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ORIGINAL ARTICLE

Knowledge and perceptions of acne among adolescents

Suzane Pasqual[1], Thais dos Santos Rohde[1], Luísa Polo Silveira[1], Mariana Canato[1], Mariana Aparecida Pasa Morgan[1], Vânia Oliveira de Carvalho[1]

Keywords:
Acne vulgaris, Adolescent behavior, Knowledge.

Abstract

Objective: To assess the knowledge and the perceptions of acne among adolescents. **Methods:** Cross-sectional study, carried out from May 2018 to May 2019. Data were collected through a questi-onnaire administered to students aged 13 to 20 years enrolled in two schools, with 793 participants (462 from a public school and 331 from a private school). Data were evaluated by Pearsons chi-square test, Yates test and Students *t* tests. **Results:** The mean age was 15.02±1.25 years in the private school, and 16.21±1.45 years (p=0.07) in the public school. In the private school, 75.8% of adolescents had acne, against 79.6% from the public (p=0.08). In the private school, 54.7% consulted a doctor due to acne, against 45.8% in the public school (p<0.0001). More public-school students did not think it was necessary to see a doctor for acne than in the private school (67.8% *vs* 32.2% - p<0.0001). More public-school students responded that mites cause acne. The perception that hormonal contraceptives worsened acne was present in 42% of the students from the public school and in 28.4% from the private (p<0.001). **Conclusions:** Adolescents had incorrect perceptions about acne, especially those from public schools, who also had less access to medical care.

[1] Hospital de Clínicas - Universidade Federal do Paraná, Departamento de Pediatria - Curitiba - Paraná - Brasil.

Correspondence to:
Vânia Oliveira de Carvalho.
Hospital de Clínicas da Universidade Federal do Paraná. Rua Gen. Carneiro, nº 181, Alto da Glória, Curitiba, PR, Brasil. CEP: 80060-900. E-mail: rcarvalho50@hotmail.com

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INTRODUCTION

Acne is a common inflammatory skin disease with a negative impact on quality of life, causing stress, anxiety, and difficulties in interpersonal relationships and social activities[1-3]. Adolescents believe that acne is not a treatable disease, which makes it difficult for them to seek medical care[4].

It was also demonstrated that adolescents did not know acne triggering factors and treatment, and commonly relied on home remedies[5,6]. Improvements on their knowledge concerning acne could dispel myths and increase adherence to treatment.

A Serbian study based on questionnaires with a total of 1452 adolescents found that the factors believed to aggravate acne included infrequent face washing, consumption of sweets and emotional stress. Comedone extraction, sun exposure and water consumption were considered improvement factors[7].

Few authors have assessed the beliefs of adolescents regarding acne[8,9], the factors that worsen the condition and treatments without prescription[10,11]. The objective of this study was to assess the perceptions and knowledge of acne among adolescents.

METHOD

A cross-sectional and analytical study was performed, with prospective data collection, carried out between May 2018 and May 2019. A structured questionnaire was administered to students aged 13 to 20 years, enrolled in the high school of two schools (public and private) of a Brazilian city. The study was approved by the Institution's Research Ethics Committee and by the directors of the two schools.

The questionnaires were elaborated by the researchers and included open and closed-ended questions on the topic of acne. The issues addressed were previous or current diagnosis of acne, presence of lesions, self reported severity, opinion on the cause of the disease, duration of the disease, treatment, duration of treatment, influence of acne on quality of life, opinion on triggers of acne, improvement factors and medical consultations due to acne (table 1).

The questionnaires were administered to 793 adolescents (462 in a public school and 331 in a private school), recorded in the data collection instrument, typed in an electronic spreadsheet (Microsoft Excel®), checked and exported for statistical analysis (JMP10®). The data were presented as means, standard deviation and coefficient of variation and percentages and subsequently correlated. The Chi-square test with Yates' correction, the Pearson's chi-square test and the Student's t-test were used in the analysis. The level of significance was set at 5%.

