

The subjective assessment of the effect and satisfaction with dermocosmetics use by patients with skin disturbances

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Abstract

Introduction: Atopic dermatitis and different constellations and the severity of symptoms that not meet the criteria for this diagnosis are a common skin disturbances. An important component of the treatment of these diseases and the proper care of sensitive and dry skin is local dermocosmetics use.

Aim: To assess the frequency of skin disturbances and the effect and satisfaction with Atoperal products use as well as the source of information about these products.

Material and methods: A questionnaire survey about the type of skin disturbances, the subjective assessment of the effect and satisfaction with Atoperal products use and source of information about these products was performed by 787 general practitioners, internists, pediatricians, dermatologists, allergists and pulmonologists and 252 pharmacists in a group of 51 085 subjects with skin disturbances.

Results: In the group interviewed by doctors, the most common skin problem was atopic dermatitis (52.5%) and in the group interviewed by pharmacists, pruritus (70.0%). In both groups, respondents after Atoperal products use most frequently reported improving of the skin hydration and greasiness of the skin and reduction of itching. In both groups, over 90.0% of respondents were satisfied or very satisfied with Atoperal products use. In the group surveyed by doctors, 75.5% of respondents obtained information about these products from doctors and 17.4% from pharmacists, while in the group surveyed by pharmacists, 48.9% from pharmacists and 36.1% from doctors.

Conclusions: Atopic dermatitis was most frequently diagnosed in a group surveyed by doctors. The main skin disturbance that occurred in a group surveyed by pharmacists was skin pruritus. The main effect of Atoperal products use, independent of the place of the survey, included improving of skin hydration and greasiness of the skin and reduction of itching. In a study population, there was a high level of satisfaction from the use of Atoperal products. Doctors and pharmacists were the main sources of information about Atoperal products depending on the place of the survey.

Key words: atopic dermatitis, other skin disturbances, dermocosmetics.

Introduction

The prevalence of atopic dermatitis in children from industrialized countries is estimated to be 5–20%. It has also been shown that the incidence of atopic dermatitis in numerous countries has increased from 3 to 5 times. However, in adult populations, there is a decrease due to the self-limiting nature of this disease (the symptoms of dermatitis after puberty persist in 5–10% of patients only). In addition, severity of symptoms decreased in a significant percentage of patients [1].

Atopic dermatitis is a chronic disease, genetically determined and its pathogenesis has not been fully explained. For the diagnosis of atopic dermatitis, at least 3 of the 4 main criteria are required to be met including persistent pruritus, typical changes in morphology and location, chronicity and recurrence, and a personal and/or family history of atopic diseases and three additional ones including dry skin, ichthyosis, pilaris keratosis, cheilitis, inflamed nipples, recurrent conjunctivitis, increased levels of IgE, food and/or wool in tolerance, the impact

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of stress and environmental factors on exacerbations, recurrent skin infections and other features [2]. Some patients may not meet the criteria for the diagnosis of atopic dermatitis, but have different constellations and the severity of the symptoms listed above [2].

An important component of the treatment of these diseases and the proper care of sensitive and dry skin is local dermocosmetics use. Dermocosmetics provide proper hydration and restoration of the damaged lipid barrier, mainly by providing deficient lipid components, as well as the restoration of correct hydration of the stratum corneum. However, it should be noted that the therapeutic effect is provided by hypoallergenic cosmetics which contain emollients in the form of soaps, gels, shampoos, lotions, and creams. These dermocosmetics have also anti-inflammatory properties and their use reduce the severity of itching and make the skin more flexible and form a protective film [3]. One type of dermocosmetics available on the Polish market is Atoperal and Atoperal Baby products. Numerous factors may influence the first choice of dermocosmetics, for example advertising, the recommendation by a friend or pharmacist or doctor and the cost of the brand manufacturer, gender, age, place of residence, education level and type of skin disturbances. However, the continued use of dermocosmetics may largely depend on the satisfaction related to ameliorating the symptoms of the disease. The factors influencing the choice and satisfaction with the use of Atoperal and Atoperal Baby products are unknown.

Aim

Therefore, the aims of the study were: the assessment of the frequency of skin disturbances in relation to socio-demographic characteristics of respondents depending on the place of completing the survey. Determination of the subjective assessment of the effect of the Atoperal and Atoperal Baby products use on skin symptoms and satisfaction with their use depending on the place of completing the survey. The assessment of the sources of information about the Atoperal and Atoperal Baby products depending on the place of completing the survey.

