

Grażyna Sroka

University of Józef Dietl in Kraków, Legnicka 5 St., 31-216 Kraków, Poland; grazyna.sroka73@gmail.com

Acne vulgaris and *rosacea* as a cosmetic and psychological problem

Abstract

This study presents the results of a survey conducted among 47 students (18 girls and 29 boys aged 13–14) of primary schools in the Podkarpackie Voivodeship (Southern Poland). The aim of the study was to self-assess the knowledge of young people about the types of acne and ways of dealing with this problem. The survey results showed that for both girls and boys this was an embarrassing problem and therefore they tried to cover up the skin lesions using methods known to them. Most respondents felt embarrassed when talking about skin problems. In relation to their own complexion problems, a significant number of respondents did not believe that they could please others and were afraid of other people judging their appearance. Girls are more sensitive to this type of problems. Most respondents are aware that acne could also affect adults, but did not know any further details about it.

Keywords: acne, health education, skin problems, surveys study

Received: [2023.10.29]

Accepted: [2024.01.29]

Introduction

Acne vulgaris is a disease that has been known since ancient times (Biegalska, Żaba, 2004). Thus the search for methods of treating this troublesome skin disease began. The beginning of the 20th century was a time of intensive expansion of knowledge about acne. The first clinical division of this disease was then made (Wilczyńska, Lewandowski, 2012). At the beginning of the 20th century, *acne vulgaris* was called juvenile acne (Latin: *acne juvenilis*) (Biegalska, Żaba, 2004). However, it is not a disease of teenagers, because it also affects a small percentage of newborns and infants; young, adult men and women also complain about these ailments – Fig. 1 – Appendix 1 (Bojar, Holland, 2004).

Acne vulgaris is a disease that affects both sexes but men are more susceptible to this type of skin disease due to genetic and hormonal conditions (Leyden, 2001). It is a chronic inflammatory disease affecting the seborrhic areas (mainly chest, face, back), characterised by, among others: the presence of: comedones (*comedo*), papular eruptions

(*papula*), pustular eruptions (*pustula*) (Fig. 1 – Appendix 1), purulent cysts (*cystis*) and scars (*koleoid*) (Biegalska, Żaba, 2004). Its etiopathogenesis is multifactorial. The causes are usually: seborrhoea (disturbances in the functioning of the sebaceous glands), keratinization within the hair follicle (due to irritation of the follicle walls, presence of sebaceous content and bacteria), colonization of bacteria and microorganisms (favoured by excessive production of sebum and closure of the sebaceous gland opening), hormonal disorders (increased activity of androgens, especially during puberty), genetic conditions (genetically determined excessive production of sebum), mental state of the patient (release of adrenal steroids into the blood due to stress) (Marks, Dawber, 1971; Sidbury, Paller, 2000; Biegalska, Żaba, 2004; Bojar, Holland, 2004; Szepietowski, Reicha, 2009; Arora et al., 2010; Michalak-Stroma et al., 2010).

Unlike teenage acne, rosacea (Latin: *acne rosacea*) begins at the age of 20–30 with a tendency to frequent erythema on the skin of the cheeks, nose and forehead. A clear progression of this disease is observed in the next decade of life, and full development occurs at the age of 40–50 (De Bersaques, 1995; Culp, Scheinfeld, 2009) (Fig. 1E–F – Appendix 1). The first medical description of this disease appeared in the literature in the 14th century. The author was a French surgeon, Dr. Guy de Chauliac (Sorsa et al., 1993). He described the erythema occurring on the skin of the cheeks, nose and forehead as “*gutterose*”, i.e. pink dotting, or “*couperose*”, which currently means rosacea in French (Rundhaug, 2005; Descargues et al., 2006). In 1891, Henri G. Piffard, a professor of dermatology from New York, based on characteristic clinical symptoms, for the first time distinguished *acne vulgaris* from *acne rosacea*, treating it as a different form of acne (Robak, Kulczycka, 2010). The etiopathogenesis of rosacea is also multifactorial. The causes of this disease may be: vascular disorders (temporary to permanent erythema phases and the development of telangiectasia), ultraviolet radiation (under its influence erythema occurs), microorganisms (mainly the human demodex *Demodex folliculorum* G. Simon and bacilli of *Helicobacter pylori* (Marshall et al.) Goodwin et al.), reactive oxygen species ROS (their source may be leukocytes infiltrating the skin and/or keratinocytes), and others (Brauchle, 1996; Ballaun et al., 2000; Zouboulis, 2001; Rebora, 2002; Dressler-Carre, 2005; Landow, 2005; Izikson et al., 2006; Nally, Berson, 2006; Berman et al., 2007; Fernandez-Obregon, Patton, 2007; Yamasaki et al., 2006; Yang et al., 2008; Grønhøj Larsen et al., 2009).

Acne vulgaris usually appears during puberty, i.e. at a time of strong changes, both biological, hormonal and psychological. Puberty means sudden changes, sometimes difficult for a young person to accept. A growth spurt and biological maturation focus teenagers’ attention on their bodies – their self-image is then disturbed, and according to psychologists, acne can even lead to serious psychological and social consequences (Kellert, Gawkrödger, 1999; Wilczyńska, Lewandowski, 2012; Gupta et al., 2016; El-Hamd et al., 2017). Young people want to be liked, especially since there is often a “cult of

beauty” among teenagers, and people with skin disorders are often simply not accepted. Similarly, stress can also exacerbate another dermatosis, rosacea, which occurs in middle-aged people (Jaworek et al., 2008). Due to its recurrent course and often ineffective treatment, this disease also negatively affects the psychosocial functioning of many patients (Chodkiewicz et al., 2007; Gupta et al., 2016; Polak et al., 2020).

The quality of life of patients suffering from chronic dermatological diseases has recently become the subject of many studies. It has been noticed that most dermatological diseases are not directly life-threatening, but they have a huge impact on many aspects of the life of the patient and his family. The aim of the survey was to self-assess young people’s knowledge about the types of acne and ways of dealing with this problem.

