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ESTIMATION OF TYPOLOGICAL DELINEATION OF EMOTIONAL-DYNAMIC PATTERN IN PRACTICALLY HEALTHY UKRAINIAN WOMEN WITHOUT AND TAKING INTO ACCOUNT SOMATOTYPE

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Annotation. The level of subjective control may vary in different regions depending on social and economic living conditions, moral attitudes and level of education of the population. Circumstances such as age, gender and constitutional variability in the locus of control cannot be ruled out (although there is very little research on this issue). The purpose of the study is to conduct a comparative study of the typological delineation of the emotional-dynamic pattern in practically healthy Ukrainian women without and taking into account the somatotype. Primary anthropo-somatotypological and personality indicators of practically healthy Ukrainian women aged 21 to 35 of different somatotypes were selected from the database of materials of the research center of National Pirogov Memorial Medical University, Vinnytsya. Determination of the components of internality by J. Rotter in the modification of E. F. Bazhin, S. O. Golinkina and O. M. Etkind included the definition (sten): indicator of the scale of general internality of the level of subjective control, indicators of the level of subjective control in the industry achievements, failures, family relationships, educational (professional) relationships, interpersonal relationships, health and disease. Statistical processing of the results was performed in the license package "Statistica 5.5" using non-parametric evaluation methods. The reliability of the difference between the values between the independent quantitative values was determined using the U-Mann-Whitney test. There was a lower level of general internality and subjective control in the field of achievement in mesomorphic women compared to women without taking into account somatotype and women of other somatotypes. According to the scale of internality in the field of failures in women without taking into account somatotype, endo-mesomorphs and representatives of the middle intermediate somatotype, the most developed sense of control over negative situations and the tendency to blame themselves for trouble compared to mesomorphic women. It is characteristic that in the sphere of family relations this image emerges especially clearly in mesomorphic women; they consider their partner, not themselves, to be more responsible for the events of family life. Women of intermediate somatotype compared to women without somatotype and women mesomorphs and ectomorphs have a higher level of internality in the field of interpersonal relationships. The level of subjective health and disease control in endo-mesomorphic women is significantly lower than in ectomorphic women. Thus, the level and various parameters of subjective control can be used as personal markers of the studied somatotype, which will create optimal and most individualized recommendations for psychological support, adaptation and coping strategies.

Keywords: locus of control, level of subjective control, women, somatotype.

Introduction

Mental health is an integral part of overall health. Mental health determines a person's ability to fulfill social roles in society, maintain and form relationships, relationships within society, manage emotions with family, friends, colleagues, and so on. That is, mental health can be described as a state of balance not only inside but also outside, through effective interaction with the surrounding society [4].

Mental health problems are one of the most pressing issues of our time. Data from Argentina show that 29.1 % of the population had one or another mental disorder at least once in their life. In particular, anxiety disorders were observed in 16.4 %, mood disorders in 12.3 %, psychoactive disorders in 10.4 %, and behavioral disorders in 2.5 % of persons. Among those surveyed, women were more likely to develop anxiety and mood disorders, and the average age of onset of mental disorders was 20 years [9].

In the world as a whole, according to the WHO, about

350 million people suffer from depression. The highest percentage of the population suffers from depression in Afghanistan (22.5 %), while the least common depressive disorders are in Southeast Asia, in particular, prevalence rates of less than 5 % are observed in Japan, China, Korea and Taiwan. At the same time, the authors of the publication note that more than half of the world's population lives in countries where the prevalence of psychiatry is 2 per 100,000 [28].

It is worth noting the important impact on the mental state of the population of events that change the usual way of life. Thus, a 2020 survey conducted in China showed that 54 % of people assess the impact of the COVID-19 epidemic on mental status as moderate or severe, 17 % have moderate and severe symptoms of depression, 29 % have moderate and severe symptoms of anxiety [10]. This epidemic has even more serious consequences for mental health for medical workers who are directly involved

in eliminating its consequences [16].

The study of sexual prevalence and features of mental illness is another relevant topic of modern research [23]. Thus, the prevalence of postpartum depression in women, according to the Canadian sample, is 8 % [12].

