

## The knowledge of beauty salon clients about hallux valgus therapy. Preliminary study

Niczyporuk M.<sup>1\*</sup>, A-F, Pupek P.<sup>2,A-E</sup>, Masłowska J.<sup>3A,C,E</sup>, Knaś <sup>3,A,C,E,F</sup>

1. Department of Esthetic Medicine, Medical University of Białystok, Poland
2. student of Cosmetology, Lomza State University of Applied Sciences, Poland
3. Department of Cosmetology, Lomza State University of Applied Sciences, Poland

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### ABSTRACT

**Introduction:** Hallux valgus is a frequent painful deformity of the feet, and occurs most often in women of different ages. People with hallux valgus have, among others, a genetic predisposition, a weaker ligament-and joint structure of the foot, pes planus (flatfoot), rheumatoid arthritis, muscular balance disorders, are obese, and wear improper footwear.

**Purpose:** To assess the knowledge of beauty salon clients on the subject of professional care of hallux valgus.

**Materials and methods:** Research was conducted in a beauty salon in Lomza, Poland using an original questionnaire. The study was approved (No. 4/2013) by the senate of the Ethics Committee of the Lomza

State University of Applied Sciences.

**Results:** The conducted research showed that 48% of the surveyed women dealt with hallux valgus using orthopedic insoles, and 26% underwent procedures recommended by a specialist. Respondents knew kinesiotherapy and taping as treatment methods for this ailment. The vast majority of the surveyed women would undergo non-surgical hallux valgus treatment, and only a few would opt for surgery.

**Conclusions:** The knowledge of the studied women about hallux valgus was quite extensive.

**Keywords:** cosmetology, hallux valgus, students' knowledge

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DOI

**\*Corresponding author:**

Marek Niczyporuk, M.D., Ph.D.  
Department of Esthetic Medicine, Medical University of Białystok  
3 Akademicka Str., 15-267 Białystok, Poland  
e-mail: niczy.ma@gmail.com

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## **INTRODUCTION**

Hallux valgus, also commonly called a “bunion”, is a frequent painful deformity of the feet. It is associated with deformation of the first metatarsophalangeal (MTP) joint, a lateral deviation of the big toe resulting in a medial deviation of the first metatarsal bone, forming an exostosis, and may be accompanied by bursitis and joint inflammation [1,2]. Although the deformation originally refers to the first MTP joint, for the metatarsal bone axis to drift medially, the metatarsocuneiform joint angle is also altered [3,4].

Deformation causes discomfort associated with inflammation. The most common complaint in the case of hallux valgus is painful medial prominence [5,6], metatarsophalangeal joint [4,7], and the remaining metatarsal or navicular bones. The accompanying symptoms are a burning sensation under the metatarsal heads, swelling and redness [1,2].

As a result of toe deformation, the foot biomechanics are changed. The weight of the body is unevenly distributed, and the toe is no longer a sufficiently strong support point when walking. The foot stabilizing structures deteriorate and the muscles weaken [4,8]. An important element is the selection of appropriate footwear. High heels cause that the weight of the body rests on the toes and the midfoot instead of on the heels, thus it is best to wear flat shoes or 3-4-centimeter, wide heels. It is also important that the toes are able to move freely. Also too small shoes contribute to the formation of hallux valgus and hammer toe. Proper shoes should be half a centimeter longer than the longest toe. The sole of the shoe is also important because too thin and stiff does not absorb the shocks that accompany walking, which can result in micro-injuries of the foot [3,9,10].

The most common cause worsening the quality of life of people affected by hallux valgus is pain [1,2], which intensifies especially when walking, when the deformity rubs against the shoe. This causes that the person feels enormous discomfort and their quality of life deteriorates. In addition, postoperative complications also affect the quality of life of people with hallux valgus [7,8]. Contemporary medicine aims to restore the quality of life of people with hallux valgus to the state before the disease.

The aim of this study was to assess the knowledge of beauty salon clients on the subject of professional care of hallux valgus.

## **MATERIALS AND METHODS**

The study on the knowledge of beauty salon clients on the subject of the treatments used for hallux valgus was conducted among 50 selected

clients of “NATURA” Beauty Salon in Lomza, Poland.

The study was conducted based on a survey using a proprietary questionnaire. The study was approved (No. 4/2013) by the Senate of the Ethics Committee of the Lomza State University of Applied Sciences. Participation in the study was voluntary and anonymous. The obtained information was only used for scientific aims and with complete confidentiality in accordance with the Personal Data Protection Act (Journal of Laws No. 133, item 833, of 29th August 1997).

The study was conducted between March and April 2016. Among the respondents, 44% were aged 30-49 years, women aged 19-29 accounted for 30%, 18% were women aged 50-69, and 8% over 70 years old. The largest number of the surveyed women had a secondary education (46%). Respondents with a higher education accounted for 40%, while 4% had a vocational education. The vast majority of the surveyed women (70%) came from the city, while the remaining 30% were rural residents.