Research methodology

The research tool was an anonymous survey conducted among 47 students of the Primary School in Bobrowa (50°06'59"N 21°25'53"E), Korzeniów (50°09'47"N 21°27'36"E) and Nagozszyn (50°08'14"N 21°24'45"E), in the Podkarpackie Voivodeship (Southern Poland). The research group included a total of 18 girls and 29 boys, aged 13–14.

The survey consisted of 23 questions regarding knowledge about skin types, type and location of skin lesions, sources of information about acne and methods of its treatment, methods of concealing skin lesions, perception of one’s attractiveness in relation to one’s own skin problems, etc. – Appendix 2. It also contained questions regarding knowledge about adult acne, including: the ability to determine the type of skin lesions, ways of concealing them and adults’ reactions to attempts to talk about their skin problems. The survey had suggested answers and in several cases there was also the option to provide an open-ended response. Multiple answers to the same question were also allowed. The construction of the survey was based on the study by K. Wilczyńska and J. Lewandowski (2012).

A comprehensive summary of all the results of the survey is set in the table (Tab. 1). The most important selected points of the survey were illustrated in pie charts, along with the percentages of the answers obtained by respondents. In the case of the three questions regarding self-perception in the context of skin problems and functioning in the environment (questions 11, 13, 18), the following scores were assigned to each question: “+1” – if the answer was affirmative, “–1” – if the answer was negative, and “0” – if the respondent chose the answer “*I don’t care, I have no opinion*”. The respondents’ answers to these survey questions were compared and the average results for girls and boys in the analysed statistical population were calculated. A parametric one-way ANOVA test was used to assess statistical differences between the mean results in two separate groups of respondents, using Duncan’s post hoc test. Statistical significance was assumed to be $p \leq 0.05$. The summary table and charts were prepared using Microsoft EXCEL.

The respondents had a relatively poor level of knowledge regarding their complexion type, as nearly half of them were unable to determine their own complexion type (only 34% of respondents provided it). More than half of the girls were able to correctly determine their complexion type, while among the boys only five out of 29 respondents (question 2 – Appendix 2). More than half of all respondents noticed unfavorable changes in their skin; most aged between 12 and 14. 16 people could not indicate the exact age at which they noticed these types of skin changes (Tab. 1 – Appendix 3). Most respondents observed skin changes in the form of blackheads, epidermal peeling and discoloration, which accounted for a total of 49% of the responses, and 27% noticed more severe skin changes in the form of papules, purulent conditions, seborrhea and acne scars (Fig. 2A).

The respondents indicated that the most common places of skin lesions were: forehead, nose and beard, and less frequently the back, chest and entire face (40% of responses in total) (Fig. 2B). Most people sought advice on skin issues only from their parents (30% of responses), while a significant part did not seek any advice at all (33% of responses) (Tab. 1 – Appendix 3). The surveyed students gained knowledge about acne from the Internet (33% of responses), television (18%) and youth guides and magazines (30%). (Tab. 1 – Appendix 3, Fig. 2C).

The most frequently mentioned methods of treating *acne vulgaris* by respondents were externally applied drugs (29% of responses) and care with cosmetics available in drugstores (20% of responses) (Tab. 1 – Appendix 3, Fig. 2D). In response to the question about what method of acne treatment they use, 15 respondents declared they used external drugs, 3 people said they were antibiotics, 3 people declared treatment with cosmetics purchased at a drugstore, 2 people followed a diet, and 24 people did not provide any answer.

Among the surveyed students, 17 stated that they had an embarrassing problem with their complexion, while as many as 22 answered that skin problems were not an embarrassing problem for them. For 7 people this phenomenon was indifferent. Some students used concealer and cosmetic powder to conceal skin lesions (31% of responses), while a significant number did not use any methods of concealing skin lesions (as many as 43% of responses) (Fig. 3A). 13 respondents believed that they were unattractive because they have skin lesions on the face. For 19 respondents, this was not a problem, and five had no opinion on it. Acne lesions did not affect the frequency of social gatherings in case of 21 respondents who covered up these lesions and went to meetings. 24 respondents did not notice a problem with skin problems and went to a meeting without covering up, and for only one student it was a reason to give up a social meeting. When talking about complexion problems, most respondents felt

