

# NAIL CARE AND DISEASES IN THE PUBLIC OPINION

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**Abstract: Introduction.** Healthy, groomed hands and nails are everybody's pride and any changes in that area of the body, due to their visibility to other people, can cause discomfort, shame and low self-esteem. Frequently, the community may discriminate the people with such conditions. Most commonly, the reactions are motivated by the fear of infection.

**The aim of the study was:** **1.** To acquire information about the social awareness of correct nail care. **2.** To explore the public knowledge on the factors that have a negative effect on and damage nails.

**Material and method.** A general survey covered 50 people from the city of Lomza and its surroundings. The study was performed with the use of a questionnaire created by the authors.

**Results.** Considering the nail fold lesions, the actions taken by the respondents differed considerably. Most women declared that they would use household remedies (47.5%), whereas, men would visit a physician (30%). 95% of women and 90% of men stated that the appearance of the affected nail plate has a negative effect on self esteem, people with such defects feel inferior to people with healthy nail plates.

**Conclusions.** **1.** The knowledge of the female respondents on the general function of nails in the human body was higher than in male respondents.

**2** The knowledge of the respondents on the factors that facilitate the nail growth process, the time of full nail regrowth and the causes of brittle and fragile nails was sufficient.

**3** The most popular procedure for ingrown nails chosen by the respondents was the use of braces.

**Key words:** nails, disease, mycosis, paronychia.

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## Introduction

A nail plate is formed by keratin protein that adheres tightly to the finger's skin and forms an elastic structure. A healthy nail covering the finger and toe tips is smooth, translucent, slightly shiny and pink. The colour of the nail stems from a large number of blood vessels located in the nail bed. The nail is tetragonal in shape, slightly concave with visible delicate ridges on the surface. The size of the plate depends on the size of the finger. The nail is thinner towards the edges. Despite the closely located tile like hard keratinocytes, water loss through the nails is a few dozen times higher than through the skin. There are certain mineral substances in the nail plate that have a great effect on its durability, such as: calcium, zinc, magnesium and iron compounds. Nail apparatus is well vascularised and innervated, therefore, mechanical damage of the nail is usually very painful and leads to blood extravasation [1].

The look and quality of the nails can be negatively affected by certain pharmaceutical ingredients, frequent soaking of the hands in water (especially when hot and combined with detergents), acetone, the use of metal nail filers, inept polishing of the nail, inner organs and metabolism disorders as well as an unhealthy lifestyle of the modern society [2,3].

Nails have certain functions to perform in the human body. They include: the improvement of manual capabilities of the hands, protection of the finger and toe tips, improvement of little objects gripping capabilities and a decorative function. Moreover, nails can perform a significant role in systemic and skin diseases diagnosis [3, 4] or the pathologies can affect the nails only. Nail defects can be acquired or congenital. The acquired diseases include, among others: partial nail lifting, brittleness, ingrown nails [3], bacterial infections of the nail and the surrounding skin (e.g. paronychia can lead to hand movement disorders), mycosis and nail plate disorders that occur with psoriasis [1].

Particularly, the changes in the nail plate related to mycosis and psoriasis may result in stigmatization of the affected people, lowering the quality of their lives, limiting social interaction and exclusion from social groups they belonged to. Due to the visibility of the lesions on the hands, they attract attention and cause negative reactions at the sight of deformities and visible changes. As a result, the affected people refrain from social contacts and, consequently, stop serving certain social roles in order to avoid negative reactions, meaningful glances or situations where others withdraw from shaking hands with them out of fear of infection, and the feeling of embarrassment [1, 4].

The lesions on the nails that occur with psoriasis are very common and sometimes may be the only symptoms of the disease. They are especially relevant in diagnosing psoriatic arthritis, the course of which is usually non-specific [1]. Depending on the area of incidence, nail psoriasis can be characterised by: the rise of the free edge of the nail plate as a result of hyperkeratotic horny masses accumulation, nail plate indentations, an “oil drop” symptom (psoriatic lumps under the nail plate), nail plate detachment, elongated ridges in the plate, nail vitiligo, linear hemorrhages under the nail, brittleness, nail roughness, nail fold psoriasis [1, 5, 6].

