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Why individuals choose balneotherapy and benefit from this kind of treatment

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1. Introduction

Balneotherapy is a method of treatment in which natural elements such as minerals and thermal waters, peloids and gases are used by means of bathing, drinking or inhalation [1]. Spa therapy at thermal springs encompasses complementary and alternative methods that include balneotherapy, hydrotherapy, exercise, and massage. Although spa therapy has been a nonpharmacological treatment modality very commonly used in the past, especially in Europe and the Middle East, its place in modern medicine is still not clear [3].

Spa therapy and balneotherapy provides individuals with the opportunity to experience a change of pace and to retreat from the physical and emotional stress of daily life, opening a path for recreation and rest [1]. It is believed that these treatments create a therapeutic atmosphere and exert a placebo effect. This plays an important role in reducing pain and developing a general feeling of wellbeing [3]. It is recommended that this type of therapy is conducted under a doctor's supervision and that the program of treatment is designed to be patient-specific. In Turkey, however, both patients and healthy individuals benefit from centers without the supervision of a doctor. The arbitrary use of spa center may worsen the patient's underlying condition, even leading to thermal crisis or other serious outcomes such as organ failure [4].

The maximum therapeutic effect that can be derived from hot or cold applications is 20–30 min and Rebound Phenomenon may develop when this period is exceeded. Nurses are on duty at spa centers, serving as members of the health team. In order for hot and cold treatments to be safely implemented, it is expected that nurses be aware of how the body reacts to changes in temperature and what risks these therapies pose. The nurse needs to evaluate the patient's tolerance to the application beforehand and assess the patient's skin integrity. Additionally, the area to be treated should be evaluated in terms of any bleeding or circulatory disorder and the patient should be informed about possible side effects [5].

Balneotherapy and other spa treatments are frequently chosen by patients with complaints related especially to the musculoskeletal system. It is reported in studies conducted on spa treatments that significant improvements are experienced in some musculoskeletal conditions such as osteoarthritis, fibromyalgia, chronic low back pain, ankylosing spondylitis and rheumatoid arthritis [3,6–13]. Evidence-based clinical practice guides recommend spa therapy especially in the treatment of osteoarthritis of the knee [14]. Osteoarthritis of the knee is frequently seen in individuals over the age of 50, causing pain, function loss and a reduction in quality of life [3]. Karagülle et al. (2000) have reported in their review of studies in the literature on osteoarthritis in older individuals that spa treatment causes an improvement in patients' pain, physical functionality and general feeling of wellness [14]. A review of the literature on patients with knee osteoarthritis reveals that clinical improvement is observed in association with spa treatment for 3–6 months and sometimes for up to 9 months. In other studies conducted with patients with osteoarthritis, it has been found that patients have a good tolerance for spa treatment [8], that they experience a diminishing of pain intensity [8,10] and a reduced need for taking pain killers [10] after spa treatment, and that their functions [8] and quality of life show improvement [8,12]. Other studies on patients with chronic knee osteoarthritis support these findings [3,9]. In the study by Constant et al. (1999) with patients with chronic low back pain, the researchers reported that spa treatment resulted in increased functionality during activities of daily living, an improved quality of life, and a reduction in the intensity and duration of pain [7]. In the study by Dandinoğlu et al. (2016), 2 weeks of spa treatment was found to improve gastrointestinal motility in patients with chronic constipation to the point that their intake of laxatives was reduced and quality of life was positively impacted [11].

In this context, this study was conducted to explore the reasons individuals go to thermal springs to receive balneotherapy and to examine the extent of their satisfaction with this treatment.

2. Materials and methods

2.1. Study design and participants

The research was carried out as a descriptive study over the period April 2017–December 2017 at a thermal springs resort with individuals

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who had signed up for balneotherapy. Patients were included into the study that healthy and sick individuals who received only balneotherapy, were not disabled in communication, were over 18 years old and accepted voluntarily to take part in the study. Patients were excluded from the study that individuals who were not received only balneotherapy, were disabled in communication, were under 18 years old and were not accepted voluntarily to take part in the study.

Since the number of individuals in the universe of the study was unknown, sample size was calculated using the formula $n = t^2. p.q/d^2$. According to the report on health tourism in Turkey in 2010, the rate of usage of thermal springs is 10% [16]. When sample size was calculated with a confidence interval of 95% and a margin of error of 5%, minimum sample size was found to be 140; the study was ultimately completed with 265 individuals.

