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Orijinal Araştırma

Investigation of The Usage of Traditional and Complementary Medicine by Patients With Diabetic Foot Wounds

Diyabetik Ayak Yarası Gelişen Hastaların Geleneksel ve Tamamlayıcı Tıp Uygulamalarını Kullanma Durumlarının İncelenmesi

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ABSTRACT

Aim: Diabetic foot is a frequent complication of diabetic patients due to susceptibility to infection, peripheral artery disease and neuropathy.

Method: The research was conducted as a descriptive and cross-sectional type of study with 180 patients with diabetic foot ulcer in order to determine their use of traditional and complementary medicine for wound healing. Data were collected using the "Structured Questionnaire". In the evaluation of the data; Pearson Chi-Square, Student's t-test, Fisher's Exact test and descriptive statistics were used. $p<0.05$ was considered significant.

Results: Participants; it was seen that the mean age was 61.5±10.6, 59.4% of them were primary school graduates, 85% of them were married and 73.3% of them were male. 35% of patients reported using at least one traditional and complementary method for foot ulcers. While using herbal products, St. John's Wort, olive oil, pine, aloe vera extract and onion; among the manipulative and mind-body methods, it was determined that praying, applying vaseline and ice to the wound were used the most. It was determined that 82.5% of the patients using traditional and complementary medicine methods used these methods without informing their physicians.

Conclusion: Patients who use traditional and complementary medicine methods without informing their physicians are at risk of infecting the wound and delaying its treatment. Therefore, it is important that the healthcare team caring for a diabetic foot ulcer question and educate each patient about traditional and complementary medicine practices.

Keywords: Diabetes, Diabetic Foot Ulcer, Wound Healing, Traditional and Complementary Treatment

ÖZET

Amaç: Diyabetik ayak, diyabetli hastalarda, enfeksiyona yatkınlık, periferik arter hastalığı ve nöropatiye bağlı sık gelişen bir komplikasyondur.

Yöntem: Çalışma, tanımlayıcı-kesitsel tipte ve diyabetik ayak yarası olan hastaların, yarada kullandıkları geleneksel ve tamamlayıcı tıp yöntemlerini saptamak amacıyla 180 hasta ile gerçekleştirilmiştir. "Yapılandırılmış Soru Formu" kullanılarak veriler toplanmıştır. Verilerin değerlendirilmesinde; Pearson Chi-Square, Student t-testi, Fisher's Exact test ve tanımlayıcı istatistikler kullanılmıştır. $p<0.05$ anlamlı olarak kabul edilmiştir.

Bulgular: Katılımcıların; yaş ortalamasının 61.5±10.6, %59.4'ünün ilkokul mezunu, %85'inin evli ve %73.3'ünün erkek olduğu görülmüştür. Hastaların %35'i, ayak yaraları için en az bir geleneksel ve tamamlayıcı yöntemi kullandığını bildirmiştir. Bitkisel ürünlerden, sarı kantaron, zeytin yağı, çam, aloevera özü ve soğan kullanılırken; manipülatif ve zihin-beden yöntemlerinden en çok dua etme, yaraya vazelin ve buz uygulamanın kullanıldığı saptanmıştır. Geleneksel ve tamamlayıcı tıp yöntemlerini kullanan hastaların %82.5'inin hekimlerine bilgi vermeden bu yöntemleri kullandıkları saptanmıştır.

Sonuç: Hekimlerine haber vermeden geleneksel ve tamamlayıcı tıp yöntemlerini kullanan hastaların, yarayı enfekte etme ve tedavisini geciktirebilme riskleri bulmaktadır. Bu nedenle, diyabetik ayak yarasına bakım veren sağlık ekibinin geleneksel ve tamamlayıcı tıp uygulamaları konusunda her hastayı sorgulaması ve eğitim vermesi önemlidir.

Anahtar Kelimeler: Diyabet, Diyabetik Ayak Yarası, Geleneksel ve Tamamlayıcı Tedavi.

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INTRODUCTION

Diabetes is a global public health problem that significantly affects the quality of life of individuals. It is one of the most important causes of blindness, renal failure, and lower extremity amputations (World Health Organization, 2016). Peripheral neuropathy, peripheral arterial disease, and foot ulcers due to the proclivity to infections and related amputations are frequently seen in individuals with diabetes (International Diabetes Federation [IDF], 2015; Public Health Institution of Turkey, 2014).