Material and methods

In this observational survey, 51 085 respondents were interviewed nation wide by 787 general practitioners, internists, pediatricians, dermatologists, allergists and pulmonologists as well as 252 pharmacists in 2013–2014. Polish doctors and pharmacists participating in the study were recruited by medical representatives, and each of them conducted questionnaire interviews with a group of 51 085 consecutive patients or guardians of children referred to the clinic or pharmacy for skin symptoms and using dermocosmetics.

Characteristics of the surveyed population are summarized in Table 1.

The questionnaire consisted of several dichotomous and multiple choice questions.

The questionnaire included demographic data (gender, age range, place of residence, education levels), type of skin disturbances (dry skin, pruritus, atopic dermatitis, tendency to recurrent infections of the skin, other). In addition, the current or past use of Atoperal or Atoperal Baby products and their type have been reported. Respondents have also assessed the effect of Atoperal or Atoperal Baby products on the appearance and condition of the skin (skin hydration improvement/improvement of greasiness of the skin/skin elasticity increase/decrease of itching/acceleration of healing) and the degree of satisfaction with these products use. In addition, the source of information about Atoperal and Atoperal Baby products (doctor/pharmacist/friends/promotional handouts/Internet/newspaper/other) were recorded.

Statistical analysis

Statistical analysis was performed using the Statistica 10.0 PL (Cracow, Poland) software package.

The socio-demographic data were analyzed depending on the place of completing the survey. The subjective assessment of the effect of Atoperal and Atoperal Baby products use on skin symptoms and satisfaction with their use depending on the place of completing the survey were also assessed.

Values of variables were presented as percentages and mean values with standard deviations (SD). Separate groups were compared using the χ^2 test and χ^2 test for trend. A $p < 0.05$ was considered as statistically significant.

Results

Skin symptoms occurring in the study group in relation to the place of the survey

In a group interviewed by doctors, the most common skin problem was atopic dermatitis (52.5%) and in the group interviewed by pharmacists it was pruritus (70.0%) – Table 1.

In both groups, among men atopic dermatitis occurred more frequently (56.6% vs. 49.2%; $p < 0.05$ and 54.5% vs. 47.6%; $p < 0.05$, respectively) and among women, dry skin (55.3% vs. 47.4%; $p < 0.05$ and 50.0% vs. 44.5%; $p < 0.05$, respectively). In both groups, atopic dermatitis more frequently occurred in subjects aged below than above 18 years (59.2% vs. 34.3%; $p < 0.01$ and 64.4% vs. 30.9%; $p < 0.01$, respectively). While, the dry skin and skin pruritus more frequently occurred in subjects aged above 18 years (61.5% vs. 47.3%; $p < 0.01$; 90.2% vs. 35.7% and 52.8% vs. 33.4%; $p < 0.01$; 42.7% vs. 18.7%; $p < 0.01$, respectively). In both groups, atopic dermatitis more frequently occurred in residents of rural

Table 1. Study group characteristics

Parameter	Respondents surveyed by doctors N = 40.440	Respondents surveyed by pharmacists N = 9.035	Respondents surveyed by doctors vs. surveyed by pharmacists
Gender, n (%):			
Female	22485/55.6	5583/61.8	< 0.05*
Male	17955/44.4	3451/38.2	
Age, n (%) [years]:			
≤ 6	16621/41.1	2954/32.7	< 0.01*
7–18	10758/26.6	1680/18.6	
19–25	5338/13.2	1346/14.9	
26–40	5297/13.1	2178/24.1	
> 40	2426/6.0	877/9.7	
Place of residence, n (%):			
Rural	12214/30.2	2530/28.0	< 0.01*
Town ≤ 200 000 residents	23050/57.0	4210/46.6	
City > 200 000 residents	5176/12.8	2295/25.4	
Education, n (%):			
Primary	5742/14.2	1157/12.8	< 0.01*
Secondary	10636/26.3	2674/29.6	
Higher	6066/15.0	1942/21.5	
Not applicable	17996/44.5	3262/36.1	
Skin symptoms, n (%):			
Dry skin	20945/51.8	4328/47.9	< 0.01*
Skin pruritus	15731/38.9	6324/70.0	
Atopic dermatitis	21231/52.5	4536/50.2	
Prone to recurrent skin infections	4772/11.8	578/6.4	
Other	526/1.3	72/0.8	
Atoperal product use, n (%):			
Yes	29400/72.7	7201/79.7	NS
No	11040/27.3	1834/20.3	
Type of Atoperal products use by adults, n (%):			
Body wash emulsion	6126/46.9	1069/24.3	
Body wash	9012/69.0	1443/32.8	< 0.001*
Cream	5642/43.2	1162/26.4	
Shampoo	2834/21.7	656/14.9	
Type of Atoperal Baby products use [%]:			
Body emulsion	16071/58.7	1617/34.9	< 0.001*
Bath lotion	14593/55.3	1515/32.7	
Foam wash	3313/12.1	533/11.5	
Shampoo	2300/8.4	385/8.3	
Cream	9829/35.9	630/13.6	

Table 1. Cont.