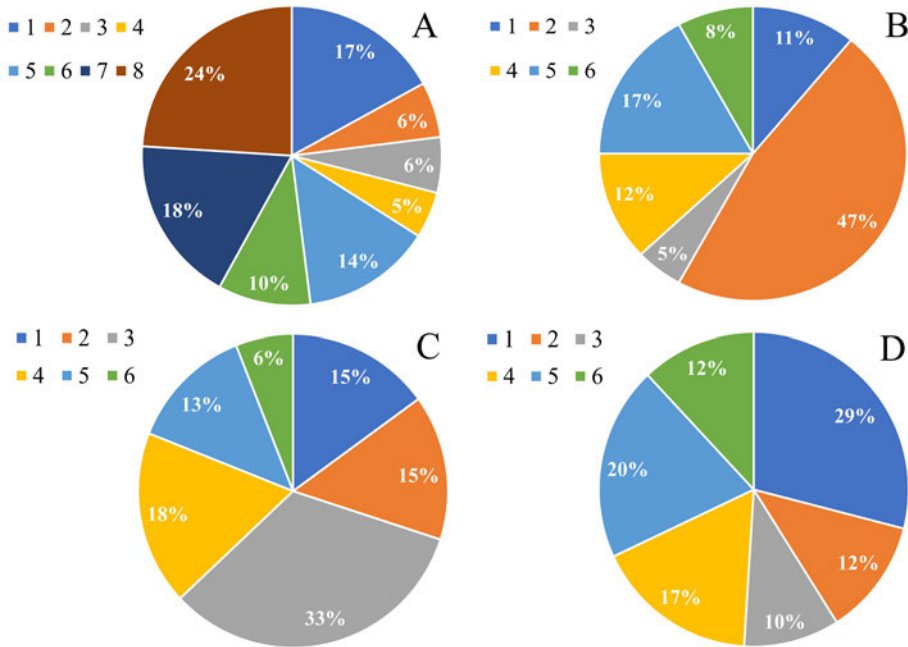


Fig. 2. Percentage comparison of the answers obtained by the respondents regarding: A – knowledge of the types of skin lesions observed by the respondents (1 – blackheads, 2 – papules, 3 – purulent conditions, 4 – seborrhea, 5 – exfoliation of the epidermis, 6 – scars after acne lesions, 7 – discoloration, 8 – I cannot define); B – places of acne skin lesions (1 – whole face, 2 – forehead, nose and beard, 3 – neck and chin, 4 – chest, 5 – back, 6 – nape); C – sources of knowledge about acne (1 – youth magazines, 2 – youth guides, 3 – Internet, 4 – television, 5 – friends, 6 – other); D – knowledge of agents used to treat acne (1 – externally applied drugs, 2 – antibiotics, 3 – hormonal drugs, 4 – treatments in a beauty salon, 5 – care with cosmetics available in drugstores, 6 – diet)

embarrassed, but continue talking about it (39% of responses). A significant proportion also reacted with laughter and jokes about their appearance (31%) (Fig. 3B).

Regarding their own skin problems, most respondents did not believe that they could please others (27% of responses) and felt afraid of other people assessing their appearance (41% of responses) (Tab. 1 – Appendix 3, Fig. 3C). 26 respondents believed that physical attractiveness was not the basis for professional or social success while 20 respondents had the opposite opinion. 27 respondents believed that skin lesions on the face did not constitute a problem at school or at work; for 6 respondents, it affected their studies and work. 13 students had no opinion on this topic.

Almost 95% of respondents knew that acne occurred not only in adolescents, but also in adults; only 5% of respondents did not know about acne in adults. Among the respondents, most people perceived skin changes in adults, consisting of redness on the face, and in the form of pustules (57% of responses in total) (Fig. 4A; Tab. 1 – Appendix 3).

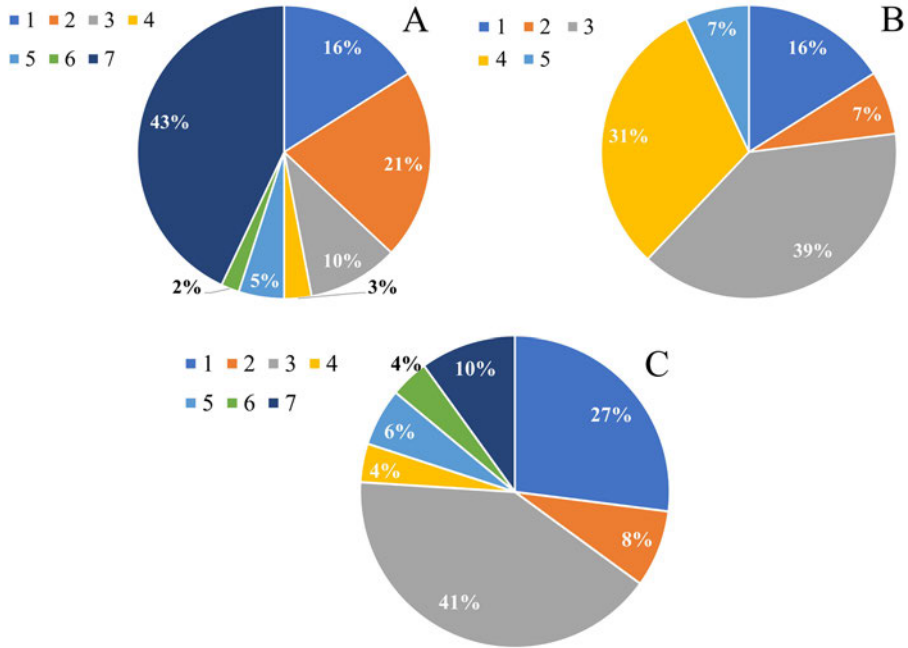


Fig. 3. Percentage comparison of answers obtained by respondents regarding: A – methods of concealing acne skin lesions (1 – concealer, 2 – cosmetic powder, 3 – long bangs, 4 – hood on the head, 5 – tilted head, 6 – others, 7 – does not use any methods); B – reaction to a direct conversation about skin problems (1 – avoiding the conversation, 2 – nervousness and quickly ending the conversation, 3 – embarrassment and continuing the conversation, 4 – laughter and jokes about one’s own appearance, 5 – resent being interfered in their affairs); C – attitude towards one’s own skin-related problems (1 – I do not believe that I can be attractive to others, 2 – hypersensitivity about appearance, 3 – fear of other people’s assessment of appearance, 4 – fear of professional help due to the possibility of confirmation seriousness of skin problems, 5 – lack of acceptance of one’s appearance without a vision of how to remedy it, 6 – lack of faith in the possibility of cure, 7 – others)

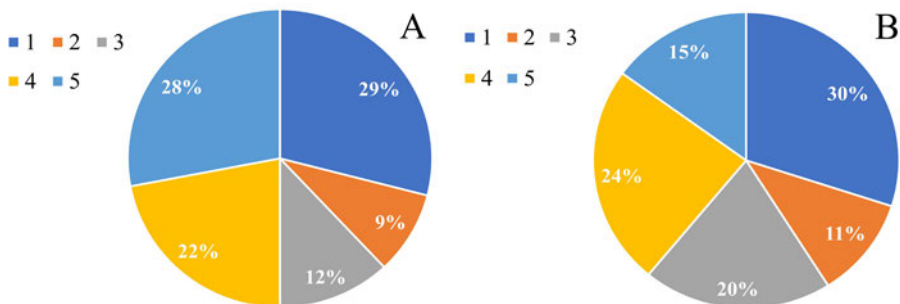


Fig. 4. Percentage comparison of answers obtained by respondents regarding: A – knowledge about the perception of skin lesions in adults (1 – facial redness, 2 – erythema, 3 – presence of papules, 4 – presence of pustules, 5 – I did not notice); B – other people reactions on adults skin problems (1 – avoiding the conversation, 2 – nervousness and interrupting the conversation, 3 – nervousness and continuing the conversation, 4 – laughter and jokes about one’s appearance, 5 – resent being interfered in their affairs)

However, skin changes in adults were observed by only 12 respondents, and 7 of them were able to indicate the symptoms in the form of pimples, papules, and redness on the face. 33 respondents did not observe any skin changes in adults.