Thus, the study of human personality and personality indicators as its components is a key element in the study of human mental health. One of the most important indicators of personality is the level of subjective control. The tendency to attribute performance to external factors is called the "external locus of control" or "externality". The concept of "internal locus of control" or "internality" includes the tendency to attribute the results of internal factors (own efforts, the presence or absence of the necessary knowledge, skills, positive and negative qualities, etc.). People who tend to consider themselves responsible for the state of their affairs are able to achieve greater success, but they feel guiltier about the events that happen to them [26].

The rate of subjective control (RSC) reflects the stable properties of the individual, namely: independence, independence, activity, responsibility for actions. RSC is formed in the course of human development and is determined by its individual-typological features, normative values, culture, within which socialization takes place. Knowing the direction of subjective control, it is possible to some extent to predict human behavior [7, 25, 29].

There is reason to believe that the locus of control has a regulatory effect on many aspects of human behavior, playing an important role in the formation of interpersonal relationships and in resolving personal crisis situations. RSC can vary in different regions depending on social and economic living conditions, moral attitudes and level of education of the population. Circumstances such as age, sex and constitutional variability of the locus of control cannot be ruled out (although there is very little research on this issue) [1, 2, 3, 5, 15, 21].

Thus, the connection between constitutional indicators and indicators of personality characteristics was found in the works of domestic researchers who studied fingerprints [17, 27]. The authors found correlations of different strength and direction between dermatoglyphic indicators and indicators obtained with the help of questionnaires by Eysenck, Spielberger, Shmishek, Rotter and Luscher.

The purpose of the study is to conduct a comparative study of the typological delineation of the emotional-dynamic pattern in practically healthy Ukrainian women without and taking into account the somatotype.

Materials and methods

Primary anthropo-somatotypological and personality indicators of practically healthy Ukrainian women aged 21 to 35 years of different somatotypes were selected from the database of materials of the research center National Pirogov Memorial Medical University, Vinnytsya.

With the help of personality questionnaires [14] the study

of individual-personal properties of the organism was carried out. Determination of the components of internality by Rotter J. in the modification of E. F. Bazhin, S. O. Golinkina and O. M. Etkind included the definition (sten): the indicator of the scale of general internality of the level of subjective control (USK_1), the level of subjective control in the field of achievements (USK_2), indicator of the level of subjective control in the field of failures (USK_3), indicator of the level of subjective control in the field of family relations (USK_4), indicator of the level of subjective control in the field of educational (professional relations), the indicator of the level of subjective control in the field of interpersonal relations (USK_6) and the indicator of the level of subjective control in the field of health and disease (USK_7).

The somatotype was calculated according to the scheme of J. Carter and B. Heath [8].

Statistical processing of the results was performed in the license package "Statistica 5.5" using non-parametric evaluation methods. The reliability of the difference between the values between the independent quantitative values was determined using the U-Mann-Whitney test.

Results. Discussion

To study the RSC, we used the "classical" measurement option [11] to solve the following tasks: 1) to evaluate test data in women with and without taking into account somatotype; 2) check the possibility of using this technique for different groups of subjects, selected by such criteria as body type, in a statistically filled sample.

People with a high level of internality tend to perceive most important events in their lives as the result of their own actions. They believe that they can control the circumstances, feel their own responsibility for them and for how their lives are in general. Researchers with lower scores on the scale of general internality often do not see a connection between their actions and overall performance, do not consider themselves properly able to control this relationship and believe that most events and actions are the result of chance or actions of others [18, 20, 24].

Significantly ($p < 0.05-0.01$) lower values of the *indicator of the scale of general internality of the level of subjective control over Rotter* in women mesomorphs (3.313 ± 1.203 sten) were found compared with women without taking into account somatotype, representatives of ectomorphic, endo-mesomorphic and middle intermediate somatotypes (4.051 ± 1.522 ; 4.095 ± 1.546 ; 4.429 ± 1.599 and 4.647 ± 1.539) sten.

