Received: 21 March 2023 / Accepted: 12 June 2023 / Published online: 30 June 2023

DOI 10.34689/SH.2023.25.3.023

UDK 614.2:619:616.5-002.954

AWARENESS ASSESSMENT OF SEMEY CITY POPULATION ABOUT DEMODEKOSIS

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Abstract

Background: Papulopustular dermatoses such as acne, rosacea, perioral dermatitis, demodicosis folliculitis, due to their high prevalence in the population, are a very urgent problem. Taking into account the localization of these dermatoses on the face and socially active age of patients, the consequence of disease development can be a significant reduction in the quality of life - social and professional contacts are disrupted, neurotic disorders and depression often develop.

Aim. To conduct a sociological study on the level of awareness of the disease demodecosis among the population, methods of infection and prevention of the disease.

Methodology: A cross-sectional study was conducted among the population of Semey to assess awareness of demodicosis. The study was conducted by electronic questionnaire. A total of 128 residents between the ages of 18 and 50 were interviewed. The questionnaire included questions about knowledge of the disease, probability of infection, effectiveness of preventive measures, readiness to observe them, and preferred sources of information. An integrated assessment was made and the priorities of individual sources of information were determined with the calculation of their specific weight.

Results: According to the results of the survey, only 37.5% (n=48) of the respondents had heard of the disease demodicosis. Only 22.4% (n=28) of the surveyed population have information about preventive measures, of which 42.4% (n=28) adhere to preventive methods. The respondents indicated the following sources of information about the disease: visits to a cosmetologist and dermatologist, as well as Internet resources.

Conclusion: A sociological survey of Semey residents on the awareness of the prevalence of demodicosis disease indicates a low level of knowledge and prevention measures. It is necessary to more persistently bring to the attention of citizens information about effective measures to prevent this dermatological disease.

Keywords: *Demodex, subcutaneous mite, awareness, prevention.*

Резюме

ОЦЕНКА ИНФОРМИРОВАННОСТИ НАСЕЛЕНИЯ ГОРОДА СЕМЕЙ О ДЕМОДЕКОЗЕ

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Введение. Папулопустулезные дерматозы, такие как акне, розацеа, периоральный дерматит, демодекозный фолликулит, в связи с их широкой распространенностью в популяции являются весьма актуальной проблемой. Учитывая локализацию данных дерматозов на лице и социально активный возраст больных, последствием развития

заболевания может быть существенное снижение качества жизни – нарушаются общественные и профессиональные контакты, часто развиваются невротические расстройства и депрессии.

Цель исследования. Провести социологическое исследование по определению уровеня информированности о заболевании Демодекоз среди населения, о способах заражения и профилактики заболевания.

Материалы и методы исследования: Было проведено поперечное исследование среди населения г.Семей для оценки осведомленности о демодекозе. Исследование проводилось методом электронного анкетирования. Было опрошено 128 жителей в возрасте от 18 до 50 лет. Анкета включала вопросы о знании об этом заболевании, вероятности заражения, эффективности мер профилактики, готовности их соблюдать, предпочитаемых источниках информации. Проведена интегрированная оценка и определены приоритеты отдельных источников информации с расчетом их удельного веса.

Результаты: По итогам анкетирования, только 37,5% (n=48) респондентов слышали о заболевании демодекоз. Владеют информацией о мерах профилактики всего 22,4% (n=28) опрошенного населения, из них 42,4% (n=28) придерживаются методов профилактики данного заболевания. Источниками информации о заболевании демодекоз респонденты указали: посещение косметолога и дерматолога, а также интернет ресурсы.

Вывод: Социологический опрос жителей г.Семей об информированности по вопросам распространенности заболевания демодекоз свидетельствует о низком уровне знаний и мер профилактики. Необходимо более настойчиво доводить до сведения граждан информацию об эффективных мерах профилактики данного дерматологического заболевания.

Ключевые слова: *демодекоз, подкожный клещ, информированность,профилактика.*

Түйіндеме

СЕМЕЙ ҚАЛАСЫ ТҰРҒЫНДАРЫНЫҢ ДЕМОДЕКОЗ ТУРАЛЫ АҚПАРАТТАНУЫН БАҒАЛАУ

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Кіріспе. Безеу, розацея, периоральды дерматит, демодекозды фолликулит сияқты папулопустулярлы дерматоздар тұрғындар арасында кең таралғандықтан, өте өзекті мәселе болып табылады. Бұл дерматоздардың бетте локализациясын және пациенттердің әлеуметтік белсенді жасын ескере отырып, аурудың даму салдарынан өмір сапасы айтарлықтай төмендеуі болуы мүмкін - әлеуметтік және кәсіби байланыстар бұзылады, невротикалық бұзылыстар мен депрессия жиі дамиды.

