

Evaluation of knowledge about acne vulgaris among a selected population of adolescents of Tricity schools

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Abstract

Introduction: It is estimated that approximately 80% of adolescents have different forms of acne vulgaris. Due to the high prevalence of the disease and its psycho-emotional impact on the quality of life, it is important to prevent the spread of misconceptions.

Aim: To analyze the basic knowledge and misconceptions concerning acne vulgaris among adolescents.

Material and methods: The study included 900 adolescents aged 15-19 years (mean age: 17.47 years), 401 females, 493 males attending high schools ($n = 481$) or technical colleges ($n = 419$). The study was based on a direct anonymous questionnaire that consisted of fourteen multiple choice questions.

Results: On average, 50.3% of questions were answered correctly. 57.8% of participants stated that they had suffered from acne. As regards the causes, more than half (59.5%) of participants stated that acne is connected to eating and hygiene habits. 40.5% of students considered acne infectious. The study revealed that many "false beliefs" exist. 26.4% of adolescents believe that starting sexual activity can influence healing. Considering the effectiveness of curing acne in adolescence, 24.2% of participants do not see a point in early treatment. Regarding the sources of knowledge about acne, most adolescents use the internet, teenage newspapers and friends' opinions. Only 41.2% want to learn more, and almost 90% consider their knowledge sufficient.

Conclusions: The results from a large population-based study indicate that the knowledge about acne is insufficient, which reveals the need for introducing educational programs in schools.

Key words: acne vulgaris, knowledge, treatment.

Introduction

Acne vulgaris is a very common skin disease with a multifactor etiology, which is characterized by comedones, papules, pustules, nodules, and in the most severe cases scars. It affects people of all racial and ethnic groups, although there are some differences in the percentage of adolescents affected. People with acne report higher rates of depressive symptoms, anxiety, suicidal thoughts and even suicidal attempts [1]. That leads to the conclusion that acne vulgaris is no longer a mere skin disorder, but needs to be reconsidered once more with proper attention.

Aim

The objective of the study was to analyze the basic knowledge, facts and myths concerning acne vulgaris

among adolescents between 15 and 19 years old attending high schools and technical colleges in the Tricity (an urban area consisting of three Polish cities: Gdansk, Sopot and Gdynia). We also wanted to know whether there is any significant variation between different schools or by gender, and whether respondents are affected by acne.

Material and methods

The study was conducted from January until March 2011. We selected 900 adolescents, from 12 randomly selected Tricity schools (via draw), aged 15-19 years (mean age: 17.47 \pm 1.04 years). The group included 401 females and 493 males. Adolescents were recruited from high schools ($n = 481$) and from technical colleges ($n = 419$).

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With the use of many available sources (books, films, internet and popular magazines), we created a direct, anonymous questionnaire that consisted of 14 multiple choice questions, based on evidence-based medicine and popular “myths” that we found in common sources. The majority of these questions (9) concerned the adolescents’ basic knowledge about the disease (out of 4 possible answers only one was correct). The remaining 5 questions were related to their opinions on the disease (they had to choose one out of 4 answers which most suited their opinions and knowledge).

Statistical analysis

Statistical analysis was performed using Statistica version 9.0. The comparisons between selected groups of adolescents were made by statistically analyzing the medians of the correct answers. Comparisons with respect to gender, suffering from acne or not and school type were performed by using Mann-Whitney U and χ^2 tests. Results of the dependent variables were expressed as mean values \pm standard deviation, with a value of p of < 0.05 being considered significant.

Results

Five hundred and twenty-one (57.78%) respondents stated that they suffered or are still suffering from acne. There were some differences in acne prevalence between males and females. 61.35% of boys and 53.37% of girls declared that they suffered from acne.

Eight hundred students (89.19%) stated that their knowledge about acne was at least sufficient. Only 97 (10.81%) of them think that their level of knowledge is insufficient.

