Research Article

Self-efficacy related to parental feeding behaviour in toddler besides social support and dependent-care agency

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ABSTRACT

Background: 1-3 years old children, a critical period and have not been self-sufficient, still need parents as a gatekeeper in feeding behavior, which is important to sustain growth, development and health status. Understanding of parental feeding behaviour help nurses perform nursing assessment, while this research has not been conducted commonly. This research to determine the relationship of self-efficacy, social support and dependent-care agency (DCA) with parental feeding behavior.

Methods: A descriptive analytic, cross-sectional study in 18 Posyandu/integrated health center (IHC) of toddler at depok sleman yogyakarta, throughout October 2014-January 2015. The respondents were 243 parents, obtained through consecutive sampling appropriate with inclusion and exclusion criteria. Measurements were achieved with questionnaire. The analysis with frequency analysis, Spearman, independent T test/Man Whitney, one way ANOVA/Kruskal Wallis test, and linear regression.

Results: Relationship between DCA and parental feeding behavior was obtained p-value<0.001; r=0.4. Relationship between self-efficacy and parental feeding behavior was obtained p-value<0.001; r=0.4. Relationship between social support and parental feeding behavior was obtained p-value<0.01; r=0.2. DCA, social support, and self-efficacy simultaneously are associated with parental feeding behavior with R2=0.280; p<0.05. Parents were still lack of learning on how to prepare a healthy menu, to identify equipment, or to supply food right from a variety of sources, to give awards to maintain good eating behavior of children

Conclusions: Self-efficacy is highly variable associated with parental feeding behavior besides social support and DCA. The next studies are needed to distinguish between parental feeding behavior among the groups with various nutritional status of children.

Keywords: DCA, Self-efficacy, Social support, Parental behavior, Feeding, Toddler

INTRODUCTION

One to three years of age are a critical period to form and affect feeding behavior.1,3 1-3 years old children have not been self-sufficient in feeding behavior, they need parents as gate-keeper1,3 through parental feeding behavior. Parental feeding behavior affect health status, growth and development of children.

Parental feeding behavior is an activity of the parents to provide a healthy food, increase the child's eating behavior and provide a pleasant dining environment. This behavior is a dependent-care action that begins with
searching for information, planning, decision-making, and action. Parental feeding behavior has not been optimal. There are more mothers deliver manners while eating rather than teaching skills in eating. Mothers find it difficult to apply a slogan of a healthy diet in preparation of food, rarely provide vegetables for the children, feeding the children while watching television or walking.

Previous research, dependent-care agency (DCA), self-efficacy, social support are related to parental feeding behavior. Skill of parent doing activity (DCA) affects accuracy of parents on feeding behavior. Adequate parental DCA is needed in the treatment of children with cancer. DCA is associated with feeding behavior. Social support affects the mother in providing balanced nutrition in children aged under five years. Self-efficacy beliefs affect parents’ ability to reach and maintain the expected results, in a feeding behavior of parents, because the parents encounter a growing child’s behavior.

Research on relationship between these variables has not been conducted commonly. It is important to provide information to nurses about factors related to parental feeding behavior. Knowledge about parental feeding behavior to help nurses to perform nursing assessment related problems of parental feeding behavior. Based on the background described, this encouraged researchers on searching for information, planning, decision-making, and action. Variables and instruments

Parental feeding behavior is a parent’s feeding activity through providing of healthy food intake, increasing the children’s eating behavior, provide a pleasant dining environment. Instruments using Parental Feeding Behaviour Questionnaire (PFBQ), with a loading factor of over 0.3 and the reliability value of 0.92 to 0.93.17

DCA is a parent’s perception of his ability in feeding. Modified instrument of Denyes / fildey dependent care agency, with a value above 0.355 validity and reliability of 0.722.

Social support is an assistance given by people around the parents, which consists of a source of parental support and parental satisfaction. Instrument was modified from Social Support Questionnaire (SSQ) by Saranson with a validity value of 0.470 to 0.738 and reliability of 0.861.

Self-efficacy is a belief in ability of parents to child feeding. Instrument was modified from the general self-efficacy scale 12 (GSEs-12), with the validity and reliability values 0.670 0.312 to 0.758.

