

Development of Improved Cleft lip/Palate Face Models for Teaching Parents of Children with Cleft Lip/Palate

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Objective: The objective of this study was to improve and evaluate cleft lip/palate face models to give support information to the parents whose children have cleft lip/palate.

Material and Method: Cleft lip/palate face models are made from a mold of about the same size as a child's head using rubber, wood and silicone and can be separated into parts to match the severity of the disease. The authors surveyed two representative samples of new candidate parents whose children had cleft lip/palate (10 in a pilot study then 30 in the larger study) and five nurses (who had taken care of the cleft lip/palate patients). The questionnaire was designed by the researchers and it had a Cronbach's reliability of $\alpha = 0.72$.

Results: The result of the pilot evaluation revealed that the overall satisfaction score was high but the color of the models was not realistic so the satisfaction score was medium. After improvements of the colour and the post-surgical scar, the qualification and satisfaction scores were high (average 4.2).

Conclusion: The authors present an improved cleft lip/palate face models for educational use to parents of children with cleft lip/palate. The models had an overall good level of satisfaction. Using face models to give information helped parents to know and understand about the condition, treatments, caregiving and scheduling age-determined visits for treatments.

Keywords: Face model, Cleft lip, Cleft palate, Teaching

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Providing information, suggestions and advice to the parents of children with cleft lip/palate and craniofacial deformities is an aspect of holistic treatment given by the multi-disciplinary team to enable and encourage patients to deliver correct, proper and effective homecare⁽¹⁻⁶⁾.

The study of 'improvements to preparatory information and cleft lip/palate face models from Singapore' for parents of children with cleft lip/palate was done using videos or an Episiotomy Trainer and hands-on models⁽⁷⁾. The material was of interest because parents can see and touch a model so as to understand the real situation⁽⁸⁾.

The Center of Cleft Lip/Palate and Craniofacial Deformities at Srinagarind Hospital provides treatment

to the largest number of cleft lip/palate patients in Thailand⁽⁹⁾. To date, the information given to patients was in the form of photos plus print material which proved inadequate^(10,11). Thus, improvement of face models, for use as object lessons, was needed to instill greater knowledge and understanding. The parents could then become better informed about the disease and practical treatments so that they would be better able to properly and effectively take care of their cleft lip/palate child.

Objectives

1. To improve face models for informing parents about children with cleft lip/palate.
2. To study the result of using improved face models for providing information to parents whose children have cleft lip/palate.

Material and Method

This descriptive research was approved by

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the Ethics Committee for Human Research, Khon Kaen University.

Producing face models

Cleft lip/palate face models are made from a mold of about the same size as a child's head using rubber, wood and silicone. The face models can be separated into parts in order to match the severity of the disease and the progress of treatment (Fig. 1).

Representative sample groups for evaluation

The representative sample groups for evaluation comprised two groups.

Group 1 was a representative sample of nurses chosen from the ten duty nurses at Ward 3C, all of whom had more than one year of experience working with cleft lip/palate patients. In order to avoid bias, the five nurses were selected by drawing lots. Group 1 included ten parents.

Group 2 comprised 30 different parents (from Group 1) of patients with cleft lip/palate who received treatment at the Out-Patient Department (OPD) and Ward 3C of Srinagarind Hospital, Faculty of Medicine, Khon Kaen University⁽¹²⁾.

Data collection

A questionnaire with ten questions, designed by the researchers, was used to collect information from ten parents and five nurses; after use of the face models to give information on children with cleft lip/palate. After the first evaluation, the researchers improved the face models to be more like a real child's face.

