

I. Vysochyna,
I. Avramenko,
V. Kramarchuk,
T. Yashkina

FEATURES OF THE EMOTIONAL PORTRAIT OF TEEN-AGE GIRLS IN THE CONTEXT OF THEIR COLOR-SENSORY ATTITUDE TO MODERN COMMUNICATION TECHNOLOGIES AND ANXIETY STATE

SE «Dnipropetrovsk medical academy of Health Ministry of Ukraine»

Department Family Medicine FPE

V. Vernadsky str., 9, Dnipro, 49044, Ukraine

ДЗ «Дніпропетровська медична академія МОЗ України»

кафедра сімейної медицини ФПО

вул. В.Вернадського, 9, 49044, м. Дніпро, Україна

e-mail: vysochynail@gmail.com

Цитування: *Медичні перспективи*. 2019. Т. 24, № 4. С. 84-88

Cited: *Medicni perspektivi*. 2019;24(4):84-88

Key words: *anxiety, teenage girls, communication technologies, sensory-color perception*

Ключові слова: *тривожність, дівчата-підлітки, технології спілкування, сенсорно-колірне сприйняття*

Ключевые слова: *тревожность, девочки-подростки, технологии общения, сенсорно-цветовое восприятие*

Abstract. Features of the emotional portrait of teen-age girls in the context of their color-sensory attitude to modern communication technologies and state of anxiety. Vysochyna I., Avramenko I., Kramarchuk V., Yashkina T. This work is a continuation of previous studies on the relationship of high anxiety and the use of modern electronic communication tools. The purpose of this study was to determine the characteristics of the emotional portrait of adolescent girls in the – context of their color-sensory attitude to modern communication technologies and state of anxiety. The study involved 136 girls aged 17 years (at the time of the survey). All respondents were evaluated according to standardized valid psychological methods (WAM - well-being, activity and mood), color relationship test (TCR), the method of "Multidimensional assessment of child anxiety" (MACAQ), the personal Taylor anxiety manifestation scale in the modification of Norakidze and contained an author's questionnaire regarding the time spent in a sitting position; time spent in front of the screen of a mobile phone, tablet, laptop, PC; problems in relationships with parents. The study was conducted in accordance with the bioethical principles and provisions of the Helsinki Declaration and Good Clinical Practice (GCP). In the course of the work, it was proved that the time spent near the screens of electronic devices (phone, tablet, laptop, PC) for more than 6 hours a day is a significant factor, which is a predictive of emotional disorders in adolescent girls due to disruption of compensation mechanisms and the formation of a high level of personal anxiety, the appearance of achromatic sensory-color associations in interpersonal interactions, exacerbation of family conflicts with parents, which together indicates maladaptation and requires disruption work corrective programs.

Реферат. Особливості емоційного портрету дівчат-підлітків у розрізі їх колірно-сенсорного сприйняття до сучасних технологій спілкування та стану тривожності Височина І.Л., Авраменко І.В., Крамарчук В.В., Яшкіна Т.О. Ця робота є продовженням попередніх досліджень з питань взаємозв'язку високої тривожності і використання сучасних електронних засобів спілкування. Метою цього дослідження було визначити особливості емоційного портрета дівчаток-підлітків у розрізі їх колірно-сенсорного сприйняття сучасних технологій спілкування та залежно від їх рівня тривожності. У дослідженні взяли участь 136 дівчаток у віці 17 років (на момент проведення анкетування). Усі респонденти оцінювалися за стандартизованими дійсними психологічними методиками (методика САН (самопочуття, активність, настрій), тест колірних відносин (ТЦО), методика «багатовимірної оцінки дитячої тривожності» (МОДТ), особистісна шкала проявів тривоги Taylor у модифікації Норахідзе). Робота містить авторську анкету з приводу тривалості перебування в сидячому положенні; часу, проведеного перед екраном мобільного телефону, планшета, ноутбука, ПК; проблем у стосунках з батьками. Дослідження було проведено згідно з біоетичними принципами і положеннями Гельсінської декларації та GCP. У ході роботи доведено, що час, проведений біля екранів електронних пристроїв (телефон, планшет, ноутбук, ПК) більше 6 годин на добу, є значущим фактором, що є предиктом емоційних порушень у дівчаток-підлітків за рахунок зриву механізмів компенсації і формування високого рівня особистісної тривожності, появи ахроматичних сенсорно-колірних асоціацій у між-особистісних взаємодіях, загострення внутрішньосімейних конфліктів з батьками, що разом свідчить про дезадаптацію і вимагає розробки коригуючих програм.

