Influence of Family Functioning on Social-Emotional Skills Development Among Children With Physical Barriers

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ABSTRACT

The ability of children to recognize and control emotions, termed social-emotional skills development, is critical for normal socialization and participation in important activities such as education. Children with physical barriers may have greater difficulty developing optimal social-emotional skills due social rejection and over-protection by parents. For these children, family is the greatest potential resource to assist in this process. The current study examined the associations between family functioning and social-emotional skills among school-aged children with physical barriers. One hundred and twenty families including a child with hearing impairment, visual impairment, physical disability, or speech impairment participated in this study. The Family Assessment Device (FAD) was used to measure family functioning and the Elementary Student's Social-Emotional Skills Measurement was used to assess the three critical social-emotional skill components persistence, self-control, and social competence. Regression analyses reveal significant positive correlations between family functioning (total FAD score) and both self-control ($r = 0.209$, $p < 0.05$) and social competence ($r = 0.364$, $p < 0.01$). Individual domains of family functioning had distinct effects on social-emotional skills development. Emotional responsiveness influenced all three components, while emotional involvement and problem-solving strongly influencing self-control and social competence. Social-emotional skills development programs for children with physical barriers should include interventions for supporting and improving family functioning, especially emotional support and problem solving.

Keywords: children with physical barriers, family functioning, family support, social emotional skills, special needs children.

1. INTRODUCTION

At the opening ceremonies of the *Asian Para Games* 2018, Indonesian President Joko Widodo demonstrated his archery skills alongside Bulan Karunia Radianti, an eleven-year-old child with physical challenges. Although she faced great difficulties, such as rejection from primary school admission and ridicule by classmates, she managed to obtain high academic achievement, make many friends, and learn archery (Damanik, 2018). Pratiwi and Mangunsong (2014) classified children with special needs into three general groups: (1) children with physical barriers (physically disabled, visually impaired, hearing-impaired, and speech impaired), (2) children with

emotional and behavioral disorders, and (3) children with intellectual disabilities. Accordingly, Bulan could be classified as a child with physical barriers relative to typical children, and requires special task modifications, alternative learning methods, and special educational services to achieve her full potential.

Children with physical barriers also face difficulty participating in routine activities, resulting in rejection and isolation that can reduce social learning both through experience and observation (Odom et al., 2006). Indeed, difficulties in social-emotional skills have been reported among children with hearing impairments (Stevenson, Kreppner, Pimperton, Worsfold, and Kennedy, 2015), visual impairments (Huurre & Aro, 1998), and physical disabilities (King, Shultz, Steel, Gilpin, & Cathers, 1993).

Social-emotional skills help children effectively manage their emotions and behaviors, achieve goals through persistence, appreciate the learning process, and work together in groups, skills essential for academic and career achievement (Scarupa, 2104). This skill set can be divided into three components: (1) self-control, (2) persistence, and (3) social competence. Self-control is the ability to manage and regulate one's emotions and behaviors in ways that are considered appropriate for a given social context. Persistence is an attitude of perseverance in achieving goals despite challenges and failures along the way. Finally, social competence is the ability to understand other's perspectives, to work within groups to complete tasks and achieve goals, to solve problems within groups by maximizing positive consequences and minimizing negative consequences, and to

behave toward others in accordance with social norms and current situations. These skills allow children to adapt and function within social environments, and thus are the foundation for development of cognition, language, and adaptive life skills (Greenspan, Wieder, & Simons, 1998, dalam Case-Smith, 2013). Further, social-emotional skills promote general well-being (Darling-Churcill & Lippman, 2016) by increasing confidence and the ability to build stable relationships (National Research Council & Institute of Medicine, 2000; Parlakian, 2003, dalam Darling-Churcill & Lippman, 2016).

Children with physical barriers can also develop these skills, but this may require a concerted effort by teachers, friends, and especially the family (Algood & Harris, 2013). Family is the most important influence on physical and cognitive development during early childhood (Dai and Wang, 2015) and high family functioning is predictive of greater social abilities among children (Mousavi, Taran, Ebrahimi, Kalantari, & Mohhammadi, 2017). Epstein et al. (1978) defined family functioning as the way in which the family unit solves problems to promote the social, psychological, and biological development of each member. Family functioning can be measured across six domains: (1) problem solving, (2) communication, (3) role functioning, (4) affective responsiveness, (5) affective involvement, and (6) behavioral control. Well-functioning families solve problems and face challenges as a unit. This in turn requires effective communication (for actual measurements, verbal communication is emphasized over non-verbal communication). Role functioning refers to the repetitive behaviors and

contributions of each individual in the family. High functioning families are able to allocate specific roles and responsibilities fairly and appropriately such that each member can fulfill their roles and responsibilities effectively. Affective responsiveness is the ability to respond with appropriate affection and emotion. Families with high functioning will respond to each member's emotions with appropriate emotion. Affective involvement is the extent to which the family is interested in and appreciates the activities of other family members. The most effective for high family functioning is empathic involvement. Finally, behavioral control refers to how the family applies rules to manage each member's behavior. Well-functioning families tend to adopt a flexible behavioral control style based on rules that are reasonable, adjustable, and negotiable.