Analysis

Univariate analysis was done with percentage. Bivariate analysis using Spearman Rho was conducted to determine the relationship of DCA, self-efficacy, social support, and parental feeding behavior. Unpaired T test / Mann Whitney was used to determine the relationship of demographic characteristics that consisted of two unpaired groups with the main variables in the study, One-Way ANOVA / Kruskal Wallis test was used to analyze the relationship between demographic characteristics that consisted of more than two unpaired groups with main variables. Multivariate analysis used linear regression.

RESULTS

The majority of parents aged 18-40 years as many as 234 (96.3%) of parents, 51.9% had a number of ≥ two children, 65% had family income below one million, 54.3% had middle education, as well as 62, 1% of parents had not received experience on health education about nutrition in children aged 1-3 years. There are relationships between parental feeding behavior and the characteristics of the level of education, income, parental education and experience of health education. Good parental feeding behavior tended to be found in higher education and higher incomes as well as parents who had received experience on health education about nutrition in children before (Table 1).

There are 7 (0.03%) parents who had feeding behaviors in children aged 1-3 years were low of the total score of feeding. Parental feeding behavior remained low in learning how to prepare a healthy menu, identify proper


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METHODS

Study Design

Analytic descriptive study, with cross sectional approach.

Population

All parents who have children aged 1-3 years living in the working area of public health center (puskesmas) depok Sleman region.

Samples

There were 243 parents as samples who meet the criteria for inclusion and exclusion, through purposive / consecutive sampling.

Time and place

The research was conducted in October 2014 to January 2015, in 18 Posyandu / Integrated Health Center (IHC) of toddler at Depok Sleman Yogyakarta.
equipment or supplies from a variety of sources, as well as to give reward for maintaining ideal children’s eating behavior. Parental feeding behavior has been correct in terms of storing food in a clean and closed, encouraging children to do enough activity and rest/sleep to improve the children’s appetite, and motivating children to spend on food while eating.

Table 1: Relationship between parental feeding behaviour and parental characteristics (n=243).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th></th>
<th>Parental feeding behavior</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of parents</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;18 years old (y.o)</td>
<td>1</td>
<td>0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18–40 y.o</td>
<td>234</td>
<td>96.3</td>
<td>142.20±21.57</td>
<td>0.382</td>
</tr>
<tr>
<td>40–60 y.o</td>
<td>8</td>
<td>3.3</td>
<td>137.50±21.59</td>
<td></td>
</tr>
<tr>
<td>Number of children</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 child</td>
<td>117</td>
<td>48.1</td>
<td>142.73±22.55</td>
<td></td>
</tr>
<tr>
<td>≥2 children</td>
<td>126</td>
<td>51.9</td>
<td>141.19±20.67</td>
<td>0.580</td>
</tr>
<tr>
<td>Family income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1.5 million rupiahs</td>
<td>158</td>
<td>65</td>
<td>138.03±20.53</td>
<td></td>
</tr>
<tr>
<td>1.5–2.5 million rupiahs</td>
<td>54</td>
<td>22.2</td>
<td>148.30±22.97</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>&gt;2.5 million rupiahs</td>
<td>31</td>
<td>12.8</td>
<td>150.71±19.49</td>
<td></td>
</tr>
<tr>
<td>Education level of parents</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic education</td>
<td>40</td>
<td>16.5</td>
<td>130.25±17.64</td>
<td></td>
</tr>
<tr>
<td>Middle education</td>
<td>132</td>
<td>54.3</td>
<td>141.47±21.01</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Higher education</td>
<td>71</td>
<td>29.2</td>
<td>149.37±21.76</td>
<td></td>
</tr>
<tr>
<td>Parents’ experience on health</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>151</td>
<td>62.1</td>
<td>138.28±21.97</td>
<td>0.001*</td>
</tr>
<tr>
<td>Yes</td>
<td>92</td>
<td>37.9</td>
<td>147.91±19.56</td>
<td></td>
</tr>
</tbody>
</table>

* p value <0.05

Table 2: Relationship between provision of parental feeding behaviour and DCA, satisfaction on social support, social support sources and self-efficacy.

