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A study to assess the effectiveness of a video assisted teaching program on knowledge regarding club foot among BSc Nursing III year students in a selected college of Rewa city

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Abstract

Background: Club foot has been recognised as a one of the common birth defects. Most of these club foot babies present late to the club foot clinics due to limited knowledge of trained birth attendants about club foot deformity and late referral to receive effective treatment. The purpose of this study was to assess the effectiveness of a video assisted teaching program on knowledge regarding club foot.

Materials and Methods: Total sample size was 50 BSc Nursing 3rd year students and Non-probability purposive sampling technique was used. Data was collected by using a self-structured knowledge questionnaire. The data were tabulated using descriptive and inferential statistics.

Results: Out of 50 BSc Nursing III year student in pretest, 27 (54%) had poor, 22(44%) had average and 1 (2%) had good knowledge score. Post test results revealed that no one (0%) had poor knowledge, 35(70%) scored average knowledge, 15 (30%) achieved good knowledge.

Conclusion: The main outcome of the study was that the most of BSc Nursing III year students was having poor to average essential knowledge regarding club foot. The video assisted teaching program utilized in the study had been found to be an effective tool for significantly improving the students` knowledge.

Keywords: video assisted teaching program, students knowledge, club foot

Introduction

Congenital clubfoot is also known as, congenital talipes equinovarus and its incidence is one in 1000 live births and is one of the most common birth defects affecting the musculoskeletal system [1]. It is a congenital dysplasia of all musculoskeletal structures (muscles, tendons, ligaments, osteoarticular and neurovascular structures) distal to the knee. The foot presents equinus, cavus, varus and adducted positions, and is supinated [2]. When untreated, children with clubfoot start walking on the outer and dorsal sides of their feet, resulting in callus formation, potential skin and bone infections, inability to wear standard shoes, and substantial limitations in mobility and employment opportunities. Clubfoot deformity is most commonly idiopathic and considered an isolated birth defect idiopathic but may be associated other birth defects such as myelomeningocele, arthrogryposis, or multiple congenital abnormalities. Many theories have been proposed to explain the etiology of idiopathic clubfoot including vascular deficiencies, environmental factors, in utero positioning, abnormal muscle insertions, and genetic factors [3, 4]. One of the first ones, described by Hippocrates, was the mechanical theory, which postulates that clubfoot results from an elevated intrauterine pressure during pregnancy. This was disputed because of the absence of increased incidence in an overcrowded uterus (twinning, large babies and hydramnios) [5]. Other advanced theories have also been proposed based on their observations. In one study abnormal peroneus brevis histology was found to be correlated with higher chances of relapse [7]. A primary germ plasm defect was proposed by some authors. Defects in the cartilage have been reported by some investigators [8]. An increased collagen synthesis [9] and retraction fibrosis of the distal muscles of the calf and supporting connective tissue have described [10]. A postural deformity needs to be distinguished from a true clubfoot. The cause of the postural deformity is the position *in utero* without any underlying pathology and the condition usually responds to passive manipulation by the mother [11]. The most import patho-anatomy of club foot is a congenital talocalcaneonavicular (TCN) joint dislocation, which is the currently accepted view. The true clubfoot is characterized by equinus, varus, adductus and cavus. The equinus deformity is

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Present at the ankle joint. In the varus component, the hind foot is rotated inwards and this occurs primarily at the talocalcaneal joint. The adductus deformity takes place at the talonavicular joint. The cavus component involves increased medial longitudinal arch of the foot. Contractures involving muscles, tendons, ligaments and joint capsules of posterior, medial and plantar aspect of the ankle and foot. Ultrasound can be used to diagnose club foot at 18th to 20th week of pregnancy. All health care workers should be encouraged to screen all newborns and infants for foot deformities and other problems so that infants with any problem can be referred for care at a clubfoot clinic. Idiopathic congenital clubfoot is characterized by a bean-shaped foot, prominence of the head of the talus dorsally, single deep medial, plantar and posterior creases. On clinical examination four important deformities of the foot are found, equinus, varus, adductus, and cavus. X-rays are not usually required to make diagnosis at birth as the character foot deformity are obvious and most of the bones of the feet are not ossified enough to be easily identified on X-ray. X-rays are usually more helpful after the age of 5 months [12]. The two views utilized are AP and lateral in stress dorsiflexion. In the clubfoot, talocalcaneal angle is decreased. Ponseti method of clubfoot manipulation and casting, Achilles tendon tenotomy, and foot abduction bracing has become the standard primary treatment for idiopathic clubfoot around the world [13]. Additionally, there is increasing evidence that long term results of extensive surgical releases for clubfoot are not good and usually result in painful, arthritic feet in adulthood [14]. In the Ponseti method of club foot is treated by serial manipulation, casting, and tenotomy of the Achilles tendon to achieve correction of the clubfoot [15]. The aim of this study was to assess the effectiveness of a video assisted teaching program on knowledge regarding club foot among BSc nursing 3rd year students.