Bennett and Hay (2007) found that children with physical barriers demonstrate well developed social skills in families that are cohesive, idealistic, and democratic. Such families are considered high functioning because they to tend support and protect the child while he or she explores the social environment as much as possible. However, these findings may be confounded by selection bias because participating families were selected by organizations dedicated to helping these children. Furthermore, Bennett and Hay (2007) used the *Social Skills Rating System* as the measurement tool, which places less emphasis on emotional skills (Humphrey, Kalambouka, Wigelsworth, Lendrum, Deighton, & Wolpert, 2011) and self-regulation (Darling-Churchill et al., 2015). Also, social-emotional skills were measured only from the teacher's perspective without parents' observations and perspectives. Thus, family functioning was not examined. Therefore, the current study examined the association between family functioning and social-emotional skills development among children with physical barriers in Indonesia. The central hypothesis is that there is a significant positive association between family functioning and social-emotional skills development among children with physical barriers. To address the potential confounders of previous studies, this study employed the Elementary Student's Social Emotional Skills Measurement, a tool that emphasizes social and emotional skills equally (Scarupa, 2014) and included a more representative sample of families.

According to Yude, Goodman, and McConachie (1998), children with physical barriers have difficulties developing social-emotional skills because they are rejected, isolated, and bullied by other children. This situation is more likely if the child is already registered in elementary school. Such children are already interacting with the wider social environment and are able to interpret and understand their conditions compared to other children. Therefore, the researchers decided to conduct this study on children with special needs currently receiving primary education. The ages of children with special needs may not correspond to those of children without special needs, however, as rejection from public elementary schools unable or unwilling to accept the child may delay admission and grade progression. Therefore, the researchers did not specific an age range in advance.

2. METHODS

2.1. Participant Characteristics

Families volunteered for the study by online access or in person at several institutions in metropolitan Jakarta, Indonesia. Inclusion criteria were families of a child (1) with hearing loss, visual impairment, physical disability, or speech impairment, (2) already registered and currently studying at the elementary school level (inclusive, public, or special elementary school (SDLB), or homeschooling), and (3) currently residing in Indonesia. Children with cerebral palsy, Down's syndrome, or double handicaps were excluded as condition severity may be a confounding variable. To apply these inclusion criteria online, certain questions were added to the registration form before participants accessed the main questionnaire. The first question was "Is your child currently registered as a student in a school equivalent to primary school?" If the respondent answered "yes", they could access the next question, while if they answered "no", the system would automatically bring them to the end of the questionnaire. The next question asked whether the child's disorder included cerebral palsy, Down's syndrome, or a double handicap. Again, the system delivered "yes" respondent to the last page and they could not access the questionnaire. Other participants were screened in person at schools or institutions as described below.

Descriptive analysis showed that 88.5% of participants completing the questionnaires were the mothers of children with physical barriers, of which 51.7% were young adults (20–39 years old), while 60% of the fathers were middle-aged (40–65 years old). Most of the participants (71.7%) reported that their income was sufficient only for daily needs (middle-low socioeconomic status). The participants' children were about evenly split between boys (50.83%) and girls, and ranged in age from 5 to 15 years old, including 35.8% from five to eight years old. The most common physical barrier was hearing impairment (71.7%), followed by visual impairment (13.3%), speech impairment (10%), and physical disability (5%).

2.2. Design

Participants were selected by *convenience sampling.* We visited special primary schools, organizations for children with disabilities, and communities predicted to have a high prevalence of families with a disabled child in metropolitan Jakarta to promote the project. Volunteers then completed the study online or in person.

2.3. Instruments

The online and offline forms included two self-report questionnaires, the Elementary Student's Social-Emotional Skills Measurement developed by Child Trends (Scarupa, 2014) and the Family Assessment Device (FAD) developed by Miller, Ryan, Keitner, Bishop, and Epstein (2000). The Elementary Student's Social-Emotional Skills Measurement consists of 21 items scored on a scale from 1 (I have "never" observed my child doing the things outlined in the item statement) to 4 (I "always" find my child doing the things described in the item statement). Previous trials have reported a coefficient of reliability = 0.843, indicating good-to-high construct validity for measuring social-emotional skills. The FAD consists of 20 items probing the six dimensions of family

functioning (see Introduction). Previous trials have also documented good-to-high construct validity (coefficient of reliability = 0.866) of this measurement tool.