RESULTS

Of the 793 adolescents evaluated, 58.0% (460) were female. In the private school, 53.2% (176) of the students were female, and in the public school 61.4% (284) (p=0.01). The mean age was 15.02±1.25 years in the private school, and 16.21±1.45 years (p=0.07) in the public school.

Among the participants, 94.0% (745) had had acne at some point in their lives and 79.2% reported having acne at the time of the interview. In the private school, 75.8% (261) of the students reported that they had acne at the time of the interview, against 79.6% (368) in the public school (p=0.08).

Parents were the main source of information on the disease for 46.2% (366) of the adolescents, 180 (54.4%) from the private school and 186 (40.3%) from the public school (p=0.0001). The doctor was the second most mentioned source of information (23%) and was more frequent in the private school. The esthetician was also a frequent source of information in the private school. The other sources of information are shown in Table 1.

Seventy-four percent (588) of the adolescents believed that hormonal problems cause acne. In the public school, 76.2% of the adolescents believed this information, and 71.3% of the adolescents in the private school (p=0.12). Almost 35% of the students responded that mites cause acne. In the public school, the frequency of positive responses to this question was substantially higher than in the private school (p<0.0001). Acne was associated with poor hygiene for 22.8% of the total number of adolescents, with a higher frequency in the private school (p=0.05). The rest of the perceptions on the causes of acne are shown in Table 2.

Eighty-one percent of participants responded they were bothered by acne. The comparison between schools showed that 84% of private school students felt uncomfortable against 77.9% of public-school students (p<0.001).

Regarding doctor consultations, 49.9% of the adolescents had seen a doctor because of acne, of which 54.7% were in the private school and 45.8% were in the public school (p<0.0001). Among the participants, 41.2% did not consider it necessary to consult a doctor, of which 67.8% were in the public school and 32.2% were in the private school (p<0.0001).

As for the treatment of acne, 53.2% used creams, 68.9% used soap and 16.6% used some systemic medication. In the public school, 70% of students used soap, 43% used topical medication and 15% used oral medication. In the private school, 68% reported using soap (p=0.6), 67.4% used topical medication (p<0.0001) and 18.4% used oral medication (p=0.2). Thirty-one percent of public-school students responded that they had already used home remedies, against 26.2% of students in the private school (p=0.1).

More than 90% of the adolescents, considered as factors that aggravate acne: eating high-fat food, not washing the face, hormonal changes, picking at acne lesions, eating chocolate and heat and humidity. The other factors are shown in Table 2.

The percentage of responses on factors that aggravate acne differed between public and private schools for the following factors: use of makeup, environmental pollution,

Table 1. Transcription of the questions of the instrument used in the study.

Part 1: Participants' information		
Gender age in years:	- ( ) Male/ ( ) Female / Age_____	
Have you ever had acne?	- Yes, I have it now and it is mild ( ) moderate ( ) severe ( ) - Yes, I've had it before and it was mild ( ) moderate ( ) severe ( ) - No, I've never had it	
Part 2: Knowledge of acne		
Where did you acquire most of your knowledge of acne?	- Parents/ School / Esthetician / My doctor / Friends /Educational campaigns/ I have never heard anything about acne	
For you, acne is:	- A disease that must be treated/ A phase of adolescence that improves on its own and does not need to be treated	
In your opinion, what causes acne? *	- You have it because your parents had it/ It is caused by poor hygiene/ It is a phase of adolescence/ Caused by an infection/ Caused by hormonal problems/ It is caused by mites	
Who has more acne?	- Girls / Boys / It's equal for both	
Assess the factors and indicate whether they worsen, improve, or not interfere with acne.	- Excessive weight/ Consumption of soft drinks/ Heat and humidity/ High-fat foods/ Wearing makeup/ Menstrual period/ Wearing caps / Picking at acne lesions/ Using birth control/ Sugary foods	- Pollution/Smoking /Not washing the face/ Washing the face several times a day/ Hormonal changes/ Sun exposure/ Using marijuana/ Drinking alcohol/ Emotional stress
Part 3: Personal questions about living with acne		
How much does acne affect your life?	- It does not bother me / It bothers me a little bit /It somewhat bothers me / It bothers me a lot	
Have you ever seen a doctor because of acne?	- Yes / No	
If not, what are the reasons?	- My parents didn't think it was necessary/ It is a disease that improves on its own/ I didn't find it necessary/ I'm afraid/ I have never talked to my parents about it	
If you have already treated acne, what was it?*	- Cream or ointment /Soap/ Oral medication (taken by mouth) - I pop the pimples/ My parents pop my pimples	
Have you used any home remedies for acne?	- Yes/ No/ If so, which one?	