Зерттеудің мақсаты. Халық арасында демодикоз ауруы, инфекция әдістері және аурудың алдын-алу туралы хабардар болу деңгейіне социологиялық зерттеу жүргізу.

Материалдар мен әдістер: Семей қаласының тұрғындары арасында демодекоз ауруынан хабардар болуды бағалау мақсатында көлденең зерттеу жүргізілді. Зерттеу электронды сауалнама әдісімен жүргізілді. 18 бен 50 жас аралығындағы 128 тұрғын сұралды. Сауалнама осы ауру туралы білім, жұқтыру ықтималдығы, профилактикалық шаралардың тиімділігі, оларды сақтауға дайындығы және қолайлы ақпарат көздері туралы сұрақтарды қамтыды. Кешенді бағалау жүргізілді және олардың үлес салмағын есептей отырып, жеке ақпарат көздерінің басымдықтары анықталды.

Нәтижелері: Сауалнама нәтижелері бойынша респонденттердің тек 37,5% (n=48) демодекоз туралы бұрын-соңды естіген. Сауалнамаға қатысқан тұрғындардың 22,4%-ы (n=28) ғана алдын алу шаралары туралы ақпаратқа ие, олардың 42,4%-ы (n=28) осы аурудың алдын алу әдістерін ұстанады. Респонденттер демодекоз ауруы туралы ақпарат көзі ретінде: косметолог пен дерматологқа бару, сондай-ақ интернет-ресурстарды көрсетті.

Қорытынды: Семей қаласының тұрғындарының демодекоз ауруының таралуы туралы хабардар болуы бойынша жүргізілген әлеуметтік сауалнама білім деңгейі мен алдын алу шараларының төмендігін көрсетеді. Бұл дерматологиялық аурудың алдын алудың тиімді шаралары туралы ақпаратты азаматтардың назарына неғұрлым табанды түрде жеткізу қажет.

Түйінді сөздер: *демодекоз, тері асты кене, ақпараттану, алдын алу.*

Bibliographic citation:

Lemishenko M.N., Khismetova Z.A., Iskakova N.S., Sarsenbayeva G.Zh., Berikuly D., Akhmetova K.M. Awareness assessment of Semey city population about demodekosis // *Nauka i Zdravookhranenie* [Science & Healthcare]. 2023, (Vol.25) 3, pp. 173-177. *doi 10.34689/SH.2023.25.3.023*

Лемишенко М.Н., Хисметова З.А., Искакова Н.С., Сарсенбаева Г.Ж., Берікұлы Д., Ахметова К.М. Оценка информированности населения города Семей о демодекозе // Наука и Здравоохранение. 2023. 3(Т.25). С. 173-177. *doi 10.34689/SH.2023.25.3.023*

Лемишенко М.Н., Хисметова З.А., Искакова Н.С., Сарсенбаева Г.Ж., Берікұлы Д., Ахметова К.М. Семей қаласы тұрғындарының демодекоз туралы ақпараттануын бағалау // Ғылым және Денсаулық сақтау. 2023. 3 (Т.25). Б. 173-177. *doi 10.34689/SH.2023.25.3.023*

Introduction

Demodecosis is a common chronic disease, mainly of the facial skin. In daily practice, doctors rarely make the diagnosis "Demodechosis", although the presence of mites is confirmed by laboratory methods [7]. Despite the fact that demodechosis is considered a common disease, the etiological factors leading to the mite pathogenicity have not been fully elucidated to date, and the exact mechanism of skin inflammation in demodechosis has not been established [10, 13].

Mites of the genus Demodex are equally prevalent in all races and all age groups. According to different data, the incidence of demodex is from 2 to 5% and ranks seventh in frequency among skin diseases. In the structure of acneiform dermatoses, demodechosis accounts for 10.5% [3]. It is noted that the detection rate of Demodexfolliculorumbrevis increases with age, while Demodexfolliculorumlongus remains at the same level or changes insignificantly. In children, a lower level of mites is registered. This is probably due to the lower production of sebum in children compared to adults. The highest number of cases of demodex infestation is registered in people in the age group of 20-40 years old. The ratio of men to women is approximately 1:4. This distribution may be due to the fact that women are more demanding of their own appearance. In the 15-20 age group, mite infestation directly correlates with the amount of fat produced, which may be directly related to the hormonal restructuring of the body. However, the observed minimal clinical manifestations testify to a high skin immunoreactivity in young people [2, 7, 11, 12].