Parameter	Respondents surveyed by doctors N = 40.440	Respondents surveyed by pharmacists N = 9.035	Respondents surveyed by doctors vs. surveyed by pharmacists
Changes observed by patients after Atoperal products use [%]:			
Improving of skin hydration	22579/76.8	5300/73.6	< 0.01*
Improving of skin greasiness	14288/48.6	3845/53.4	
Increase in skin elasticity	8232/28.0	994/13.8	
Reduction of itching	12789/43.5	2744/38.1	
Acceleration of healing	4998/17.0	965/13.4	
Satisfaction with Atoperal products use [%]:			
Unsatisfied	59/0.2	29/0.4	
Moderately satisfied	2558/8.7	598/8.3	NS
Satisfied	20080/68.3	4659/64.7	
Very satisfied	6703/22.8	1915/26.6	
The source of information about Atoperal products [%]:			
Doctors	30532/75.5	2599/36.1	< 0.001*
Pharmacists	7036/17.4	3521/48.9	
Friends	1618/4.0	425/5.4	
Promotional handouts	647/1.6	295/4.1	
Internet	526/1.3	346/4.8	
Newspapers	81/0.2	15/0.2	

* χ^2 test for trend.

than urban areas (57.6% vs. 52.7%; $p < 0.05$ and 56.8% vs. 47.1%; $p < 0.01$, respectively). While, the dry skin and skin pruritus more frequently occurred in urban than rural residents (58.5% vs. 40.8%; $p < 0.01$, 54.0% vs. 35.6%; $p < 0.01$ and 43.1% vs. 31.1%; $p < 0.01$; 33.2% vs. 25.5%, $p < 0.01$, respectively). In the group surveyed by doctors, the dry skin and pruritus least frequency was reported by subjects with primary education, and in the group surveyed by pharmacists by subjects without education. While, the atopic dermatitis occurred most frequently among subjects with primary education and without education (data not shown).

The patients' subjective assessment of the effect of Atoperal and Atoperal Baby products on the skin symptoms

In both groups, respondents most frequently reported after Atoperal and Atoperal Baby products use improving of skin hydration and greasiness of the skin and reduction of itching (Table 1).

In both groups, the frequency of improving of skin hydration and reduction of itching after Atoperal products use was similar among women and men (77.9% vs. 75.5%; 43.5% vs. 43.5% and 75.0% vs. 71.4%; 38.9% vs. 36.8%, respectively). While, in the group surveyed by doctors, the improving of greasiness of the skin was slightly more frequently reported by women than men (49.6% vs. 47.4%)

and in the group surveyed by pharmacists, by men than women (55.9% vs. 51.8%; $p < 0.05$) – data not shown.

In the group surveyed by doctors, improving of skin hydration after Atoperal use was least frequently reported by subjects aged over 25 years (68.1% vs. 78.8% vs. 81.6% vs. 79.5%; $p < 0.01$) and in the group surveyed by pharmacists, by subjects aged 6 years and below, and 19–25 years (71.0% and 70.0% vs. 73.9% vs. 79.9%; $p < 0.05$). Improving of the greasiness of the skin was least frequently reported by respondents aged above 40 years and 19–25 years (35.8% vs. 47.8% vs. 52.3% vs. 49.3% vs. 49.9%; $p < 0.01$ and 47.3% vs. 59.8% vs. 53.4% vs. 51.4% vs. 52.7%; $p < 0.05$). In both groups, reduction of itching was least frequently reported by subjects aged 6 years and below (40.3% vs. 42.6% vs. 51.8% vs. 48.3% vs. 48.8%; $p < 0.05$ and 30.5% vs. 41.5% vs. 40.5% vs. 42.8% vs. 44.8%; $p < 0.01$, respectively) – data not shown.

