NIEWINNA, Patrycja, KOŁODZIEJ, Klaudia, ŻUCHOWSKI, Michał, MAŃDZIUK, Dominika, ZARODA, Przemysław, DĄDA, Paweł, PAWLIK, Paweł, KOŁODZIEJ, Wojciech, WAWRZKOWICZ, Jakub and KORGA, Monika. Acne during Covid-19-The effect of pandemic and quarantine on skin care of patients with acne. Quality in Sport. 2024;15:51982. eISSN 2450-3118.
https://dx.doi.org/10.12775/QS.2024.15.51982
https://apcz.umk.pl/QS/article/view/51982

The journal has had 20 points in Ministry of Higher Education and Science of Poland parametric evaluation. Annex to the announcement of the Minister of Higher Education and Science of 05.01.2024. No. 32553.
Has a Journal's Unique Identifier: 201398. Scientific disciplines assigned: Economics and finance (Field of social sciences); Management and Quality Sciences (Field of social sciences).
Punkty Ministerialne z 2019 - aktualny rok 20 punktów. Załącznik do komunikatu Ministra Szkolnictwa Wyższego i Nauki z dnia 05.01.2024 r. Lp. 32553. Posiada Unikatowy Identyfikator Czasopisma: 201398.
Przypisane dyscypliny naukowe: Ekonomia i finanse (Dziedzina nauk społecznych); Nauki o zarządzaniu i jakości (Dziedzina nauk społecznych).

The authors declare that there is no conflict of interests regarding the publication of this paper.
Received: 01.06.2024. Revised: 20.06.2024. Accepted: 01.07.2024. Published: 05.07.2024.

Acne during Covid-19-The effect of pandemic and quarantine on skin care of patients with acne

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ABSTRACT

Introduction: Acne is a chronic inflammatory disease of the pilosebaceous unit resulting from androgen-induced increased sebum production, altered keratinisation, inflammation, on the face, neck, chest and back.[1] During the COVID-19 pandemic, many patients with acne complained of worsening symptoms. This investigation was designed to survey the impact of COVID-19 regulations on acne and guide patients with acne on symptom management during the pandemic.[2]

Aim of the study: The study aimed to investigate whether the problem of acne increased during the pandemic.Has the pandemic affected the level of people's awareness of acne and skin care?Did wearing masks affect the condition of the skin?

Methods and Materials: Research was conducted on a group of 484 people (female – 97%, male – 3%).The study group included patients who suffered from acne before the pandemic and patients who developed it during the pandemic (from March 2020).

Results: The conducted research confirms that the restrictions introduced during the COVID-19 pandemic (face masks) had a significant impact on the skin condition of patients with acne and their care habits. Patients' interest in the subject of acne and involvement in the treatment has increased significantly - that is a positive trend.

Conclusion:

The COVID-19 pandemic has given rise to the need to use personal protective equipment such as masks.[4]The use of face masks is associated with high rates of acne

eruption.[5]Patients with acne vulgaris continue to present increasingly in dermatology outpatient clinics and seek treatment during the COVID-19 pandemic.[6] Patients during COVID-19 intensify their dermatology treatment.

Key words: acne, COVID-19, acne treatment, maskne, dermatology, face mask

Introduction

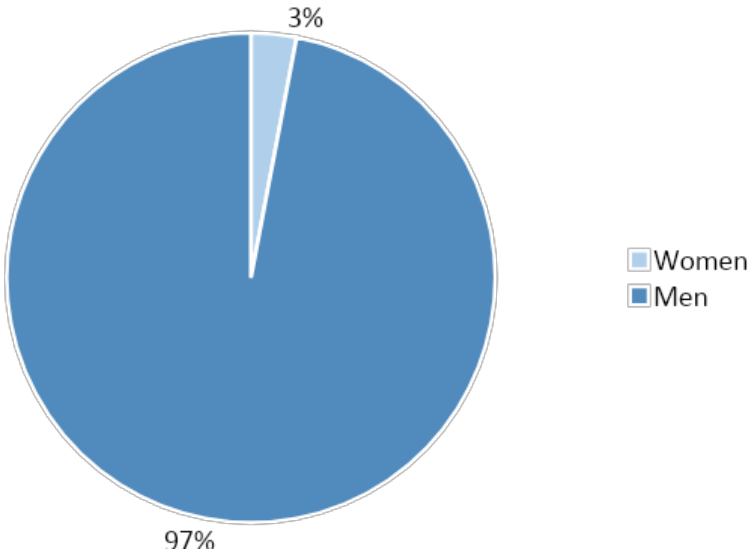
Acne is a chronic inflammatory disease of the pilosebaceous unit resulting from androgen-induced increased sebum production, altered keratinisation, inflammation, and *Propionibacterium acnes* colonization of hair follicles on the face, neck, chest and back.It is one of the most common diseases in the World affecting about 85% of people between 12 and 25 years of age. Moderate to severe cases constitute 15 – 25% of all. Acne results in physical symptoms such as soreness, itching, and pain, but its main effects are on quality of life[7].One of the most common reasons adult women between the ages 20 to 40, for example, come to the dermatology clinic is for acne. Clinical trial data revealed that approximately 50% of women in their 20s, 33% of women in their 30s, and 25% of women in their 40s suffer from acne.[8] The pathogenesis and existing treatment strategies for acne are complex.[9]Topical therapies including benzoyl peroxide, retinoids, and antibiotics when used in combination usually improve control of mild to moderate acne.[10]

