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Exploring the body through reflexology: Physical behaviors observed during application

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ABSTRACT

Recent studies on reflexology describe the appearance of different application-associated effects, attributed to a self-regulatory mechanism related to treatment efficacy.

On the other hand, sleep is a physiological process of vital importance for health. Its main value lies in restoring the natural balance between neuronal centers. Among its associated behavioral characteristics are spontaneous movements and eye movements.

The aim of this study is to investigate the effects that occur during application of reflexology and that are not described in the literature.

This is a descriptive observational study with a quantitative methodology. Abivariate anlysis has been conductec through chi-square test or Anova as apropiate. A total of 111 clients of a therapy center in Tarragona have participated in the study. They were assigned into four groups (musculoskeletal, stress, anxiety, mantenance). Reflexology was administered and observered the manifestations that occured during the session.

The findings have identified four categories of effects, of which there was no previous reference. These effects can be related to any of the stages of sleep. This study shows that reflexology promotes its application for different effects, such as eye movements and spontaneous movements. These data reveal the need to investigate these effects and their impact on health as well as their possible relationship with sleep.

1. Introduction

Foot reflexology is a complementary therapy frequently used in various countries of Europe and America [1–4]. It has been shown to be effective in improving the quality of life of cancer patients, decreasing anxiety and stress [5], reducing anxiety associated with menopause symptoms [6], helping to cope with the pain of fibromyalgia [7,8], improving the quality of sleep in women after giving birth [9] and in many other health problems [1,4,10]. It has also been recognized as a therapy that brings other benefits such as an increase in vital energy, body consciousness, relaxation and general well-being [4]. Evidence shows physiological effects such as a better synchronization between heart rate and breathing, as well as vagal activity [5,7], changes in EEG records [11,12] and cortical activity [13]. Different theories explain these changes [14]. Most studies attribute the changes to a modulation of the nervous system [5]. Despite all this, there is little solid scientific evidence to explain the mechanisms of reflexology and the health benefits it can provide [1,2,6,15].

There are different types of reflexology that have evolved from Fitzgerald, founder of the Zone Therapy [16] and known as the father of modern reflexology [17,18]. One of the doctors who most believed in the principles of Fitzgerald was Dr. Riley, who expanded his technique, producing the first diagrams and drawings of the points located in the foot. In 1930, Ingham worked with Dr. Riley, marking her professional development in this field. Ingham assigned major roles to the reflex areas of the feet and spread his method all over the United States, creating one of the most prestigious schools of reflexology [16]. In time, the Ingham method and her books reached Europe, and are still used today by many people interested in the subject of health [19]. Doren E. Bayly introduced the method in Britain in 1966 and Hanne Marquartd in Germany in

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1967. In 1984, Marquartd opened a subsidiary in Barcelona, Catalonia (Spain) with the aid of Dr. Montserrat Noguera [20]. Marquartd expanded the foot zone maps, introducing new reflex on the back and on the ground areas and established precisely-located anatomical correspondences. She also demarcated three new areas with transverse lines, identifying the existing analogy forms between a person in a sitting posture and the shape of the foot. All of this gave rise to a methodology known as reflex zone therapy (RZT) [21,22].

Reflexology is a self-regulatory therapy. It is known that reflexology can promote the appearance of different physical manifestations during the session, referred to hereinafter as body behaviors (BB). These BB can be expressed as yawning, crying, laughing, sweating and intestinal peristalsis or flatus, among others [3,23]. These provide information about the progress of the session and allow the therapist to adapt the treatment to the needs that arise [19,24,25]. In the days following or between sessions, other types of BB can appear before improvement, such as the reappearance of old pains, irritation, irritability or exhaustion among others [21,23,26,27]. This suggests that the effectiveness of the treatment is a peripheral vasodilation response, which occurs to eliminate the accumulation of local toxins [14]. Some authors, such as Marquartd, define these manifestations as unpleasant or annoying because of the way they are manifested and for the feeling of discomfort, they cause in the client. These can include increased perspiration or mucous secretions, altered sleep patterns, the appearance of fever, headaches, dizziness, depression, or feelings of mourning [28]. In addition, Gunnarsdottir describes them in her study of fibromyalgia, stating that most women studied had progressively-worsening symptoms, suffering pain, fatigue or flu symptoms before they got better [29]. Authors like Bagheri-Nesami [30] or Sahai [31] have defined them as curative crises as a consequences of a detoxification effect or catharsis in which the emotional overflow is part of the healing process [32]. According to Laplantine, (1999) in Bordes [3], through these BB, the body is attempting to balance its functions [3,27] using its capacity of self-regulation [27,28] spontaneously re-establishing therapeutic restoration. Some of these physiological or emotional manifestations could be related to the nervous system [7,25,33–35]. However, little is known about the physical behaviors associated with reflexology or what they express [23].

