

The Effects of Socio-Demographical Factors and Perceived Seriousness Upon Motherly Skill of Managing Eating Disorder on Children with Avoidant Restrictive Food Intake Disorder (ARFID)

Yoyok Bkti Prasetyo^{1*}, Chairul Huda Al-Husna¹, Nabila Arif¹ Ahsan³

¹. Faculty of Health Sciences, University of Muhammadiyah Malang.

². Department of Nursing, Brawijaya University.

***Corresponding Author: Yoyok Bkti Prasetyo**

Abstract

Objective: Perceived seriousness is considered to mothers in making decisions for the sake of protective attempts upon children suffering from avoidant restrictive food intake disorder (ARFID). This study aimed to identify the predictor factors of motherly skill in managing eating disorder on children with ARFID. **Method:** A cross-sectional descriptive survey was held to 245 mothers taking care of children with ARFID. This research was conducted in 3 subdistricts and three community public health centres in Malang. Data were collected by questionnaires of perceived seriousness and a managing eating disorder. Data were processed descriptively, using Pearson correlation and multiple linear regression (level of significant 0.05). **Results:** Factors in respect of motherly skill of managing eating disorder included the feeling of fear of children's condition ($p = 0.006$), feeling of failure to contribute when children suffered from malnutrition ($p = 0.010$), serious condition ($p = 0.017$), and the whole-life changes ($p = 0.002$). The multiple-linear regression revealed that factors influenced motherly skill of managing eating disorder covered education ($\beta = 1.089$, $p = 0.022$), the number of children ($\beta = -1.582$, $p = 0.025$), and perceived seriousness ($\beta = 0.097$, $p = 0.020$). **Conclusion:** This current research had indicated that perceived seriousness was a significant factor to influencing mothers in making decisions for the sake of protection upon their children. Thus, we recommend that motherly belief is fostered in the event of health promotion.

Keywords: *Perceived seriousness, The skill of managing an eating disorder, ARFID.*

Introduction

Children who suffer from Avoidant Restrictive Food Intake Disorder (ARFID) will show up a specific behaviour of avoiding or even refusing food, either the one they have been familiar with or the one new to them [1]. In addition, they also fall on appetite and body weight losses, dependent on parenteral nutrition, supplement, functional dysphasia, and stomachache [2]. For that reason, mothers are set up to play a significant role to manage children with ARFID.

Their attitudes in caring of them are the core of character building on children, specifically in the case of getting children difficult to eat due to some determinant factors such as being neglectful in choosing ways of providing food, giving them snacks to calm

them down, and never habituating them to eat on time [3]. The prevalence of ARFID is reported between the interval of 5% to 23% [2,4]. On top of that, ARFID can result in malnutrition on children, such as stunting and wasting. Indonesia has shown a fluctuating and elevating tendency on stunting phenomena from 2007 to 2010. This statement is corroborated by data regarding stunting occurrences in Indonesia, namely: 36.8% in 2007, 35.6% in 2010, and 37.2% in 2013 [5,6].

In East Java Province, it is reported that 15% of 2.4 million toddlers have been suffering from food avoidance which causes malnutrition. Around 59.3% of toddlers are ageing from 3-5 years old falling on food avoidance [7].

Perceived seriousness will be much-determining mothers in making decisions of what health or curative conducts to apply [8,9]. Perceived seriousness refers to a feeling of seriously concerning on conditions faced by self or other people [10]. It regards difficulties or consequences in which ones are believing to cause further conditions to happen. The more the difficulties and negative consequences rise within the specific condition, the greater the probability the ones will take on for preventive conducts for the sake of protection from the risks [11].

Perceived seriousness can be identified from the feeling expressed by mothers upon the possible impacts of certain conditions, such as the feeling of pain, discomfort, loss of a job, loss of time for work, financial burden, interactional and communicational difficulties with families, and susceptibility on future situations [12].

Generally speaking, the deeper the motherly understanding of certain health problems or illnesses that happen to children, the higher the perceived seriousness will be [13]. The mother's failure in preserving the perceived seriousness will trigger a feeling of fear of condition, role's failure, anxiety, interactional disorder, powerlessness, the shift of self-perception, fear of danger, financial burden, obstacles that happen, degree of seriousness of illnesses, and shift of familial change.

Concerning the role's failure due to children's condition, mothers are made depressed and anxious because of limited communication and negative emotion. Some depression cases that happen to parents occur due to less optimum children development and children's mental health [14].

Parents' over-thinking of their children's condition will cause their anxiety level to rise higher [15]. Parents are exposed to very challenging conditions of their children so that they are going to focus on giving extraneous attention, which is alleged to reduce the interactional intensity with the surrounding environment [16].