In both groups, improving of skin hydration and greasiness as well as reduction of itching was least frequently reported by rural residents (74.3% vs. 77.5% vs. 80.5%; $p < 0.05$; 35.1% vs. 53.5% vs. 58.0%; $p < 0.001$; 30.9% vs. 48.7% vs. 49.1%; $p < 0.001$ and 67.6% vs. 75.5% vs. 77.0%; $p < 0.05$; 45.3% vs. 52.6% vs. 64.4%; $p < 0.01$; 35.6% vs. 39.9% vs. 37.5%; $p < 0.05$, respectively) – data not shown.

In the group surveyed by doctors, improving of skin hydration was most frequently reported by respondents

with primary education (84.7% vs. 74.8% vs. 69.1% vs. 78.4%; $p < 0.01$) and in the group surveyed by pharmacists, subjects with higher education (81.8% vs. 74.1% vs. 71.6% vs. 70.1%; $p < 0.01$). While, improving the greasiness of the skin more frequently reported subjects without education and with higher education, respectively (52.3% vs. 50.0% vs. 44.5% vs. 44.1%; $p < 0.05$ and 60.5% vs. 51.5% vs. 46.8% vs. 54.5%; $p < 0.05$). In turn, reduction of itching was more frequently reported by subjects with higher education and with primary education, respectively (52.7% vs. 37.3% vs. 44.1% vs. 41.9%; $p < 0.01$ and 43.3% vs. 40.1% vs. 42.8% vs. 32.4%; $p < 0.05$, respectively) – data not shown.

In the group surveyed by doctors, improving of skin hydration after Atoperal products use was more frequently reported by subjects with dry skin and atopic dermatitis, and in the group surveyed by pharmacists, by subjects with dry skin (82.8% and 81.4% vs. 75.0% vs. 66.0% vs. 80.8%; $p < 0.05$ and 85.3% vs. 66.5% vs. 77.9% vs. 65.5% vs. 57.1; $p < 0.01$, respectively). Improving of the greasiness of the skin was more frequently reported by subjects with pruritus and atopic dermatitis, and with other skin disturbances (54.8% and 53.1% vs. 52.8% vs. 51.7% vs. 30.8%; $p < 0.05$ and 61.9% vs. 53.0% vs. 59.6% vs. 57.1% vs. 53.8%; $p < 0.01$, respectively). While, in both groups, reduction of itching was more frequently reported by subjects with pruritus (66.4% vs. 47.8% vs. 43.7% vs. 56.1% vs. 34.6%; $p < 0.001$ and 73.3% vs. 37.1% vs. 36.0% vs. 47.0% vs. 57.1%; $p < 0.001$, respectively) – data not shown.

The satisfaction with Atoperal and Atoperal Baby products use

In the group surveyed by doctors, one of the Atoperal products was used by 72.7% of respondents and in the group surveyed by pharmacists, by 79.7% (Table 1).

In both groups, over 90.0% of respondents were satisfied or very satisfied with Atoperal products use (Table 1).

The percentage of women and men unsatisfied with Atoperal products use was similar in both study groups (Table 2). While, in both groups, men were slightly more often satisfied than women with Atoperal products use and women slightly more often were very satisfied (Table 2).

In the group surveyed by doctors, a higher percentage of patients unsatisfied with Atoperal products use was observed among respondents aged 19–25 years and 26–40 years and very satisfied among respondents aged over 40 years, while, in the group surveyed by pharmacists, among respondents aged over 40 years. However, in both groups, the percentage of subjects very satisfied was the highest among respondents aged over 40 years (Table 2).

In the group surveyed by doctors, residents of big cities were least frequently unsatisfied with Atoperal products use (Table 2). In addition, this subgroup was more frequently very satisfied with Atoperal products

use (Table 2). While, in the group surveyed by pharmacists, residents of big cities were most frequently unsatisfied with Atoperal products use and residents of smaller towns were most frequently very satisfied with Atoperal products use (Table 2).

In both study groups, subjects with higher education were most frequently unsatisfied and very satisfied with Atoperal products use (Table 2).

In a group surveyed by doctors, respondents with pruritus and atopic dermatitis were most frequently unsatisfied with Atoperal products use, and in a group surveyed by pharmacists, these were respondents with other skin disturbances (Table 2). While, in both groups, respondents prone to recurrent skin infections were most frequently very satisfied with Atoperal products use (Table 2).

Sources of information about Atoperal products

In the group surveyed by doctors, 75.5% of respondents obtained the information about Atoperal products from doctors and 17.4% from pharmacists. While, in the group surveyed by pharmacists, 48.9% obtained such information from pharmacists and 36.1% from doctors. Promotional handouts, Internet and newspapers were the marginal sources of obtaining information by respondents involved in this study (Table 1).