Fragility or splitting, commonly referred to as brittleness of the nails is the weakening and chipping of the free edge of the nail. Brittleness can manifest with the peeling of the free edge, cracking along the longitudinal ridges of the nail plate and softness of the nail [3]. Most commonly, the root of the defect is the dryness of the nail plate caused by, for example, overuse of nail polish removers, frequent nail painting or prolonged soaking of the hands in water, especially water with detergents (brittle nails is a common condition of housewives). Moreover, brittleness can occur as a result of vitamin, iron, magnesium and calcium deficiency as well as in the course of dermatological conditions, such as lichen planus or psoriasis [7].

Ingrown nails is a painful and troublesome phenomenon, in which the edges of the nail plate curl and grow into the nail folds around the plate. First, there is an inflammatory reaction (pain, swelling, redness, topical tissue warming) at the spot where the nail plate curls into the fold, which is followed by a bacterial infection. The condition most commonly affects big toes on both feet [8]. The causes of ingrown nails are numerous, such as wearing tight shoes, wearing high heels that change the direction of nail growth, nail injuries, doing sports that significantly affect the feet, genetic factors, orthopaedic anomalies such as flat feet, incorrect walking motor skills, a bunion and – the key factor in this defect – incorrect feet care combined with deep cutting of the nail edges close to the nail folds and leaving the edges sharp [9].

Bacterial infections of the nails and the surrounding skin are surprisingly common. What is characteristic of them is that they proceed in various ways [9]. Paronychia is an acute or chronic condition that results from a bacterial or/and fungi infection of the nail fold surrounding the nail. The factors that contribute to the occurrence of paronychia are: prolonged soaking of the hands in water, ingrown nails as well as excessive interference in the nails, including the damage of the matrix and nail folds (circumstantial damage, nail biting, cuticle cutting and aggressive manicure) that foster microorganism penetration and infection development. In result, the nail fold becomes painful, swollen, red. Untreated paronychia can lead to phlegmon. Parony-

chia requires topical antibiotic or antifungal treatment. If topical treatment does not yield any effects, oral treatment is required [3].

Mycosis is an infectious and very burdensome condition, however, it often remains untreated. Nail mycosis usually occurs with toe mycosis. The infection usually affects the big and the little toe, from where it moves to the nails. The condition is characterised by the loss of natural translucency and the nail plate colourization (yellow or white) as well as uneven, brittle and fragile nails. Depending on the severity of the condition and the extent of the lesions, topical preparations (e.g. medicinal nail polish) or general, oral medications are used. Neglecting nail mycosis may result in its spreading all over the body [4, 10, 11]. In order to keep the therapy effective after the treatment, it is required to disinfect the shoes and socks to avoid the risk of reinfection [12].

It is worth noting that all changes of the skin, hair and nails have a significant effect on the affected people and lower the comfort of their lives. They feel rejected, worse and victimized. Due to the visibility of the lesions and negative reactions of the surrounding people (disgust and aversion) as well as the feeling of embarrassment, the affected limit or avoid social contacts. Moreover, skin lesions can complicate everyday functioning due to, for example, pain or complications of the primary disease changes [4–6].

### Aim of the study

1. To receive information about the social knowledge of correct nail care.
2. To explore the public knowledge on the factors that have a negative effect on and damage the nails.

### Material and method

A general survey covered 50 people from Lomza and its surroundings. The study was performed with the use of a questionnaire created by the authors, containing a set of demographic and specific questions on the nail anatomy, functions and care, the causes and symptoms of most common nail conditions and defects.

### Results

Out of the 50 people covered by the study, 68% lived in the city and 32% lived in the rural areas. The respondents had predominantly secondary education (76%), 16% had higher education, 6% vocational education and primary education was the response of 2% of the studied group.

Most of the women believed that nails are for improving manual functions of the hand, finger tips protection and have a decorative function – 77,5%. The men (60%) believed that nails protect finger tips (Table 1).

Table 1: The purpose of nails according to the respondents.

