

THE EFFECTIVENESS OF HEALTH EDUCATION ON PARENT'S KNOWLEDGE LEVEL ABOUT CHILDREN WITH CONGENITAL TALIPES EQUINOVARUS

Ingga Kurnialis Putri¹, Yufitriana Amir², Riri Novayelinda²

¹Student of Faculty of Nursing, Riau University, Patimura, Riau, Indonesia

²Lecturer of Faculty of Nursing, Riau University, Patimura, Riau, Indonesia

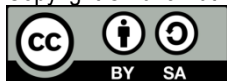
Corresponding Author: ingga.kurnialis6396@student.unri.ac.id

ABSTRACT

CTEV (Congenital et al.) is defined as a condition in which there is adductor in the front of the foot and supination in the back, varus in the toes in the subtalar complex, equinus in the hindfoot, and medial deviation of the entire foot towards the floor surface. The CTEV therapy process requires routine and periodic evaluations until the child ages 4-5. This, of course, impacts the level of knowledge and compliance of parents in accompanying their children during the therapy program. Examining how health education utilizing leaflet media affects parents' understanding of children with CTEV is the primary goal of this study. One group was given a pretest-posttest as part of this quantitative study's quasi-experimental methodology. The parents of children who are patients make up the population. Thirty participants were selected using a purposive sampling method. Using a questionnaire as its measuring instrument, this study examines two parts: part A, which focuses on respondent characteristics, and part B, which delves into questions on CTEV and the knowledge element associated with it. The analysis used is a bivariate analysis using the Wilcoxon test. There is a significant difference in the mean level of parental knowledge on the pre-test and post-test in the experimental group, with a p-value of 0.019. Health education regarding CTEV for parents who have children suffering from CTEV using leaflets influences the level of knowledge of respondents. Hopefully, these results can be an alternative intervention to increase parents' knowledge about CTEV.

Keywords: CTEV, Health Education, Knowledge

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INTRODUCTION

CTEV (Congenital Talipes Equinovarus), also known as clubfoot, is an orthopedic disorder that occurs at birth and is often found in newborns (Laloan, 2020). CTEV is one of the most common types of congenital malformations, characterized by changes in four main structures: cavus at the midfoot, adduction at the forefoot, varus at the heel, and equinus at the rear of the foot (Barrie, 2022). The March of Dimes Birth Defect Foundation conducted a study and obtained data that the prevalence of infants with congenital anomalies reached 59.3 per 1000 live births (Pambudi & Purnanin, 2022). In Indonesia, there are between 3,648 and 16,752 new cases of CTEV every year (Purnomo, 2019). According to the Indonesian Ministry of Health (2018), from 2014 to 2018, the prevalence of congenital CTEV in Indonesia was 21.9 percent.

Comprehensive and quality child development involves stimulation, detection, and early intervention to overcome toddler growth and development problems. Proper stimulation aims to stimulate children's brain development so that their motor skills, speech, language, socialization, and independence can develop optimally according to age. This is crucial to prevent delays in children's growth and development (Adillani, 2014). Early detection and intervention are crucial to ensure a child's development is well underway. Early detection of developmental problems involves screening to identify any developmental disorders in children under five and responding to parents' complaints regarding their child's developmental problems (Pambudi & Purnanin, 2022).

A frequently used operative procedure nowadays is post-eromedial release (PMR). This method is applied to patients with CTEV who have

been unsuccessfully corrected by non-operative therapy or have recurrence after starting to walk. The process of CTEV therapy requires regular and periodic evaluation until the child reaches 4-5 years of age. This certainly impacts the level of knowledge and compliance of parents in accompanying children during the therapy program. Good social support and adequate knowledge for parents can help reduce emotional problems and make them more stable in facing various challenges (Safitri, 2017).

Many people still need to gain an understanding of CTEV, especially those with low levels of education and socioeconomic status. They often argue that if a child does not show signs of illness, no health issues need to be taken seriously, even in terms of growth and development. Katharina and lit (2018) point out that many parents consider growth and development synonymous. Therefore, the role of parents is vital in supporting children's growth and development (Soetjningsih, 2016). One way to increase community understanding is through health education.

Health education can be explained as a process that links information with health outcomes. In addition, health education is also defined as a series of efforts to increase awareness and expand knowledge about health maintenance and improvement. These efforts are aimed at individuals, groups, families, and communities (Yopy, 2014). Health education motivates individuals to receive and apply health information, aiming to become more becoming (Mulyanti, 2022). Research conducted by Saputri and the research team (2021) showed that using media booklets in health education positively impacts parents' knowledge, skills, and behavior in supporting the growth of preschool-age children in the Lubuk Buaya working area, Padang City. The findings of this study indicate that health education can improve parents' knowledge, self-esteem, and actions in helping their children prepare for school in the area.