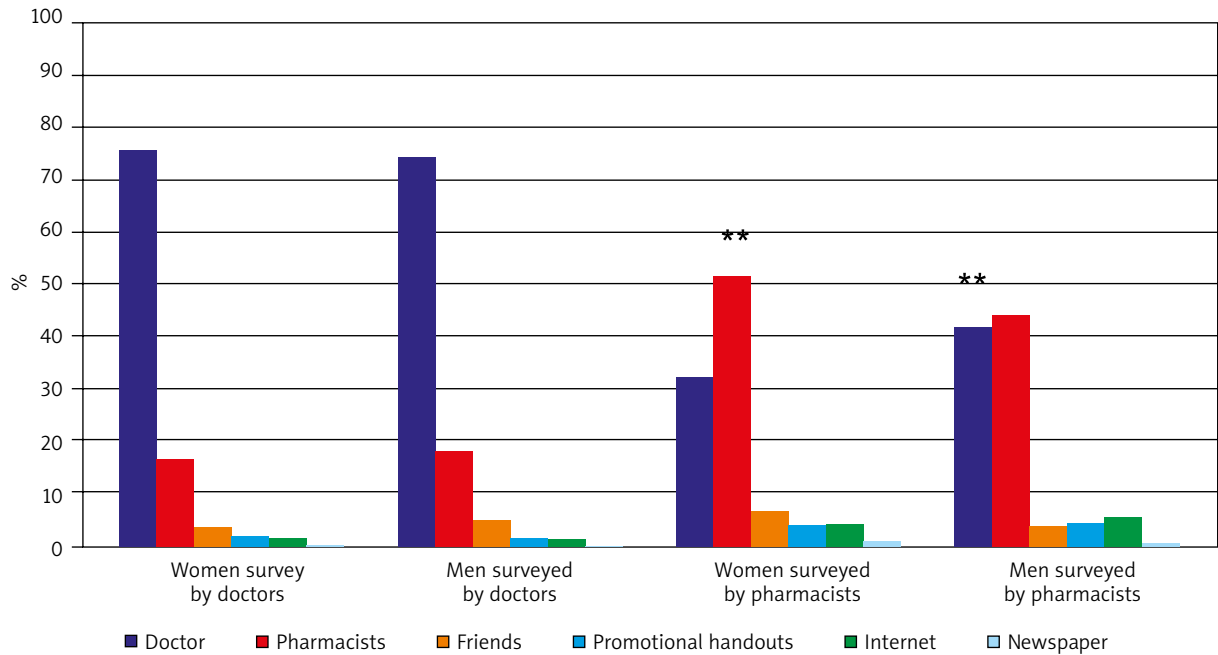
In the group surveyed by doctors, women slightly more than men obtained information about Atoperal products from doctors (76.5% vs. 74.4%) and men from pharmacists (16.7% vs. 18.2%). While, in a group surveyed by pharmacists, women more frequently than men obtained information about Atoperal products from pharmacists (51.6% vs. 44.2%; $p < 0.01$) and men from doctors (41.8% vs. 32.5%; $p < 0.01$) – Figure 1.

In the group surveyed by doctors, independent of age subgroups, over 70.0% of respondents obtained information about Atoperal products from doctors, slightly more frequently they were guardians of children aged 6 years and below (79.6% vs. 73.3% vs. 71.0% vs. 70.5% vs. 76.4%; $p < 0.05$). While, in the group surveyed by pharmacists, guardians of subjects aged 18 years and below received information about Atoperal products least frequently from pharmacists (46.1% and 46.% vs. 48.6% vs. 55.4% vs. 47.5%; $p < 0.05$). In both groups, respondents aged over 18 years themselves obtained most frequently information from promotional handouts, Internet and newspapers, and friend. However, this frequency was higher in a group surveyed by pharmacists than by doctors (data not shown).

In both study groups, the information about Atoperal products was obtained from doctors the least frequently by residents of big cities. In the group surveyed by doctors, pharmacists were the least frequent source of information about Atoperal products for residents of smaller towns and in the group surveyed by pharmacists, for rural residents (Figure 2).