Answer category	Gender				Women				Men			
	Women		Men		Rural Area		City		Rural Area		City	
	N	%	N	%	N	%	N	%	N	%	N	%
Improving manual functions of the hand, finger tips protection and have a decorative function	31	77,5	6	60	11	91,7	20	71,4	2	50	4	66
Do not have any function	1	2,5	0	0	0	0	1	3,6	0	0	0	0
I don't know their purpose	0	0	1	10	0	0	0	0	0	0	1	16
Protection of finger tips	8	20	3	30	1	8,3	7	25	2	50	1	16,7
<b>Total</b>	<b>40</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>12</b>	<b>100</b>	<b>28</b>	<b>100</b>	<b>4</b>	<b>100</b>	<b>6</b>	<b>100</b>

Respondents were asked about the colour of a healthy nail plate. The highest number of women (50%) responded that the nail plate is pink. 7.5% of the women believed that the nail plate is white (all of them lived in the city). 70% of the men responded that a healthy nail plate is translucent (Table 2).

Table 2: The colour of the nail plate according to the respondents.

Answer Category	Gender				Place of Residence							
	Woman		Man		Woman				Man			
					Rural Area		City		Rural Area		City	
	N	%	N	%	N	%	N	%	N	%	N	%
Pink	20	50	3	30	7	58,3	13	46,4	1	25	2	33,3
Yellow	0	0	0	0	0	0	0	0	0	0	0	0
Semitranslucent	17	42,5	7	70	5	41,7	12	42,9	3	75	4	66,7
Grey	0	0	0	0	0	0	0	0	0	0	0	0
White	3	7,5	0	0	0	0	3	10,7	0	0	0	0
<b>Total</b>	<b>40</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>12</b>	<b>100</b>	<b>28</b>	<b>100</b>	<b>4</b>	<b>100</b>	<b>6</b>	<b>100</b>

According to 50% of women and 50% of men, full nail plate regrowth lasts for 90-150 days, which is the right answer (Table 3).

Respondents were asked to indicate factors that facilitate nail growth. 30% of women responded that pregnancy is such factor, 2.5% women believed, surprisingly, that malnutrition increases nail plate growth. According to most men (80%), nail growth is accelerated by frequent cutting. This group included 75% of rural areas inhabitants and 83.3% city inhabitants (Table 4).

Respondents were asked about the causes of brittle and fragile nails. 62% of women and 50% of men indicated that a poorly balanced diet is the cause of this phenomenon. This group included 46.6% of women and no men from the

Table 3: The duration of full nail plate regrowth.

Answer Category	Gender				Woman				Man			
	Woman		Man		Rural Area		City		Rural Area		City	
	N	%	N	%	N	%	N	%	N	%	N	%
7 days	3	7,5	0	0	1	8,33	2	7,14	0	0	0	0
30 days	14	35	1	10	4	33,32	10	35,72	0	0	1	16,7
90-150 days	20	50	5	50	6	50	14	50	2	50	3	50
I don't know	3	7,5	4	40	1	8,33	2	7,14	2	50	2	33,3
<b>Total</b>	<b>40</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>12</b>	<b>100</b>	<b>28</b>	<b>100</b>	<b>4</b>	<b>100</b>	<b>6</b>	<b>100</b>

Table 4: Factor that facilitates nail growth.

Answer Category	Gender				Woman				Man			
	Woman		Man		Rural Area		City		Rural Area		City	
	N	%	N	%	N	%	N	%	N	%	N	%
Pregnancy	12	30	0	0	3	25	9	32	0	0	0	0
Malnutrition	1	2,5	0	0	1	8,3	0	0	0	0	0	0
Cutting the nails every 2-3 days	12	30	8	80	3	25	9	32	3	75	8	83,3
Using a glass filer	6	15	0	0	3	25	3	11	0	0	0	0
I don't know	3	7,5	2	20	0	0	3	11	1	25	1	16,7
Skin conditions	0	0	0	0	0	0	0	0	0	0	0	0
Using hand creams	6	15	0	0	2	16,7	4	14	0	0	0	0
<b>Total</b>	<b>40</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>12</b>	<b>100</b>	<b>28</b>	<b>100</b>	<b>4</b>	<b>100</b>	<b>6</b>	<b>100</b>

city, and 50% of women and men respectively from the rural areas (Table 5).

Table 5: The cause of brittle and fragile nails.