Anxiety, as a basic trait of personality, is a central component of the emotional portrait of the person, it can be influenced by various significant factors in the context of the person's readiness (setting) to experience fear and anxiety about a wide range of subjectively significant phenomena, especially in adolescence and most by girls in terms of their gender characteristics. In view of today's fast-paced brain load, new information technologies are changing not only the cultural and information space, where the central place belongs to the human being not so much as the information medium, but rather as a "visual image" based on a computer-screen stream. It also forms a particular type of attachment to this type of communication and, in some cases, a state of dependence, which, a priori, changes the structure of interpersonal and social relationships.

Color sensory is very closely related to the emotional life of the individual [1, 2, 4, 9], and therefore color can be considered as a carrier of the code of relations of the subject to the object, which allows to study the emotional picture of the world, which consists in the collective consciousness of the individual social categories (teen-age girls) and identify the features of their emotional portrait in terms of their color-sensory attitude to modern communication technologies.

The Color Relationship Test (CRT) is a compact non-verbal diagnostic method that reflects both conscious and partially unconscious levels of human relationships. CRT methodologically relies on the concept of relations of V.M. Myasishcheva, ideas of B.G. Ananyeva about the figurative nature of psychic structures of any level and the idea of A.N. Leontiev about the sensual fabric of semantic formations of personality [3, 5, 8, 10]. The method of color-associative experiment differs from other color methods by a peculiar way of extracting reactions to color stimuli, and the evaluation of the results involves a comparison of colors associated with certain concepts with their place (rank) in the layout and interpretation of the emotional-personal significance of each color, on the basis of which the idea of meaningful features of relations can be made [4, 6, 11, 12].

The psychological meaning of the category "relationship" is that they "...is a form of reflection by person of reality that is around him ..." and this system is the most specific characteristic of the individual than its other components, such as character, abilities and temperament [5, 7].

The purpose of the study – to determine the features of emotional portrait of teenage girls in context of their color-sensory attitude to modern communication technologies and anxiety state.

MATERIALS AND METHODS OF RESEARCH

136 girls aged 17 (at the time of the survey) participated in the survey. In accordance with the objectives of the study, we conducted a survey with questions about the length of stay in a sitting position; time spent in front of the communication screen (mobile phone / tablet / laptop / PC), relationship problems with parents.

The actual work was carried out in accordance with bioethical principles in accordance with the Declaration of Helsinki and Good Clinical Practice (GCP). The possibility of conducting the questionnaire was confirmed with the informed consent of the parents of the teenage girls and the consent of the respondents to the questionnaire was obtained directly.

To assess anxiety in adolescents, the Multi-dimensional Assessment of Childhood Anxiety Questionnaire (MACAQ) was used, Taylor's personal scale of manifestations of anxiety in the Nora-kidze modification (with a lie scale); operative assessment of well-being, activity and mood (WAM test). For the test of color relations (TCR), an authorial questionnaire was proposed, which contained four concepts - relationships designed with the purpose of the actual study, and which allowed to analyze the associative color attitude to such concepts as one's own health, schooling, relationships with parents, the attitude towards themselves. When conducting a TCR, the wording of the questions was as follows: What color is your health?, Your education in a school ?, When do you talk to your parents? Are you right now?

All the psychological methods selected for the study are conventional, valid and evaluated according to instructions and keys.

The methods of mathematical and statistical analysis were used for the statistical processing of the study materials: verification of the normal distribution of quantitative indicators using the Shapiro-Wilk test; estimation of the significance of the difference in the mean for quantitative traits with abnormal Mann-Whitney (U) distribution for unrelated samples; the Kruskal-Wallis H-test to compare the averages of the three samples. The main statistical characteristics used in the work include: number of observations (n), median (ME) with interquartile range (LQ-UQ), relative values (P), level of statistical significance (p). In most cases critical value of p was <0.05. In cases of multiple comparisons we used Bonferroni correction and critical value of p equaled to 0.05/(number of possible comparisons). Data processing and analysis were performed using Libre Office, Statistica 6.1 (StatSoftInc., Serial No. AGAR909E415822FA) and

online calculator <http://www.socscistatistics.com/tests/kruskal/Default.aspx>.