The indicator of the level of subjective control in the field of achievements according to Rotter is significantly ($p < 0.05-0.01$) lower in women mesomorphs (4.313 ± 1.786 sten) compared with women without taking into account somatotype, representatives of endo-mesomorphic and middle intermediate somatotypes (5.133 ± 1.814 ; 5.762 ± 2.166 and 5.824 ± 1.334) sten and tends ($p = 0.094$) to lower values compared to ectomorphic women

(5.190 ± 1.504) sten. That is, women mesomorphs to a lesser extent than representatives of other somatotypes, tend to see in the achievements and victories only their own achievements. They are less likely to overestimate their strengths, capabilities and abilities.

The indicator of the level of subjective control in the field of failures according to Rotter is significantly ($p < 0.05$) lower in women mesomorphs (3.594 ± 1.316) sten compared with endo-mesomorphic women (4.429 ± 1.326) sten and tends ($p = 0.081-0.099$) to lower values compared to women without somatotype and representatives of the middle intermediate somatotype (4.184 ± 1.608 and 4.471 ± 1.736) sten. Higher scores on this scale in women with endo-mesomorphic and middle intermediate somatotype reflect a developed sense of subjective control over negative events and situations, which is manifested in the tendency to blame themselves for various troubles and sufferings. Lower rates (in mesomorphic women) indicate that subjects tend to attribute responsibility for such events to other people or consider them the result of failure.

The indicator of the level of subjective control in the field of family relations according to Rotter is significantly ($p < 0.05-0.01$) lower in mesomorphs (4.281 ± 1.689) sten compared with women without taking into account somatotype and representatives of endo-mesomorphic somatotype (5.214 ± 1.933 and 5.762 ± 1.546) sten and tends ($p = 0.054$) to lower values compared with ectomorphic women (5.429 ± 1.777) sten. Higher rates mean that endo-mesomorphic women consider themselves more responsible for events in her family life, and mesomorphic women tend to hold their partners responsible for situations that arise in their family.

The indicator of the level of subjective control in the field of educational (professional) relations according to Rotter is not reliable and there are no tendencies of differences when comparing between women without taking into account somatotype and/or representatives of different somatotypes.

A higher level of subjective control in the field of interpersonal relationships indicates that a person considers himself able to control his formal and informal relationships with other people, to evoke respect and sympathy. The lower indicator, on the contrary, indicates that the subject cannot actively form their circle of communication and tends to consider their interpersonal relationships the result of the activity of partners [6, 13, 22]. *The indicator of the level of subjective control in the field of interpersonal relations according to Rotter* is significantly ($p < 0.05-0.01$) higher in women of intermediate somatotype (6.588 ± 1.372) sten compared with women without taking into account somatotype and women mesomorphs and

ectomorphs (5.633 ± 1.542 ; 5.188 ± 1.378 ; 5.286 ± 1.821) sten. This indicator tends to higher values in women of mesomorphs (5.188 ± 1.378 ; $p = 0.072$) sten compared with endo-mesomorphic females (6.000 ± 1.265) sten.

Higher levels of subjective control in the field of health and disease show that the subjects feel responsible for their health: if they are sick, they blame themselves and believe that recovery depends largely on their actions. Researchers with a low score on this scale consider the disease the result of chance and hope that recovery will come as a result of other actions, especially - doctors [19]. *The indicator of the level of subjective control in the field of health and disease according to Rotter* in women endo-mesomorphs is significantly (5.048 ± 1.830 ; $p < 0.05$) lower than in women ectomorphs (6.190 ± 1.662) sten and tends ($p = 0.092$) to higher values compared to women without taking into account somatotype (5.765 ± 1.752) sten.

Thus, a lower level of general internality and subjective control over the achievement of mesomorphic women was found compared to women without taking into account somatotype and women of other somatotypes. According to the scale of internality in the field of failures in women without taking into account somatotype, endo-mesomorphs and representatives of the middle intermediate somatotype, the most developed sense of control over negative situations and the tendency to blame themselves for trouble compared to mesomorphic women. It is characteristic that in the sphere of family relations this image emerges especially clearly in mesomorphic women; they consider their partner, not themselves, to be more responsible for the events of family life. Women of intermediate somatotype compared to women without taking into account somatotype and women mesomorphs and ectomorphs have a higher level of internality in the field of interpersonal relationships. The level of subjective health and disease control in endo-mesomorphic women is significantly lower than in ectomorphic women.