* Question with the possibility of selecting more than one alternative.

Table 2. Sources of knowledge and perceptions of acne reported by adolescents.

Source of knowledge	Total 793 % (n*)	S. Pa† 331 % (n)	S. Pu‡ 462 % (n)	*p*
Family	46.2 (366)	54.4 (180)	40.3 (186)	<0.001
Doctor	23 (180)	29.3 (97)	17.9 (83)	<0.001
School	17.6 (140)	19.6 (65)	16.2 (75)	0.2
Friends	16.3 (130)	13.9 (46)	18.8 (84)	0.1
Campaigns	11.2 (89)	3.3 (11)	16.8 (78)	<0.001
Esthetician	8 (63)	10.6 (35)	6.6 (28)	0.02
Never heard of it	5.4 (40)	1.5 (5)	7.5 (35)	0.001
Perceptions				
Hormonal changes	74.1 (588)	71.3 (236)	76.1 (352)	0.12
Phase of adolescence	67.5 (535)	76.7 (254)	60.8 (281)	<0.001
Mites	34.9 (277)	13.2 (44)	50.4 (233)	<0.001
Lack of hygiene	22.8 (181)	26.3 (87)	20.4 (94)	0.05
Infection	16.5 (131)	15.6 (52)	17.1 (79)	0.6
Genetic inheritance	13.6 (105)	16.7 (55)	10.8 (50)	0.01
Worsening Factors				
High-fat foods	97.8	97.9	97.8	0.67
Not washing the face	95.2	94.6	95.8	0.71
Hormonal changes	94.4	94.2	94.6	0.21
Picking at acne lesions	92.0	91.2	92.9	0.46
Chocolate	91.1	91.1	91.2	0.42
Sugary foods	88.9	89.7	88.1	0.77
Heat and humidity	76.9	75.9	78.0	0.78
Emotional stress	88.8	88.2	98.4	0.86
Using anabolics	74.7	73.1	76.3	0.56
Excessive weight	70.6	72.1	69.2	0.41
Smoking	50.2	51.5	48.9	0.77
Drinking alcohol	41.9	39.3	44.5	0.11

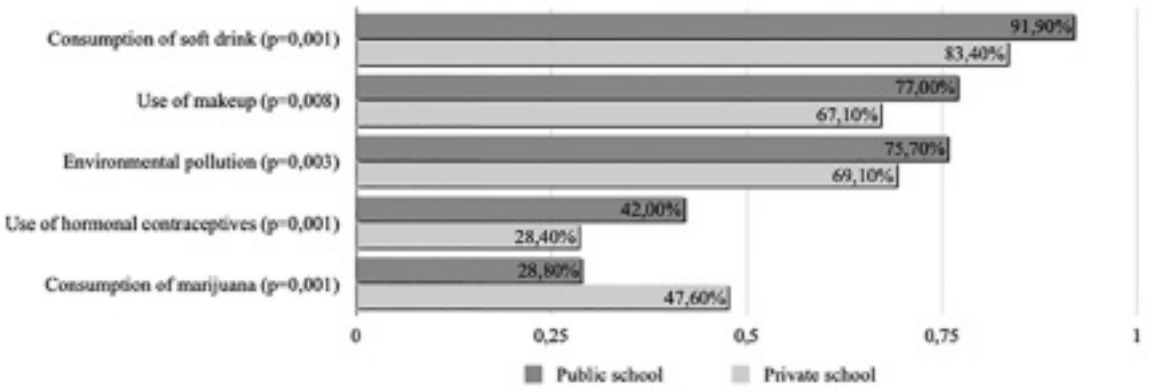
* n = absolute number of adolescents.
† S. Pa - Private School.
‡ S. Pu - Public School.