It is estimated that all patients with diabetes have a risk of developing diabetic foot ulcers by 12-15% throughout their lives. It has been seen that 50-70% of non-traumatic foot amputations are related to diabetes. In the next 3-5 years after the first amputation, half of the patients undergo amputation for the other leg. It was reported that relative death risk increases approximately 2.5 fold in diabetic individuals who are diagnosed with a new foot ulcer (Turkey Endocrinology and Metabolism Society, 2017). According to the Ministry of Health data, the number of amputations in our country is approximately 12,000 per year. An important part of this is diabetes-related amputations (Saltoğlu, Kılıçoğlu, Baktıroğlu, Oşar-Siva and Aktaş, 2015).

In the National Consensus Report, diagnosis, treatment, and prevention of diabetic foot ulcer and infections include medical therapies such as correct antibiotic selection, surgical interventions, wound debridement, revascularization, reconstruction, wound care, metabolic control, foot load relief, and negative pressure application (Saltoğlu et al., 2015).

Due to cultural characteristics, there are complementary methods which are used instead of medicine or used additionally in our country. The use of methods that are objected by many medical professionals is increasing day by day (Bulduklu, 2015). These methods are called "complementary", "traditional" or "alternative medicine" when they cover the spectrum of health practices that are not in the country's own tradition and are not included in the current health system (Tokaç, 2013). According to the Complementary and Alternative Medicine (CAM) Center of the American National Institutes of Health, CAM approaches; tried to explain their activities in different disease groups by dividing them into five groups as "cognitive-behavioral approaches", "manipulative approaches", "energy approaches", "alternative medical systems" and "biological approaches" (http://nccam.nih.gov/health)/whatiscam).

Some herbs covered in "biological approaches" are used by patients with diabetic foot ulcers for the treatment of their wounds. Most of these products used do not contain enough studies that they heal diabetic foot ulcer. Unconscious and disproportionate use of these herbs can lead to serious infections, as well as cause foot/limb loss as a result of misuse. Studies on the use of traditional and complementary medicine methods in patients with diabetic foot ulcers in the world have not been reached. The information to be obtained from the studies on this subject will guide the researchers and clinical staff in determining the information needs of the patients about the use of traditional and complementary medicine methods and planning their education.

Study Questions

In the research, answers to these questions were sought.

1. Do patients with diabetic foot ulcer use traditional and complementary methods for wound healing?

2. Which traditional and complementary method/methods are used by patients?

METHOD

Research Place

This cross-sectional and descriptive research was conducted in "Nazlı-Selim Eren Chronic Wounds and Infections Care Unit" of the Practice and Research Hospital of Aydın Adnan Menderes University. This unit is located within the hospital, has 7 rooms, and provides service 7/24. In the unit, the service is provided by a multidisciplinary team (a faculty member physician, two resident physicians, and six nurses).

Research Population and Sample

Therefore, no sample selection was made and 180 patients who applied the unit between October 2016 and June

2017 with diabetic foot diagnosis and who met the inclusion criteria (being at the age of 18 years and over, having type 2 diabetes, having active diabetic foot ulcer, trying to heal the wound by using a traditional and complementary method, and volunteering to participate) were included in the study.

Data Collection Tools

The data of the research were collected using the "structured questionnaire" prepared based on the literature knowledge (Berk, Dokumacı ve Kaymaz, 2015; Dedeli ve Karadakovan, 2011; Erdoğan, Atik ve Çınar, 2014; Gülgün, 2014; Güngörmüş ve Kıyak, 2012; Kılıç, Şentürk ve Göriş, 2015; Kılıçarslan, 2012; Kramlich, 2014; Ö. Ovayolu ve N. Ovayolu, 2013). Before using the form, opinions of experts (four nursing instructors and one physician) who were experienced on diabetes/diabetic foot about the content of the questionnaire were taken and the questionnaire was rearranged according to the recommendations. In addition, a preliminary application was conducted with 10 patients who were not included in the sample and the form was finalized.

This form consists of three parts.

The first part consists of 2 open-ended and 7 closed-ended questions that examine the sociodemographic (age, sex, place of residence, educational status, etc.) characteristics of the participants. The second part consists of 1 open-ended (diabetes year) and 5 closed-ended (medicines used in the treatment of diabetes, regular attendance to diabetes examinations, comorbid health problems) questions which examine the health status of the participants.

