jako moderator związku poczucia koherencji z preferencjami wartości*. Fides et Ratio 2010; 2(2): 25–38.
14. Antonovsky A, Sagy S. *The development of a sense of coherence and its impact on responses to stress situations*. J. Soc. Psychol. 1986; 126: 213–225.

15. Antonovsky A. *Rozwikłanie tajemnicy zdrowia. Jak radzić sobie ze stresem i nie zachorować?* Warsaw: Institute of Psychiatry and Neurology; 2005, p. 34.
16. Eriksson M, Lindstroem B. *Validity of Antonovsky's sense of coherence scale: a systematic review*. J. Epidemiol. Commun. Health 2005; 59: 460–466.
17. Łapińska M, Gaworska-Krzemińska A, Dominiak K, Milewski M, Zawadzka J, Kretowicz K. et al. *Poczucie koherencji a odporność na stres wśród położnych jako predyktory samodzielności zawodowej*. Probl. Pielęg. 2013; 21(3): 306–317.
18. Suominen S, Helenius H, Blomberg H, Uutela A, Koskenvuo M. *Sense of coherence as a predictor of subjective state of health: results of 4 years of follow-up of adults*. J. Psychosom. Res. 2001; 50: 77–86.
19. Mroziak B, Czabała J, Wójtowicz S. *Poczucie koherencji* a *zaburzenia psychiczne*. Psychiatr. Pol. 1997; 31: 257–268.
20. Habrat E. *Poczucie koherencji u osób z przebytym zespołem depresyjnym typu endogennego*. Psychoterapia 1997; 3: 73–79.
21. Sariusz-Skąpska M, Czabała JC, Dudek D, Zięba A. *Ocena stresujących wydarzeń życiowych i poczucie koherencji u pacjentów z chorobą afektywną jedno – i dwubiegunową*. Psychiatr. Pol. 2003; 37(5): 863–875.
22. Bień A, Wrońska I. *Poczucie koherencji kobiet a czynniki społeczno-demograficzne*. Pielęgniarstwo XXI wieku 2005; 3: 55–61.
23. Jabłoński M. *Poczucie koherencji a ryzyko rozwoju depresji u chorych na ostrą białaczkę*. Psychoonkologia 2009; 1–2: 1–10.
24. Dembinski PH. *Finance: servant or deceiver?: Financialization at the crossroad*. New York: Observatoire de la Finance, Palgrave Macmillan; 2009.
25. Jabłoński M, Pilecki MW, Murawiec S, Bielas J, Rachel W, Jach R. *Nowe zagrożenia dla psychoterapii w Polsce po transformacji ustrojowej lat 80. XX wieku*. Psychiatria 2014; 11(2): 81–86.
26. Królikowska S. *Rola stereotypów płci w kształtowaniu postaw kobiet i mężczyzn wobec zdrowia.* Now. Lek. 2011; 80(5): 387–393.
27. Vogt K, Jenny GJ, Bauer GF. *Comprehensibility, manageability and meaningfulness at work: Construct validity of a scale measuring work – related sense of coherence*. SA J. Ind. Psychol. 2013; 39: 8.
28. Lundman B, Aléx L, Jonsén E, Norberg A, Nygren B, Fischer RS. *Innerstrength – A theoretical analysis of salutogenic concepts*. Int. J. Nurs. Stud. 2010; 47: 251–260.
29. Basińska M, Andruszkiewicz A, Grabowska M. *Nurses'sense of coherence and their work related patterns of behavior*. Int. J. Occup. Env. Health 2011; 24(3): 256–266.
30. Suraj S, Singh A. *Study of sense of coherence health promoting behaviour in north Indian students*. Indian J. Med. Res. 2011; 134: 645–652.
31. Siber G, EndlerPC, Mesenholl E, Lothaller H, Müller-Breidenbach E, Haug TM. *Kohärenzempfinden (Sense ofCoherence) bei niedergelassenen Arztinnen und Arzten für Allgemeinmedizin*. Wien. Med. Wochenschr. 2009; 159(7–8): 192–195.
32. Rębak D, Głuszek S. *Poczucie koherencji jako wykładnik w prognozowaniu aktywności zawodowej ratowników medycznych*. Piel. Zdr. Publ. 2012; 2(2): 103–107.
33. Soderhamn O, Holmgren L. *Testing Antonovsky's sense of coherence (SOC) scale among Swedish physically active older people*. Scand. J. Psychol. 2014; 45(3): 215–221.

34. Lindmark U, Stenstrom U, Gerdin EW, Hugoson A. *The distribution of 'sense of coherence' among Swedish adults: a quantitative cross-sectional population study*. Scand. J. Public Health 2009; 38(1): 1–8.
35. Bergman E, Malm D, Ljungquist B, Berterö C,Karlsson JE. *Meaningfulness is not the most important component for changes in sense of coherence*. Eur. J. Cardiovasc. Nur. 2012; 11: 331–338.
36. Tartas M,Walkiewicz M, Majkowicz M, Budzyński W. *Psychological factors determining success in a medical career: A 10-year longitudinal study*. Med. Teach. 2011; 3: e163–e172.
37. Erzurum VZ, Obermeyer RJ, Fecher A, Thyagarajan P, Tan P, Koler AK. et al. *What influences medical students'choice of surgical careers*. Surgery 2000; 128: 253–256.

Address: Marcin Jabłoński
University of Philosophy and Education Ignatianum in Krakow
31-501 Kraków, Kopernika Street 26