Materials and Methods

A total of 484 respondents were included in the study (female – 97%, male – 3%).A self-administered online questionnaire was applied using Google Forms. The questionnaire was disseminated using social media – Facebook and Instagram. It contained 25 closed questions. The first 4 were about gender, age, residence and education. The other 21 concerned the studied problem.The study group included patients who suffered from acne before the pandemic and patients who developed it during the pandemic (from March 2020).

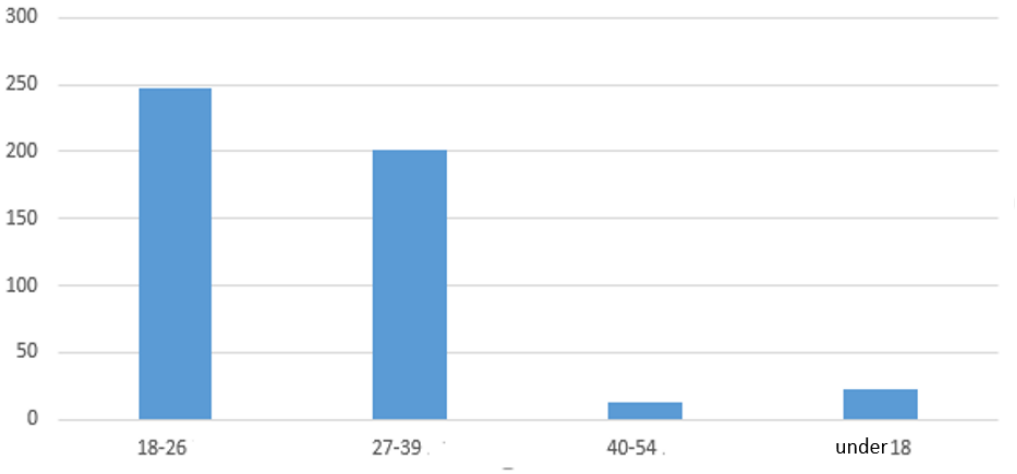
RESULTS:

Figure 1. gender



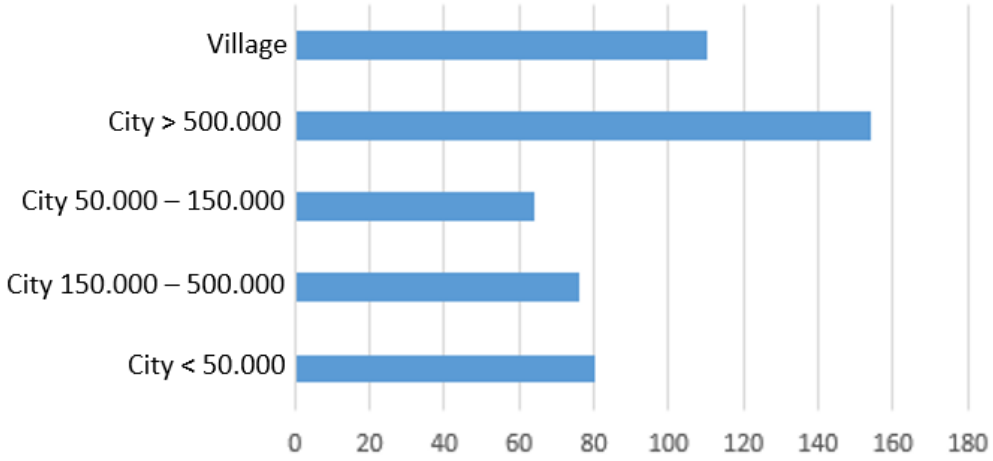
The largest group of respondents were women.They constituted 97% of all respondents.