RESULTS AND DISCUSSION

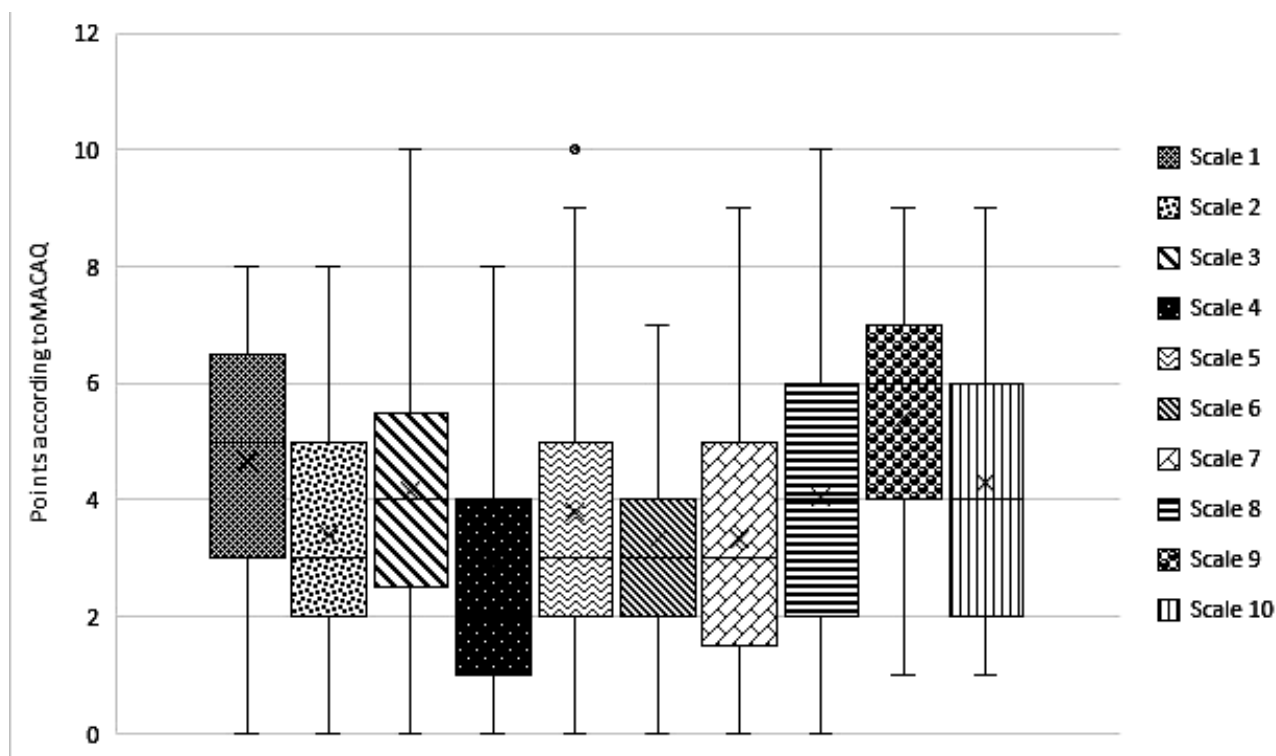
This work is a continuation of our previous research conducted in the previous year with an extension of the battery of psychological techniques to determine the features of emotional portrayal of adolescent girls in terms of their color-sensory attitude to modern communication technologies and the existing state of anxiety.

6 participants (4%) were excluded from the survey because they had 6 points on the lie scale, and the sample of the results was based on a sample survey of 130 girls.

The results of the WAM test (well-being, activity and mood) are shown that the majority of respondents are more likely to be less than the highest level of well-being – 50 (38.5-58) points, the

average level of activity is up to 45 (39-54) points and high level of mood – 56 (43.5-62) points. 3% (n=4) of the girls surveyed had decreased well-being, 12% decreased activity (n=16) and 8% decreased mood (n=10).

According to our data, the anxiety level of adolescent girls was 24 points (17.5-29), which is characterized by an average level of tendency to high, with every second participant in the questionnaire having a high level of anxiety and only 2 teenage girls had very high level of anxiety. A correlation analysis between the level of anxiety on the Taylor test and the level of overall anxiety on the MACAQ revealed a direct strong relationship ($r=0.71$; $p<0.001$). The structure of anxiety in adolescent girls according to the MACAQ results is presented in figure.



Notes: scale 1 - general anxiety, scale 2 - anxiety in relationships with peers, scale 3 - anxiety in relation to the assessment of others, scale 4 - anxiety in relationships with teachers, scale 5 - anxiety in relationships with parents, scale 6 - anxiety, associated with academic achievement, scale 7 - anxiety that arises in situations of self-expression, scale 8 - anxiety that arises in situations of knowledge testing, scale 9 - decrease in mental activity associated with anxiety, scale 10 - increase autonomic reactivity related to anxiety.