Parental fear of possible impacts that may occur under specific conditions or illnesses makes parents set up a limitation on children's physical and social activities [17]. It is of grand necessity to observe perceived seriousness on mothers to manage children with ARFID so that they will not fall on

malnutrition. Only a few types of research in Indonesia appear to expose this phenomenon. Some studies have shown the importance of perceived seriousness. As many as 51% of patients with actinic *keratosis* did not consider the illness serious [18]. Further, 52.6% of patients with breast cancer strongly believed in the seriousness of their illness [19]. Also, around 88.3% of parents put heavy seriousness upon dental caries on their children [20] while as many as 66.7% of patients deemed cervical cancer very serious illness so that, to them, it was of important necessity to do a screening test [21].

The great attention to the perceived seriousness ones have put over certain illnesses represents the great importance of strong belief and seriousness in making decisions for health conduct to apply. This current research was intended to identify the effects of socio-demographical and perceived seriousness on the motherly skill of managing eating disorder on children with ARFID.

Materials and Methods

Study Sites and Participants

This was a cross-sectional study in which the sample size was defined using the rule of the thumb in Structural Equation Modeling (SEM), where the number of estimated parameters was multiplied by 5 or 10. There were 10 parameters in total which means that the sample size constituted $10 \times 10 = 100$ participants (covering the minimum total size). The sample size in this study was 245 participants. Participant inclusion criteria required children suffering from ARFID (< 5 years old), but not suffering from chronic diseases and congenital disabilities of their digestive system.

Data Collection

The data were collected between August 2018 to February 2019. The questionnaire was administered at integrated health service posts and/or a residence on the targeted areas. In sum, there were a total of 245 participants involved.

Questionnaire

Perceived Seriousness

The questionnaire to collect data of perceived seriousness was developed based on Health Belief Model with a total of 11 indicators,

namely: 1) feeling of fear of children's condition, 2) feeling of role's failure when finding out children suffering from malnutrition, 3) rapid heartbeat when thinking of children's conditions, 4) interactional disorder, 5) feeling of powerlessness, 6) swing of mood, 7) feeling of fear of talking about dangers over children's condition, 8) financial power, 9) time, 10) serious conditions, and 11) shifts/changes in the whole life.

To rate, a 5-point Likert scale was used, with the descriptors of (1: never, 2: rarely, 3: sometimes, 4: frequently, 5: always). The validity values of perceived seriousness for all 11 questions consecutively signified: 0.42; 0.68; 0.54; 0.47; 0.58; 0.66; 0.65; 0.68; 0.57; 0.66; and 0.76 (above or equal to 0.4 was considered valid). Meanwhile, the reliability test was represented by 0.83 (above 0.6 was considered reliable).

Managing Eating Disorder

A questionnaire as regards managing eating disorder was developed based on Nursing Intervention Criteria and Nursing Outcome Criteria which consisted of 9 indicators: 1) collaborating with health teams, 2) collaborating with family members, 3) emerging positive relationship, 4) monitoring vital sign, 5) monitoring fluid intake output, 6) defining the desired expectation, 7) functioning attitude modification, 8) discussing with health team, and 9) taking over responsibility. To rate, a 5-point Likert scale was occupied, with the descriptors of (1: never, 2: rarely, 3: sometimes, 4: frequently, 5: always). The validity values of managing eating disorder for all 9 questions respectively constituted: 0.74; 0.72; 0.71; 0.72; 0.73; 0.81; 0.84; 0.77; 0.78 (above or equal to 0.4 was considered valid), whilst the reliability test indicated 0.89 (above 0.6 was considered reliable).

Statistical Analysis

All the data were processed using IBM SPSS Statistics 23.0 software (IBM Corp., Armonk, NY, USA) with $p < 0.05$ set up as the significance level. Demographic data on mothers and children were shown in the form of frequency distributions (percentages). The data regarding perceived seriousness and skill of managing an eating disorder were presented in the form of mean values (standard deviation).

Pearson correlation coefficient was used for the analysis of the correlation between perceived seriousness and skill of managing an eating disorder. Meanwhile, a multiple linear regression was used to examine the effects of socio-demographical and perceived seriousness on the motherly skill of managing eating disorder, primarily those caring for children with ARFID.

Ethical Considerations

This current research had been granted ethical approval from the Committee of Research Ethics, Faculty of Public Health, Airlangga University with a serial number of 333-KEPK. All the involved participants had stated informed consent completed with signature. All privacies and confidentialities were of total assurance.

Results

Socio-demographical Characteristics

The result shown in Table 1 indicates that the majority of mothers belonged to a group with the range of age of 26-35 years old, with a total of 139 (56.7%). Most of the mothers were also the graduates of senior high school level, with many 89 (36.3%). To make it specific, the majority of the mothers were unemployed, represented by 190 (77.6%). In terms of income, the middle rank, between 1-2 million, took the highest number of participants with a total of 126 (51.4%). As many as 104 mothers (42.4%) were only taking care of 1 single child.

