

Development of Parental Knowledge, Attitude and Practice Questionnaire Regarding Defecation and Constipation in Thai Children

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Abstract

Background: Functional constipation is a common problem in childhood. The parents' understanding of defecation and constipation in children affects the prevention and recognition of this disorder.

Objective: The aim of his research is to develop parental Knowledge, Attitude, and Practice (KAP) questionnaire towards defecation and constipation in children.

Methods: The questionnaire was developed by the authors. The Item Objective Congruence index (IOC) by 5 experts was used for evaluating contents of the questionnaire. Then, a cross-sectional survey of 100 individuals was carried out to establish internal consistency using Cronbach's alpha.

Results: The original KAP questionnaire included 31 items categorized under the 3 domains of knowledge, attitude, and practice. During expert validation, 5 items were disqualified. For assessing internal consistency, the Cronbach's alpha value was 0.229. Eight items were excluded to strengthen the internal consistency. For the adjusted questionnaire with 18 items (5 from knowledge, 5 from attitude, and 8 from practice), the Cronbach's alpha values increased to 0.511.

Conclusions: The developed questionnaire with 18 items has improved homogeneity. These findings help develop measurement tools to assess knowledge, attitude and practice on defecation and constipation in children for Thai parents to encourage early detection and prevention of constipation.

Keywords: Development; Validation; Knowledge; Attitude; Practice; Questionnaire; Childhood constipation; Parent

Introduction

Functional constipation is a common pediatric problem that approximately affects 1 in 10 children worldwide [1]. Childhood constipation is characterized by bothersome and embarrassing symptoms such as stomach ache, decreased appetite and difficult stooling, which negatively impact physical and mental health of children, parental satisfaction and health care costs.

The recognition of defecation problem and constipation might influence help-seeking behavior. Moreover, early intervention for constipation is associated with a better long term outcome. However, many studies showed parental misconceptions about defecation and constipation in children may delay seeking medical care [2-4].

A reliable and valid instrument is important for assessing KAP of parents about defecation and constipation in children. To the best of our knowledge, there is insufficiency of standardized tools for measuring parental KAP in this field. Thus, the objectives of our study were to develop valid and reliable questionnaire to assess KAP among Thai parents regarding defecation and constipation in children. The validated questionnaire will be used to measure KAP in a larger sample in the future.

Materials and Methods

The three phases of questionnaire development: phase 1, developing questionnaire by reviewing literature; phase 2, examining content validity by experts; and phase 3, assessing internal consistency of the questionnaire.

Phase 1: Questionnaire development

The authors developed KAP questionnaire related to defecation and constipation in children after reviewing the literature on knowledge, attitude, and practice of parents with constipated children. The searches for articles were conducted in the PubMed electronic database with the following keywords; 'defecation', 'constipation', 'children', 'pediatric', 'knowledge', 'attitudes' and 'practice'. All items distributed in three domains and scoring for responses to questions were segregated by each domain.

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- Three choice items in the knowledge domain; 1 mark was given for every “correct” answer and 0 mark was given for every “incorrect” answer.
- Five point Likert items in the attitude domain; the responses to statements were categorized using a Likert scale ranging from 0 to 4 based on the level of agreement to the statements.
- Dichotomous items in the practice domain; the responses representing positive practices were scored as 1 and negative practices were as 0.

Phase 2: Content validation of the questionnaire

The questionnaire was reviewed independently by a panel of 5 pediatric gastroenterologists. The experts evaluated each item by the IOC.

Where,

$$IOC = \frac{\sum R}{N}$$

N=Number of pediatric gastroenterologists.

R=Rating (1, 0, -1) of item as a measure by pediatric gastroenterologists [5].

In each item, the experts gave a rating of 1 for really measuring the attribute, -1 for not clearly measuring, or 0 for the unclear the expected attribute. The qualified items should have the IOC equal to or greater than 0.50.

Phase 3: Internal consistency of the questionnaire

A self-administered survey was conducted among 100 parents. The subjects were requested to respond to the KAP questionnaire. The completeness of the questionnaire was ensured by the investigator. Cronbach's alpha coefficients was used as a measure of internal consistency of the questionnaire that depicted the reliability of a set of items concerning the knowledge, attitude, and practice.

Where,

$$\alpha = \frac{n}{n - 1} \left(1 - \frac{\sum s^2(X_i)}{s^2(Y)} \right)$$

n=Number of items.

$s^2(X_i)$ =Variance of each item.

$s^2(Y)$ =Variance of total score.

The Cronbach's alpha coefficient ranged from 0 to 1.0 with higher values denoting increased reliability. Values less than 0.5 were indicative of unacceptable reliability [6,7].

Participants

In phase 3, subjects included parents with children aged 0-15 years presenting to pediatric department of Bhumibol Adulyadej hospital, Bangkok, Thailand, between October 2021 and September 2022. All were be able to read and understand the questionnaire. We excluded parents who had visual impairment and mental disorder.

Statistical analysis

Statistical analysis was performed using SPSS software version 23.0. We described demographic characteristics using descriptive statistics such as the mean for continuous variables and frequency for categorical variables. As for the expert panel evaluation, content validity measured by IOC was calculated using Microsoft Excel. The Cronbach's alpha coefficients for internal consistency were analyzed using SPSS.