The third part consists of 2 open-ended questions which examine the use of traditional and complementary treatment methods by patients with diabetic foot ulcer (How long have you been using non-pharmacological treatment methods for your foot ulcer? In your opinion, which traditional/complementary method you used was not useful?) and 15 closed-ended questions (the methods used and information sources).

The structured questionnaire was implemented to the patients who received inpatient treatment in the wound care unit after necessary explanations were made and their verbal consent was obtained. Some of the participants filled in the form by themselves. For the rest of the participants (illiterate, etc.) who asked for help, the questions were read by the researcher.

Data Evaluation

All the data were analyzed using SPSS 18.0 package program. Frequency tables and descriptive statistics were used in the analysis of the findings. The significance level was accepted as 0.05 for the intergroup differences and $p<0.05$ was considered statistically significant.

Ethical Aspects

Prior to the research, necessary ethical approval was obtained from the Noninvasive Clinical Trials Ethics Committee of Adnan Menderes University Faculty of Medicine (Protocol No: 2016/960) and from the hospital. The participants were informed about the purpose of the study and that the data obtained will be used for scientific purposes and their verbal consent was obtained.

RESULTS

This study was conducted with 180 patients with diabetic foot ulcer who applied to the wound care unit which admits patients all over Turkey and provides service 7/24. The mean age of the participants (N=180) was 61.5±10.6 (min:33, max:88), 73.3% were male, 85% were married, 59.4% were primary school graduates, and 25% were self-employed (Table 1).

Table 1. Distribution of Participants' Demographic Characteristics (N=180)

Descriptive Information	N	%
Age (61,54±10,6) (Min: 33, Max:88)		
Sex		
Female	48	26.7
Male	132	73.3
Marital Status		
Married	123	85
Single	57	15
Educational Status		
Illiterate	15	8.3
Literate	3	1.7
Primary school	107	59.5
Secondary School	17	9.4
High school	22	12.2
University	16	8.9
Occupation		
Retired	4	2.2
Officer	18	10
Private Sector	38	21.1
Self-employment	45	25
Housewife	43	23.9
Farmer	32	17.8

Table 1. Distribution of Participants' Demographic Characteristics (N=180) (Continue)

Place of Longest Residence		
Village	47	26.1
District	87	48.3
City Center	46	25.6
Income Status		
Income Less Than Expenses	95	52.8
Income Equal to Expenses	81	45
Income More Than Expenses	4	2.2
Health Insurance		
None	3	1.7
Social Security Institution	166	92.1
Health Card for Uninsured	10	5.6
Private Health Insurance	1	0.6
Current Working Status		
Non-employed	63	35
Employed	18	10
Retired	99	55

40% of the participants stated that they had diabetes for 10 years or less and 56.1% of them stated that they used insulin. It was determined that 51.1% of the participants had regular diabetes examinations and that 72.2% had previously received foot ulcer treatment. It was found that 70% of the participants had other health problems besides diabetes (42.8% had hypertension, 28.9% had cardiac problems, 16.7% had a chronic renal failure) and that 51.7% came from other cities (Table 2).

Table 2. Health Status of the Participants (N=180)

	N	%
Diabetes years		
10 years and less	72	**40**
11-20 years	56	31.1
21-30 years	44	24.4
31 years and over	8	4.4
Diabetes treatment		
Oral antidiabetic	32	7.8
Insulin treatment	101	**56.1**
Oral antidiabetic+insulin	43	23.9
Regular diabetes examinations		
No	88	48.9
Yes	92	**51.1**
Previous treatment for diabetic foot		
No	41	22.8
Yes	139	**77.2**
Other accompanying diseases*		
None	54	30
Hypertension	77	**42.8**
Cardiac problems	52	28.9
Chronic renal failure	30	16.7
Other**	26	14.6
Provinces where they came from for diabetic wound treatment		
Urban area	87	48.3
Rural area	93	**51.7**

*More than one options were marked
**Cholesterol (n=3), asthma (n=6), COPD (=2), respiratory failure (n=1), bronchitis (n=2), stroke (n=1), Parkinson (n=2), guatr (n=5), rheumatoid arthritis (n=2), leukemia (n=1), schizophrenia (n=1).