Mite activity in older age groups (after 45 years) is supported by age-related skin and glandular changes, menopausal hormonal restructuring, as well as by various somatic pathologies. Asymptomatic carriage in men is more frequent than in women, at a ratio of 2:1 [1, 6, 17]. In the population, demodicosis is detected in 55-100% of cases, including patients without papulopustular eruptions on the face. The source of infection is humans (a sick person or a carrier), pets. The tick parasitizes dogs, horses, and cattle. The disease is widespread everywhere in all seasons. In spring and summer a rise in the incidence of the disease is registered. It can be assumed that this is due to increased insolation, changes in ambient temperature, exacerbation and emergence of immune and endocrinological disease [4, 5, 8, 15].

Difficulties of demodicosis therapy, which is not always successful, even with the most effective acaricides, are related to the structure of the mites' covers. The cuticle of a demodicidal consists of three layers: the outer, epicuticula; the middle, exocuticula; and the inner, endocuticula, and is structurally the most developed in females. Its thickness varies from 0.11 μm (the thickness of parasite eggshells) to 0.6 μm (the cuticle of adults in the most sclerotized areas), which protects the demodiculus from external influences [14]. A characteristic feature of the cuticle structure is that the inner layers of the exo- and endocuticula lack pore channels communicating with the external environment, so that it can only participate in water and gas exchange. For this reason, through the cuticle demodicid is difficult or impossible to pass large molecules of exogenous substances, in particular contact acaricidal preparations. This explains the difficulties of antiparasitic therapy for demodicosis, the need for long courses of treatment and the choice of drugs with minimal molecule size. Therapy should be staged and include symtomatic drugs, anti-inflammatory, antibacterial, desensitizing and antiparasitic agents, as well as the treatment of concomitant diseases and preventive measures [9, 16].

Aim. To conduct a sociological study on the level of awareness of the disease demodecosis among the population, methods of infection and prevention of the disease.

Materials and Methods

The study was conducted by electronic questionnaire. The link to the Google form with the questionnaire was sent to college and university students and polyclinics. Participants of the events filled out this questionnaire on personal or work computers.

Besides general information about the respondents (gender, age, professional activity), the questionnaire included 6 questions to assess the population's awareness about preventing demodicosis (risk of the disease, probability of infection, most effective prevention methods and readiness to follow them, preferred sources of information, its usefulness and sufficiency).

We have interviewed 128 residents of Semey city and Abay region at the age of 18 - 50 by random sampling and divided them into 6 main groups (18-25, 25-30, 30-35, 35-40, 40-45 and 45-50 years old). During the study a comparative assessment of the results with the calculation of the error of representativeness and validity was carried out.

Results

Among the population of Semey city, Abay region, who wished to participate in this survey, 89.0% were women, in accordance with the materials of the work I.B. Nazarova [12], who compared the characters of their attitude to their health in men and women who traditionally are more attentive to their health, they have a more pronounced self-

preservation attitude than men, and they are more willing to answer questions. In terms of age, respondents from 25 to 30 years old were more active in the survey, with 37.0% of the respondents. Respondents indicated their employment as follows: 26% (n=33) work in the service industry, 19% (n=24) in education, 14% in health care, and the rest. The characteristics of the respondents can be seen in Table 1.

Table 1.

The characteristics of the respondents.

Characteristics of the participants (n=128)	n	%
Age		
18-25	25	20
25-30	47	37
30-35	29	23
35-40	12	9
40-45	3	2
45-50	12	9
Sex		
Male	14	11
Female	114	89
Profession/job		
Education sector	24	19
Healthcare sector	18	14
Financial sector	8	6
Service sector	33	26
Entrepreneurship	6	5
Other	11	22
Doesn't work	28	8

Nowadays convincing data have been accumulated on the important role of a weakened immune system in the development of demodecosis and the maintenance of its chronic course. Severe emotional stress, neuroendocrine, gastrointestinal, mental, immune diseases, lesions of the hepatobiliary system and lipid metabolism disorders can contribute to the occurrence of demodecosis [7]. It is obvious that demodecosis disease is often associated with concomitant or associative diseases, which in turn are the root causes in the occurrence of demodecosis. The first question that respondents answered was about their knowledge of the disease demodechosis (subcutaneous mite). The results showed that 37% of respondents knew what demodecosis is, while 63% answered no, respectively (Figure 1). This shows that the media,health workers still need to inform about such a contagious skin disease as demodecosis.