<table>
<thead>
<tr>
<th>Variable*</th>
<th>Parental feeding behavior on children aged 1-3 years old</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>p</td>
</tr>
<tr>
<td>DCA</td>
<td>0.4</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Satisfaction on social support</td>
<td>0.2</td>
<td>0.01*</td>
</tr>
<tr>
<td>Social support sources</td>
<td>0.2</td>
<td>0.02*</td>
</tr>
<tr>
<td>Self – efficacy</td>
<td>0.4</td>
<td>&lt; 0.001*</td>
</tr>
</tbody>
</table>

* a Spearman’s Rho test; *there is significant correlation at p <0.05; the strength of the correlation (r) is very strong when close to 1.

Parental feeding behavior of children aged 1-3 years was associated with DCA at moderate level of relationship’s strength; also associated with satisfaction levels of social support and the number of sources of social support at weak strength of relationship and associated with self-efficacy at moderate level of relationship’s strength (Tabel 2).

The result of the regression analysis suggested that a linear combination of DCA, self-efficacy, satisfaction of social support associated with parental feeding behavior of children aged 1-3 years. The most dominant variables that were related to parental feeding behavior in children aged 1-3 years from the largest are self-efficacy, satisfaction and DCA parental support. Based on these results, the well-improved parental feeding behavior were found in parents who had good score in self-efficacy, satisfaction of social support, and DCA (Table 3).

Coefficient of linear regression correlation in this model is R² = 0.280. In this study, an obtained model is associated with a score of feeding behavior at 28% on parents who have children aged 1-3 years. This model was also statistically significant (p<0.05). The multivariate linear regression analysis backward method, it resulted an equation on parental feeding behavior in children aged 1-3 years = 15.624+1.543 (self-efficacy) + 0.423 (level of satisfaction)+0.197 (DCA). All the assumptions of linear regression (i.e. linearity, normality, zero residues, residues no outliers, independency, constant and homoscedasticity met) (Table 3).
Table 3: Multivariate analysis of variables related to parental feeding behaviour in children ages 1-3 years.

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>p</th>
<th>95% CI against β</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Minimum</td>
<td>Maximum</td>
</tr>
<tr>
<td>Constant</td>
<td>15.624</td>
<td>0.264</td>
<td>-11.839</td>
<td>42.294</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>1.543</td>
<td>&lt;0.001</td>
<td>0.952</td>
<td>2.133</td>
</tr>
<tr>
<td>Satisfaction of social support</td>
<td>0.423</td>
<td>0.02</td>
<td>0.065</td>
<td>0.782</td>
</tr>
<tr>
<td>DCA</td>
<td>0.197</td>
<td>&lt;0.001</td>
<td>0.123</td>
<td>0.272</td>
</tr>
</tbody>
</table>

Significance at p value < 0.05.

DISCUSSION

Parental feeding behavior in children aged 1-3 years is parents’ activity to provide and maintain a healthy food, to provide a pleasant dining environment, and to improve the children’s eating behavior. On results of this research, parental feeding behavior in children aged 1-3 years at good quality are found in parents who had either good self-efficacy, satisfaction of social support, as well as DCA.

**Self-efficacy relationship with parental feeding behavior**

A good self-efficacy contributes in adequate parental feeding behavior. Parental feeding practice, self-efficacy, and quality of food are related to a child's diet.10,19,20 Increased mothers’ self-efficacy on feeding cause greater fruit and vegetable consumption in children aged 1-3 years.21 Self-efficacy influences parents-children interaction and family becomes more optimal.22 Increased parental self-efficacy is also important in preventing obesity in younger children.23

Self-efficacy is a feeling that is owned by the parents so that they can manage their tasks in effective and successful parenting.24 A conviction of parents to be capable to perform the behavior in achieving and maintaining the desired result.26 When parents feel capable, they will be more diligent planning purpose and achieve task assignment.24

Self-efficacy is associated with feeding behavior of the parents, because children aged 1-3 years is the opportunity to introduce a variety of food that is healthy, safe, balanced on the child, parents are required confidence in trying new things in the introduction of foods to children. Children aged 1-3 years is also the period of the parents to teach good eating behavior, parental confidence necessary to continue to try and confidence that parents are able to teach good eating habits to children, although sometimes fail, because children aged 1-3 years are still dependent with others, which are the parents in fulfillment of meal need.8,27,28