Figure 2. Age



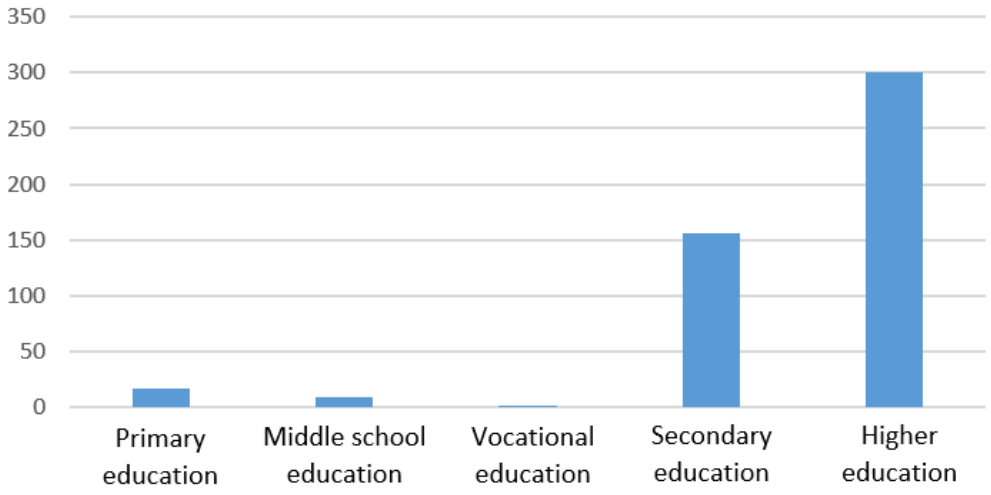
The most numerous group of respondents were people in the age 18-26 years.

Figure 2. Place of residence



Respondents were also divided based on their place of residence. The majority of women who participated in the study came from urban areas,especially from cities with more than 500.000 inhabitants.

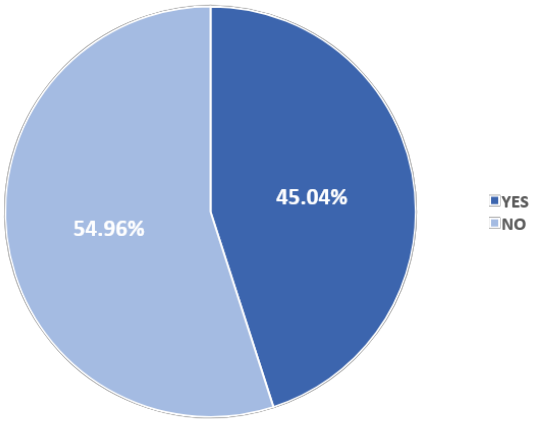
Figure 4. Education



Respondents with higher education constituted the largest group (62%), while those with vocational education represented the smallest group – 1% of the respondents.Women with

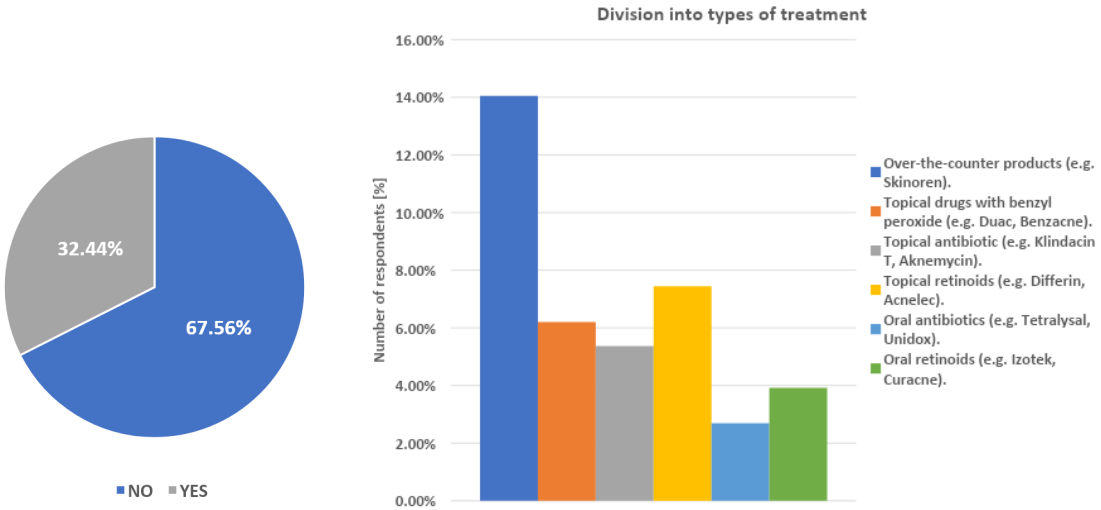
higher education constituted the largest group (69%), while those with elementary education represented the smallest group – 1% of the respondents.