Over years of clinical practice applying reflexology, we have observed the different effects cited by other authors or sources. One is a state of general relaxation, which usually appears during the first 15 min, often accompanied by eye movements with eyes closed and spontaneous movements of different body parts. However, we could not find citations or references in any of the databases consulted. These observations generate a research question: Why do eye and spontaneous movements occur during the application of reflexology? From that, the following hypothesis is proposed: The application of reflexology promotes different behavior. It could be associated with sleep characteristics.

The aim of this study lies in corporeality reading, exploring through reflexology new effects not classified in the literature that may arise during its implementation, describe their characteristics and establish a hypothetical relationship with the sleep process. The interest of the study is to open a debate on possible causes, meanings, effects and/or associated benefits and their impact on health of reflexology.

2. Methods

2.1. Study design

This is a descriptive observational study with a quantitative methodology. Expertise in clinical observation was an important component that allowed us to provide a greater understanding the process and improve the health care applied. In many investigations, observation has been key to important discoveries. In the present study we use observation as a method for approaching information from reality, for discovering facts and phenomena that we want to investigate and for gaining awareness of the subjectivity that this implies [36], and because, as Lynch [37] suggests, the best theories are those built on actual situations.

It was carried out from March to July 2014. The study was conducted in a complementary therapies center in the area of Tarragona, Catalonia (Spain). Participants were recruited from among the clients who requested reflexology. An information leaflet on the study was prepared and provided to clients upon arrival at the center, to request their voluntary participation.

Initially, clients were evaluated by the health care staff, who established the relevant diagnosis, based on which three groups were created: musculoskeletal, anxiety and stress. A fourth group was later added, consisting of clients who requested this service for prevention, without there being any specific reason or health problem.

They had all received reflexology sessions previously. Clients who had never received reflexology were excluded in order to prevent any discomfort that may arise from observation in their first experience, and also because most of the time on the first visit is devoted to examination. The study group consisted of the first three clients in the morning and the afternoon, provided they met the requirements for inclusion and agreed to participate in the study.

2.2. Intervention

The intervention consisted of applying reflexology and observing the BB that occurred during the session and that had not been described in the literature. The sessions lasted for one hour, including 15 min of rest, and were carried out between 9:00 a.m. and 8:00 pm. Two nurses and two physical therapists, all with academic training and more than five years' expertise in the technique, performed the reflexology sessions. The cartographic map of the reflex areas of the feet, and the treatment technique used in this study were based on the Marquartd methodology [28], and on the professionals' personal experience in the reflex areas of the head and neck. Specifically it consisted of maintaining the application of sustained sedation in the temporomandibular joint, the oculomotor center, the celiac plexus and the highest point of the diaphragm applied twice as long as the rhythmic movement, which produces a relaxation. The basic movement was carried out with the thumb and was characterized by a rhythmic up-and-down movement, combined with a sustained sedative movement. Average pressure was applied throughout the treatment.

2.3. Data collection

The data were collected by observing the patient, then recording the physical manifestations on a grid designed by the research team (based on a previous pilot study) and by video recordings. The professionals who applied the treatment recorded the information. The observations were carried out from the very beginning until the very end of the session and were focused on client observation and on the physical manifestations that occurred. All the information was registered on a records grid. Only seven sessions were filmed, because the quality of the recording was poor, possibly due to deficient equipment. Different movements were observed in all of them. The recordings were kept for six months and then destroyed.