Structure of anxiety of adolescent girls according to the MACAQ results

According to the questionnaire data as for the time spent daily in front of the screen of communication media (mobile phone / tablet / laptop / PC), we divided participants into 3 groups: minimal activity (up to 4 hours a day – 33% of observations), average activity (4-6 hours – 26% of observations), high activity (more than 6 hours – 41% of obser-

vations). At the same time, among other motives for using communication means, every second teenager girl uses gadgets for communication.

The analysis of the results of TCR revealed the existence of the same distribution of choices of color series when characterizing the emotional associations of one's "I" in health – most teenage girls

chose bright colors, which is consistent with an ethnographic analysis of color values conducted by V. Turner in 1983 and in accordance with the author's opposition of white and black, associated with the antithesis of "good-evil", "health-illness", "luck-failure", etc., indicating the presence of trans-cultural stability of the main color-emotionally individual structures, and in our case – studied adolescents.

In the TCR methodology, the ratio of teenage girls to school education, those adolescents who had the most activity using communication tools and high levels of anxiety, were characterized by the choice of achromatic colors, with the choice of gray-brown-black colors recorded in 80% of respondents when assessing their relationship with their parents, which is most likely related to personal conflict over the need and success of school education and the length of time spent in computer networks. At the same time, the color choices in relation to themselves corresponded to bright shades (mainly red, yellow), which indicates that they have a sufficiently high self-confidence and can be regarded as overestimated self-esteem.

Adolescent girls who had minimal and medium activity when using communication means, chose emotionally attractive colors: red (50%), yellow (40%), and purple (10%), while associative of the choice of color in relation to the evaluation of their relationship with their parents was represented by all shades of the series from achromatic (20% of answers) to the primary colors (80%), which needs further clarification of this situation.

In order to determine the likely impact of long-term use of communication devices on the MACAQ anxiety indicator, we calculated the Kruskal-Wallis H-test for 3 groups, which was 8.0872 ($p=0.01753$),

which allowed us to state that the studied phenomenon has a significant effect on the result.

Further analysis of the results revealed a critical time span near electronic devices that significantly influenced the onset of high anxiety in teenage girls, namely, when a teenager spends more than 6 hours a day in front of a communication screen (phone, tablet, laptop or PC).), it has a high level of anxiety (U criterion empirical – 287, critical value – 313 ($p \leq 0,001$).

Also, in the group of girls who had a high level of anxiety, which was statistically related to the length of stay with electronic devices for more than 6 hours a day, it was found that almost all respondents (96%) stated that they had unsatisfactory relationships with their parents, against 2% , among those who did not have high anxiety and spent less than 6 hours a day with electronic devices. This fact in view of the psychological portrayal of adolescents may be regarded as an attempt to "escape from reality" in which parents play an important role.

CONCLUSION

Thus, it has been shown that the length of time spent on electronic devices (phone, tablet, laptop or PC) over 6 hours a day is a significant factor driving emotional disorders in adolescent girls due to the failure of compensation and the formation of high levels of personal anxiety, formation of achromatic sensory-color associations in interpersonal interactions, emergence of intra-family conflicts with parents and high level of self-esteem, which is generalized by impaired personality adaptation.

Conflict of interest. The authors declare no conflict of interest.

REFERENCES

1. Bazhin EF, Jetkind AM. [Relationship Color Test: Method. recommendations]. LNII PNI im. V.M. Behtereva. 1985;1:2-7. Russian.
2. Bazyma BA. [Color and psyche]. HDAK. 2001;1:112-24. Russian.
3. Malkova, Romicyna Elena Evgen'evna [The main stages and the procedure for creating the methodology "Multidimensional assessment of child anxiety" (MACAQ)]. 2009;1:119-133. Russian.
4. Myasishev VN. [Relationship Psychology: Selected Psychological Works]. Modjek MPSI. 2004; 125-138. Russian.
5. Lebets IS, et al. [Peculiarities of health status and principles of prevention of psychosomatic and psychological disorders in children of school age from the zone of military conflict]. Zdorov'e rebenka. 2018;13(8):729-35. Available from: http://nbuv.gov.ua/UJRN/Zd_2018_13_8_5.
- Ukrainian. doi: <https://doi.org/10.22141/2224-0551-13.8.2018.154152>
6. Gippenreiter JuB. [Psychology of personality: anthology]. Moskva: AST Astrel. 2009;58-92. Russian.
7. Sobchik LN. [Color picker method. Modified eight-color Luscher test]. Sankt-Peterburh: Rech. 2001;12-37. Russian.
8. Kim Min-Hyuk, et al. Association between high adolescent smartphone use and academic impairment, conflicts with family members or friends, and suicide attempts. PloS one. 2019;14(7). doi: <https://doi.org/10.1371/journal.pone.0219831>
9. Bae Sung-Man. The relationship between smartphone use for communication, social capital, and subjective well-being in Korean adolescents: Verification using multiple latent growth modeling.