## **RESULTS**

The conducted research showed that as many as 88% of the surveyed women led an active lifestyle, and the remaining 12% assessed their lifestyle as inactive. A majority of the surveyed women (76%) took advantage of cosmetic treatments for the feet, while the remaining 24% did not. For most of the respondents (64%), the topic of foot problems was not shameful, while for 22% it was very embarrassing. The remaining 14% of the surveyed women had no opinion on this subject. In the case of 56% of the respondents, their families had a history of foot problems, while 24% did not have a family history of the disease. A total of 20% of women did not have knowledge on this topic. More than a half (54%) of the women knew the term bunion, while 38% had heard about this condition, but they had never had experience with it, and 8% of the respondents did not have any knowledge about it at all.

The vast majority of the surveyed women (78%) were aware that hallux valgus was painful, and 16% had no opinion about this topic. Whereas, 6% of respondents were of the opinion that hallux valgus does not cause pain. When asked about the causes of hallux valgus, more than half of the surveyed women (58%) indicated uncomfortable footwear, while 12% believed that it was too much weight on the feet. A small percentage of women indicated a genetic predisposition (6%) and overweight (4%).

A total of 54% of the respondents had problems with hallux valgus and the remaining 46% did not have such symptoms. In the case of 42% of

the women, the first symptom of hallux valgus was forefoot pain, and 38% observed redness and swelling. Whereas, 14% of the surveyed women felt discomfort while wearing shoes. In the case of 44% of the respondents, the pain was in the form of a burning sensation, while 32% felt a shooting pain. The remaining 22% experienced chronic pain.

The conducted research showed that 48% of the surveyed women dealt with hallux valgus using orthopedic insoles, and 26% underwent procedures recommended by a specialist. A slightly smaller group of respondents (22%) underwent special rehabilitation or exercise, and 4% did not treat these symptoms. The vast majority of the surveyed women (74%) stated that in their opinion a person with hallux valgus should go to an orthopedic surgeon, and 18% to a podologist. While 6% of the respondents decided that the appropriate doctor in this case would be a family doctor, and 2% would go to a beautician.

More than half of the surveyed women (66%) obtained information about hallux valgus from the Internet, 18% from a doctor, 10% from a beautician, and 6% from popular magazines. This study shows that 48% of the respondents were familiar with kinesiotherapy as a treatment method for hallux valgus, 36% taping, 8% PNF method (proprioceptive neuromuscular facilitation), and 4% manual therapy. The vast majority of the surveyed women (94%) would undergo non-surgical hallux valgus treatment, and only 6% would opt for surgery. Hallux valgus deformation significantly affected the quality of life of 76% of patients (feeling pain caused irritability).

## **DISCUSSION**

Hallux valgus, commonly referred to as bunion, is one of the most common deformities of the foot. This disease is a painful deformation of the forefoot at the level of the first metatarsophalangeal joint, characterized by a lateral deviation of the first metatarsal bone axis and a medial deviation of the toe axis. According to many authors [1,4,8-12], hallux valgus is a disorder caused by, among others, wearing inadequate shoes, especially too tight, high heels or narrow/pointed toes. It is assumed that for hallux valgus to develop certain predispositions in the construction of the foot must occur, and improper footwear contributes to increasing discomfort and accelerated progress of deformation. Our research shows that the respondents had adequate knowledge on this subject. When asked about the causes of hallux valgus, more than half of the surveyed women (58%) indicated uncomfortable footwear, while 12% believed that it was too much weight on the feet.

The relationship between the deformity and flat feet raises a lot of controversy. Many authors emphasize a tendency for a pronated foot to develop

hallux valgus. The coexistence of generalized ligamentous laxity cannot be ruled out, which usually results in excessive pronation as well as supination. This contributes to foot instability, facilitating hypermobility and hallux valgus formation [1,10,11].

Some authors believe that excessive mobility is a rare cause of hallux valgus. Whereas, other researchers suggest that the hypermobility of the first metatarsal bone is the basic pathology that leads to the formation of this deformity. Despite all these controversies, it is indisputable that for medial deviation drift of the first metatarsal bone to occur, there must be some degree of deformation or instability of the first MTC joint. Joint laxity of the first radius occurs in three areas, which results in the possibility of dorsal subluxation of the metatarsal bone in relation to the cuneiform bone. The clinical symptom of this pathology is a sagging or collapse of the arch of the foot. This enables a logical explanation as to why hallux valgus deformity is often accompanied by flat feet. Dorsal translocation of the first radius results in the transfer of the foot support point towards the second radius, which in turn leads to metatarsalgia and overburdening of the second MTP joint. Such changes often accompany hallux valgus [1,3,8,11].