Answer Category	Gender				Woman				Man			
	Woman		Man		Rural Area		City		Rural Area		City	
	N	%	N	%	N	%	N	%	N	%	N	%
Nail water content is lower than normal	19	47,5	2	20	6	50	13	46,4	2	50	0	0
Poorly balanced diet	25	62,5	5	50	7	58,3	18	64,3	1	25	4	66,7
It is filed in both directions	3	7,5	1	10	2	16,7	1	3,6	0	0	1	16,7
The use of certain medications	5	12,5	0	0	1	8,3	4	14,3	0	0	0	0
Not using protective nourishing hand products	2	5	0	0	1	8,3	2	7,1	0	0	0	0
I do not pay attention	1	2,5	0	0	0	0	1	3,6	0	0	0	0
I don't know	1	2,5	3	30	1	8,3	0	0	2	50	1	16,7

\*The results do not total to 100% as the respondents were able to choose more than one answer

The conditions that increase nail brittleness that were most frequently indicated are vitamin deficiency (70% women, 40% men), mycosis (30% women, 30% men) and lichen planus (20% women, 0% men). The data is presented in Table 6.

Respondents were asked to indicate the causes of ingrown nails. The majority of women (65%) and men (60%) answered that the cause of this phenomenon is incorrect nail cutting and cutting nail side edges (Table 7).

Considering the elimination methods of ingrown nails, the respondents mostly indicated the use of corrective bra-

Table 6: Diseases causing nail brittleness.

Answer Category	Gender				Woman				Man			
	Woman		Man		Rural Area		City		Rural Area		City	
	N	%	N	%	N	%	N	%	N	%	N	%
	Psoriasis	1	2,5	1	10	0	0	2	7,1	1	25	0
Mycosis	12	30	3	30	4	33,3	8	28,6	1	25	2	33,3
Vitamin Deficiency	28	70	4	40	7	58,3	21	75	1	25	3	
Ulcerative colitis, gastric ulcers	0	0	0	0	0	0	0	0	0	0	0	0
Atopic Dermatitis	2	5	1	10	0	0	2	7,1	0	0	1	16,7
Lichen Planus	8	20	1	10	4	33,3	5	17,9	1	25	0	0

\*The results do not total to 100% as the respondents were able to choose more than one answer

Table 7: The causes of ingrown nails.

Answer Category	Gender				Woman				Man			
	Woman		Man		Rural Area		City		Rural Area		City	
	N	%	N	%	N	%	N	%	N	%	N	%
	Incorrect nail care	12	30	1	10	4	33,3	7	28	1	25	1
Incorrect nail cutting	26	65	6	60	6	50	17	64,3	2	50	3	50
Tight shoes	11	27,5	0	0	4	33,3	17	60,7	0	0	0	0
Cutting the nail side edges	12	30	2	20	5	41,7	8	28,6	2	50	0	0
Wearing high heels	4	10	0	0	2	12,5	2	7,1	0	0	0	0
Cutting the nails too short	12	30	1	10	6	50	6	21,4	0	0	1	16,7
I don't know	2	5	1	10	1	8,3	0	0	0	0	1	16,7

\*The results do not total to 100% as the respondents were able to choose more than one answer

ces. Similar preferences could be observed for both genders in terms of place of residence (Table 8).

Table 8: Corrective methods of ingrown nails.

Answer Category	Gender				Woman				Man			
	Woman		Man		Rural Area		City		Rural Area		City	
	N	%	N	%	N	%	N	%	N	%	N	%
	Nail Bracing	23	46	5	50	6	50	17	60,7	2	50	3
Deep cutting of the ingrown nail	6	12	0	0	2	16,7	4	14,3	0	0	0	0
Ripping of the nail	0	0	0	0	3	25	0	0	0	0	0	0
Biological Pedicure	7	14	0	0	0	0	3	10,7	0	0	0	0
Hybrid pedicure	1	2	0	0	0	0	1	3,6	0	0	0	0
I don't know	8	10	5	50	4	33,3	4	14,3	2	50	3	50

\*The results do not total to 100% as the respondents were able to choose more than one answer

The respondents were asked to explain what paronychia is. The majority of respondents stated that it is an infection of the nail folds – 38% of women and 20% of men. From among these women, 8.3% lived in the rural areas and 50% lived in the city. From among the men, respectively, the rural area inhabitants represented 25% of the respondents, who indicated this answer and 16,7% were city inhabitants (Table 9).