Conclusions and prospects for further development

1. In the studied somatically healthy Ukrainian women with different body types, the constitutional features of RSC were established. Representatives of different somatotypes are characterized by both internality and externality to some extent, and the boundary between them is variable: on some scales the internal locus of control dominates, on others - the external locus of control.

In further research it is necessary to conduct a prognostic assessment of the impact of constitutional indicators on the indicators of personality traits of practically healthy men of different constitutional types.

References

- [1] Andriievskiy, I. I., Serebrennikova, O. A., Kyrychenko, I. M., Zhuchenko, I. I., & Gunas, V. I. (2020). Correlations of body structure and size indicators with personality indicators of practically healthy women with mesomorphic somatotype.

Biomedical and Biosocial Anthropology, 39, 35-44. doi: 10.31393/bba39-2020-06

- [2] April, K. A., Dharani, B., & Peters, K. (2012). Impact of locus of control expectancy on level of well-being. *Rev. Eur. Stud.*, 4,

- 124-137. doi: 10.5539/res.v4b2p124
- [3] Beisswingert, B. M., Zhang, K., Goetz, T., Fang, P., & Fischbacher, U. (2015). The effects of subjective loss of control on risk-taking behavior: the mediating role of anger. *Frontiers in Psychology*, 6, 774. doi: 10.3389/fpsyg.2015.00774
- [4] Bhugra, D., Till, A., & Sartorius, N. (2013). What is mental health?. *International Journal of Social Psychiatry*, 59(1), 3-4. doi: 10.1177/0020764012463315
- [5] Bobrishchev, A. A. (2016). Взаимосвязь уровня субъективного контроля со стресс-преодолевающим поведением сотрудников государственной противопожарной службы МЧС России с различным уровнем адаптированности [The relationship between the level of subjective control and stress-overcoming behavior of employees of the state fire service of the Ministry of Emergencies of Russia with different levels of adaptation]. *Медико-биологические и социально-психологические проблемы безопасности в чрезвычайных ситуациях - Biomedical and socio-psychological problems of safety in emergency situations*, 1, 92-97. doi: 10.25016/2541-7487-2016-0-1-92-97
- [6] Brackett, M. A., Rivers, S. E., & Salovey, P. (2011). Emotional intelligence: Implications for personal, social, academic, and workplace success. *Social and personality psychology compass*, 5(1), 88-103. doi: 10.1111/j.1751-9004.2010.00334.x
- [7] Canby, N. K., Cameron, I. M., Calhoun, A. T., & Buchanan, G. M. (2015). A brief mindfulness intervention for healthy college students and its effects on psychological distress, self-control, meta-mood, and subjective vitality. *Mindfulness*, 6(5), 1071-1081. doi: 10.1007/s12671-014-0356-5
- [8] Carter, J. L., & Heath, B. H. (1990). *Somatotyping - development and applications*. Cambridge University Press.
- [9] Cia, A. H., Stagnaro, J. C., Gaxiola, S. A., Vommaro, H., Loera, G., Medina-Mora, M. E., ... & Kessler, R. C. (2018). Lifetime prevalence and age-of-onset of mental disorders in adults from the Argentinean Study of Mental Health Epidemiology. *Social psychiatry and psychiatric epidemiology*, 53(4), 341-350. doi: 10.1007/s00127-018-1492-3
- [10] Cullen, W., Gulati, G., & Kelly, B. D. (2020). Mental health in the COVID-19 pandemic. *QJM: An International Journal of Medicine*, 113(5), 311-312. doi: 10.1093/qjmed/hcaa110
- [11] Danner, D., Blasius, J., Breyer, B., Eifler, S., Menold, N., Paulhus, D. L., ... & Ziegler, M. (2016). Current challenges, new developments, and future directions in scale construction. *European Journal of Psychological Assessment*, 32, 175-180. doi: 10.1027/1015-5759/a000375
- [12] Dennis, C. L., Heaman, M., & Vigod, S. (2012). Epidemiology of postpartum depressive symptoms among Canadian women: regional and national results from a cross-sectional survey. *The Canadian Journal of Psychiatry*, 57(9), 537-546. doi: 10.1177/070674371205700904