The most frequently mentioned forms of concealing visible skin lesions on the face in adults by respondents were also cosmetic powder and concealer. 13 respondents did not notice any methods of concealing acne in adults. According to respondents, most adults avoided talking about their own skin problems (30% of responses), or they showed nervousness when talking about it (20% of responses); some also reacted with laughter and jokes about their appearance (24% of responses) (Tab. 1 – Appendix 3, Fig. 4B).

Comparison of the average score obtained from three questions regarding self-perception in the context of skin problems and functioning in the environment (questions 11, 13, 18 – Appendix 2) showed that, in general, boys paid less attention to this type of problems. The results obtained here were statistically significant in relation to the group of girls (Fig. 5).

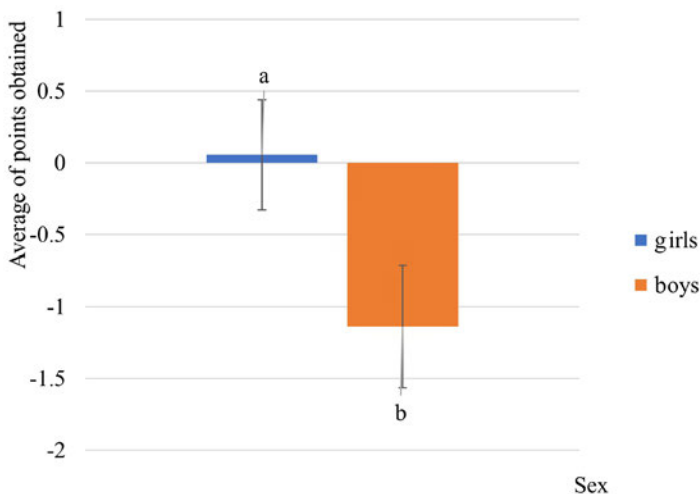


Fig. 5. Comparison of the average score from three questions regarding self-perception in the context of skin problems and functioning in the environment (questions 11, 13, 18) in groups of girls ($n = 18$) and boys ($n = 29$); mean values \pm SD with different letters (a-b) are statistically different according to Duncan's test, with $p \leq 0.05$

Discussion

Acne vulgaris is one of the most common dermatological diseases and ailments of adolescence. According to Biegalska and Źaba (2004) and Wolska (2005), this disease affects approximately 80% of the population, and according to Adamski and Kaszuba (2008) even 100% of the population. In descriptions by various authors, the appearance of acne is noticeable between the ages of 11 and 40. In this study, the respondents noticed the

appearance of disturbing changes on their skin between the ages of 12 and 14; this is within the range given above (Tab. 1 – Appendix 3). The bibliography states that mild lesions such as comedonal, papular and papulopustular acne cover approximately 85% of the population, and severe forms (with complications in the form of scars and discoloration) cover the remaining 15% (Kaszuba et al., 2008). The acne lesions mentioned most frequently by the surveyed students were blackheads, epidermis exfoliation and discoloration. A much smaller proportion of respondents noticed skin changes in the form of papules, purulent conditions, seborrhea and acne scars (Fig. 2A).

The surveyed boys and girls got both advice and knowledge about skin problems from the Internet, television, and then from youth guides and magazines; few turned to their parents for advice and help (Fig. 2C). As the survey showed, knowledge about how to deal with the problem of acne varied among the surveyed students and largely depended on the source from which it came. It should certainly be stated that there is no appropriate and sufficient education at school and young people are forced to use the most easily available, and not always valuable, materials, i.e. the media and youth press. This has also been confirmed by previous research by Krajewska et al. (2003). Also in the opinion of Pawin et al. (2009), the sources of knowledge and advice about skin problems are mainly the mass media, followed by family doctors (usually downplaying the problem), friends or relatives.

The results of this study showed that for both girls and boys, *acne vulgaris* was an embarrassing problem. Therefore, they tried to deal with this problem using the methods available to them. Since the survey was conducted in a rural environment, it was easy to see that most students did not seek professional advice, but covered up skin lesions on their own, using cosmetic products most easily available in drugstores (Fig. 2D, 3A). This might be the result of various environmental factors, e.g. family wealth, simple access to beauty salons or specialised dermatology clinics.

Taking into account the methods of treating *acne vulgaris*, most students used external pharmacological treatment; however, few used oral pharmacological treatment – antibiotics, medicinal cosmetics from drugstores and an appropriate diet (Tab. 1 – Appendix 3). Currently, in the professional treatment of this type of diseases, due to the social aspect of the disease, it is postulated to include additional therapeutic factors in addition to traditional pharmacological treatment. Family can be considered such a factor because it significantly affects the mental state of a young person. A child should feel confident and feel that he or she is an important link in the family. The family should assure him or her that, despite cosmetic defects, he or she is still interpersonally attractive. This type of action allows the patient to find his or her way in a not always friendly external environment (Czelej, Tuszyńska-Bogucka, 2004; Polak et al., 2020).

Most respondents felt embarrassed when talking about skin problems. Some respondents did not believe that they could please others (27% of responses) and were

afraid of other people judging their appearance (41% of responses). More than half of respondents believed that physical attractiveness was the basis for professional or social success. The obtained results are comparable to the results of the research by Wilczyńska and Lewandowski (2012). Currently, this kind of views are extremely popular among rural and urban children, which is especially promoted by youth magazines and Internet portals. Among the surveyed group of boys, skin problems did not have such a negative impact on their self-acceptance and perception by the environment. Girls were more sensitive to these factors (Fig. 5).