Table 9: The notion of paronychia according to the respondents' answers.

Answer Category	Gender				Woman				Man			
	Woman		Man		Rural Area		City		Rural Area		City	
	N	%	N	%	N	%	N	%	N	%	N	%
	A nail disease	5	12,5	0	0	3	25	2	7,1	0	0	0
Nail fold infection, painful accumulation of pus around the nail	15	38	2	20	1	8,3	14	50	1	25	1	16,7
Inhibited nail growth	1	2,5	0	0	1	8,3	0	0	0	0	0	0
Nail plate infection	3	7,5	0	0	2	16,7	1	3,6	0	0		
Infection under the nail	3	7,5	0	0	0	0	3	10,7	0	0	0	0
I don't know	13	32,5	8	80	5	41,7	8	28,6	3	75	5	83,3
<b>Total</b>	<b>40</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>12</b>	<b>100</b>	<b>28</b>	<b>100</b>	<b>4</b>	<b>100</b>	<b>6</b>	<b>100</b>

The most commonly indicated paronychia treatment methods were: the use of home remedies (47.5% women, 30% men) and doctor's appointment (22.5% women, 30% men). Detailed data is presented in Table 10.

Table 10: Treatment methods of the redness and swelling of the nail fold according to the surveyed people.

Answer Category	Gender				Woman				Man			
	Woman		Man		Rural Area		City		Rural Area		City	
	N	%	N	%	N	%	N	%	N	%	N	%
	I ignore the problem	1	2,5	0	0	0	0	1	3,57	0	0	0
I see a doctor	9	22,5	3	30	3	25	6	21,43	1	25	2	33,3
I use home remedies	19	47,5	3	30	7	58,3	12	42,86	2	50	1	16,7
I often and thoroughly wash hands with soft soap	3	7,5	2	20	1	8,3	2	7,14	1	25	1	16,7
I soak it in water and soft soap solution	3	7,5	0	0	0	0	3	10,71	0	0	0	0
I disinfect it with alcohol	5	12,5	2	20	1	8,3	4	14,29	0	0	2	33,3
<b>Total</b>	<b>40</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>12</b>	<b>100</b>	<b>28</b>	<b>100</b>	<b>4</b>	<b>100</b>	<b>6</b>	<b>100</b>

The majority of respondents stated that mycosis is an infectious disease (77% women and 70% men) that can be transmitted directly or indirectly (80% women, 60% men). The definition of mycosis was accepted by 77.5% of women and 40% of men.

The participants of the survey were asked whether they think that nail diseases affect the self-esteem or the conviction of being worse. 47.5% of women and 50% men responded affirmatively and, from among the women who thought that nail defects can stigmatize the affected and lower their self-esteem, 41.1% were rural areas inhabitants and 50% city inhabitants, whereas, this opinion was shared by 50% of city and rural areas inhabitants, respectively (Table 11).

From among the factors that have a negative impact on the quality and the look of nails, the respondents indicated stress, nail diseases and injuries, incorrect nail care, detergent use and frequent soaking of the hands. Moreover, the interviewees stated that the nail polish remover dries out the nails (95% women, 70% men), which results in brittle nails (Table 12).

Table 11: The effect of nail diseases on self-esteem.

Answer Category	Gender				Woman				Man			
	Woman		Man		Rural Area		City		Rural Area		City	
	N	%	N	%	N	%	N	%	N	%	N	%
Yes, because the nails are visible to others and can cause disgust	19	47,5	5	50	5	41,7	14	50	2	50	3	50
Yes, because the affected people are ashamed of the way they look	17	42,5	3	30	6	50	11	39,3	2	50	1	16,67
Yes, but it refers mostly to women	2	5	1	10	0	0	2	7,1	0	0	1	16,67
Generally not	0	0	0	0	0	0	0	0	0	0	0	0
No	1	2,5	1	10	0	0	1	3,6	0	0	1	16,67
I don't have an opinion	1	2,5	1	10	1	8,3	0	0	0	0	0	0

Table 12: The effect of nail polish remover on the nails.