Figure 5. Did you start acne treatment before the pandemic (before March 2020), which is still ongoing?



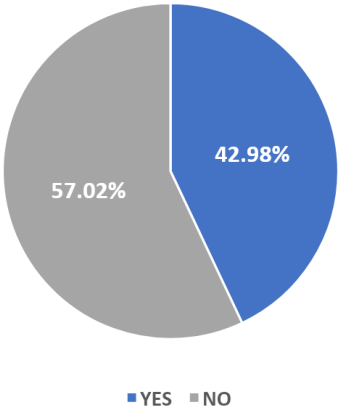
54,96% of respondents started acne treatment before the pandemic which is still ongoing. 45,04% of them started treatment during the pandemic.

Figure 6.During the pandemic (from March 2020), have you had to modify the long-term acne treatment, started before the pandemic, due to exacerbation of skin lesions?



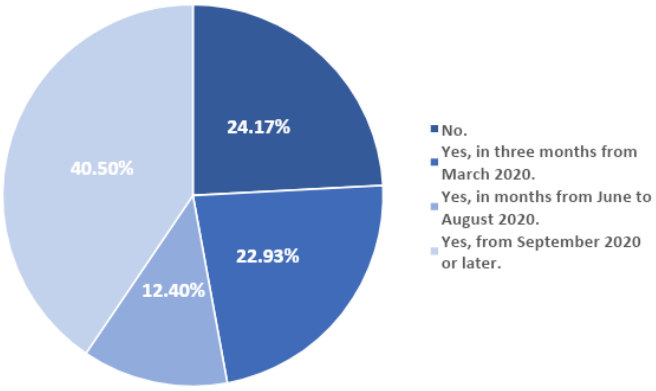
67,56% patients had to modify the long term acne treatment started before the pandemic. The most numerous group of respondents used over-the-counter products(e.g. Skinoren),topical retinoids (e.g. Differin) and topical drugs with benzoyl peroxide (e.g. Duac).

Figure 7. During the pandemic (from March 2020), have you started a new acne treatment, that was not a modification of your long-term treatment?



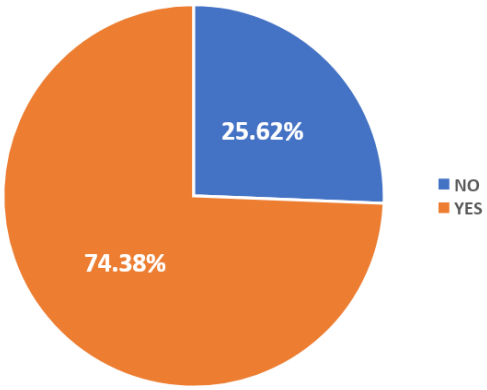
During the pandemic 42,98% of respondents started a new acne treatment, that was not modification of their long-term treatment. Most often they start treatment with over the counter products (e.g. Skinoren), Topical retinoids (e.g. Differin) and oral retinoids (e.g. Izotek).

Figure 8.During the pandemic (from March 2020), did you notice acne exacerbation or the appearance of new acne lesions?



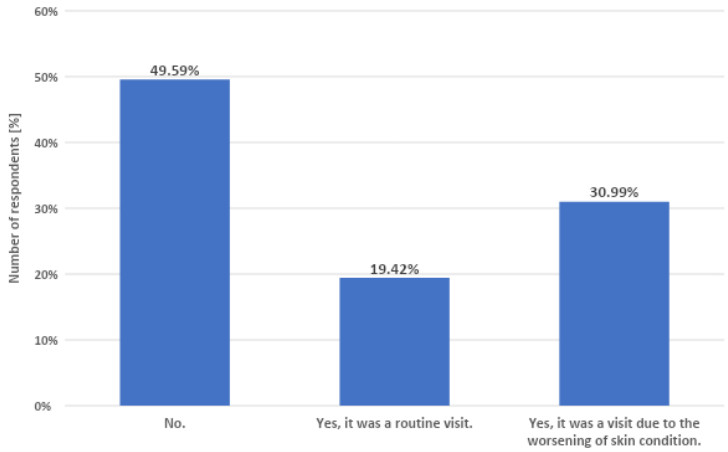
Most of the answers (40,50%) noticed acne exacerbation or the appearance of new acne lesions from September 2020 or later. 22,93% replier noticed changes on skin in three months from March 2020. 24,17% didn't notice acne exacerbation.