Of those surveyed, 95% of people knew that occurred in adults. They indicated skin changes on the face, consisting of redness, erythema and the presence of pustules (Fig. 4A). According to respondents, most adults avoided talking about their own skin problems, were nervous but continued the conversation, while some reacted with laughter and jokes about their appearance (Fig. 4B). In hypersensitive people, a cosmetic defects were the cause of frequent absences from work, which on a larger scale exposed both the employer and the patient to serious economic consequences. Patients with low self-esteem often exaggerated the symptoms of their illness, what had serious consequences. Also in recent years, many studies have appeared indicating the existence of a relationship between the condition of the skin and the level of stress experienced by patients. On the one hand, the presence of lesions and the need for their constant treatment is a source of severe stress for many patients. On the other hand, stress itself is a very important factor that exacerbates the course of many dermatological diseases, such as *acne vulgaris* and *acne rosacea* (Devrimci-Ozguven et al., 2000; El-Hamd et al., 2017).

Chronic dermatological diseases adversely affect many aspects of the patient's life (Gupta et al., 2016). There are many reasons, but one of the most important is the negative reaction of the environment, which often results from lack of knowledge about the disease and unjustified fear of infection. This causes a large group of dermatology patients to have a strong sense of stigmatisation. This has a negative impact on learning among children and professional work among adults (Želazny et al., 2004; Tyc-Zdrojewska et al., 2011; El-Hamd et al., 2017). The feeling of stress that accompanies patients with dermatological diseases, the need for long-term, often troublesome treatment and the frequent lack of understanding from those around them result in the development of various mental disorders, most often of a depressive and anxiety nature (Gupta et al., 2016; Polak et al., 2020). Therefore, reducing stress levels, improving mental condition, and, when necessary, implementing appropriate psychiatric treatment, may increase the effectiveness of dermatological treatment of such common diseases as *acne vulgaris* or *rosacea* (Tyc-Zdrojewska et al., 2011). Appropriate health education conducted at school by specialists, not youth media, is equally important in this respect.

Conclusions

This study found a relatively low level of knowledge among the respondents regarding complexion type. However, most of the students were able to correctly indicate and define skin lesions. In the study group, the most common places of acne lesions were: forehead, nose and beard, less frequently the back and chest [1]; Research showed that there was no appropriate and sufficient education on this subject at school, that is why young people were forced to use the most accessible and not always valuable sources, i.e. the media and the press. Knowledge among young people about how to deal with the problem of acne varied and largely depended on the quality of the source of information on this topic [2]; The survey proved that skin lesions on the face, both for girls and boys, were an embarrassing problem. Therefore they tried to cover up these imperfections using known methods, usually the most accessible ones [3]; When talking about skin problems, most respondents felt embarrassed, some reacted with laughter and jokes about their appearance. In relation to their own complexion problems, most of the respondents did not believe that they could please others and they were afraid of other people judging their appearance, but this was not so important in the group of surveyed boys [4]; Most students were aware that acne could affect adults and, like some teenagers, it could make them feel embarrassed and nervous when talking about it [5].

Conflict of interest

The author declare no conflict of interest related to this article.

References

- Adamski, Z., Kaszuba, A. (ed.) (2008). *Dermatologia dla kosmetologów*. Poznań: Wydawnictwo Naukowe Uniwersytetu Medycznego. Poland. [In Polish]
- Arora, M.K., Seth, S., Dayal, S. (2010). The relationship of lipid profile and menstrual cycle with *acne vulgaris*. *Clinical Biochemistry*, 43(18), 1415–1420. <https://doi.org/10.1016/j.clinbiochem.2010.09.010>
- Ballaun, C., Weninger, W., Uthman, A., Weich, H., Tschachler, E. (2000). Human keratinocytes express the three major splice forms of vascular endothelial growth factor. *Journal of Investigative Dermatology*, 104(1), 7–10. <https://doi.org/10.1111/1523-1747.ep12613450>
- Berman, B., Perez, O.A., Zell, D. (2007). Update on rosacea and anti-inflammatory-dose doxycycline. *Drugs Today*, 43(1), 7–10. <https://doi.org/10.1358/dot.2007.43.1.1025697>
- Biegalska, J., Żaba, R. (2004). Trądzik popopulity. *Przewodnik lekarza*, 6, 34–60. [In Polish]
- Bojar, R.A., Holland, K.T. (2004). Acne and *Propionibacterium acnes*. *Clinics in Dermatology*, 22(5), 375–379. <https://doi.org/10.1016/j.clindermatol.2004.03.005>
- Brauchle, M., Funk, J.O., Kind, P., Werner, S. (1996). Ultraviolet B and H₂O₂ are potent inducers of vascular endothelial growth factor expression in cultured keratinocytes. *Journal of Biological Chemistry*, 271(36), 21793–21799. <https://doi.org/10.1074/jbc.271.36.21793>