- [13] Edara, I. R. (2021). Exploring the Relation between Emotional Intelligence, Subjective Wellness, and Psychological Distress: A Case Study of University Students in Taiwan. *Behavioral Sciences*, 11(9), 124. doi: 10.3390/bs11090124
- [14] Eliseev, O. P. (2010). *Практикум по психологии [Workshop on psychology]*. СПб: Питер. - St. Petersburg: Peter.
- [15] Gorskaya, N., & Glyzina, V. (2013). Level of subjective control (LSC) in the area of interpersonal relations as one of the fundamental needs of the individual. *Middle East Journal of Scientific Research*, 13(SPLISSUE), 34-37. doi: 10.5829/idosi.mejsr.2013.13.sesh.1407
- [16] Greenberg, N. (2020). Mental health of health-care workers in the COVID-19 era. *Nature Reviews Nephrology*, 16(8), 425-426. doi: 10.1038/s41581-020-0314-5
- [17] Gunas, V. I. (2019). Correlations of indices of personality traits with indexes of finger and palmar dermatoglyphics of practically healthy Ukrainian men. *Biomedical and biosocial anthropology*, 34, 20-25. doi: 10.31393/bba34-2019-03
- [18] Husa, R. A., Buchanan, T. W., & Kirchhoff, B. A. (2021). Subjective stress and proactive and reactive cognitive control strategies. *European Journal of Neuroscience*, Online ahead of print. doi: 10.1111/ejn.15214.
- [19] Kagermazova, L., Masaeva, Z., Azhiev, A., & Kalmanova, T. (2020). *Psychological and pedagogical features of the relationship between subjective control and anxiety of students in the practice of the educational process of the university*. In E3S Web of Conferences (Vol. 210, p. 18060). EDP Sciences. doi: 10.1051/e3sconf/202021018060
- [20] Kurzban, R., Duckworth, A., Kable, J. W., & Myers, J. (2013). An opportunity cost model of subjective effort and task performance. *Behavioral and brain sciences*, 36(6), 661-679. doi: 10.1017/S0140525X12003196
- [21] Kuznetsov, A. S., Usmanova, E. N., & Kolomytseva, O. V. (2019). Athletes' psychological-physiological indices study in different specializations at the stages of sports career crises overcoming. *Russian journal of physical education and sport*, 14(2 (eng)), 89-96. doi: 10.14526/2070-4798-2019-14-2-89-96
- [22] Lee, P. L. (2016). Control beliefs level and change as predictors of subjective memory complaints. *Aging & mental health*, 20(3), 329-335. doi: 10.1080/13607863.2015.1008991
- [23] Mokhtari, M., Dehghan, S. F., Asghari, M., Ghasembaklo, U., Mohamadyari, G., Azadmanesh, S. A., & Akbari, E. (2013). Epidemiology of mental health problems in female students: A questionnaire survey. *Journal of epidemiology and global health*, 3(2), 83-88. doi: 10.1016/j.jegh.2013.02.005
- [24] Raio, C. M., & Glimcher, P. W. (2021). Quantifying the subjective cost of self-control in humans. *Proceedings of the National Academy of Sciences*, 118(35). e2018726118. doi: 10.1073/pnas.2018726118
- [25] Rivers, S. E., Brackett, M. A., Reyes, M. R., Mayer, J. D., Caruso, D. R., & Salovey, P. (2012). Measuring emotional intelligence in early adolescence with the MSCEIT-YV: Psychometric properties and relationship with academic performance and psychosocial functioning. *Journal of Psychoeducational Assessment*, 30(4), 344-366. doi: 10.1177/0734282912449443
- [26] Rotter, J. B. (1975). Some problems and misconceptions related to the construct of internal versus external control of reinforcement. *Journal of consulting and clinical psychology*, 43(1), 56-67. doi: 10.1037/h0076301
- [27] Serebrennikova, O. A., Gunas, V. I., Klimas, L. A., Ocheretna, N. P., & Shayuk, A. V. (2019). Predictive assessment of the association of dermatoglyphic indicators with indicators of personality traits, established by factor analysis. *Reports of Morphology*, 25(1), 12-18. doi: 10.31393/morphology-journal-2019-25(1)-02
- [28] Smith, K. (2014). Mental health: a world of depression. *Nature News*, 515(7526), 180-181. doi: 10.1038/515180a
- [29] Zhang, J. W., Howell, R. T., & Stolarski, M. (2013). Comparing three methods to measure a balanced time perspective: The relationship between a balanced time perspective and subjective well-being. *Journal of Happiness studies*, 14(1), 169-184. doi: 10.1007/s10902-012-9322-x