use of hormonal contraceptives and consumption of marijuana (Graphic 1). According to the private schools for the following factors: use of makeup, environmental pollution, use of hormonal hormonal contraceptives and consumption of marijuana (Graphic 1). According to the responses of the adolescents, the factors that improved acne were washing their faces several times a day, physical exercise, and use of hormonal contraceptives (Graphic 2).

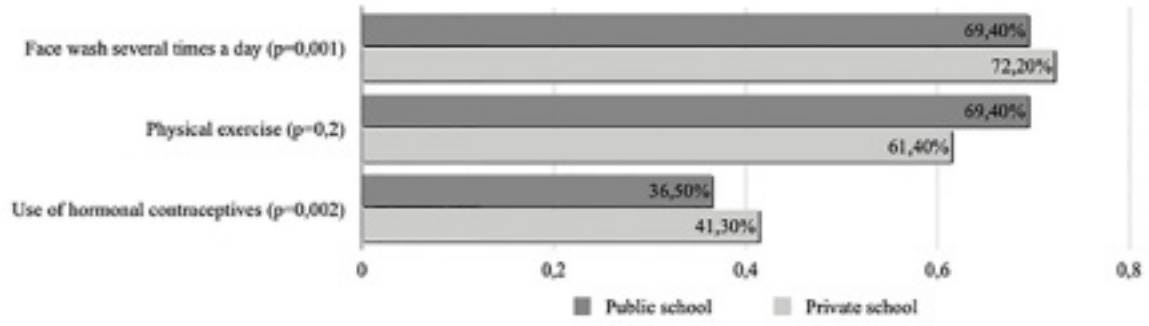
Seventy-one percent (563) of the interviewees considered that the questionnaire was easy to answer.

DISCUSSION

Even though 80% of the participants reported being bothered by the disease, only 49.9% had seen a doctor because of acne. This percentage was higher in the private school than in the public school. This was similar in the study by Solórzano et al. (2005)[8], in which 74% of respondents did not consult a doctor for acne, perhaps due to the belief that it is not a treatable disease. A study carried out with 329 young people between 13 and 22 years old in Saudi Arabia demonstrated that most adolescents do not believe that acne requires treatment[4], The authors believe that this population needs better guidance on the subject. In the present study, the comparison between schools showed that most adolescents in the public school (67.8%) did not consider it necessary to consult a doctor due to acne, while the minority had this opinion in the private school (32.2%). Therefore, it is necessary to provide guidance on acne to adolescents, especially to those with lower socioeconomic conditions.



Graphic 1. Acne worsening factors reported by adolescent.



Graphic 2. Acne improving factors reported by adolescent.

The present study and other studies that assessed adolescents' beliefs about acne showed that many young people do not see a doctor for acne and that they often do not have reliable sources of information about the subject[8-14]. These data may be related to the fact that they do not consider acne as a disease, but rather as a normal phase of adolescence.

The question on sources of information showed that the adolescents in this study did not have a health professional as their main source of information, which would have been a reliable source. Instead, 46.2% of the total responses indicated parents as the main source of information. A significantly higher number of students from the private school received information from doctors in comparison to public school. Only 11.2% of the total number of students were informed about acne in campaigns, which demonstrates the scarcity of this type of action in schools. A higher percentage of adolescents in public schools had never heard of the disease. It is possible that public school students have less access to adequate information about acne and to health professionals. In interviews about acne, 58% of adolescents considered that the information received from previous sources was inadequate[15], which means that, in addition to the scarcity of information on the topic nationally, there is a worldwide need for higher quality content.