Subjects and Methods

Fifty BSc Nursing 3rd year students were selected through non-probability purposive sampling technique from Saudamini College of Nursing of Rewa city in Madhya Pradesh after they agreed to participate in the study. A tool was developed through extensive review of books, journals, published, and unpublished articles and expert suggestions. The tool was divided into two parts: Part I containing

demographic data to obtain socioeconomic characteristics of Nursing students and Part II containing structured knowledge questionnaires (30 multiple choice questions) to assess the knowledge of those students. Each correct response carried 1 mark and incorrect response carried 0 marks. The score range from a minimum of 0 to a maximum of 30. Prepared structured knowledge questionnaire along with blueprint and the planned teaching was validated by 10 experts. Formal permission from the authorities and informed consent from the students were obtained. Pre-test was conducted using self-structured knowledge questionnaires followed by implementation of video assisted teaching program. Post-test was done after 7 days. Data were presented as frequency and percentages. Distribution of subjects between pre- and post-test and association with knowledge score was calculated using Chi-square test. $P < 0.05$ was considered statistically significant.

Results

Demographic Characteristics

Demographic characteristics of the subjects have been shown in Table-1. We observed that majority of 31 (62%) subjects were in the age of 18–21 years and 19 (38%) were from 22 to 25 years. Majority 46 (92%) of the study subjects were female and only 4 (8%) were male. It was also found that family income of the 38 (76%) students was less than 30 thousands whereas only 12(24%) students had family income more than 30 thousands. Previous year academic performance of the majority 41(82%) students was between 50% to 75%, 4(8%) students obtained above 75% whereas remaining 5(10%) had performance below 50%. Majority 37 (74%) of the Nursing students belonged to rural area and rest 13 (26%) belonged to urban area and majority 36 (72%) had gained any knowledge about foot from books alone whereas rest 28% from other sources such as internet 11 (22%), journal 2 (4%) and TV and others 1 (2%).

Effectiveness of planned teaching program

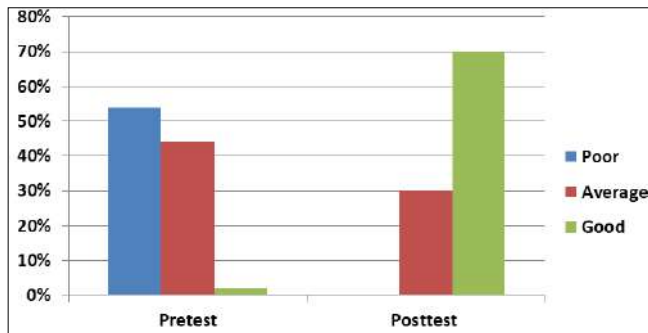
It was observed that only 1(2%) student had good knowledge before implementation of video assisted teaching program. After implementation of the program, 70% of the students had good score [table-2]. It was also observed that planned teaching program was significantly effective in improving the knowledge of mothers regarding weaning ($P = 0.0002$) (fig-1)

Table 1: Frequency and percentage distribution of demographic variables (n=50)

S.No.	Characteristics	Description	Frequency	Percentage
1.	Age of participants	18-21 year	31	62%
		22-25 year	19	38%
2.	Gender	Male	4	8%
		female	46	92%
3.	Family income	<30,000/ month	38	76%
		≥30,000/month	12	24%
		<50%	5	10%
4.	Previous year academic performance	50-75%	41	82%
		Above 75%	4	8%
		Rural	37	74%
5.	Residence	Urban	13	26%
		Books	36	72%
6.	Source of information	Journals	2	4%
		Internet	11	22%
		T V and others	1	2%

Table 2: Effectiveness of video assisted teaching program on improving the knowledge regarding club foot

Knowledge score	Pretest	Post test
Poor (0-10)	27 (54%)	0 (0%)
Average (11-20)	22 (44%)	15 (30%)
Good (21-30)	1 (2%)	35 (70%)

**Fig 1:** Comparison of pre and post-test knowledge scores

Discussion

The study revealed that before administering the video assisted teaching program, 22(44%) participants were having average knowledge regarding club foot and the 27(54%) participants were having poor knowledge and only 1 (2%) of the participants were having good knowledge. But, after administering the video assisted teaching program, majority of the BSc 3rd year Nursing students, 35(70%) were having good knowledge regarding club foot and the rest, 15(30%) were having average knowledge and none of them 0(0%) are having poor knowledge regarding club foot. The results showed that there is lack of appropriate information regarding club foot and its management among the nursing students. Study was supported by similar study to assess the knowledge of hospital staff regarding BMW management in tertiary hospital in Uttar Pradesh. Training was given to the nursing staff in which majority i.e. 159 (78.4%) nurses were having average knowledge and 23 (11.3%) nurses were having good knowledge whereas 21 (10.3%) were having poor knowledge, after the training it is evidenced that 108 (52.8%) were having good knowledge and the rest 95(47.2%) were having average knowledge [16]. There is significant association between previous year academic performance of the BSc Nursing 3rd year students and pre-test knowledge regarding club foot deformity. There was no correlation between pre-test knowledge score with other demographic variables. The study also depicts that the mean knowledge score after administering the video assisted teaching program had increased than before, indicates significant improvement in knowledge regarding club foot. These findings were supported by Midhula and Balasubramanian who conducted a pre-experimental study to evaluate the video-assisted teaching module on the care of dementia patients among B. Sc. nursing students at Mangalore. The result revealed that there was no association between pretest skill and sociodemographic variables such as age, gender, academic performance, and previous experience.

Conclusion

Present study demonstrated that video assisted teaching is an effective way of increasing knowledge of BSc 3rd year nursing students regarding club foot deformity. Hence,

Nurse Educators can use a variety of teaching-learning methods and styles such as video assisted teaching method to teach BSc Nursing students for the best adaptation by the younger generation Nurses.

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