2.2. Interventions

There was not a standardized and validated questionnaire so the data were collected with a questionnaire that was developed by the researcher in based to with the literature [3,7–9]. Expert opinion was obtained from four persons (two nurse academicians and two physicians) before the study for the questionnaire form. In order to evaluate the comprehensibility of the questionnaire forms, a pilot study was conducted with five patients. Based on their feedback, some words and sentences were changed for clarity. Also the questionare applied again to these 5 people after 2 days to measure the consistency of the question form.

The questionnaire consisted of 24 multiple-choice and open-ended questions. The questions addressed the descriptive characteristics of the participants, their health status and use of medicines, and their experience and satisfaction with balneotherapy. The researcher compiled the data using the face-to-face interviewing technique in one of the lounges at the facility.

2.3. Ethical considerations

The present study was approved by the ethical committee of X University. Written permission was then obtained from the university in which the research was being conducted. The participants were informed about the study and their written and verbal consent was obtained.

2.4. Statistical analysis

The data were analyzed on the SPSS 21.0 package program. Figures and percentage distributions have been provided. The Chi-square test was used to compare some of the demographic characteristics of the participants and their attitudes toward the use of thermal springs. Statistical significance was accepted as $p < 0.05$.

3. Results

An examination of the sociodemographic characteristics of the participants revealed that their mean age was 45.94 ± 14.31 years; about half (50.2%) were women and most (71.3%) were married. Approximately half of the individuals (45.6%) were elementary school graduates and about two-thirds (67.2%) were employed. A large majority (90.6%) had social security and the income status of about half (46.4%) was good. About half (41.1%) of the participants had chronic diseases and the most common among these were musculoskeletal disorders (56.8%), hypertension (29.3%) and diabetes (23.8%). Approximately one-third of the individuals (32.8%) took regular medicine for their chronic condition and the most frequently taken drugs were antihypertensives (40.2%), anti-inflammatory drugs (33.3%) and antidiabetic agents (31%). It was found that one-third (34.7%) of the participants exercised regularly and about one-third (33.3%) engaged in exercise irregularly (Table 1).

Table 1
Sociodemographic characteristics of the participants (N = 265).

Characteristics	(n)	(%)
Age groups (years)		
18-31	58	21.9
32-46	64	24.2
47-60	103	38.9
61-74	40	15.0
Mean age	45.94 ± 14.31 (18–74) years	
Gender		
Female	133	50.2
Male	132	49.8
Marital status		
Married	189	71.3
Single	76	28.7
Education level		
Elementary school	121	45.6
High school	103	38.9
University or Postgraduate	41	15.5
Social Security status		
Have insurance	240	90.6
No insurance	25	9.4
Monthly Income		
620$ and ↓	83	31.3
621-865	59	22.3
866$ and ↑	123	46.4
To have a chronic disease		
Yes	109	41.1
No	156	58.9
Type of chronic disease[a]		
Thyroid diseases	13	11.9
Digestive system diseases	6	5.5
Musculoskeletal disorders	62	56.8
Hypertension	32	29.3
Asthma	6	5.5
Diabetes	26	23.8
Heart disease	7	6.4
Regular drug use		
Yes	87	32.8
No	178	67.2
Drug type[b]		
Antidiabetic	27	31.0
Antihypertensive	35	40.2
Thyroid medicine	10	11.4
Anti-inflammatory	29	33.3
Other (antacid, cortisone, anticoagulant and antiarrhythmic)	18	20.6
Do regular exercise		
Yes	92	34.7
No	84	31.7
Sometimes	89	33.6

[a] Percentages have been calculated based on 109 respondents.
[b] Percentages have been calculated based on 87 respondents.

When the participants' characteristics were examined in terms of their use of balneotherapy, it was observed that the common reasons they offered for their use of the treatment were their complaints of pain and it was seen that two-thirds (77.4%) benefited from balneotherapy. The most common benefits observed were muscle loosening (66.8%), reduced pain (50.7%) and relaxation-rest (49.2%). About half of the individuals (47.9%) had been informed about balneotherapy by their healthcare providers and more than one-third (39.6%) had benefited from the treatments at a frequency of 1–6 times a year. Approximately one-half of the patients (48.7%) had applied for balneotherapy on their own prerogative and only a few individuals (8.7%) had signed up on the basis of a doctor's recommendation. A large majority of the participants (95.5%) stated that they would recommend balneotherapy to others. Only one-fifth of the participants (19.6%) informed their doctors about their use of balneotherapy. Among the participants, 10.6% developed side effects related to the spa treatment; the most common of these were hypotension-weakness (28.5%), headache (14.2%), varicose