The average percentage of correct answers (based on 9 general acne knowledge questions) for the entire group of adolescents was 50.31% (SD = 0.158). There were some differences according to gender, school type and acne status: females, high school students, and those who suffered from acne obtained higher scores, proving to be more knowledgeable (Figure 1). We assessed these differences statistically. Using the median of correct answers and run-

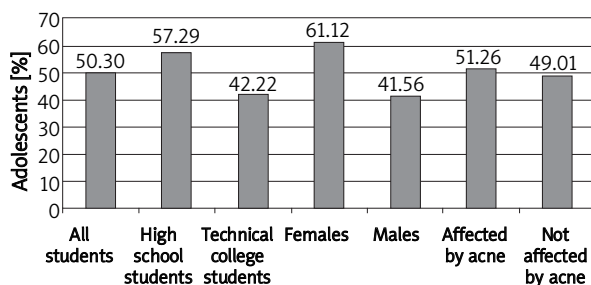


Figure 1. The average percentage of correct questionnaire answers in a group of 900 respondents and some distinguished subgroups

ning Mann-Whitney U and χ^2 test we demonstrated statistically significant differences (at $p < 0.05$) according to school type (Mann-Whitney U $p = 0.00001$, χ^2 test $p = 0.0001$) and gender (Mann-Whitney U $p = 0.01$, χ^2 test $p = 0.001$). There were no statistically significant differences according to acne status (Mann-Whitney U $p = 0.32$, χ^2 test $p = 0.614$).

Five hundred and forty-nine (61.48%) adolescents believe that acne affects less than 40% of the teenage population. Six hundred and eighty-eight (77.22%) students believe that acne can affect the face, arms, upper part of the chest and the back. One hundred and eighty-one (20.31%) believe that acne is limited to the face. Eleven other students (1.23%) stated that it can appear only on the arms and the remaining 11 (1.23%) stated that it is exclusively a disease that appears on the upper part of the chest and the back.

Five hundred and fifteen (59.26%) adolescents believe that acne vulgaris is a disease that appears only during adolescence. Three hundred and fifty-nine (40.07%) assume that the disease can occur in any period of life. Only 8 (0.89%) and 14 (1.56%) students connect the onset of acne respectively with the neonatal/infant period and adulthood.

When it comes to the main causes of the disease most adolescents point to bacterial infection (359; 40.52%), insufficient hygiene (229; 25.85%), fatty diet (183; 20.65%) and chocolate (115; 12.98%). Five hundred and four (56.44%) adolescents think that the treatment of acne is not easy, and often dermatological consultation is needed.

Two hundred and sixty-one (30.38%) students believe that every oral contraceptive is effective in treating acne. Two hundred and thirty-five (26.4%) respondents believe that starting sexual activity will heal acne. Two hundred and sixteen (24.19%) believe that treatment makes no sense in adolescence, because acne is a normal condition that will end with puberty. One hundred and fourteen (12.77%) think that maintaining proper hygiene will improve acne. Fifty-nine (6.61%) adolescents believe in efficacy of homemade methods. Twenty-seven (3.03%) others stated that intensive physical exercises are effective in improving acne.

Six hundred and four (67.49%) adolescents know that “squeezing” is not recommended, because it can aggravate the spread of the bacteria. One hundred and seventeen (13.07%) of them think that they can do it themselves and 78 others (8.72%) think that they can do it at the beauty parlor. The remaining 96 (10.73%) think that squeezing is not recommended because after such intervention the lesions will no heal.

Six hundred and twenty-nine (69.97%) stated that the first person they would visit to deal with acne is a dermatologist. For 123 (13.68%) adolescents it is their general practitioner (GP). Another 100 (11.27%) with such problems would visit beauticians and the remaining 47 (5.23%) would ask their pharmacist.

There are a few sources of acne knowledge among the analyzed population. Three hundred and ninety-se-

ven (45.27%) students have taken their knowledge about acne from the internet, 236 (26.91%) from friends, and 85 (9.69%) from newspapers. Only 159 (18.13%) adolescents obtained their knowledge from consultation with doctors.

The majority of students (528; 58.80%) are not very willing to extend their knowledge about acne. In this group 144 (16.04%) are definitely not interested in it. The remaining 370 (41.20%) of them would be inclined to do it.