The questionnaires inquired about the model's

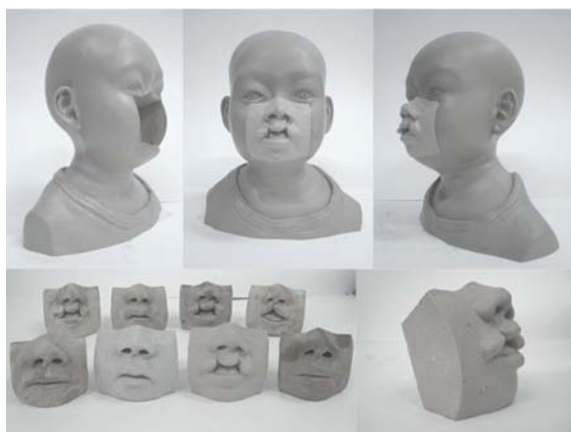


Fig. 1 Face models of children with cleft lip/palate

life-likeness in terms of shape, size, color, disease condition, disease classification, and the satisfaction of using face models (advantages and convenience). A five-point Likert scale was used: Fully agree = 5, Mostly agree = 4, Medium agreement = 3, Little agreement = 2, Don't agree = 1.

The information was analyzed using percentages, means, averages and standard deviations. The evaluation of using face models was categorized into three levels according to the average score:

Score	0 - 1.66	Low satisfaction
Score	1.67 - 3.32	Medium satisfaction
Score	3.33 - 5.00	High satisfaction

Results

The initial ten parents whose children had cleft lip/palate and the five nurses agreed the colour of the models did not look real and the post-surgical scar was not clear (Table 1). Thus, the model colour was improved and the post-surgical scar around the mouth and palate made clearer. The new models were presented to 30 other parents for re-evaluation and the satisfaction score for the improved face models was high in all categories (mean, 4.20).

Discussion

The face models of cleft lip/palates are used to support giving information to the parents of children with cleft lip/palate. The objective was to create visual media that would enable visualization and improve understanding of the condition because some of the defects are not externally visible. A further goal is to help parents understand how the multidisciplinary team will try to correct the defect and how important it is to come to the service center according to the schedule given so that follow-up assessments and subsequent interventions are done in the appropriate order and time.

In the current study, we evaluated the satisfaction and usefulness of the face model from the perspective of parents and nurses: they were highly satisfied with the improved model.

The model maker was a Thai civil servant (*viz.*, Govist W.), who also created medical education models for medical students at Srinagarind (university) Hospital, at the Faculty of Medicine, Khon Kaen University. The cost of our face models of cleft lip/palate was three times cheaper than the commercially available model; despite the fact that the commercial model had an unnatural color and overly large-sized head. The commercial model had a natural texture but

Table 1. Satisfaction result from pilot group’s impression of first round face models (parents = 10, nurses = 5).

Model characteristic	Satisfaction	
	Result from parents whose children have cleft lip/palate	Result from nurses
1. Realistic shape	High	High
2. Realistic size	Highest	High
3. Realistic colour	Medium	Medium
4. Realistic representation of the condition	High	High
5. Convenience	High	High
6. Realistic classification of severity	High	Medium-High
7. Useful for practising disease classification	High-Highest	High
8. Useful for future use	Highest	Highest
9. Usefulness of face models for giving information	Highest	Highest
10. Satisfaction using face models for giving information	Highest	Highest

Table 2. The score of the satisfaction from the parents whose children had cleft lip/palate to using cleft lip/palate face models the second time (n = 30).

The qualification of the models and the satisfaction to using the face models	Mean	The interpretation of the satisfaction result
1. Realistic shape	4.23	High
2. Realistic size	3.96	High
3. Realistic colour	3.56	High
4. Realistic representation of the condition	4.16	High
5. Convenience	4.33	High
6. Realistic classification of severity	4.03	High
7. Useful for practising disease classification	4.20	High
8. Useful for future use	4.50	High
9. Usefulness of face models for giving information	4.53	High
10. Satisfaction using face models for giving information	4.53	High
Mean	4.20	High

some raters said that the suture lines were too difficult to see. The face model for cleft lip/palate made by our in-house staff is therefore highly useful and a cost-saver. Most importantly, the model has proven satisfactory for demonstrating the cleft lip/palate deformities to parents, thereby improving their understanding.