Ostrowski et al. [12] and Prusinowska et al. [13] reported that genetic predisposition plays an important role in the occurrence of hallux valgus. Other, or additional, predisposing factors may also be obesity and standing types of work, according to the authors. Only a small percentage of the surveyed women had knowledge about this subject, who identified a genetic predisposition (6%) and overweight (4%) as the cause of hallux valgus.

According to Klimczak et al. [5] and Srokowska et al. [6], the most common main complaint in hallux valgus is a painful medial prominence. Whereas, Marczyński [7] considers metatarsophalangeal joint pain a symptom of hallux valgus. However, Waldman [14] reports that in extreme cases, pain, swelling, and inflammation of the metatarsophalangeal joint capsule occur. Our research indicates that in 42% of the women, the first symptom of hallux valgus was forefoot pain, and 38% observed redness and swelling. In the case of 44% of the respondents, the pain was characterized by a burning sensation, while 32% felt a shooting pain. The remaining 22% of them experienced chronic pain.

Michalak [9] is of the opinion that in the case of inflammation, pads, protector rings, and inserts that pull the toe towards the outside are helpful. Such a cover protects from pressure, reduces pain, and prevents swelling. For metatarsalgia-type pain, orthopedic inserts with a metatarsal pad can also be used. The conducted research showed that 48% of the surveyed women dealt with hallux valgus

using orthopedic insoles, and 26% underwent procedures recommended by a specialist.

In medical practice, many therapeutic methods are used in the fight against hallux valgus. One of them, according to Rakowski [15] and Prusinowska et al. [13], is manual therapy concerning dysfunctions of joint structures and the related muscles, connective tissues, nerve roots, and peripheral nerves. Techniques used in manual therapy are a part of physiotherapy used in orthopedic disorders of the musculoskeletal system. Our research showed that only 4% of the respondents were familiar with this method. Whereas, Marczyński [7] considers the Proprioceptive Neuromuscular Facilitation (PNF) method effective for hallux valgus treatment, which, according to our research, only a few respondents were knowledgeable about.

Baumhauer [8] reports that the active rehabilitation of joints is becoming increasingly common in medicine. According to Bajerska et al. [16] and Głowczewska-Siedlecka et al. [17] kinesiotherapy is an effective method. The aim of kinesiotherapy is to restore the optimal length of contracted muscles, i.e. the adductor muscle of the big toe and short flexor muscles, rebuilding plantar muscle strength forming the arch of the foot and strengthening the peroneus longus muscle, which weakens in people who wear high heels. Whereas, according to Mosiejczuk et al. [18] and Kočański et al. [19], an alternative solution that can bring relief to hallux valgus sufferers is taping, which involves using special tapes to help the patient overcome pain, and to place the hallux valgus deformity in the correct position in relation to the other toes. The present study showed that the surveyed women knew these hallux valgus treatment methods very well; 48% were familiar with kinesiotherapy, and 36% with taping.

According to Bazan et al. [3], Baumhauer [8], and Prusinowska et al. [13], conservative treatment of hallux valgus deformity is indicated in moderate forms, or when surgical treatment is too burdensome for the patient. In advanced deformations of the toe, with significant pain, surgical treatment is used. An operation correcting the hallux valgus is necessary when the progressive deformation might lead to degenerative changes in the knee and hip joints. The conducted study shows that the vast majority of the surveyed women (94%) would undergo non-surgical (conservative) hallux valgus treatment, and only 6% would opt for surgery.

As a deformity that brings with it enormous pain, discomfort and inflammation, hallux valgus significantly worsens the quality of life of patients. Also, this study shows that hallux valgus significantly affects the quality of life of patients, because most of them (76%) were irritated with people in their environment due to pain [1,2].

As a deformity that brings with it enormous pain, discomfort and inflammation, hallux valgus significantly worsens the quality of life of patients. Also, this study shows that hallux valgus significantly affects the quality of life of patients, because most of them (76%) were irritated with people in their environment due to pain [1,2,20]. Research carried out by Wyderka, Gronowska and Szeląg [20] proved that burdensome pain, which patients experienced before surgery, resolved completely or almost completely after the operation. The vast majority of respondents did not feel the need to take analgesics, and the cosmetic defect, which is so important for women, was reduced or completely disappeared.

## CONCLUSION

Knowledge about hallux valgus among the studied women was quite extensive. They associated the disease with pain (burning sensation, shooting pain, chronic pain), redness, and swelling of the forefoot. The women knew that orthopedic insoles, kinesiotherapy, taping, and surgical treatment are used in the treatment process. The respondents were also aware that hallux valgus significantly affects the quality of life, but only 6% would opt for surgical treatment.

## Conflicts of interest

The authors declare that there are no conflicts of interests regarding the publication of this study.

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