It was determined that 35% (n=63) of the patients who participated in the study applied traditional and complementary therapies to heal their diabetic foot wounds. 65% (n=117) of the participants were found to be aware of the traditional and complementary methods used in the treatment of diabetic foot ulcers.

The herbal methods, one of the traditional and complementary treatment methods, used by the participants were "St. John's wort" (85%), "olive oil extract" (16.1%), "aloe vera extract" (3.2%), "pine extract" (3.2%), "onion" (3.2%) and others (12.8%), respectively. The mind-body medical and manipulative approaches used by the patients were ice application on the wound (3.2%), topical application of Vaseline (4.8%), and praying (4.8%) (Table 3).

Table 3. Distribution of Traditional/Complementary Treatment Methods Used by Participants (N=63)

	N	%
Herbal Methods		
St. John's wort	54	**85.7**
Olive oil extract	10	16.1
Aloevera extract	2	3.2
Pine extract	2	3.2
Onion	2	3.2
Other*	8	12.8
Ice application on foot wound		
Before medical treatment	2	3.2
Topical application of vaseline on wound		
Before medical treatment	3	4.8
With medical treatment	1	1.6
Praying		
Before medical treatment	1	1.6
With medical treatment	3	4.8
Other**	4	6.4

*Flax seed (n=1), hibiscus (n=1), black cumin (n=1), lavender oil (n=1), lemon juice (n=1), dried fig (n=1), henna with olive oil (n=1), granulated sugar (n=1).
**Foot massage (n=1), ozone treatment (n=1), hirudin therapy (n=1), cologne (n=1).

It was determined that 82.5% (n=52) of the participants did not inform their physicians that they used traditional and complementary medical practices.

When the demographic characteristics of the participants and their usage of traditional and complementary treatment were compared, a significant difference was found between the working status and the status of using traditional and complementary treatment (x^2=5.99; p<0.019). According to this, it was found that 61.1% of those who were employed and 32.1% of those who were not employed used a method (Table 4).

Table 4. Comparison of Participants' Demographic Characteristics and Their Status of Using Traditional and Complementary Treatment

	Users	Non-users		
	N (%)	N (%)	X^{2*}	p
Sex				
Female	20 (41.7)	28 (58.3)	1.27	0.258
Male	43 (32.6)	89 (67.4)		
Working Status				
Employed	11 (61.1)	7 (38.9)	**5.99**	**0.019**
Non-employed	52 (32.1)	110 (67.9)		
Educational Status				
Primary school and below	45 (36)	80 (64)	0.18	0.672
Secondary school and above	18 (32.7)	37 (67.3)		
Place of Residence				
District-village	49 (36.6)	85 (63.4)	0.56	0.452
City center	14 (30.4)	32 (69.6)		
Income Level				
Equal or less	61 (34.7)	115 (65.3)	-	0.613
High	2 (50)	2 (50)		
Diabetes Medicine				
Insulin	48 (33.3)	96 (66.7)	0.87	0.348
Other	15 (41.7)	21 (58.3)		

**PearsonChi- Square, Fisher'sExact test*

There was no significant difference found between participants' sex, educational status, place of residence, income level, and status of using medicine for diabetes and their status of using of traditional and complementary treatment (p>0.05).

DISCUSSION

It was determined that two out of five participants had diabetes for 10 years or less (40%), that three out of four had previously received foot ulcer treatment (72.2%), that more than half used insulin (56.1%) and had regular diabetes examinations (51.1%) (Table 2). Although it has been a long time for the participants to be diagnosed with diabetes, it was important that a large part of them applied with a recurrent foot ulcer. In the literature, there is no exact time reported for the development of diabetes-related foot ulcer complication. This may be due to the fact that patients are diagnosed with diabetes in the late period. In this context, according to the IDF atlas reported in 2017, 212.4 million people (half of all people with diabetes) were unaware of the disease because of asymptomatic course of the disease in the first years and one in two adults could not be diagnosed with diabetes. In the study conducted by Acar and Kacıra (2017), 132 patients who developed diabetic foot ulcers were followed up for 20 months on average; 110 of them had lower extremity amputation for the first time; 22 underwent reamputation due to the recurrent foot ulcer. In the same study, the mean duration of diabetes was found to be 10.5 years in the amputation group and 11.5 years in the reamputation group. The study results support our findings.