- Chodkiewicz, J., Salamon, M., Miniszewska, J., Woźniacka, A. (2007). Psychospołeczne aspekty funkcjonowania osób chorych na trądzik różowaty. *Przegląd Lekarski*, 64, 997–1001. [In Polish]
- Culp, B., Scheinfeld, N. (2009). Rosacea: a review. *Pharmacy and Therapeutics*, 34(1), 38–45.
- Czelej, D., Tuszyńska-Bogucka, V. (2004). Wspierająca rola rodziny w terapii przewlekłych chorób dermatologicznych młodzieży. *Annales Universitatis Mariae Curie-Skłodowska, Sectio D*, 59(Suppl. 14), 370–373. [In Polish]
- De Bersaques, J. (1995). Historical notes on (Acne) rosacea. *The European Journal of Dermatology*, 5(1), 16–22.
- Descargues, P., Deraison, C., Prost, C., Fraitag, S., Mazereeuw-Hautier, J., D' Alessio, M., Ishida-Yamamoto, A., Bodemer, C., Zambruno, G., Hovnanian, A. (2006). Corneodesmosomal cadherins are preferential targets of stratum corneum trypsin-ant chymotrypsin-like hyperactivity in Netherton syndrome. *Journal of Investigative Dermatology*, 126(7), 1622–1632. <https://doi.org/10.1038/sj.jid.5700284>
- Devrimci-Ozguven, H., Kundakci, T.N., Kumbasar, H., Boyvat A. (2000). The depression, anxiety, life satisfaction and affective expression levels in psoriasis patients. *Journal of the European Academy of Dermatology and Venereology*, 14(4), 267–271. <https://doi.org/10.1046/j.1468-3083.2000.00085.x>
- Dressler-Carre, M. (2005). *Acne vulgaris and rosacea*. In: Arcangelo V.P. (ed.), *Pharmacotherapeutics for Advanced Practice: A Practical Approach*. Philadelphia: Lipincott Wiliams & Wikins. USA.
- El-Hamd, M.A., Nada, E.E.A., Moustafa, M.A., Mahboob-Allah, R.A. (2017). Prevalence of acne vulgaris and its impact of the quality of life among secondary school-aged adolescents in Sohag Province, Upper Egypt. *Journal of Cosmetic Dermatology*, 16(3), 370–373. <https://doi.org/10.1111/jocd.12328>
- Fernandez- Obregon, A., Patton, D.L. (2007). The role of *Chlamydia pneumoniae* in the etiology of acne rosacea: response to the use of oral azithromycin. *Cutis*, 79(2), 163–167.
- Grønhøj Larsen, F., Jakobsen P., Grønhøj Larsen, C., Heidenheim, M., Held, E., Nielsen-Kudsk, F. (2009). The metabolism and pharmacokinetics of isotretinoin in patients with acne and rosacea are not influenced by ethanol. *British Journal of Dermatology*, 161(3), 664–670. <https://doi.org/10.1111/j.1365-2133.2009.09241.x>
- Gupta, A., Sharma, Y.K., Dash, K.N., Chaudhari N.D., Jethani, S. (2016). Quality of life in *acne vulgaris*: relationship to clinical severity and demographic data. *Indian Journal of Dermatology, Venereology and Leprology*, 82(3), 292–297. <https://doi.org/10.4103/0378-6323.173593>
- Izikson, L., English, J.C., Zirwas, M.J. (2006). The flushing patient: differential diagnosis, workup, and treatment. *Journal of the American Academy of Dermatology*, 55(2), 193–208. <https://doi.org/10.1016/j.jaad.2005.07.057>
- Jaworek, A.K., Wojas-Pelc, A., Pastuszczyk, M. (2008). Czynniki zaostrzające przebieg trądziku różowatego. *Przegląd Lekarski*, 65, 180–183. [In Polish]
- Kaszuba, A., Trznadel-Budźko, E., Czyż, P. (2008). Etiopatogeneza i współczesne metody miejscowego leczenia trądziku pospolitego. *Nowa Klinika*, 15, 304–310. [In Polish]
- Kellett, S.C., Gawkrödger, D.J. (1999). The psychological and emotional impact of acne and the effect of treatment with isotretinoin. *British Journal of Dermatology*, 140(2), 273–282. <https://doi.org/10.1046/j.1365-2133.1999.02662.x>
- Krajewska, K., Krajewska-Kułak, E., Bartoszewicz, A., Jankowiak, B., Rolka, H., Lewko, J., Łukaszuk, C., Heleniak, M. (2003). Wiedza młodzieży szkół średnich w Białymstoku na temat postępowania z trądzikiem. *Dermatologia Kliniczna*, 5(3), 152–153, 2003. [In Polish]
- Landow, K. (2005). Rosacea: the battle goes on. *Comprehensive Therapy*, 31(2), 145–158. <https://doi.org/10.1007/s12019-005-0011-0>
- Leyden, J.J. (2001). The evolving role of *Propionibacterium acnes* in acnes. *Seminars in Cutaneous Medicine and Surgery*, 20(3), 139–143. <https://doi.org/10.1053/sder.2001.28207>

