

IMPACT EVALUATION OF A WORKSHOP ON PONSETI TECHNIQUE IN TREATMENT OF CLUBFOOT AT ILE-IFE NIGERIA

¹Yongu, W.T , ² Adegbehingbe,O.O

ABSTRACT

Background: Training of health workers in the use of Ponseti technique is one of the cardinal strategies in disseminating and sustaining this widely accepted and unique way of treating children born with clubfoot. There is scarcity of data on the impact of such a training workshop on health workers (HW).

Objectives: To assess the impact of Ponseti training workshop on the knowledge, attitude and practice of health workers. **Methodology:** A cross sectional study using a non-controlled pre and post test design was carried out on participants at the Ponseti Workshop which took place at Ile-Ife Osun State of Nigeria on 20th and 21st November 2012. All the participants that were physically present during the first and last sessions of the workshop were included in the pre and post test respectively. A questionnaire was administered to the group to assess their knowledge, attitude and practice (KAP) before the series of lectures. This was repeated the next day after they had completed their lectures and practical demonstrations to assess the impact on them. The questionnaire was Likert scale type. The results of the pre and post test was collated and analysed. For simplicity of analysis, correct answers that the participant agreed or strongly agreed with were scored 1. Any correct answer that was disagreed with or they were not sure, were scored zero.

Results: The pre test questionnaire was distributed to 46 participants but only 40 responded. The mean age was 44.5 yrs (range 29-64 yrs). The highest qualification was FWACS, FMCS (Orthopaedic surgeons) 9 (22.5%), medical doctors with only MBBS 3(7.5%), physiotherapists 5 (12.5%), Plaster technicians 10 (25%), orthopaedic nurses 2(0.5%), occupational therapist 1(0.25%), O' level certificate 1(0.25%), qualification was not indicated in 8 of the respondents. The male to female ratio was 4.6:1. Only 32 participants out of 38 who responded returned the answered questionnaires in the post test. The mean score from the pre test (PT 1) was 66.25% while the mean score for the post test (PT 2) was 70.05%. The impact of the workshop on the participant's knowledge, attitude and practice (KAP) was PT 2 minus PT1 which is 3.8%. **Conclusion:** The Ponseti workshop had a definite impact on the way the participants would be treating their patients with clubfoot henceforth. More regular workshops would be needed to sustain a cumulative impact on the health workers in this peculiar way of treating this disease condition.

Key Words: *Ponseti, clubfoot, impact, workshop.*

INTRODUCTION

Clubfoot is a multidimensional congenital musculoskeletal deformity affecting the foot or feet. It is characterized by adduction at the forefoot with associated supination, varus of the hindfoot, equinus at the ankle due to the shortened tendo achilles and cavus on the medial side of the foot¹⁻⁴. All

these deformities are correctable by Ponseti method which involves serial systematic manipulation and casting to achieve 70 degrees of abduction, well timed tenotomy, three weeks of continuous casting, continuous abduction brace for three months and subsequently night time(12 hrs) usage for up to 4 years. When this strict protocol is adhered to, the long term success rate (excellent or good) is usually up to 78%^{2,3}.

However, there are usually challenges in following the protocol because some of the health workers themselves do not fully understand the functional anatomy of the foot^{3,4}. This caused a delay from 1963 when it was first described by Professor Ignacio Ponseti to 1995 when the results of long term follow up were published before

¹College of Health Sciences, Benue State University/Benue State University Teaching Hospital Makurdi, ²Obafemi Awolowo University Teaching Hospital, Ile-Ife.

Correspondence to:

DR YONGU, W.T

College of Health Sciences,
Benue State University, Benue State University
Teaching Hospital Makurdi.
Tel.08023564595
E-mail:manwilly2002@yahoo.com

it started to gain wide acceptance. There are problems like the belief system of the community ascribing clubfoot to witchcraft, stigmatisation of patients and their parents as well as poor assessment when child birth is in the village where there are no attending health workers^{4,5,6}. There are also other methods of treating the condition both traditional and orthodox but the results of long term follow up are not as good as the Ponseti method⁵⁻⁸.

These barriers to Ponseti management can be overcome by educating health workers, parents and community members about the disease and its treatment, establishing clubfoot clinics and partnering with the patients so that the financial burden of the care can be shared^{6,7,8}. This is the role service clubs, churches, mosques and non-governmental relief agencies can play to assist the very poor patients in the society^{7,8,9}.

This cross sectional study was performed on health workers in Nigeria who came to attend the second Ponseti workshop in Ile Ife Osun state of Nigeria in November 2012. The first international workshop in the country took place at the same venue in 2009 and some of the participants then have become resource persons. This study was done to assess the early impact of the knowledge they acquired in this second conference.

METHODOLOGY

A cross sectional study using a non-controlled pre and post test design was carried out on participants at the Ponseti Workshop which took place at Ile-Ife Osun State of Nigeria on 20th and 21st November 2012. Ethical clearance was obtained from the organizers and consent from each participant.