Figure 9. Did you notice any worsening of the skin condition due to wearing face masks?



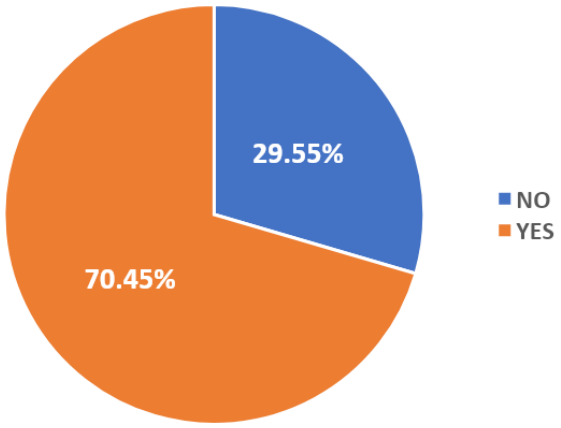
74,38% of respondents noticed worsening of the skin condition due to wearing face masks.

Figure 10. Did you visit a dermatologist during the pandemic (from March 2020)?



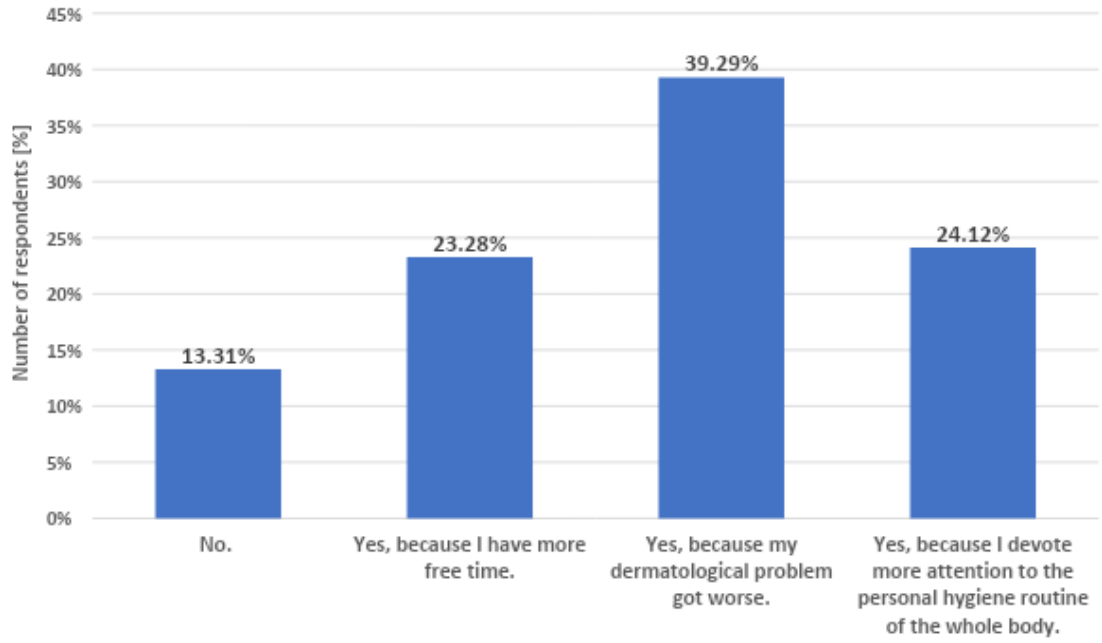
During the pandemic (from March 2020) 30.99% of answerers visited a dermatologist due to the worsening of skin condition. 49,59% didn't visit a dermatologist and 19,42% had routine visits.

Figure 11. During the pandemic (from March 2020), have you started to pay more attention to the composition of the skin products you use?



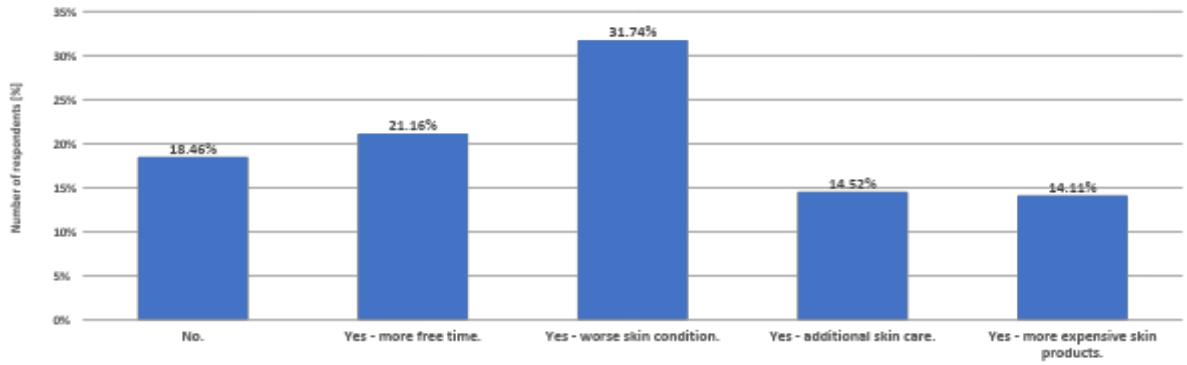
During the pandemic (from March 2020) 70,45% respondents started to pay more attention to the composition of the skin products they use.