- Marks, R., Dawber, R.P.R. (1971). Skin surface biopsy: an improved technique for examination of the Horny layer. *British Journal of Dermatology*, 84(2), 117–123. <https://doi.org/10.1111/j.1365-2133.1971.tb06853.x>
- Michalak-Stroma, A., Chodorowska, G., Juszkievicz-Borowiec, M., Gerkowicz, A., Bartosińska, J. (2010). Rola *Propionibacterium acnes* (*P. acnes*) w patogenezie trądziku pospolitego. *Nowa Medycyna*, 2, 56–59. [In Polish]
- Nally, J.B., Berson, D.S. (2006). Topical therapies for rosacea. *Journal of Drugs in Dermatology*, 5(1), 23–26.
- Pawin, H., Beylot, C., Chivot, M., Faure, M., Poli, F., Revuz, J., Dréno, B. (2009). Creation of tool to assess adherence to treatments for acne. *Dermatology*, 218(1), 26–32. <https://doi.org/10.1159/000165628>
- Polak, D., Teległów, A., Piotrowska, A. (2020). Wpływ czynników psychologicznych na powstawanie i przebieg wybranych chorób skóry oraz znaczenie zaburzeń dermatologicznych w dobrostanie psychicznym. *Aesthetic Cosmetology and Medicine*, 9(5), 455–460. <https://doi.org/https://doi.org/10.6084/m9.figshare.13151012> [In Polish]
- Rebora, A. (2002). The management of rosacea. *American Journal of Clinical Dermatology*, 3, 489–496. <https://doi.org/10.2165/00128071-200203070-00005>
- Robak, E., Kulczycka, L. (2010). Trądzik różowaty – współczesne poglądy na patomechanizm i terapię. *Postępy Higieny i Medycyny Doświadczalnej (Advances in Hygiene and Experimental Medicine)*, 64, 439–450. [In Polish]
- Rundhaug, J.E. (2005). Matrix metalloproteinases and angiogenesis. *Journal of Cellular and Molecular Medicine*, 9(2), 267–285. <https://doi.org/10.1111/j.1582-4934.2005.tb00355.x>
- Sand, M., Sand, D., Thrandorf, C., Paech, V., Altmeyer, P., Bechara F.G. (2010). Cutaneous lesions of the nose. *Head and face medicine*, 6, 7(2010), <https://doi.org/10.1186/1746-160X-6-7>
- Sidbury, R., Paller, A.S. (2000). The diagnosis and management of acne. *Pediatric Annals*, 29(1), 17–24. <https://doi.org/10.3928/0090-4481-20000101-06>
- Sorsa, T., Lindy, O., Kontinen, Y.T., Suomalainen, K., Ingman, T., Saari, H., Halinen, S., Lee, H.M., Golub, L.M., Hall, J., Simon, S. (1993). Doxycycline in the protection of serum α -1-antitrypsin from human neutrophil collagenase and gelatinase. *Antimicrobial Agents and Chemotherapy*, 37(3), 592–594. <https://doi.org/10.1128/AAC.37.3.592>
- Szepietowski, J., Reicha, A. (ed.) (2009). *Dermatologia – co nowego*. Wrocław: Wyd. Cornetis Sp. z o.o., Poland. [In Polish]
- Trądzik grudkowy – jak go rozpoznać i wyeliminować <https://wizaz.pl/pielęgnacja/trądzik-grudkowy-sprawdź-jak-go-rozpoznać-i-leczyć-364840-r1/> / [Access: 08.11.2022; In Polish]
- Trądzik ropowiczy – jakie są jego przyczyny i sposoby leczenia? <https://e-recepta.net/blog/trądzik-ropowiczy-jakie-sa-jego-przyczyny-i-sposoby-leczenia/> [Access: 07.12.2022; In Polish]
- Trądzik zaskórnikowy – przyczyny, leczenie. Jak pozbyć się zaskórników? <https://www.heydoc.pl/trądzik-zaskornikowy-przyczyny-leczenie-jak-pozbyc-sie-zaskornikow/> [Access: 26.04.2022; In Polish]
- Tyc-Zdrojewska, E., Trznadel-Grodzka, E., Kaszuba, A. (2011). Wpływ przewlekłych chorób skóry na jakość życia pacjentów. *Dermatologia Kliniczna*, 13(3), 155–160. [In Polish]
- Wilczyńska, K., Lewandowski, J. (ed.) (2012). *Kosmetologia i trądzik pospolity*. Niepubliczna Wyższa Szkoła we Wrocławiu. Wrocław: Wyd. Indygo Zahir Media. pp. 155. [In Polish]
- Wolska, H. (2005). Choroby łojotokowe. In: M. Błaszczuk-Kostaniecka, H. Wolska (eds.) *Dermatologia w praktyce*. Warszawa: Wydawnictwo Lekarskie PZWL. Poland. [In Polish]
- Yamasaki, K., Schaubert, J., Coda, A., Lin, H., Dorschner R.A., Schechter, N.M., Bonnart, C., Descargues, P., Hovnanian, A., Gallo, R.L. (2006). Kallikrein-mediated proteolysis regulates the antimicrobial effects of cathelicidins in skin. *Federation of American Societies for Experimental Biology Journal*, 20(12), 2068–2080. <https://doi.org/10.1096/fj.06-6075com>

- Yang, C.S., Shin, D.M., Lee, H.M., Son, J.W., Lee, S.J., Akira, S., Gougerot-Pocidaló, M.A., El-Benna, J., Ichijo, H., Jo, E.K. (2008). ASK1-p38 MAPK-p47phox activation is essential for inflammatory responses during tuberculosis via TLR2-ROS signaling. *Cellular Microbiology*, 10(3), 741–754. <https://doi.org/10.1111/j.1462-5822.2007.01081.x>
- Zouboulis, C.C. (2001). Retinoids – which dermatological indications will benefit in the near future? *Skin Pharmacology and Applied Skin Physiology*, 14(5), 303–315. <https://doi.org/10.1159/000056361>
- Żelazny, I., Nowicki, R., Majkiewicz, M., Samet, A. (2004). Jakość życia w chorobach skóry. *Przewodnik Lekarza/Guide for GPs*, 9, 60–65. [In Polish]



Fig. 1. Selected types of acne: A – comedonica (*acne comedonica*) (Source: <https://www.heydoc.pl/tradzik-zaskornikowy-przyczyny-leczenie-jak-pozbyc-sie-zaskornikow/>), B – papular (*acne papulosa*) (Source: <https://wizaz.pl/pielęgnacja/tradzik-grudkowy-sprawdz-jak-go-rozpoznać-i-leczyć-364840-r1/>), C – pyogenic acne (*acne phlegmonosa*) (Source: <https://e-recepta.net/blog/tradzik-ropowiczy-what-are-its-causes-and-treatment-methods/>), D – infantile (*acne infantilis*) (Source: Public domain), E – rosacea (*acne rosacea*), F – rosacea in *rhinophyma* stage (Source: Sand et al., 2010)

Acne vulgaris and *rosacea* as a cosmetic and psychological problem
– anonymous survey (template)

Sex:

1. DO YOU KNOW WHAT complexion YOU HAVE?

- A) Yes
- B) No

2. IF YES, WRITE WHICH KIND?

3. HAVE YOU NOTICED ANY DISTURBING CHANGES IN YOUR SKIN??

- A) Yes
- B) No

4. THE AGE AT WHEN YOU NOTICED SKIN CHANGES IS:

- A) 10–11 years of age
- B) 12–13 years of age
- C) 14–15 years of age
- D) I can't determine

5. CAN YOU DESCRIBE THE CHANGES YOU NOTICED AS (you can select more than one answer):

- A) comedones
- B) papular eruptions
- C) purulent eruptions
- D) seborrhea
- E) peeling of the epidermis
- F) scars after acne lesions
- G) discoloration
- H) I can't determine

6. THE ABOVE CHANGES ARE LOCATED AT (you can select more than one answer):

- A) the whole face
- B) forehead, nose and beard
- C) neck and chin
- D) chest
- E) back
- F) nape