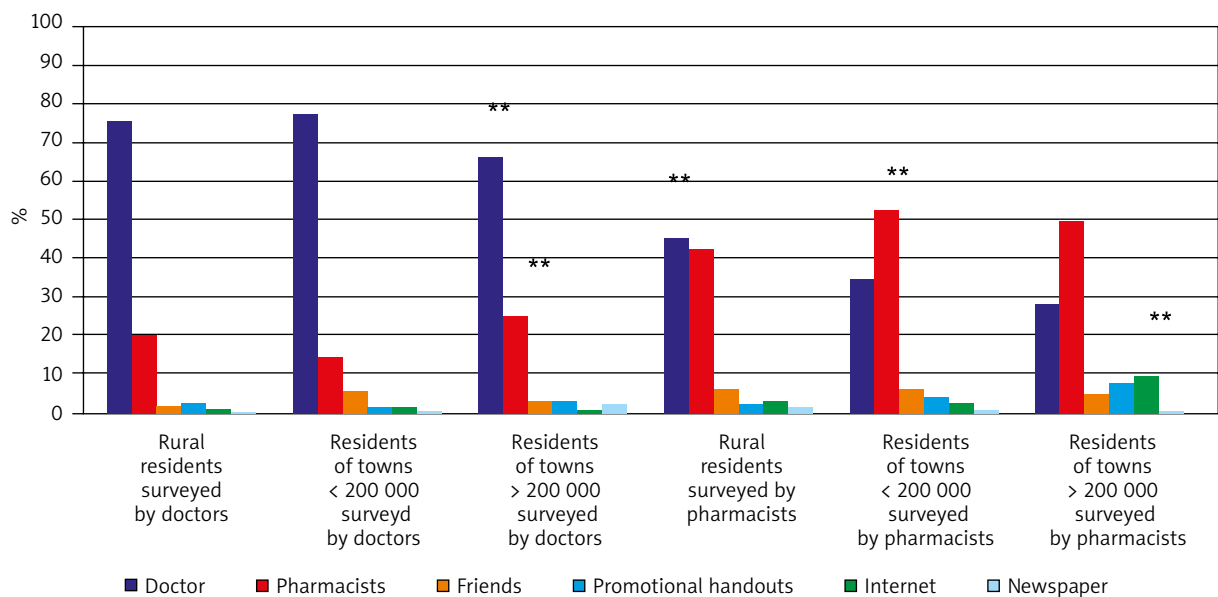
Table 2. Subjective satisfaction with Atoperal products use and socio-demographic and clinical characteristics of the respondents

Variable	Unsatisfied			Moderately satisfied			Satisfied			Very satisfied		
	Surveyed by doctors	Surveyed by pharmacists	Value of p	Surveyed by doctors	Surveyed by pharmacists	Value of p	Surveyed by doctors	Surveyed by pharmacists	Value of p	Surveyed by doctors	Surveyed by pharmacists	Value of p
Gender, n (%):												
Female	0.2	0.3	NS	9.5	8.5	NS	66.3	63.2	< 0.05	23.9	28.0	< 0.05
Male	0.1	0.5		7.8	8.0		70.8	67.1		21.3	24.4	
Age, n (%) [years]:												
≤ 6	0.2	0.1	< 0.05	6.1	6.7	< 0.05	69.1	68.8	< 0.01	24.6	24.4	< 0.01
7–18	0	0.3		7.0	6.6		75.7	72.4		17.3	20.7	
19–25	0.5	0		9.9	11.6		68.2	61.3		21.4	27.1	
26–40	0.4	0.4		11.2	8.9		64.7	63.3		23.7	27.4	
> 40	0	1.8		20.3	11.2		49.6	45.3		30.1	41.7	
Place of residence, n (%):												
Rural	0.2	0.1	< 0.05	12.2	7.5	< 0.05	71.9	68.6	< 0.01	15.7	23.8	< 0.05
Town ≤ 200 000 residents	0.2	0.4		7.5	10.8		68.0	63.8		24.3	25.0	
City > 200 000 residents	0	0.5		6.0	4.7		60.1	61.8		33.9	23.0	
Education, n (%):												
Primary	0	0.4	< 0.05	8.2	9.7	< 0.05	46.4	69.4	< 0.05	15.4	20.5	< 0.01
Secondary	0	0.3		11.1	11.3		70.3	61.7		18.6	26.7	
Higher	0.8	0.8		70.3	61.7		60.6	57.6		28.9	34.4	
Not applicable	0.1	0.1		18.6	26.7		67.9	69.4		25.5	24.0	
Skin symptoms, n (%):												
Dry skin	0.1	0.7	< 0.05	9.2	9.7	NS	65.6	60.6	< 0.05	26.1	29.0	< 0.05
Pruritus	0.2	0.6		8.7	8.3		61.8	61.5		29.3	29.6	
Atopic dermatitis	0.2	0.1		6.7	6.3		67.9	69.8		25.2	23.9	
Prone to recurrent skin infections	0	0.8		11.1	11.4		55.0	56.0		33.9	31.8	
Other	0	7.8		42.3	7.8		38.5	71.4		19.2	19.0	