Discussion

The problem of acne is not only visual, as many people think, but it can also trigger many psychological disturbances, which might even have fatal outcomes [1, 2]. This common disease affects more than 90% of males and 80% of females [3] and it is also a skin disorder with a huge impact on the quality of life [4]. That is why the level of knowledge and spread of myths about acne seem to be of crucial importance.

Acne prevalence in a self-report study group of 900 adolescents was 57.78% (61.46% of boys and 53.37% of girls in this representative sample of 15-20 year-olds). These results were subjective due to the self-assessment of acne status.

Various studies have analyzed the level of knowledge and spread of myths among adolescents, students, doctors or other professional healthcare practitioners. The most common myths and misconceptions were usually connected with etiology of acne and its treatment [5, 6].

Our study shows that adolescents feel comfortable with their knowledge about acne, as almost 90% believe that their knowledge is at least "sufficient".

Nevertheless, the study confirms that knowledge about acne is insufficient among Polish adolescents. In our study, almost 60% of adolescents associate acne vulgaris with food habits (fatty food or chocolate) or insufficient hygiene. Although there are some reports about the role of diet in acne management, none of these factors is the main cause of the disease [7]. Some studies have revealed a positive correlation between acne and milk [8, 9], but until now other studies that correlate diet and acne have failed. These discrepancies might be connected with the fact that the majority of studies did not incorporate adequate controls, objective measures, and appropriate statistical analyses [10].

In our study more than a quarter of adolescents believe that the main factor of acne is a lack of hygiene. There is no evidence that frequent face washing improves acne status, or that a lack of hygiene may exacerbate the disease [11]. Some authors use the term "acne detergenticans", meaning acne lesions provoked by certain soaps and shampoos [12, 13]. It is proved that cleaning the face obsessively can aggravate the disease and will not cure acne [12].

The most common false belief concerning acne treatment is that every oral contraceptive is effective in acne

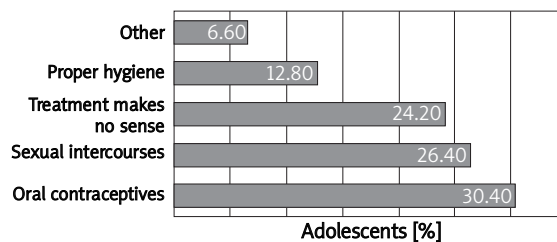


Figure 2. The most common false beliefs about the treatment of acne vulgaris in a group of 900 adolescents

treatment (Figure 2). We would like to mention here that only 3 of them (norgestimate ethinyl estradiol, norethindone ethinyl estradiol and drospiridone ethinyl estradiol) have been approved by the FDA in acne treatment [14]. Progestogen-only contraceptives often worsen acne and should be avoided [15]. Also combined contraceptive pills containing norethisterone or levonorgestrel can be less effective [14] or may even aggravate acne [16].

Another common belief is that starting sexual activity will help to cure acne, which might encourage early sexual initiation or even risky sexual behaviors among young people. A lot of reviews show that adolescents nowadays are more conscious about HIV/AIDS, but there is a low level of knowledge and consciousness about other sexually transmitted diseases [17].

There are no available control studies on efficacy of other widespread "methods of effective treatment" such as drinking chamomile, putting toothpaste on pimples or intensive exercise.

Interestingly, a significant percentage of adolescents believes that acne vulgaris is not a disease, that can be cured, but a normal condition affecting adolescents.

According to our study, the majority (almost 70%) of adolescents declared that the first person they would visit in case of having acne is a dermatologist. Interestingly only 18% gained their knowledge about acne from doctors' consultation, which might be connected with troublesome access to dermatology consultation in Poland. According to our study, the majority of adolescents have taken their knowledge about acne from the internet – the most popular source of information nowadays.

To sum up, our study highlights the high prevalence of inappropriate and insufficient knowledge about acne vulgaris among adolescents in Poland. Misconceptions concerning especially causes and methods of treatment may result in a prolonged period of therapy, thus increasing the risk of post-acne scarring, with a marked psychological impact. These behaviors may lead to inadequate help-seeking and poor patient outcomes.

Doctors should remain cautious and try to familiarize patients with all proven information, trying to explain all misunderstandings connected with acne. Educational programs to improve knowledge about this common skin disease are essential.

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