Consultation with a health care professional is important to clarify doubts and dispel myths that can often be disseminated in digital media. A survey with 130 teenagers showed that 45% of them obtained information about acne on social media, mainly YouTube and Instagram[10], as demonstrated by Raznatovic Durovic et al in their study with 500 adolescents, 70.2% of whom used the internet as a source of information[16]. The authors suggest that doctors ask patients about their search for content on the internet and advise them on myths and behaviors with no scientific evidence that interfere with adherence to appropriate treatment[10].

One of the factors that contribute to the occurrence of acne are hormonal changes, such as increased levels of androgens, which may be associated with polycystic ovary syndrome[15]. Another factor is genetic influence with a positive family history of acne[17]. In the emotional sphere, stress is also associated to increased acne severity[18]. More than 70% of participants recognized that hormonal factors influence the occurrence of acne. However, there were some misperceptions about acne, such as the fact that more than half of public-school students considered mites as the cause of the disease. Approximately 17% of the participants responded that acne is caused by some infection, and only 13.6% said that it is associated with genetic inheritance. In a survey with 852 adolescents, 23% considered acne as an infectious disease, showing that many young people do not have adequate knowledge of the influence of infections on acne[19]. Around 50% of the patients assessed by Solórzano Gutierrez et al.

(2005)[8] did not know the causes of acne, demonstrating lack of knowledge of the subject.

Most students from both public and private schools agreed on consumption of soft drink, use of makeup and environmental pollution as worsening factors for acne, as well as physical exercise as an improving factor. However, a divergence was observed on the consumption of marijuana: while 47,6% of students from private school affirmed it exacerbates acne, only 28,8% from public schools assumed it. The topic on use of hormonal contraceptives also provoked some confusion: almost half of students from public schools believed it could aggravate acne against 28% from private school. In addition, more than half of the students in both schools attested that washing the face several times a day could improve acne, the same was observed in a study performed by Al Natour[4]. In terms of food, more than 90% of adolescents considered fatty foods as an aggravating factor for acne. Although the place of diet in the etiopathogenesis of acne is controversial, Öner and Hacinecipoglu addressed an important issue in their study: some patients avoid foods that they believe increase their acne and, as a result, eating disorders can develop. As eating disorders are more common in adolescence and have high biopsychosocial morbidity, it is important to recognize them[20].

As demonstrated above, the present study revealed unfounded beliefs regarding the factors that worsen or improve acne among adolescents. A relevant possible cause for such confusion might be the internet and social media playing a role as source of information, which may be classified as non-reliable due to the enormous amount of information from different and unknown origins. These are misconceptions that could be corrected with public health programs, advertising campaigns on the topic, and medical consultations.

Regarding the treatment of the disease, behaviors that can worsen acne were revealed. For example, one third of the students used home remedies.

One of the limitations of the study was that it was based on a questionnaire, and answers may not be reliable due to fear or shame. However, the study allowed the collection of important information, such as beliefs and misconceptions about acne and the low search for health care professionals. This is an alarming fact that indicates the need to implement public policies allowing access to correct information and consultations with qualified professionals that can provide appropriate treatment, avoiding esthetic and emotional consequences for this population.

Acne was frequent, and many adolescents had misperceptions about the disease. There are some differences in the knowledge of the topic between students from public and private schools, which may be associated with the lower demand for qualified professionals to monitor and treat acne. Due to the negative repercussions of the disease, it is important to emphasize the need to implement health and education policies.