7. HAVE YOU ASKED FOR (you can select more than one answer):

- A) a cosmetogist for advice?
- B) your doctor for advice?
- C) your parent for advice?
- D) another person for advice?
- E) I didn't address anyone

8. IF YOU HAVE KNOWLEDGE ABOUT ACNE, WRITE WHERE YOU GET IT FROM (you can select more than one answer):

- A) youth magazines
- B) guides for young people
- C) Internet

- D) television
 E) friends/colleagues
 F) other sources (what?)
-
9. WHICH FORM OF ACNE TREATMENT HAVE YOU HEARD ABOUT? (you can select more than one answer):
 A) externally applied drugs
 B) oral antibiotics
 C) hormonal drugs
 D) treatments in a beauty salon
 E) care with cosmetics available in the drugstore
 F) diet
-
10. HAVE YOU USED SOME OF THE METHODS LISTED IN QUESTION NO. 9?
 A) No
 B) Yes (which one? – and how long, how often?)
-
11. ARE THE TROUBLES YOU HAVE WITH COMPLEXION AN EMBARRASSING PROBLEM FOR YOU?
 A) Yes
 B) No
 C) It isn't important to me
-
12. DO YOU USE ANY METHODS TO COVER OR HIDE CHANGES ON YOUR SKIN? (you can select more than one answer):
 A) cosmetic concealer
 B) cosmetic powder
 C) long bangs
 D) hood on the head
 E) head tilted
 F) other ways (what?).....
 G) I don't use any methods
-
13. DUE TO COMPLEXION PROBLEMS, DO YOU THINK YOU ARE UNATTRACTIVE?
 A) Yes
 B) No
 C) I have no opinion
-
14. IF ACNE CHANGES APPEAR ON YOUR FACIAL SKIN BEFORE YOU ARE PLANNED TO GO TO A SOCIAL MEETING, THEN:
 A) you are trying to cover them up using methods known to you
 B) you cancel the meeting and provide another explanation
 C) you don't see a problem with it and go to the meeting
-
15. HOW DO YOU REACT WHEN SOMEONE WANTS TO TALK TO YOU ABOUT YOUR SKIN PROBLEMS?
 A) you avoid conversation
 B) you are nervous and interrupt the conversation
 C) you are embarrassed, but you continue the conversation
 D) you laugh and even joke about your appearance
 E) you resent him for interfering in your problems
-
16. WHAT IS YOUR ATTITUDE TO COMPLEXION PROBLEMS?
 A) you don't believe you can be attractive to others
 B) you are oversensitive about your appearance
 C) you are afraid that your appearance is judged by other people

- D) you are afraid of professional help because it may confirm the seriousness of your problem
- E) you don't accept your appearance, but you don't know how to deal with it
- F) you do not believe that the lesions can be cured
- G) other observations

17. DO YOU THINK THAT PHYSICAL ATTRACTIVENESS IS THE BASIS OF PROFESSIONAL OR SOCIAL SUCCESS?
- A) No
 - B) Yes (Why?)

18. DO YOU THINK THAT SKIN CHANGES ON THE FACE ARE A PROBLEM IN STUDY AND WORK?
- A) Yes
 - B) No
 - C) I have no opinion

19. HAVE YOU KNOWN THAT ACNE OCCURS NOT ONLY IN YOUNG PEOPLE, BUT ALSO IN ADULTS?
- A) Yes
 - B) No

20. CAN YOU DESCRIBE SKIN CHANGES IN ADULTS AS (you can select more than one answer):
- A) facial redness
 - B) erythema
 - C) presence of lumps
 - D) pustules
 - E) I didn't notice

21. HAVE YOU OBSERVED THE ABOVE SYMPTOMS IN YOUR FAMILY OR ADULTS' IMMEDIATE ENVIRONMENT?
- A) Yes (which one?)
 - B) No

22. HAVE YOU NOTICED IN CASE OF ADULTS WHO HAVE VISIBLE COMPLEXION CHANGES, ANY METHODS OF COVERING THE CHANGES ON THE FACE?
- A) cosmetic concealer
 - B) cosmetic powder
 - C) long hair
 - D) head tilted
 - E) they do not use any methods

23. HOW DO ADULTS REACT WHEN SOMEONE WANTS TO TALK TO THEM ABOUT THEIR SKIN PROBLEMS?
- A) they avoid conversation
 - B) they are upset, they interrupt the conversation
 - C) they are nervous and continue the conversation
 - D) they resent being interfered in their affairs

Thank you for filling out the survey honestly!

Trądzik pospolity i różowaty jako problem kosmetyczny oraz psychologiczny

Streszczenie

Niniejsza praca przedstawia wyniki badań ankietowych przeprowadzonych wśród 47 uczniów (18 dziewcząt i 29 chłopców w wieku 13–14 lat) szkół podstawowych z województwa podkarpackiego (Południowa Polska). Celem pracy była samoocena wiedzy młodzieży na temat rodzajów trądziku i form radzenia sobie z tym problemem. Wyniki ankiety pokazały, że zarówno dla dziewcząt, jak i chłopców jest to wstydlivy problem i związku z tym usiłują oni sami zatuszować zmiany skórne znanymi sobie metodami. W trakcie rozmowy o problemach z cerą większość respondentów odczuwa skrępowanie. W stosunku do własnych problemów związanych z cerą, znaczna część ankietowanych nie wierzy, że może podobać się innym oraz odczuwają strach przed oceną swojego wyglądu przez inne osoby. Bardziej wrażliwe na tego rodzaju problemy są dziewczęta. Większość ankietowanych jest świadoma, że trądzik może dotyczyć również osób dorosłych, ale nie zna bliższych szczegółów na ten temat.

Słowa kluczowe: trądzik, edukacja zdrowotna, problemy skórne, badania ankietowe

Information on the author

Grażyna Sroka

She graduated from cosmetology studies at the University of Józef Dietl in Kraków (Poland).