In light of these issues, the researcher is considering pursuing the position of "The effect of health education on the level of knowledge of parents of pediatric patients with CTEV at the Polyclinic of Arifin Achmad Hospital, Riau Province".

METHOD

The researcher conducted an ethical test on July 10, 2024, with Number 1113/UN.5.1.8/KEPK.FKp/2024. This study falls under the quantitative subfield, employing a quasi-experimental design and a one-group pretest-posttest methodology. This study's overarching goal for parents whose children have CTEV is to determine how much more informed they are after receiving health education.

This study included all children who received CTEV treatment at the Orthopedic Clinic at Arifin Achmad Hospital, Riau Province, from July to August 2023, with 42 individuals. The minimum sample size for quantitative research is 30 respondents. It is necessary to adjust the sample size by adding several respondents to overcome the possibility of dropout or non-compliance. Based on these data, this study's respondents were 34 members of one group.

RESULTS

Table 1 Frequency distribution of Respondent Characteristics

No	Characteristics	F	Persentase
1	Age of parents		
	a. 26-35 years old	18	60%
	b. 36-45 years old	12	
2	Child's age		
	a. 0-1 Years	16	
	b. 1-3 Years	14	
3	Child's Gender		
	a. Male	20	
	b. Female	10	
4	Work		
	a. Not Working	22	73,3%
	b. Employed	8	
5	Education		
	a. Elementary	2	
	b. Junior High School	7	
	c. Senior High School	16	53,3%
	d. Higher Education (DIII, S1, S2, S3)	5	
Total		30	

Table 1 shows that based on the age group distribution, most respondents were adults (26-35 years old), with 18 respondents (60%). Most respondents had secondary education, as many as 16 respondents (53.3%). Based on employment

characteristics, the majority of respondents did not work, namely 22 respondents (73.3%).

Table 2 Frequency distribution of the average score of respondents' knowledge before and after being given health education about CTEV

Variable	Treatment Education	Mean	SD	P Value
Health education	Before	13,6	6,75	0,000
	After	15,7	5,90	0,000
Difference		2,1		

Table 2 shows that the average knowledge of parents about CTEV disease for their children increased after being given treatment. Judging from the average parents' knowledge before health education, the average knowledge level was 13.6 points. Then, after the treatment, respondents' average level of knowledge increased by 15.7 points and, a difference of 2.1. Since fewer than fifty participants filled out the survey, the Shapiro-Wilk test was used to compare the two groups before and after the test. A p-value of $0.000 < 0.05$, as shown by the Shapiro-Wilk test, indicates that the data distribution did not follow a normal distribution. Therefore, parametric tests cannot be applied and must be replaced with non-parametric tests, namely the Wilcoxon test.

Tabel 3 Average knowledge of parents before and after providing educational education about CTEV in children

Variable	Pretest	Posttest	Mean	p value
	Mean	Mean	Defference	
	SD	SD		
Treatment group	13.6 (6.75)	15.7 (5.92)	2.1	0.019

Table 3 shows that after parents received health education about CTEV, their knowledge about CTEV increased with an average of 13.6 before and 15.7 after treatment. The results of the Wilcoxon statistical test showed a p-value of 0.019, or p-value $0.019 < 0.05$, indicating that health education effectively increases parents' knowledge about CTEV in children.

DISCUSSION

Research on the effect of health education on the level of parental knowledge in pediatric patients with congenital talipes equinovarus shows that most respondents are in the early adult age group (26-35 years), with a total of 18 respondents (60%). According to Budiman (2018), humans are divided into four categories: children, adults, elderly, and the elderly. Individuals are grouped into two age categories: 26-35 and 36-45. In this context, women who are 26-35 years old fall into the young woman category. People can experience and understand various processes at this early stage, so health education can effectively improve parents' knowledge about their child's illness, such as CTEV.

The results of this study were dominated by the age of the child, ranging from 0 to 1 year, with as many as 16 respondents (53.3%). Charles (2019) explains that clubfoot is a congenital condition that has existed since birth. About 1 in every 1,000 newborns will suffer from CTEV, but the signs and symptoms of CTEV itself are only realized by parents when the child grows up, so treatment by parents against children is sometimes late.

The results of this study were dominated by children of the male gender, with as many as 20 respondents (66.7%). Rizki (2020), in his research, explained epidemiological data obtained that male children experience more CTEV than women. The ratio of the incidence of CTEV in male infants compared to female infants is 2:1. However, the severity of CTEV is not related to the sex of the child.

Regarding educational attainment, 53.3% of the sample comprises 16 respondents with a high school diploma or equivalent. The results of Kuntum's research (2015) explain that the higher the level of education and knowledge, the easier it is for parents to guide children from an early age to imagine and fulfill their needs 43 to develop optimally. Parental knowledge is essential to enable them to screen and detect children's development early.