***p* < 0.01 women vs. men.

Figure 1. Sources of information about Atoperal products according to gender



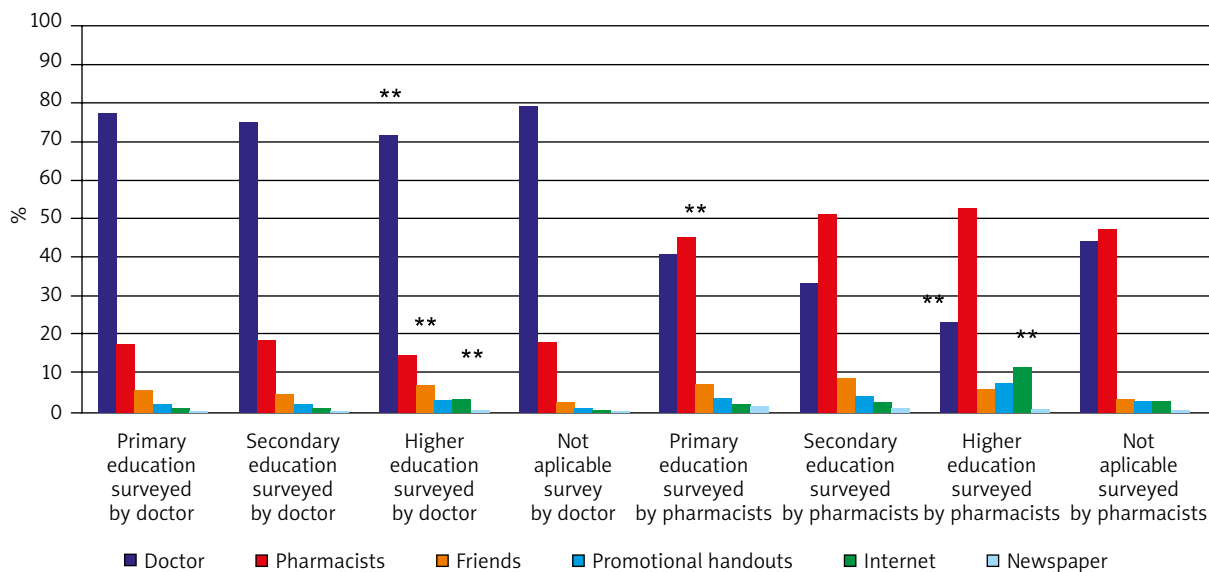
***p* < 0.01 surveyed by doctors vs. surveyed by pharmacists.

Figure 2. Sources of information about Atoperal products according to the place of residence

In both groups, subjects with higher education obtained the information about Atoperal products from doctors least frequently. While, in a group surveyed by doctors, subjects with higher education obtained the information about Atoperal products from pharmacists least frequently and in a group surveyed by pharmacists, subjects with primary education. In addition, in both groups, Internet was the most frequent source of infor-

mation about Atoperal products for subjects with higher education (Figure 3).

In a group surveyed by doctors, doctors more frequently than pharmacists were the source of information about Atoperal products for subjects with atopic dermatitis and prone to recurrent dermatitis (78.4% vs. 45.0%; *p* < 0.001 and 78.3% vs. 39.4%; *p* < 0.001, respectively). While, in a group surveyed by pharmacists, pharmacists



** $p < 0.01$.

Figure 3. Sources of information about Atoperal products according to the education level

more frequently than doctors were the source of information (42.3% vs. 13.8% and 39.4% vs. 12.8%, respectively) – data not shown.

Discussion

The presented study assessed the effect of satisfaction with one of brands of dermocosmetics use is the first large survey performed in the Polish population.