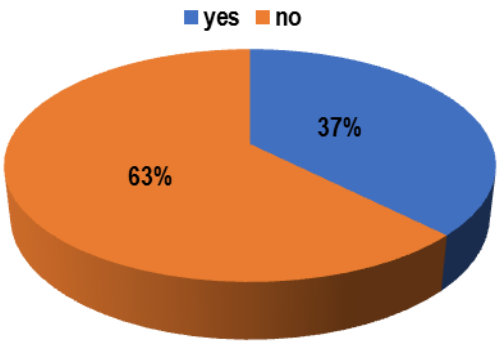

Figure 1. Knowledge about demodicosis.

In turn, respondents who answered positively mentioned their cosmetologists and dermatologists as a source of information, as well as Internet resources. The next question was about the knowledge of the ways of infection with demodicosis. Frequent routes of infection mentioned by respondents were contact, household, physical routes of transmission, as well as failure to maintain personal hygiene. Another part of the questionnaire questions concerned the respondents' opinion on measures to prevent the disease demodex. The study showed that 20% of respondents are aware of measures to prevent the disease, 80% do not have the information. This indicates that the population does not fully understand the possible ways to protect themselves and their families from the disease (Fig.2).

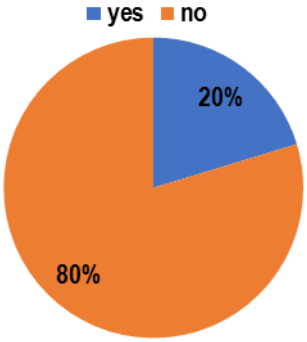

Figure 2. Knowledge about preventive measures of demodicosis.

Respondents were also asked if any of their relatives and friends had ever been infected with demodicosis. The distribution of responses was as follows: 73% answered no, 19% don't know, and 8% yes.

The relationship between the knowledge of demodecosis and the age of the respondents was also analyzed. It was revealed that the older the age of the respondent, the lower the knowledge about this disease.

The last question in the questionnaire was about the respondents' knowledge of the methods and ways of infection with demodecosis disease, most respondents do not know about the ways of infection of this disease. Currently, in connection with the popularization of cosmetology services among the population, especially among women, this issue is very important. Since the analysis of the literature review has shown that the ways of infection are by contact and household means.

Thus, according to the results of a sociological survey among residents of Semey city, Abay region, it can be concluded that the level of awareness of the population about the disease demodecosis is low, and immediately requires strengthening preventive and sanitary measures at the PHC level.

Discussion

The diagnosis of demodicosis is primarily based on clinical evaluation and confirmed by microscopic detection of demodex mites from eyelash alopecia.

It is confirmed by microscopic detection of Demodex mites from epilated eyelashes in study of *Aktas Karabay E et al* [2]. Therefore clinical diagnosis is not definitive. Blepharitis, blepharoconjunctivitis, ocular rosacea, eyelash disorders and trichiasis.

In study *Demirkazık M., Koltas İ.S.* shown that symptoms such as trichiasis and chalazion may raise suspicion of Demodex infection. On slit lamp examination, CD has the appearance of a solidified exudative excretion [5].

On slit lamp examination, the CD has the appearance of solidified exudative excretions at the base of the eyelashes.

The detection of Demodex can be easily performed by an ophthalmologist or laboratory technician.

The eyelashes are removed with fine forceps. Sampling eyelashes with CDs will give better results than random removal of eyelashes.

Under the optical microscope, pipette a drop of saline solution onto the edge of the coverslip before examination.

Pipette a drop of saline solution on the edge of the coverslip If CD remains, add a drop of fluorescein solution,

Lam N.S.K. et al. found that peanut oil or a drop of 75% alcohol can be added to help the embedded demodex migrate. [11].

The biggest question is the maximum number of mites that can be detected. Demodex mites can be is detected in asymptomatic populations, so it is important to know how many eyelashes need to be collected and how many mites are present. It is not known how many mites can cause pathological changes.

Conclusion

Sources of informing the population about the prevalence pathways and preventive measures are of great importance for the prevention of demodecosis. At the same time, it is important to assess how meaningful the sources of information are to the population, taking into account their information coverage (impact), credibility of the information, and ease of perception. The survey showed that the majority of participants do not know and have no idea about such a contagious skin disease as demodicosis. An important factor of informational influence on the population is the ease of perception of the information. Therefore, it is necessary to increase the medical literacy of the population through television, radio and Internet resources also on primary healthcare level.

Conflict of Interest. *The authors declare that they have no conflict of interest.*

Contribution of authors. *All authors were equally involved in the writing of this article.*

Funding: *No funding was provided.*

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