Toddles between 0-3 years old took the biggest portion with 177 (72.2%) in total. Female children were the most dominant with many 135 (55.1%). Furthermore, 197 (80.4%) children were classified into normal body weight group, which was the highest among its other counterparts. For body height criterion, the majority of the children exhibited a normal height with the total accumulation of 149 (60.8%). At last, the biggest index for body mass was taken out by the normal group with a total of 188 (76.7%).

Correlation between Perceived Correlation between Perceived Seriousness and Skill of Managing Eating Disorder

Table 2 indicates that there was a correlation between perceived seriousness and skill of managing eating disorder ($r = 0.177$; $p = 0.005 < 0.05$).

Factors in respect of perceived seriousness which were interconnected with skill of managing eating disorder included: feeling of fear of children's condition ($p = 0.006 < 0.05$), feeling of role's failure when finding out children to suffer from malnutrition ($p = 0.010 < 0.05$), rapid heartbeat in event of

thinking of children's condition ($p = 0.007 < 0.05$), swing of mood ($p = 0.000 < 0.05$), feeling a fear of talking about possible risks over children's condition ($p = 0.015 < 0.05$), serious condition ($p = 0.017 < 0.05$), and the whole-life changes ($p = 0.002 < 0.05$).

Table 1: Socio-demographical Characteristics

No.	Characteristics	n (%)
1	Age (years old) ^a :	
	- 17 – 25	61 (24.9)
	- 26 – 35	139 (56.7)
	- 36 – 45	45 (18.4)
2	Educational Background:	
	- Elementary School	50 (20.4)
	- Junior High School	75 (30.6)
	- Senior High School	89 (36.3)
	- Higher Education	31 (12.7)
3	Occupational Status:	
	- Employed	55 (22.4)
	- Unemployed	190 (77.6)
4	Income:	
	- > 2 million	63 (25.7)
	- between 1-2 million	126 (51.4)
	- < 1 million	56 (22.9)
5	Number of Children :	
	- 1	104 (42.4)
	- 2	97 (39.6)
	- 3	36 (14.7)
	- 4	7 (2.9)
	- 5	1 (0.4)
6	Children's Age (years old) ^b :	
	- 0 – 3	177 (72.2)
	- > 3 – 5	68 (27.8)
7	Children's Gender:	
	- Male	110 (44.9)
	- Female	135 (55.1)
8	Children's Body Weight (BW/A) ^d :	
	- Dramatically underweight	7 (2.9)
	- Underweight	39 (15.9)
	- Normal weight	197 (80.4)
	- Overweight	2 (0.8)
9	Children's Body Height (BH/A) ^d :	
	- Dramatically short	50 (20.4)
	- Short	38 (15.5)
	- Normal	149 (60.8)
	- Tall	8 (3.3)
10	Children's Body Weight (BW/BH) ^d :	
	- Dramatically underweight	7 (2.9)
	- Underweight	23 (9.4)
	- Normal	188 (76.7)
	- Overweight	27 (11)

Notes:

- The category of mothers' ages was based on the standard of Ministry of Health of Indonesia (2009): Mean \pm SD (30.20 \pm 6.120)
- The category of children's ages: Mean \pm SD (2.01 \pm 1.109)
- The category was based on WHO standard of 2010: Table Z score

Effects of Factors Related to Skill of Managing Eating Disorder

Table 3 presents the results of the multiple linear regression, explaining some factors that affected the skill of managing the eating disorder, namely educational background of mothers, the number of children taken care of, and perceived seriousness.

It was predicted that the educational background was positive to the skill of managing an eating disorder ($\beta = 1.089$, $p = 0.022 < 0.05$). Contrarily, the number of children was considered negative to the skill of managing eating disorder ($\beta = -1.582$, $p = 0.025 < 0.05$). Meanwhile, perceived seriousness appeared to be positive to the skill

of managing eating disorder ($\beta = 0.097$, $p = 0.020 < 0.05$).

Table 2: The Correlation between Perceived seriousness and Skill of Managing Eating Disorder (r/p)

Variables	Managing eating disorder (r/p)
Perceived Seriousness	0.177 / 0.005
Feeling of fear of children's condition	0.176 / 0.006
Feeling of role's failure when finding out children to suffer from malnutrition	0.165 / 0.010
Rapid heartbeat in event of thinking of children's condition	0.171 / 0.007
Interactional disorder	-0.026 / 0.686
Feeling of powerlessness	0.054 / 0.399
Swing of mood	0.276 / 0.000
Feeling a fear of talking about possible risks over children's condition	0.156 / 0.015
Financial power	-0.055 / 0.394
Time	-0.009 / 0.884
Serious condition	0.152 / 0.017
Whole-life changes	0.193 / 0.002