Figure 12. During the pandemic (from March 2020), have you started to pay more attention to skin care (cleansing, moisturizing, peels, toning)?



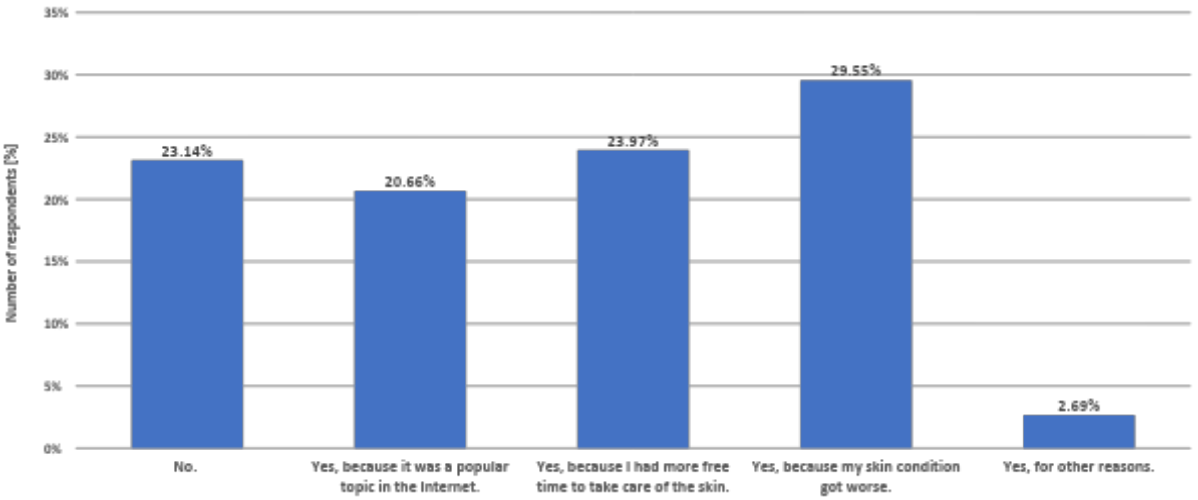
During the pandemic 86,69% respondents started to pay more attention to skin care. 23,28% of them started to pay more attention to skin care because they have more free time, 39,29% due to their dermatological problem got worse and 24,12% because they started to pay more attention to personal hygiene routine of the whole body.

Figure 13. Have you increased your expenses on skin care products since the beginning of the pandemic (from March 2020)?



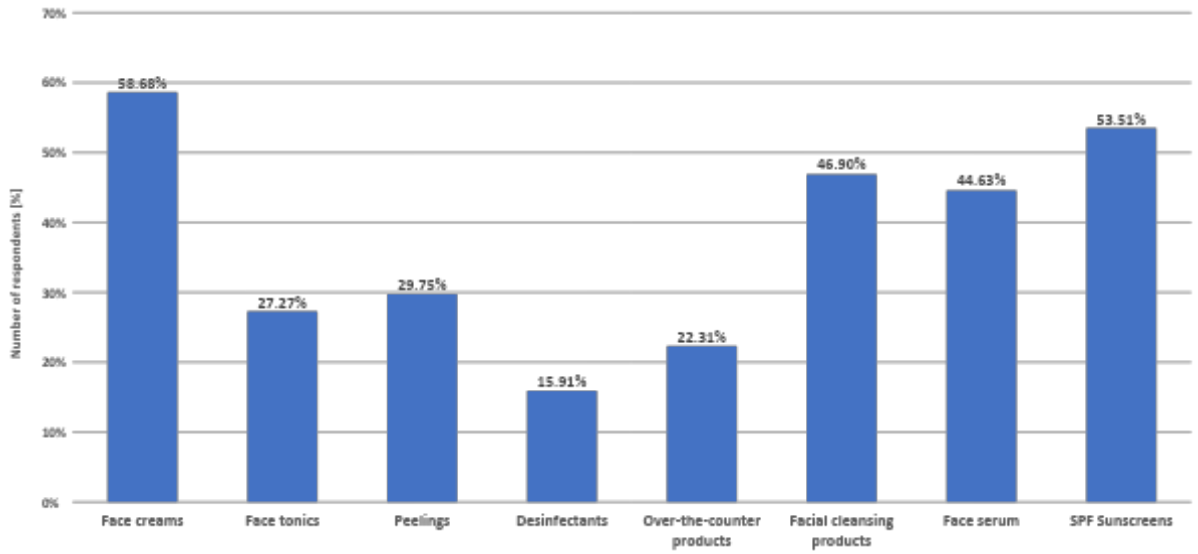
31,74% respondents increased their expenses on skin care products since the beginning of the pandemic (from March 2020) due to worsening skin condition, 21,16% because they had more free time, 14,11% started to buy more expensive products. 18,46% didn't increase their expenses on skin care products.