Conclusion

The evaluation of the overall satisfaction for using the cleft lip/palate face models for instructing parents whose children had cleft lip/palate was satisfactory, *i.e.*, between high to the highest level. Initially, there were some concerns regarding the

realistic aspects of the color of the model and the clarity of the post-surgical scar; thus, improvements were made and a re-evaluation of satisfaction done. The evaluation after improvements were made revealed that the representative samples had a high level of satisfaction. Using face models provided affected parents with knowledge and understanding regarding the disease, its severity and scheduling treatments. Parents were then able to take better care of their children, including bringing the children for treatments on time according to their age.

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การพัฒนาหุ่นใบหน้าจำลองสำหรับให้ข้อมูลผู้ปกครองเด็กที่มีภาวะปากแหว่งเพดานโหว่

สุธีรา ประดับวงษ์, วัฒนภก โกวิท, นิรมล พัจนสุนทร, บวรศิลป์ เชาวน์ชื่น

วัตถุประสงค์: การศึกษานี้มีวัตถุประสงค์เพื่อพัฒนาและประเมินหุ่นใบหน้าจำลองเพื่อประกอบการให้ข้อมูลผู้ปกครองเด็กที่มีภาวะปากแหว่งเพดานโหว่

วัสดุและวิธีการ: หุ่นใบหน้าจำลองได้ถูกทำขึ้นในขนาดเดียวกับศีรษะเด็ก โดยใช้วัสดุ ที่ทำด้วยยางไม้ และซิลิโคน สามารถแยกเป็นส่วนๆได้เพื่อให้เหมาะสมกับความรุนแรงของโรคหุ่นใบหน้าได้รับการประเมินผลใน 2 กลุ่มตัวอย่าง คือผู้ปกครองเด็กที่มีภาวะปากแหว่งเพดานโหว่รายใหม่ 10 ราย และหลังการปรับปรุงหุ่นจำลอง 30 ราย และกลุ่มพยาบาลประจำการ ที่มีประสบการณ์ในการดูแลผู้ที่มีภาวะปากแหว่งเพดานโหว่ 5 คน โดยใช้แบบประเมินที่ออกแบบโดยผู้นิพนธ์และผ่านการทดสอบความน่าเชื่อถือวิธี Cronbach's alpha มีค่า $\alpha = 0.72$

ผลการศึกษา: ผลการประเมินครั้งที่ 1 โดยรวมมีความพึงพอใจอยู่ระดับมากแต่มีข้อบกพร่องในส่วนของความเหมือนจริงของสีหุ่นที่มีผลประเมินความพึงพอใจอยู่ระดับปานกลาง ผลจากการประเมินครั้งที่ 1 ทำให้มีการปรับแก้สี และแปลเป็นหลังการผ่าตัดของหุ่น หลังการปรับแก้ผลการประเมินคุณสมบัติของหุ่นและความพึงพอใจโดยรวมอยู่ในระดับพึงพอใจมากมีคะแนนเฉลี่ย 4.2 คะแนน

สรุป: ผู้นิพนธ์นำเสนอการพัฒนาหุ่นใบหน้าจำลองผู้ป่วยปากแหว่งเพดานโหว่เพื่อประกอบการให้ข้อมูลแก่ผู้ปกครอง ผลการประเมินความพึงพอใจโดยรวมอยู่ในเกณฑ์ดี การใช้หุ่นใบหน้าจำลองประกอบการให้ข้อมูลมีส่วนส่งเสริมให้ผู้ปกครองมีความรู้ความเข้าใจเกี่ยวกับภาวะของโรคแนวทางการรักษา สามารถให้การดูแลและนำพาผู้ป่วยให้เข้ารับการรักษาตามช่วงอายุได้อย่างเหมาะสม