Children and Youth Services Review. 2019;96:93-99. doi: <https://doi.org/10.1016/j.chilyouth.2018.11.032>

10. Demirci Kadir, Akgönül Mehmet, Akpinar Abdullah. Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. *Journal of behavioral addictions*. 2015;4(2):85-92. doi: <https://doi.org/10.1556/2006.4.2015.010>

11. Hsieh Yi-Ping, Yen Cheng-Fang, Chou Wen-Jiun. Development and Validation of the Parental Smartphone

Use Management Scale (PSUMS): Parents' Perceived Self-Efficacy with Adolescents with Attention Deficit Hyperactivity Disorder. *International journal of environmental research and public health*. 2019;16(8):1423. doi: <https://doi.org/10.3390/ijerph16081423>

12. Rather Shabir Ahmad, Khazer Mudasir. Impact of Smartphones on Young Generation. *Library Philosophy and Practice*. 2019;2384. Available from: <https://digitalcommons.unl.edu/libphilprac/2384/>

СПИСОК ЛІТЕРАТУРИ

1. Бажин Е. Ф., Эткінд А. М. Цветовой тест отношений: метод. рекомендации. Ленинград: ЛНИИ ПНИ им. В.М.Бехтерева, 1985. 19 с.

2. Базыма Б. А. Цвет и психика. Харьков: ХДАК, 2001. 172 с.

3. Малкова-Ромицына Е. Е. Основные этапы и процедура создания методики «Многомерная оценка детской тревожности» (МОДТ). *Известия Рос. гос. педагогического университета им. АИ Герцена*. 2009. Т. 83. С. 119-133.

4. Мясищев В. Н. Психология отношений: Избранные психологические труды / под ред. А. А. Бодалева. Москва: Модэк МПСИ, 2004 356 с.

5. Особливості стану здоров'я та принципи профілактики психосоматичних і психологічних порушень в дітей шкільного віку із зони військового конфлікту / І. С. Лебець, та ін. *Здоровье ребенка*. 2018. Т. 13, № 8. С. 729-735. URL: http://nbuv.gov.ua/UJRN/Zd_2018_13_8_5. DOI: <https://doi.org/10.22141/2224-0551.13.8.2018.154152>

6. Психология личности: хрестоматия / под ред Ю. Б. Гиппенрейтер. Москва: АСТ Астрель, 2009. 624 с.

7. Собчик Л. Н. Метод цветных выборов. Модифицированный восьмицветовой тест Люшера. Санкт-Петербург: Речь, 2001. 112 с.

8. Association between high adolescent smartphone use and academic impairment, conflicts with family

members or friends, and suicide attempts / Kim Min-Hyuk et al. *PloS one*, 2019. Vol. 14, No. 7. DOI: <https://doi.org/10.1371/journal.pone.0219831>

9. Bae Sung-Man. The relationship between smartphone use for communication, social capital, and subjective well-being in Korean adolescents: Verification using multiple latent growth modeling. *Children and Youth Services Review*. 2019. Vol. 96. P. 93-99. DOI: <https://doi.org/10.1016/j.chilyouth.2018.11.032>

10. Demirci Kadir, Akgönül Mehmet, Akpinar Abdullah. Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. *Journal of behavioral addictions*. 2015. Vol. 4, No. 2. P. 85-92. DOI: <https://doi.org/10.1556/2006.4.2015.010>

11. Hsieh Yi-Ping, Yen Cheng-Fang, Chou Wen-Jiun. Development and Validation of the Parental Smartphone Use Management Scale (PSUMS): Parents' Perceived Self-Efficacy with Adolescents with Attention Deficit Hyperactivity Disorder. *International journal of environmental research and public health*. 2019. Vol. 16, No. 8. P. 1423. DOI: <https://doi.org/10.3390/ijerph16081423>

12. Rather Shabir Ahmad, Khazer Mudasir. Impact of Smartphones on Young Generation. *Library Philosophy and Practice*. 2019. No. 2384.

The article was received
2019.09.11