Figure 14. Has your interest in acne increased during the pandemic (from March 2020)?



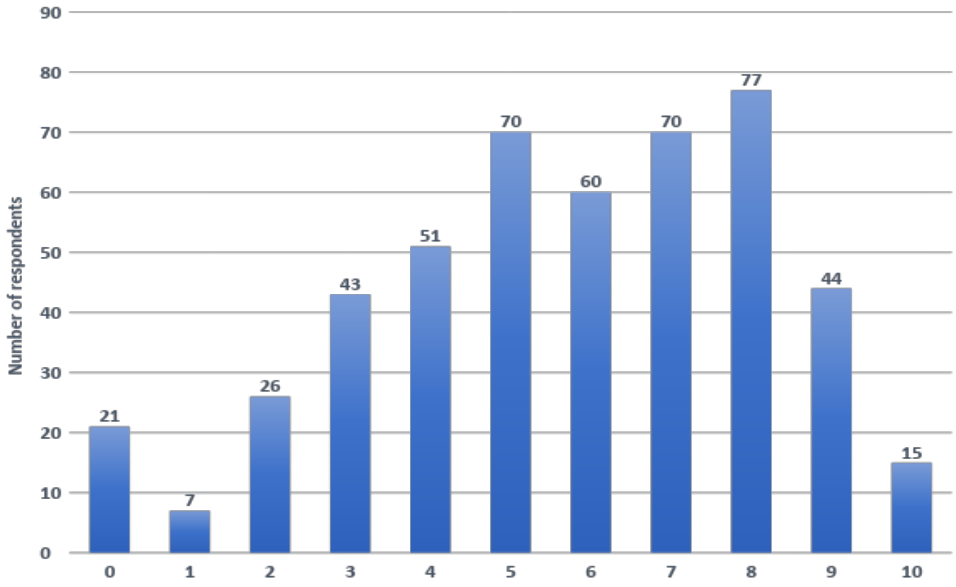
76,86% of respondents increased their interest in acne during the pandemic (from March 2020). 20,66% of answerers became interested in acne because it was a popular topic on the internet, 23,97% because they had more free time to take care of the skin and 29,55% due to their skin condition got worse.

Figure 15. The most frequently introduced skin care products.



The most frequently introduced skin care products were: face creams,facial cleansing products,face serum,SPF sunscreens. Respondents rarely chose peelings,face tonics, disinfectants and over-the counter products.

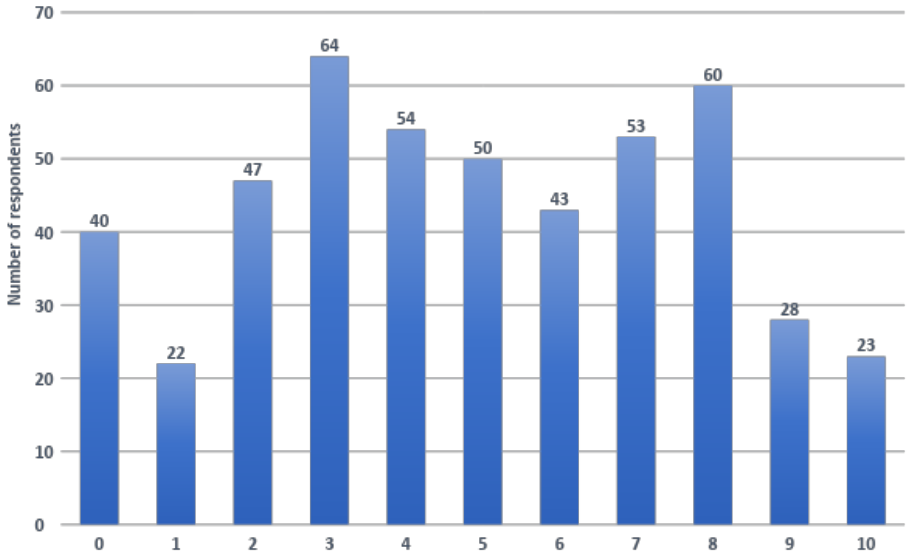
Figure 16. Rate your well-being from the condition of your skin before the pandemic (before March 2020) on a scale from 0 to 10, where 0 - means completely unsatisfactory and 10 - means completely satisfactory.