REFERENCES

1. Bagatin E, Timpano DL, Guadanhim LR, Nogueira VMA, Terzian LR, Steiner D, et al. Acne vulgaris: Prevalence and clinical forms in adolescents from São Paulo, Brazil. An Bras Der-matol. 2014;89(3):428-35.
2. Thappa DM, Adityan B, Kumari R. Scoring systems in acne vulgaris. Indian J Dermatol. 2009;75(3):323-6.
3. Tasoula E, Gregoriou S, Chalikias J, Lazarou D, Danopoulou I, Katsambas A, et al. The im-pact of acne vulgaris on quality of life and Psychic health in young adolescents in Greece. Results of a population survey. An Bras Dermatol. 2012;87(6):862-9.
4. Al Natour S. Acne vulgaris: Perceptions and beliefs of Saudi adolescent males. J Family Co-munity Med. 2017;24(1):34-43.
5. Zaghloul SS, Cunliffe WJ, Goodfield MJD. Objective assessment of compliance with treat-ments in acne. Br J Dermatol. 2005;152(5):1015-21.
6. Semivimli Dickicier B. Topical treatment of acne vulgaris: efficiency, side effects, and ad-herence rate. J Int Med Res. 2019;47(7):2987-92.
7. Markovic M, Soldatovic I, Bjekic M, Sipetic-Grujicic S. Adolescents' self--perceived acne-related beliefs: from myth to science. An Bras Dermatol. 2019;94(6):684-90.
8. Solórzano Gutierrez S, Contreras G, Perez Del Arca C. Aspectos epidemiológicos y percep-ciones del acné vulgar en escolares de secundaria del Cono Sur de Lima-Perú. Folia Dermatol Peru. 2005;16(3):113-8.
9. Tan JKL, Vasey K, Fung KY. Beliefs and perceptions of patients with acne. J Am Acad Der-matol. 2001;44(3):439-45.
10. Yousaf A, Hagen R, Delaney E, Davis S, Zinn Z. The influence of social media on acne treatment: a cross-sectional survey. Pediatr Dermatol. 2020;37(2):301-4.
11. Smithard A, Glazebrook C, Williams HC. Acne prevalence, knowledge about acne and psychlogical morbidity in mid-adolescence: a community-based study. Br J Dermatol. 2001;145(2):274-9.
12. Brajac I, Bilić-Zulle L, Tkalčić M, Lončarek K, Gruber F. Acne vulgaris: myths and miscon-ceptions among patients and family physicians. Patient Educ Couns. 2004;54(1):21-5.
13. Albahlool AM, Alshotairy HA, Abdulrahman R, Abdullah A, Fouad Mogharbel B, Malky AM, et al. Assessment of knowledge, attitude and practice toward acne vulgaris among com-munity in Jeddah City. Egyptian J Hosp Med. 2016;66:193-7.
14. McEvoy B, Nydegger R, Williams G. Factors related to patient compliance in the treatment of acne vulgaris. Int J Dermatol. 2003;42(4):274-80.
15. Yarak S, Brasil Parada MOA, Bagatin E, Talarico Filho S, Hassun KM. Hyperandrogenism and skin: Polycystic ovary syndrome and peripheral insulin resistance. An Bras Dermatol. 2005;80(4):395-410.
16. Raznatovic Durovic M, Jankovic J, Durovic M, Spiric J, Jankovic S. Adolescents' beliefs and perceptions of acne vulgaris: A cross-sectional study in Montenegrin schoolchildren. PLoS One. 2021;16(6):e0253421.
17. Karadag AS, Balta I, Saricaoglu H, Kiliç S, Kelekçi KH, Yildirim M, et al. The effect of personal, familial, and environmental characteristics on acne vulgaris: a prospective, multicenter, case controlled study. G Ital Dermatol Venereol. 2019;154(2):177-85.
18. Zari S, Alrahmani D. The association between stress and acne among female medical stu-dents in Jeddah, Saudi Arabia. Clin Cosmet Investig Dermatol. 2017;10:503-6.
19. Poli F, Auffret N, Beylot C, Chivot M, Faure M, Moyse D, et al. Acne as seen by adoles-cents: Results of questionnaire study in 852 French individuals. Acta Dermatol Venereol. 2011;91(5):531-6.
20. Öner Ü, Hacınecipoglu F. Could acne be a risk factor for developing eating disorders? Acne vulgaris and eating disorders. J Cosmet Dermatol. 2021;21(5):2176-82.