Answer Category	Gender				Woman				Man			
	Woman		Man		Rural Area		City		Rural Area		City	
	N	%	N	%	N	%	N	%	N	%	N	%
Dries	38	95	7	70	11	91,7	27	96,4	3	75	4	66,66
Moisturises	0	0	0	0	0	0	0	0	0	0	0	0
Cleans	2	5	1	10	1	8,3	1	3,6	0	0	1	16,67
Nourishes	0	0	2	20	0	0	0	0	1	25	1	16,67
<b>Total</b>	<b>40</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>12</b>	<b>100</b>	<b>28</b>	<b>100</b>	<b>4</b>	<b>100</b>	<b>6</b>	<b>100</b>

Correct hand care, including manicure, has a substantial effect on the hands' skin and nails condition. According to the respondents, the main consequence of inappropriate pushing back of the cuticles can be the damage of the matrix (70% women and 70% men).

### Discussion

It is often overlooked that nails should be cared for as well as the rest of the body. A healthy and well cared nail plate is pale pink due to a net of small blood vessels located under it. Unfortunately, as a result of a not very healthy lifestyle, nicotine smoking, injuries and harmful factors, the nail plate becomes thick, misshapen and changes its colour [13]. During the study, respondents had difficulties with indicating the correct colour of the nail plate, however, it were the women who predominantly presented the correct answer.

Not maintaining correct nail care, smoking, overusing certain cosmetic products or procedures, we risk the damage of our nails due to an excessive dryness of the nail plate [13]. 95% of the interviewed women and 70% of men believed that nail polish remover has a strong drying effect on the nail plate. Nonetheless, it is the most commonly used cosmetic product. From among the other factors that intensify brittleness of the nails, the respondents indicated vitamin deficiency, mycosis, prolonged soaking of the hands, nail diseases and injuries.

Pain associated with lesions on the nails have a strong impact on human functioning and well being. Untreated

nail defects can impede daily life functioning, including school and work activity. Moreover, nail and around the nail (e.g. nail fold) infections that are often neglected therapeutically, can result in nail deformities [1]. Unfortunately, only 38% of interviewed women and 20% of men were familiar with paronychia. As treatment methods for the symptoms of the condition, most respondents declared the use of home remedies (47.5% women and 30% men), however, only a small group would consider visiting a doctor. Considering ingrown nails, most respondents knew the causes of the condition and the leading therapeutic method in the opinion was the placement of corrective braces by a podologist/cosmetologist.

During nail plate growth, development disorders can often occur, such as ingrowing of the nail plate down the nail fold which results in finger inflammation. There are a few factors that lead to this defect: constant pressure on the nails, mechanical injury, wearing tight shoes, incorrect nail cutting [14]. In this study, also the respondents most frequently indicated the incorrect nail cutting (65% women and 60% men) and wearing tight shoes (27.5% women) as the cause of this condition. The fundamental mistake that is often made while cutting toe nails is rounding the side edges of the nail plate or cutting the sides too deep [15]. Ingrown nails can be treated with a surgical (partial or complete removal of the nail plate by a surgeon) or conservative method (placing corrective braces) [14]. 46% of women and 50% of men in the study found the use of corrective braces as the leading treatment of ingrown nails.

Psoriatic nail changes, in the form of deformed and pitted nail plate, can affect one or more nails [4, 16]. Psoriasis is treated separately from nail mycosis when its symptoms are hyperkeratosis and nail plate colour change [16]. The majority of respondents (77.5% women and 40% men) correctly identified mycosis and its symptoms.

Lesions of a disease, such as skin and nail condition, that are visible to other people often lead to stigmatization of the affected people and different forms of exclusion [17]. The respondents were also asked about the influence of nail changes and diseases on the level of self-esteem or the feeling of being worse. With regard to this matter, 47% of women and 50% of men gave an affirmative answer. From among the women who believed that nail defects severely interfere with the socio-emotional sphere, 41% were rural areas inhabitants and 50% city dwellers, and in the case of men, 50% of men from the city and from the rural areas, respectively, agreed with this opinion.

### Conclusions

1. The knowledge of women on the general function of nails in the body was greater than men.

2. The knowledge of respondents on the factors facilitating nail growth, the time of complete nail regrowth and the causes of brittle and fragile nails was sufficient.
3. The most popular treatment method of ingrown nails in the survey was the use of braces.

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