Parental self-efficacy on feeding in children aged 1-3 years is associated with the level of education and parental income. The higher level of education and income, is the higher parental self-efficacy. Family income and mother's education affect the confidence of parents in encouraging self-efficacy in feeding.25 Higher education helps parents to have good self-efficacy related to the initiative to learn and seek information about a healthy diet for children, parents’ toughness to counter of feeding problems in children, as well as the efforts of parental feeding behavior of healthy and safe food. Parental self-efficacy in the initiative to provide a varied diet requires the support of resources, including family income.

**DCA relationship with the children’s feeding behavior**

Higher DCA supports to improve parental feeding behavior. Increasing mothers’ ability impacts positively on the health of children in Bolivia.26 DCA is associated with the parents’ or guardian’s behavior on self-care of children with cancer.26 DCA is associated with parental feeding behavior in children aged 1-3 years.12

DCA is an ability to search information, planning, decision-making, and behavior in knowing and meeting the needs of proper people’s self-care.9 DCA is an ability of adults to meet self-care needs of children, who depend socially with others which are their parents.11 Parents provide assistance to children, provide proper nutrition, encouraging, guiding and directing the child during mealtimes, and supporting personal development through interaction and teaching by being role-model.32 Increased parental DCA in feeding children can improve the behavior of parents in providing healthy, safe, well balanced food; providing a pleasant eating environment; as well as directing a good children’s feeding behavior.

The similar results have been done in research, that in order to be able to behave in a good feeding, it needs knowledge.33,34 Knowledge motivates parents in child nutrition improve parenting practices in planning a proper family meal.5,13 Experience of parents receiving health education on nutrition in children also increases parental DCA. Parents will gain knowledge, while parents receive health education. Parents are still lack the ability to recognize body part that plays a role in digesting food and functions, determine the characteristics of a pleasant dining environment, monitor the intake of children as needed, because majority of parents reported to have never received health education about children’s...
nutrition. DCA is associated with parental feeding behavior, because with the knowledge, motivation and skills of the parent, the parent are required in feeding practices for varying the presentation of food, responding appropriately when a child refuses food, building children’s independence in eating.

Social support relationship with parental feeding behavior

High satisfaction of social supports benefit positively in shaping the behavior of feeding a good parent. Nurses need to help families to raise awareness of the family in child care, as well as a husband, in addition to other family members. The existence of problems in child care experience can lead to maternal depression which then affects the inadequate parenting behaviour, which requires social support from people around. Social support related to maternal behavior in feeding balanced nutrition. Stunted increased incidence in children in Simeulue Aceh occurs in children who have no family support.

The results are consistent with previous research’s related to the role of social support in the parent’s behavior in parenting. In general, there is a significant correlation with the support of parental behavior. Information support to parents to help parents in providing healthy, safe, balanced food. Feedback support obtained by parents helps parents to continue to improve the eating behavior of children. Instrumental and emotional support help parents in providing a pleasant eating environment. Nurse educators as part of the patient's health problems, in conducting education programs is needed to involve other family members in addition to the parent. Adequate cooperation between parents and a source of parental support, play a role in the accuracy of the behavior of parents in parenting.

Factors associated with parental feeding behavior in children aged 1-3 years from the highest to the lowest

Factors associated with parental feeding behavior in children aged 1-3 years in the study sequentially from the highest to the lowest are self-efficacy, satisfaction support, and DCA. Self-efficacy is the highest factor associated with feeding behavior of parents of children aged 1-3 years. Well-improved parental self-efficacy in feeding, which means that parents feel able to regulate or manage feeding the children effectively and successfully. Feelings of being able to parent will arise when the parents have done well to children. Parents have the correct initiatives in the feeding of children, parents are able to utilize its potential to cultivate good feeding practices. Parents are also resilient and able to deal with the problems experienced in the feeding children. Parents need to ensure food to eat has full of healthy content. Children aged 1-3 years have a tendency of eating behavior: difficult or fussy while feeding, play food when not hungry, thus requiring initiative, effort and toughness parents in feeding.