According to IDF (2017), diabetes is the leading cause of cardiovascular diseases, blindness, chronic renal failure, and lower extremity amputation. In this study, it was determined that more than half of the participants (70%) had other health problems besides diabetes (Table 2).

In this study, one-third of the participants (35%) were determined to use traditional and complementary methods to heal foot ulcers. This is an important finding since the delay in receiving service from the specialist wound care team increases the possibility of wound infection and delays wound healing. In the study conducted by Martin et al. (2017) with 30 patients with a diabetic foot ulcer, it was reported that 60% of the patients used complementary and alternative treatment methods for foot ulcers.

Two out of three patients in this study were found to be aware of some traditional and complementary methods in the treatment of diabetic foot ulcer (65%). In the study conducted by Kaynak and Polat (2014) with 285 diabetic patients, it was reported that the ratio of the usage of complementary and alternative treatment was 48.1% and that all users used herbal applications.

In this study, the participants were found to prefer "herbal methods" and "mind-body medical and manipulative approaches" as traditional and complementary methods. When the most used local herbal methods in foot ulcer were examined; it was determined that more than four out of five (85%) used St. John's wort and that about one out of five (16.1%) used olive oil extract. On the other hand, aloe vera extract (3,2%), pine extract (3,2%), onions (3,2%), and other (12,8%) methods were found to be used less. There was no study found on the use of St. John's wort by patients with a diabetic foot ulcer.

In the study conducted by Gül and Dinler (2016) to identify medicinal and aromatic plants commonly used in wound healing, Aspleniumscolopendrium (hart's-tongue), Hypericumperforatum (St. John's wort), Plantago major (white man's foot, broadleaf plantain), LysimachiaverticillarisSrengel

(lysimachia), Rumexcrispus (lamb's ear) were reported to be commonly used by patients.

Yucel et al. (2017) applied St. John's wort oil extract for wound care and treatment in a patient with stage 2 pressure ulcer in the intensive care unit. This was the first case study that reported the useful effects of St. John's wort on the pressure wounds. As a result, they reported that St. John's wort oil extract had an important effect on the treatment of pressure wounds.

In a randomized double-blind study conducted with 40 patients with diabetic foot ulcers, placebo gel was applied to 20 patients in the control group and plantaveragel (aloe vera and plantago major) was applied to 20 patients in the study group. As a result of the study, it was reported that there was a significant decrease in the ulcer surfaces of those who received plantavera gel application compared to the control group (Najafian, Khorasani, Najafi, Hamedi and Mahjour, 2018).

In this study, mind-body medical and manipulative approaches were found to be less preferred. The methods applied included topical application of Vaseline, praying, and ice application (Table 3). There is a limited number of study conducted in our country to determine the traditional and complementary methods used by patients to diabetic ulcer healing. In the study conducted by Martin et al. (2017), it was reported that 67% of diabetic foot patients used lard oil, 22% used honey, and 11% applied cupping.

In this study, it was determined that most of those (82.5%, n=52) who used traditional and complementary medicinal applications did not inform their physicians. This is an important problem. Similar to our study, it has been reported that most of the parents (69.2%) using traditional and complementary methods in children with Type 1 diabetes mellitus did not inform their healthcare professional (Arıkan, Sivrikaya ve Olgun, 2009).

When the demographic characteristics of the participants and their usage of traditional and complementary treatment were compared, a significant difference was found between the working status and the status of using traditional and complementary treatment (x^2=5.99; p<0.019). According to this, it was found that two-thirds (61.1%) of those who were employed and one-third (32.1%) of those who were not employed used a method (Table 4). It is an interesting finding that those who were employed used more traditional and complementary treatment methods. We believe that being influenced by the social environment (friends, relatives, etc.) is more effective in this group.

CONCLUSION

Considering the results obtained from this study, two-thirds of the participants were aware of some traditional and complementary methods in the treatment of diabetic foot ulcer; however, only one-third of them used traditional and complementary methods in the treatment of diabetic foot ulcer. The most used herbal methods were St. John's wort and olive oil extract. However, it was determined that most of the patients did not inform their physicians about this situation.

In conclusion, specialized team members should question the patient when taking anamnesis in terms of the use of traditional and complementary methods. Patients' reasons for using these treatment methods and the importance of informing physicians should be emphasized.

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