The most frequent skin problem in a group surveyed by doctors was atopic dermatitis, and in a group surveyed by pharmacists, skin itching. In both groups, dry skin occurred slightly more frequently among women and atopic dermatitis among men. It is in contrast to the previously published epidemiological study conducted among residents of the Lodz region, in which there was a similar frequency of atopic dermatitis among adult women and men [4]. While, in the Polish study conducted in children similar to the present study, atopic dermatitis occurred more frequently among boys than girls [5]. In addition, a study performed in the German population revealed the association between allergic dermatitis and male gender [6]. Considering that most of the study population were persons below 18 years of age, the results are consistent with previous observations showing the relationship between atopic dermatitis and male gender. This is in accordance with the results of other studies that have shown a higher frequency of atopic dermatitis among the population below 18 years than in adults [1] and the present study that has also shown a higher prevalence of atopic dermatitis in children and adolescents than in adults, regardless of the place of the survey. However, because the questionnaire included only age groups of 6 years

and below and 7–18 years and not the age of the respondents, it is impossible to clearly show whether post-puberty is followed by a significant reduction in the percentage of subjects with atopic dermatitis. On the other hand, it seems that about the self-restraint this disease with age indicates a higher incidence of dryness and itching of the skin in the both groups of adults respondents. However, it is interesting that frequency of people prone to recurrent skin infections increased with age regardless of the place of the survey.

Contrary to the previously published study [4] that shown an increased risk of atopic dermatitis among adults living in the city center, atopic dermatitis occurred least frequently among big city residents. However, the analysis did not take into account the age or city and rural residence. On the other hand, in the children population in other studies [5, 7], there was no association between the occurrence of atopic dermatitis and the place of residence. In addition, the results of a study conducted in the Finish population showed no differences in the incidence of allergic diseases among those living in rural areas, but was raised in non-agricultural families and city residents [8]. It should be noted that this aspect was not analyzed in this study.

One of the described risk factors for atopic dermatitis was a lower socioeconomic status including a low education level [9]. However, a frequent occurrence of atopic dermatitis among subjects without education in a group surveyed by doctors and among subjects with primary education in a group surveyed by pharmacists is not a confirmation of these results and the effect of the age structure of respondents. It should be noted that obtained results suggested that parents of younger children more often look for help from doctors.

As mentioned above, the important part of treatment of atopic dermatitis and skin disturbances that do not meet the criteria for this diagnosis is dermocosmetics containing emollients use [3]. On the Polish market there are several brands of these dermocosmetics and in the present study the Atoperal brand was assessed. In both study groups, respondents most frequently reported improving of skin hydration and greasiness of the skin and reduction of itching after Atoperal products use. The percentage of women and men who reported improving of skin hydration and reduction of itching was similar in both study groups. It should be also noted that these effects in both groups were most frequently reported among children aged 6 years and below. The interesting observation, but difficult to explain, is the least frequency of rural residents reporting these effects. It is in contrast to the results of a previously published study that has shown greater severity of skin disturbances in urban residents [4]. In the present study, the subjective effects reported by respondents were analyzed and these may depend on expectations. Since the questionnaire used in this study did not include these factors, further studies are necessary to explained this association. However, this hypothesis may be partially supported by the observations that residents of big cities were more frequently very satisfied with Atoperal products use. The benefits of using Atoperal products are shown by an observation that in both groups, improving of skin hydration was reported more frequently by subjects with dry skin and in a group surveyed by doctors, also subjects with atopic dermatitis. In addition, the effectiveness of Atoperal products in pruritus relieving is supported by the fact that subjects with pruritus more frequently reported reduction of itching.

The good quality and effectiveness of Atoperal dermocosmetics confirms satisfaction of respondents with their use. In both study groups, over 90.0% of respondents were satisfied and very satisfied with Atoperal products use. In addition, this is supported by the results shown that doctors and pharmacists were the main source of the information about Atoperal products for respondents in this study. On the other hand, the present study has shown that subjects with skin disturbances rarely actively look for information about dermocosmetics. Adults with higher education frequently actively look for such information.

The study has several limitations. The most important one is the lack of the control group using dermocosmetics of other brands. The second limitation is the self-reported assessment of effectiveness.

However, the strength of the study is the large study group which is representative of the Polish population and that this study is a multicenter one.

Conclusions

Atopic dermatitis was diagnosed most frequently in a group surveyed by doctors and its prevalence was

higher among men, subjects below 18 years and rural residents. The main skin disturbance that occurred in a group surveyed by pharmacists was skin pruritus, frequently among subjects above 18 years and urban residents. The main effect of Atoperal products use independent of the place of the survey was improving of skin hydration and greasiness of the skin and reduction of itching. In the study population, there was a high level of satisfaction with the use of Atoperal products. Doctors and pharmacists were the main sources of information about Atoperal products depending on the place of the survey. The respondents rarely found information about these products themselves, mainly in the Internet.

Conflict of interest

The author declares no conflict of interest.

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