Table 3: The multiple-linear regression of effects of socio-demographical factors and perceived seriousness upon the skill of managing eating disorder

Variables	<i>B</i>	<i>SE</i>	<i>B</i>	<i>T</i>	<i>P</i>
Constant	30.829	4.790		6.436	0.000
Mothers' age	-0.041	0.092	-0.036	-0.442	0.659
Mothers' educational background	1.089	0.472	0.150	2.308	0.022
Number of children	-1.582	0.703	-0.189	-2.251	0.025
Children's age	-0.188	0.669	-0.030	-0.280	0.779
Body weight	-0.212	0.253	-0.084	-0.839	0.402
Body height	0.069	0.065	0.115	1.066	0.287
Perceived seriousness	0.097	0.041	0.144	2.347	0.020

Discussion

The research had indicated that there was a correlation between perceived seriousness and skill of managing an eating disorder. Perceived seriousness appears when ones believe in certain consequences or impacts of illness that are deemed to get much severer when no immediate treatment is given [20]. Mothers are supposed to make decisions in order to get certain treatments for their children who suffer from ARFID.

They perceive the condition very susceptible to the particular illness so that they will make decisions to practice health conduct [22]. A perception of ones towards the degree of seriousness, severity, and damage caused by the illness will push forward them to take health actions. Health actions can be in the form of prevention or medication either. Consultation for prevention and medication can be practised at the nearest health centres.

The preventive or medication actions are close to the level of seriousness or severity of the illness. The more people think that the illness is serious or severe, causing threats to them, the stronger their willingness to take actions for prevention or medication to the health centres will be [23]. Theory of *Health Belief Model* extensively defines the relationship between individual belief and

health conducts. This theory indeed predicts that people will take health actions when they perceive themselves so susceptible to specific illnesses [24]. The strong individual belief will determine further steps or procedures to take. Theoretically speaking, the Health Belief Model (HBM) refers to a socio-psychological model that elaborates and predicts health conducts concerned on individual attitudes and belief. On top of that, this model postulates that one's tend to apply health conducts when they feel vulnerable upon particular illness. In other words, they practice a healthy lifestyle only if they perceive that the lifestyle offers them many more benefits than that the preventive actions do [25].

Motivation towards taking out preventive actions rises due to threats perceived and personal desire to avoid any negative probabilities [26]. Personal belief on health problems and preventive actions ones are taking outplay important role in facilitating or restricting an attempt of health promotion [27]. Holding on a weak belief can contribute to failure to seek out health services due to lack of control perceived over health [28]. Besides, another study has shown that motherly belief is concomitant with the pattern of providing children with food and the status of children's body weight [29]. A factor of belief also contributes to caregivers'

skill in taking care of children with *ARFID*. This is because the factor appears to be a predictor to decide for the sake of protection from threats caused by health problems, including in the case of children with *ARFID* [30]. Besides, belief can determine ones to take particular preventive actions upon the illness and to commit health promotion [30].

Moreover, belief explains why they shift their plans or keep doing specific health conducts [31,32]. Another statement argues that belief can explain why ones fail to participate in activities, which is aimed at detection or prevention over particular illnesses [11,33,34]. At last, belief can be effective for predicting ones to take actions for the sake of prevention, screening, or controlling illnesses [35]. Perceived seriousness is influenced by educational and knowledge backgrounds [36]. However, both factors do not directly influence individual attitudes [37]. The former affects individual health conducts in terms of informational acceptance.

The knowledge that can be effective to influence health conducts refers to one that is acquired beyond educational context. Rather, it can be related to personal experiences or information received from numerous existing media [38].

A perception that pushes forward mothers to commit health conducts is perceived when they are taking care of their children. Such a perception can also be applied to the real implementation of health conducts, especially for prevention [39,40]. This preventive conduct can level up the preventive attempt. When each of mothers can maximize a preventive attempt, therefore, it is said that the attempt can suppress the number of patients of specific illnesses significantly lower [41].

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The number of children is also considered a determinant factor that influences the skill of managing an eating disorder. This is due to the availability of time that has been adequate for interaction. The fewer the number of children is, the more adequate the interaction between mothers and children will be. This warm interaction will affect children's health. Mothers with good interaction with their children will be able to provide good practice of parenting reflected by the skill of managing their children's health and health promotion conducts [42, 43].

Conclusion

Motherly belief in taking care of their children with *ARFID* is the core factor. The belief can be in the form of perceived seriousness which will push mothers forward to practice promotional and preventive conducts so that the children will no longer suffer from a threat of severer malnutrition. Perceived seriousness, further, refers to the degree in which mothers believe upon the most probable threats over health to help them mobilize sources they possess in order to take protective actions. In short, this protective procedure is demonstrated through the motherly skill of managing an eating disorder.

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