ОЦІНКА ОСОБЛИВОСТЕЙ ТИПОЛОГІЧНОЇ ОКРЕСЛЕНОСТІ ЕМОЦІЙНО-ДИНАМІЧНОГО ПАТЕРНУ У ПРАКТИЧНО ЗДОРОВИХ УКРАЇНСЬКИХ ЖІНОК БЕЗ І З УРАХУВАННЯМ СОМАТОТИПУ

Андрієвський І. І., Маєвський О. Є., Нестерук В. П., Степаненко Р. Л., Гунас І. В.

Анотація. Рівень суб'єктивного контролю може варіювати у різних регіонах залежно від соціальних та економічних умов

життя, моральних установок і рівня освіченості населення. Не можна відкидати і таку обставину як вікову, статеву і конституціональну мінливість локусу контролю (хоча досліджень, присвячених цьому питанню, надзвичайно мало). Мета дослідження - провести порівняльне дослідження особливостей типологічної окресленості емоційно-динамічного патерну у практично здорових українських жінок без і з урахуванням соматотипу. Первинні антропо-соматотипологічні та показники особливостей особистості практично здорових українських жінок віком від 21 до 35 років різних соматотипів відібрані з банку даних матеріалів науково-дослідного центру Вінницького національного медичного університету ім. М. І. Пирогова. Визначення складових інтернальності за J. Rotter у модифікації Є. Ф. Бажіна, С. О. Голинкиної та О. М. Еткинда включало визначення (стени): показника шкали загальної інтернальності рівня суб'єктивного контролю, показників рівня суб'єктивного контролю в галузі досягнень, невдач, сімейних відносин, навчальних (професійних) відносин, міжособистісних відносин, здоров'я і хвороби. Статистичну обробку результатів проведено в ліцензійному пакеті "Statistica 5.5" із використанням непараметричних методів оцінки. Достовірність різниці значень між незалежними кількісними величинами визначено за допомогою U-критерія Мана-Уїтні. Встановлено менший рівень загальної інтернальності та рівня суб'єктивного контролю в галузі досягнень у жінок мезоморфів порівняно із жінками без урахування соматотипу та жінками інших соматотипів. За шкалою інтернальності у сфері невдач у жінок без урахування соматотипу, енто-мезоморфів і представниць середнього проміжного соматотипу відзначається найбільш розвинене почуття контролю над негативними ситуаціями та схильність звинувачувати самих себе в неприємностях порівняно із жінками мезоморфами. Характерно, що і у сфері сімейних відносин цей образ вимальовується особливо чітко саме у жінок мезоморфів; більшою мірою відповідальним за події сімейного життя вони вважають не себе, а партнера. Жінкам середнього проміжного соматотипу порівняно із жінками без урахування соматотипу та жінками мезоморфами і екторморфам притаманний вищий рівень інтернальності у галузі міжособистісних відносин. Показник рівня суб'єктивного контролю в галузі здоров'я та хвороби у жінок енто-мезоморфів достовірно менший порівняно із жінками екторморфами. Таким чином, рівень та різні параметри суб'єктивного контролю можна застосовувати в якості особистісних маркерів досліджуваних певного соматотипу, що дозволить створити оптимальні та максимально індивідуалізовані рекомендації для психологічного супроводу, адаптації та копінг-стратегій.

Ключові слова: локус контролю, рівень суб'єктивного контролю, жінки, соматотип.