Of the total responders, 22 (or 73.3% of the total) did not have jobs. The work environment affects knowledge because those who interact more frequently with others have more access to information than those who rarely interact

(Notoatmodjo, 2012). Individuals who do not work tend to focus more on supporting friends and family because they often interact with these people and pay more attention to their every need, including the development of their children.

The study results illustrate that a health service effectively increases parents' knowledge about the disease CTEV in children, with a p-value of 0.019 ($p < 0.05$). Effectiveness This can be seen from increased parental knowledge after health education intervention. Before education, the mother's knowledge score ranged from 0 to 20 points, averaging 13.6. After the intervention assessment, the average increased to 15.7, a difference of 2.1 points. This research is also consistent with the findings of Lestari et al. (2021), which show an increase in knowledge about clubfoot (CTEV) after health education, with significant improvement in the sound knowledge category. Health education can increase public understanding of these conditions.

Researchers know that this research still has many things that could be improved. They realize that this has possible dependencies that affect the results. These limitations include: During research data collection, researchers were hampered by space research that does not support it, so the research was carried out in the waiting room with crowded and noisy patients. The difficulty of getting patients checked on time at the polyclinic caused the length of time the research lasted.

CONCLUSION

The results of the univariate analysis showed that the average knowledge of respondents increased after being given health education about CTEV disease in children. Before health education, the average knowledge of parents was 13.6, while after health education, the average value increased to 15.7. Statistical tests showed that health education improved parents' knowledge about CTEV in children, with a p-value of 0.019 ($\alpha = 0.05$). For Patient Families, The results of this study are expected to increase knowledge and awareness and motivate patient families regarding the importance of knowing about CTEV disease experienced by children so that they can know the proper management.

REFERENCES

- Adillani, M. (2014). Penatalaksanaan Fisioterapi Pada Kasus Conginetal Talipes Equino Varus (CTEV) Bilateral Di RSUP Dr. Sardjito Yogyakarta (Thesis). Surakarta: Universitas Muhammadiyah Surakarta
- Barrie, A& Varacallo,M. (2022). Clubfoot. In: Stat Pearls [Internet]. Treasure Island (FL):Stat Pearls Publishing ; Available from:<https://www.ncbi.nlm.nih.gov/books/NBK551574/>
- Jatmika, S.E.D.,Jatmika, S.E.D.,Maulana, M.,KM, S.,& Maulana, M. (2019). Pengembangan Media Promosi Kesehatan. Yogyakarta: K-Media Kiswanto.
- H & Rizqiea,N,S. (2022). Hubungan Dukungan Sosial Dengan Kepatuhan Orang Tua dalam Proses Terapi Anak dengan Kelainan CTEV di RS Ortopedi Prof Dr R Soeharso Surakarta. Surakarta: Universitas Kusuma Husada Surakarta
- Katharina, T. & lit, K. (2018). Hubungan Antara Pengetahuan Ibu Dengan Sikap Terhadap Tumbuh Kembang Anak Usia 0-24 Bulan. Jurnal Kebidanan,7(2): 134–141.
- Kementerian Kesehatan Republik Indonesia.(2018).Info datin: Kelainan bawaan. Jakarta: Pusat Data dan Informasi Kemeterian Kesehatan RI.
- Kuntum, K. (2015). Perkembangan Anak Usia Balita Di Puskesmas Pengambiran Kota Padang Tahun 2015. Padang: Jurusan DIII Keperawatan Padang.
- Kusuma NPSW, Alfian LW, Febrianto R, & Hidayatullah A. (2020). Congenital Talipes Equino Varus (CTEV). JKedokt Unram. 9:528–33.
- Laloan & Lengkong. (2020). Congenital talipese quinovarus. J e-Clini C Univ Sam Ratulangi, 8(2):211–21.
- Lestari, T,R , Supadma, D,E, & Pasaribu (2021). Sosialisasi Pengetahuan Tentang Kaki Pengkor / Congenital Talipes Equino Varus (Ctev) Pada Kader Di Wilayah Puskesmas Pondok Labu, Jurnal Pengabdian Kepada Masyarakat, 1(1): 20-24
- Masturoh, I., & Anggita, N. (2018). Metodologi Penelitian Kesehatan. Jakarta: Kementrian Kesehatan Republik Indonesia.
- Meena S, Sharma P, Gangary S,K, & Lohia L,K. (2014). Congenital clubfoot. J Orthop Allied Sci. 2(2): 34-39
- Mulyanti, S & Kusmana, T. (2022). Pengaruh Pendidikan Kesehatan Terhadap Pengetahuan Ibu Dalam Menstimulasi Pertumbuhan Perkembangan Balita Di Posyandu Wilayah Kerja Puskesmas Tamansari Kota Tasikmalaya. Healthcare Nursing Journal, 4(2):363-367
- Murphy, D., Raza, M., Khan, H., Eastwood, D. M., & Gelfer, Y. (2021). What is the optimal treatment for equinus deformity in walking-age children with club foot? Asystematicreview. EFORTopenreviews,6(5): 354–363
- Notoatmodjo,S. (2012). Metodologi Penelitian Kesehatan. Jakarta: Rhineka Cipta
- Notoatmodjo,S. (2018). Metodologi Penelitian Kesehatan. Jakarta: Rhineka Cipta.