Good self-efficacy means that parents can confidently perform feeding practices to achieve and maintain the desired result. When parents have not been able to provide food that is healthy and safe; improve child feeding behavior; providing a pleasant eating environment; with good self-efficacy, parents are willing try to achieve those. Likewise, when parents are able to do so, then parents will strive to maintain the positive capabilities, thereby increasing parental feeding behavior in children.

The more parents feel capable, with good self-efficacy, parents have diligent planning objectives increasingly as well as in performing tasks achievement, related with feeding in children. The persistence may indirectly increase the ability of parents in feeding. Likewise, the feeling of parents’ ability to manage them feeding the child effectively and successfully can indirectly increase parental satisfaction in feeding children aged 1-3 years.

Parental feeding behavior is associated with the parents’ income. Women with higher incomes tend to use food as a bidder calmness children over 12 months of age, when the child is experiencing distress. Sufficient income, assist parents in providing a safe and healthy food for children, providing instrumental support relation prepare a pleasant dining environment.

Score of parental feeding behavior in children aged 1-3 years, based on the characteristics of the income level of the parents, it was found that the higher the income level is the higher score of feeding behaviour. The high knowledge of nutrition associated with higher earnings, women with higher incomes also tend to read the labels of food products when preparing food for the family, including children. A study to look at the pattern of infant feeding in mothers who have children aged 1 year in EDEN, delayed introduction of additional food and the use of instant baby food is more common in women with a high income. Poverty status associated with the ability to support mothers on child feeding.

This research is aligned with other previous studies, where the income of the parents influenced parental in parenting, including feeding practices. The adequacy of the diet that is safe, healthy and balanced, demands the availability of funds to achieve it, as well as in providing a pleasant environment related to the provision of children’s delightful cutlery that also demands financial adequacy in the family.

Higher parental education tends to have feeding behavior better than low to middle educated parents. This is consistent with previous research, mothers with secondary education and above, are more likely to restrict foods that are less healthy, its purpose in relation to feeding.
Parents' health consciousness means that awareness on the diet of fruits, vegetables, eggs, beans and juice.\textsuperscript{45} There is a significant relationship between balanced diet and sociodemographic variables of maternal education. Higher education levels are associated with well-quality diet and consciousness of health as well as decline in dietary pattern score of sweetness and instant food. Highly frequency vegetable intake in children aged 1-3 years was associated with maternal education.\textsuperscript{1} A toddler with a high educated mother is more likely to provide food such as fruit and reduce providing drinks and desserts that are enriched with sweeteners or candy.\textsuperscript{36}

Analysis of the results of this study, in general is in the same direction with the results of other similar studies, that the higher the education level of parents, the higher behavior in parenting is, including feeding. But it is inevitable that diversity education level of parents is something that must be encountered by nurses, so how nurses can optimize the domain of parental behavior in feeding from all characteristics of parental education, is becoming a challenge. Nursing interventions related to knowledge and level of education, a nurse should be able to assess the level of knowledge before intervention.

Parental feeding behavior is based on the experiences of parents getting experience on health education obtained a higher mean score parents than the parents who have not received health education.

Approach to online health promotion to parents and children in fifth grade through eighth grade is an alternative viable option used to help prevent and repair of childhood obesity.\textsuperscript{37}

Analyzed the contents of the ethnographic study of on line posts of mothers who have children aged 0-2 years in two popular magazines in America that most of the questions and the support are delivered by mothers are problems in eating and sleeping independently in addition parenting stress issues and consultation on the development of children.\textsuperscript{35}

A survey to parents, the study stated that the majority of resources on feeding children is obtained from the internet, parents are more likely to share information about feeding with fellow partner, the process of extracting knowledge prefer to fellow parent groups through social media.\textsuperscript{48}

Research on self-efficacy, satisfaction of social support and DCA nowadays, is able to predict the behavior of parental feeding as much as 28%, while 72% is influenced by other variables that have not been studied in the current research, which still need to be investigated in order to achieve optimal behavioral feeding parent in children aged 1-3 years.

Self-efficacy is highly variable associated with parental feeding behavior besides social support and DCA. The next studies are needed to distinguish between parental feeding behaviors among the groups with various nutritional status of children.

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