Results

Phase 1: Questionnaire development

The important domains and items that could be included in the questionnaire were identified after doing a literature review. The first draft included 31 items (11 items on knowledge, 10 items on attitude and 10 items on practice) (Table 1).

Table 1: The adjusted items for measuring parental knowledge regarding defecation and constipation in children.

	Items	A	B	C
K1	Which of the following is the result if your children hold back their stool?	Constipation	Diarrhea	No effect
K2	Which of the following is the most likely mechanism of longstanding stool withholding behavior	More nutrients from the stool are absorbed by body	More water from the stool is absorbed by body	More nutrients and water from the stool are absorbed by body
K6	Which of the following is not diagnostic criteria for functional constipation	Two to three spontaneous bowel movements per week	Lumpy or hard stools	Difficulty with evacuation of stools

K7	Which of the following is not reason of stool withholding behavior	passage stools with discomfort	Afraid to pass stool in different place	Eating sticky rice in every morning
K8	Which of the following factor is the most likely impact to success toilet training	Blaming your children if they refuse to practice toilet training	Practicing toilet training after meal once a day	Going to the toilet only when your children can't hold back

Phase 2: Content validation of the questionnaire

Based on the comments of the expert panel, 4 items from knowledge domain and 1 item from practice domain were disqualified. The accepted Item Objective Congruence indexes (IOC) by 5 experts were at least 0.6 (Table 2).

Table 2: The adjusted items for measuring parental attitude regarding defecation and constipation in children.

	Items	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
A3	I can observe my child for stool withholding behavior					
A4	If my child has spontaneous bowel movements less than three times a week, it is defined as constipation					
A6	If my child has painful or hard bowel movements, it is defined as constipation					
A7	Fecal incontinence is one of symptom of constipation					
A10	Stool withholding behavior causes constipation					

Phase 3: Internal consistency of the questionnaire

Characteristics of the participants: A total of 100 parents participated in the questionnaire process to establish internal consistency. The mean \pm SD age of the patients was 36.04 ± 8.64 years; 80% of subjects were mother. The level of education revealed that almost half of the patients had below or equal high school level.

The Cronbach's alpha value for the overall questionnaire was 0.229, low as compared with the benchmark of 0.5. In order to

improve the Cronbach's alpha value, we decided to perform exploratory analysis to calculate Cronbach's alpha after deleting some questions. After testing, a total of 8 questions were deleted: 2 from the knowledge domain, 5 from the attitude domain and 1 question from the practice domain. The Cronbach's alpha value re-calculated after deletion process was 0.511 (Table 3).

Table 3: The adjusted items for measuring parental practice regarding defecation and constipation in children.

	Items	Yes	No/not done/can't remember
P2	I promote my child to go to the toilet after meals once a day.		
P4	I take my child to go to the toilet if he/she has stool withholding behavior		
P5	I motivate my child to exercise		
P6	I motivate my child to drink enough water		
P7	I motivate my child to get adequate fiber		

P8	I regularly monitor my child's bowel movement		
P9	I support a suitable potty or toilet for my child		
P10	I don't force my child to go to the toilet if he/she isn't ready to practice.		

Discussion

To the best of our knowledge, this is the first study in Thailand that is set up to develop a reliable and valid questionnaire to assess parental KAP toward defecation and constipation in children. Our results showed no unacceptable content validity and reliability. This validated questionnaire may be standardized tool for assessing parental understanding about childhood constipation [8].

The initial KAP questionnaire that developed based on literature review of research consisted of 31 items and contained knowledge, attitude and practice subscales. The content validity analysis by experts was conducted to exclude items that were not relevant to the targeted construct. In this study, some items must be deleted to represent the constructs of interest.

In the test reliability, we explored consistency across items (internal consistency). This questionnaire demonstrated that reliability coefficients using the Cronbach's alpha value were low. Literature has suggested that the Cronbach's alpha value can be improved by deleting or revising irrelevant questions. Finally, our consensus was to delete a total of 8 questions, which reduced the total number of questions to 18. The removal of questions increased the Cronbach's alpha value to 0.511. We concluded that the internal consistency of the KAP questionnaire wasn't unacceptable.

Conclusion

In the present study, we developed a new questionnaire that holistically assesses knowledge, attitude and practice of Thai parents toward defecation and constipation in children. This tool focuses on the causes, risk factors, symptoms, diagnosis and prevention of children constipation in the Thai population. This developed KAP questionnaire may be applicable in routine evaluation of parents as part of a larger survey.

Limitations

There are some limitations of our study. The participants in this study were from a single site from Bhumibol Adulyadej hospital, thus we may limit generalizability. Moreover, the result of questionnaire did not reach the desired level of 0.7 for internal consistency. Our finding was indicative of poor reliability. A low Cronbach's alpha value could be due to low number of questions, poor inter relatedness among the questions, or heterogeneous constructs. Nonetheless, further studies are recommended to determine additional content-related items to generate more reliable results.

Ethical Consideration

The study protocol was reviewed and approved by the institutional review board (IRB No. 29/64). After ethics committee approval was achieved. Written, informed consent was obtained from each participant. They were also informed of the voluntary participation, adequate information disclosure about the research and consequences of study.

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