Average satisfaction rating - 5,7

Barely 3% of respondents rated their skin condition before pandemic (before March 2020) to 10, which means they were completely satisfied. 4% of answerers were completely unsatisfied with their skin condition before the pandemic. They rated their skin condition to 0.The largest number of respondents rated their skin condition before pandemic from 5 to 8.

Figure 17. Rate your well-being from the condition of your skin during the pandemic (from March 2020) on scale from 0 to 10, where 0 - means completely unsatisfactory and 10 - means completely satisfactory.



Average satisfaction rating – 4,9

During the pandemic (from March 2020) 4,7% of respondents rated their skin condition to 10, which means they were completely satisfied. The number of people satisfied with the condition of their skin increased by 1,7% compared to the condition of their skin before the pandemic. 8,3% of answerers were completely unsatisfied with their skin condition during the pandemic. They rated their skin condition to 0. Amount of people totally unsatisfied with the condition of their skin increased by 4,3% compared to the condition of their skin before the pandemic. The largest number of respondents rated their skin condition during pandemic between 3-4 and 7-8. Average satisfaction of skin condition during pandemic decreased by 0,8% compared to satisfaction before the pandemic.

SUMMARY

Acne vulgaris is one of the most common chronic inflammatory diseases and is characterized by papules, pustules, comedones, and nodules. Although adolescence is the preferential age group, acne may affect various age groups.[11]Also, skin fragility due to inflammation or irritation by anti-comedogenic agents can worsen the situation.[12][13]The COVID-19 pandemic has given rise to the need to use personal protective equipment such as

masks, among healthcare professionals and the general public.[14]Topical therapies including benzoyl peroxide, retinoids, and antibiotics when used in combination usually improve control of mild to moderate acne.

DISCUSSION AND CONCLUSIONS

Acne vulgaris is one of the most common dermatologic complaints.[15]Due to unclear etiology, likely with multiple factors, targeted and low-risk treatments have yet to be developed.[16]Several factors contribute to its aetiopathogenesis including heat, humidity, mechanical friction and microbiome dysbiosis in a complex interplay under the occlusive area of the mask. [17]The use of face masks is associated with high rates of acne eruption[18]The results of the study indicate an average level of knowledge among respondents regarding.The conducted research confirms that the restrictions introduced during the COVID-19 pandemic (face masks, social restrictions) had a significant impact on the skin condition of patients with acne and their care habits. Patients' interest in the subject of acne and involvement in the treatment has increased significantly - that is a positive trend.Patients with acne vulgaris continue to present increasingly in dermatology outpatient clinics and seek treatment during the COVID-19 pandemic. [19]"Maskne" has been one of the negative spin offs of the universally acceptable and effective role of face mask in containing the ongoing pandemic of SARS-CoV-2 virus or COVID 19. Several factors contribute to its aetiopathogenesis including heat, humidity, mechanical friction and microbiome dysbiosis in a complex interplay under the occlusive area of the mask.[20]Average satisfaction rating with the condition of the skin during the pandemic insignificantly decreased – despite the major impact of the pandemic on skin condition.Over 42% of respondents during the pandemic managed to see a dermatologist and began dermatological treatment.Over 32% of respondents modified their dermatological treatment during the pandemic.Over-the-counter products were most commonly sought after, while oral antibiotics were least commonly sought after.Over half of respondents noticed acne exacerbation or the appearance of new acne lesions.

Disclosure:

The authors declare that they have no financial or non- financial conflicts of interest that could be perceived as influencing the interpretation of the research findings or the content of this manuscript. This work was conducted independely without any external finfing or suport.

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Funding Statement : The authors declare that there are no conflicts of interest or financial disclosures as sociated with this scientific work.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement : Informed consent was obtained from all subjects involved in the study

Data Availability Statement : The data that form the basis of this study were collected through anonymous survey. The data presented in this study are available upon request from the corresponding author

Acknowledgment: Not appropriate.

Conflicts of Interest: The authors declare no conflict of interest

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