- Pambudi, A, S &Purnaning, D. (2022). Congenital Talipes Equinovarus (CTEV). Mataram: Fakultas Kedokteran Universitas Mataram.
- Pavone,V.etal.(2018). Theetiology of idiopathic congenital talipes equinovarus: A systematic review. *Journal of Orthopaedic Surgery and Research*,13(1): 1– 11
- Purnomo, I, Wibisono, I, & Nurwidiati, R. (2019). Pengaruh Terapi Latihan Dan Pemasangan Bandage Pada Congenital Talipes Equino Varus Bilateral DiYpac Semarang: Laporan Kasus. *Jurnal Fisioterapi dan Rehabilitasi (JFR)*. 3(2): 41-47
- Purwanto, E, & Sulistyastuti, D.(2017). Metode Penelitian Kuantitatif Untuk Administrasi Publik Dan Masalah-Masalah Sosial. Yogyakarta: Gava Media
- Raehan. (2019). Pengaruh Penyuluhan Kesehatan Terhadap Pengetahuan Ibu Tentang Tumbuh Kembang Anak Usia 3-5 Tahun Di Paud Buah Delima Di Lingkungan Galung Tengah Kabupaten Majene. *Jurnal Ilmiah Media Bidan*. 4(2): 113-122.
- Richardo J. & Andriessanto C. (2019). Congenital Talipes Equinovarus (CTEV). Manado: Fakultas Kedokteran Universitas Sam Ratulangi Manado
- Ruzzini, L, De Salvatore, S., Longo, U, G., Marino, M, Greco, A, Piergentili, I,Costici, P. F, & Denaro, V. (2021). Prenatal Diagnosis of Clubfoot: WhereAre We Now? Systematic Review and Meta-Analysis. *Diagnostics (Basel,Switzerland)*, 11(12): 2235.
- Saputri, M, Chundrayetti, E & Deswita. (2021). Pengaruh Pendidikan Kesehatan dengan Media Booklet Terhadap Pengetahuan, Sikap dan Tindakan Ibu Tentang Stimulasi Perkembangan Anak Usia Pra Sekolah di Wilayah Kerja Puskesmas Lubuk Buaya Kota Padang, *Jurnal Ilmiah Universitas Batanghari Jambi*, 21(3): 1361-1369
- Setiadi.(2013). Konsep Dan Praktik Penulisan Riset Keperawatan. Yogyakarta: Graha Ilmu
- Smythe, T., Kuper, H., Macleod, D., Foster, A., & Lavy, C. (2017). Birth Prevalence Of Congenital Talipes Equinovarus In Low- And Middle- Income Countries: A Systematic Review And Meta-Analysis. *Tropical Medicine &International Health: TM &IH*. 22(3), 269– 285.
- Soetjningsih.(2016).Tumbuh Kembang Anak. Jakarta: EGC
- Sugiyono. (2016). Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung: Alfa beta
- Sugiyono.(2019).Statistika Untuk Penelitian. Bandung:Alfa beta.
- Suiraoaka & Supariasa, (2012). Media Pendidikan Kesehatan. Yogyakarta: Graha Ilmu
- Sujarweni,V.W.(2014).Metode Penelitian: Lengkap, Praktis, dan Mudah Dipahami.Yogyakarta: Pustaka Baru Press.
- Sutarno, S., Sarwa, S., & Evy Apriani, E. (2023). Buku Ajar Promosi Kesehatan Dan Pendidikan Kesehatan. Cilacap: Unaic Press
- Triguno, Y, Supahar, & Purnami (2020). Pengembangan Media Video Untuk Meningkatkan Pengetahuan dan SikapIbuTentangTumbuhKembang Anak di Wilayah Kerja Puskesmas Jagoi babang Kalimantan Barat. *Jurnal Kesehatan MIDWINERSLION*, 5(1): 184-194
- Yopy, B., Nurwegha, F., & Prayogi, B. (2014). Pengaruh Pendidikan Kesehatan Tentang Stimulasi Perkembangan Anak Usia 0-3 Tahun Terhadap Pengetahuan Dan Sikap Orang Tua. *Jurnal Ners Dan Kebidanan*,1(1):16-22