All the participants that were physically present during the first and last sessions

of the workshop were included in the pre and post test respectively. A questionnaire was administered to the group to assess their knowledge, attitude and practice (KAP) before the series of lectures. This was repeated the next day after they had completed the lectures and practical demonstrations to assess the impact on them.

The questionnaire was Likert scale type. The results of the pre and post test was collated and analysed. For simplicity of analysis, correct answers that the participant agreed or strongly agreed with were scored 1. Any correct answer that was disagreed with or they were not sure, they scored zero.

RESULTS

The pre test involved 40 participants who answered and returned the questionnaire out of 46 who received it. The mean age was 44.5 yrs (range 29-64 yrs). The highest qualification was FWACS, FMCS (orthopaedic surgeons) 9 (22.5%), medical doctors with only MBBS 3 (7.5%) physiotherapists 5 (12.5%), plaster technicians 10 (25%), orthopaedic nurses 2 (0.5%), occupational therapist 1 (0.25%), O'level certificate 1 (0.25%), qualification was not indicated in 8. The male to female ratio was 4.6:1.

Only 32 participants answered the questions and returned the questionnaire out of 38 who received it in the post test.

The mean score from the pre test (PT 1) was 66.25% while the mean score for the post test (PT 2) was 70.05%. The impact of the workshop on the participant's knowledge, attitude and practice (KAP) was PT2 minus PT1 which is 3.8%.

DISCUSSION

Clubfoot is a complex musculoskeletal deformity that presents at birth and results in complete inward turning of the foot. It can be idiopathic or occur as part of a syndrome in association with other disorders, such

as spina bifida and arthrogyposis. It is the most common musculoskeletal congenital birth defect and has a worldwide incidence of 1.6-1.8/1000 live births^{7,8}. In the People's Republic of China, where the birth rate is more than 18.2 million births per year, it is estimated that over 18,000 children are born each year with clubfoot. In Nigeria where the birth rate is 39.23 births/1000 population (2012 estimation) the estimated children born with it would even be relatively higher. If left untreated, neglected club-feet result in physical, social, psychological, and financial burdens to individuals and their families^{8,9,10}.

The Ponseti method for correcting clubfoot is a safe, effective, and a minimally invasive treatment that is recently gaining acceptance. Several seminars and workshops have been organized all over the world to disseminate information on the technique^{9,10,11}. Several methods have also been used to study the effect of the knowledge acquired from these conferences on the way these patients are treated.

Recently the Ponseti technique has been implemented in Latin America. A study was conducted to evaluate the initial impact and unique barriers to the diffusion of the Ponseti method throughout this region. Structured interviews were conducted with 30 physicians practicing the Ponseti method in three socioeconomically diverse countries: Chile, Peru and Guatemala. Since learning the Ponseti method, these physicians treated approximately 1,740 clubfoot patients, with an estimated 1,705 (98%) patients treated using the Ponseti method, and 35 (2%) patients treated using surgical techniques. The barriers were classified into the following themes: physician education, health care system of the country, culture and beliefs of patients, physical distance and transport, financial barriers for patients, and parental compliance with the method. The results yielded several common barriers throughout Latin America including lack of physician education, physical

distance to the treatment centers, and financial barriers for patients^{10,11,12}.

They concluded that information from this study can be used to inform, implement and evaluate specific strategies to improve the diffusion of the Ponseti method for treating clubfoot throughout Latin America. In our study, there was an overall improvement in the knowledge of the participants on clubfoot and the Ponseti mode of treatment from 66.25% to 70.05% after the workshop. The impact could even be higher because some of the participants in the pre-test held onto the questionnaires longer than required and therefore had their answers influenced by the lectures before submission for analysis. This gave rise to the relatively high (PT 1) value of 66.25%. There was also a heterogeneous mixture of the participants with educational qualification ranging from O'level certificate to fellowships in orthopaedics, this made complete understanding of some of the medical terminologies challenging for those without thorough formal training in anatomy. This further buttresses the fact that more workshops need to be organized to improve health workers education on this subject matter.

Another study was also conducted to evaluate the short-term results of the non-surgical Ponseti method training programs run in Ho Chinh Minh City, Vietnam. A questionnaire was developed and distributed to the 57 trainees who had completed one of the 3-day training courses. Of the 57 questionnaires distributed, 36 (63%) were completed and returned for evaluation. Most responders were continuing to use the Ponseti method for management of clubfoot. On average, each trainee had treated 16 babies with clubfoot, most of who were less than 12 months of age, within 2 years of the initial training course and were achieving good clinical correction. The major problems identified were the inability to perform an Achilles tenotomy, lack of availability of the

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foot abduction splint, and parent compliance. The course materials were being used for reference and for dissemination of the Ponseti method to other clinical peers^{11,12}.

They concluded that evaluation of the Ponseti method training program for management of clubfoot in Vietnam revealed continued use of the technique at 12-24 months post-training⁷. A longer term and more objective

assessment of the babies/children treated and of the associated gait function and foot comfort would be beneficial⁵.

We agree with the authors of both studies that proper documentation and evaluation of the Ponseti technique at each club foot clinic and publication of same will go a long way in objectively convincing those who are still doubtful of the results of this mode of treatment.

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