2.4. Procedure

After formulating the research question and inclusion criteria, we selected the measurement tools based on an extensive review of those available. The Elementary Student's Social-Emotional Skills Measurement and FAD were chosen based on general applicability, breadth of coverage, and well documented construct validity. The selected instruments were then adapted by performing a back translation and adjusting the items quantitatively and qualitatively according to the research question and cultural context.

All data were acquired from May 8 to 27, 2019. We prepared a unified online questionnaire using *Google form* and shared the link with parents through schools and institutions for children with physical barriers. We also visited thirteen schools in metropolitan Jakarta to administer the instruments in person (so as to mitigate selection bias based on home internet access). In total, 59 completed surveys were obtained online and 61 offline.

All data were analyzed using SPSS (version 20). Associations between social-emotional skill domains and FAD domains were assessed using Pearson's correlation coefficients. Significance was set at $P<0.05$ (one-tailed).

3. RESULTS

3.1. Influence of general family functioning on social-emotional skills development by children with physical barriers

Consistent with our research hypothesis that family functioning has a major influence on social-emotional skills development among children with physical barriers, there were significant correlations between general family functioning as measured by total FAD score and the social-emotional skill subscores for self-control ($p < 0.05$) and social competence ($p < 0.01$), but not for persistence ($p = 0.153$) (Table 1).

Table 1. Correlations between total Family Assessment Device (FAD) score of family functioning and individual social-emotional skill scores

Components	df	r	r^2	p
Persistence	119	0.094	0.008	0.153
Self-Control	119	0.209*	0.043	0.011
Social Competence	119	0.364**	0.13	0.000

** $p < 0.01$

* $p < 0.05$

3.2. Contributions of each family functioning dimension to social-emotional skills development

Table 2. Correlations between individual FAD dimension scores and social emotional skills subscores

		Persistence	Self-Control	Social Competence
Affective involvement	Pearson Correlation (r)	.047	**.228	**.293
	r²	0.002	0.051	0.085
	Sig. (1-tailed)	.304	.006	.001
	N	120	120	120
Affective responsiveness	Pearson Correlation (r)	*.160	*.204	**.346
	r²	0.025	0.04	0.119
	Sig. (1-tailed)	.041	.013	.000
	N	120	120	120
Behavior control	Pearson Correlation (r)	.078	.086	**.261
	r²	0.006	0.007	0.068
	Sig. (1-tailed)	.199	.176	.002
	N	120	120	120
Communication	Pearson Correlation (r)	-.120	-.142	.057
	r²	0,014	0,02	0,003
	Sig. (1-tailed)	.096	.061	.267
	N	120	120	120
Problem-solving	Pearson Correlation (r)	.103	**.245	**.308
	r²	0,01	0.06	0.094
	Sig. (1-tailed)	.132	.004	.000
	N	120	120	120
Role functioning	Pearson Correlation (r)	.066	.133	*.169
	r²	0.004	0.017	0.028
	Sig. (1-tailed)	.238	.074	.032
	N	120	120	120

$**p < 0.01$

$* p < 0.05$

Each FAD domain had distinct influences on specific social-emotional skills (Table 2), with affective involvement significantly and positively associated with self-control and social competence, affective responsiveness with persistence, self-control, and social competence, behavioral control with social competence, problem-solving with self-control and social competence, and role-functioning with social competence. Among these domains, affective responsiveness appeared to have the most pervasive influence on social-emotional

skills (influencing all three), while affective involvement and problem-solving had particularly strong influences on self-control and social competence.

4. DISCUSSION and CONCLUSION

We found that specific family functioning domains differentially influenced social-emotional skills with substantial variability in association strength. For instance, the family functioning domain 'emotional responsiveness' positively influenced all three social-emotional skills examined, while 'communication' had no significant influence on any. Further, only 'emotional responsiveness' among the six family functioning domains influenced persistence, while most domains influenced social competence. The relatively weak influence on persistence is in line with Mokrova, Brien, Calkins, and Leerkes (2015), who found that the influence of family on persistence in children is indirect and requires mediation by maternal values and the quality of maternal cognitive stimulation and emotional support. Similarly, Gilmore, Cuskelly, Jobling, and Hayes (2009) found a strong influence of maternal emotional support on the persistence of children with physical barriers. These findings also help to explain the strong influence of affective responsiveness (emotional support provided by parents) on social-emotional skills development. Parents who respond appropriately to their child's emotions promote the development of persistence and perseverance to achieve desired goals. The absence of a significant correlation between family functioning and persistence can also be explained by the application of ineffective parental

Surprisingly, communication had no significant influence on social-emotional skills development.

discipline at home. Parents of children with physical barriers tend to be permissive and unable to discipline. Mangunsong (2014) explained that many parents tend to be overprotective toward their physically disabled children. According to Cunningham's *psychic of crisis* model (1979, in cited in Atmodiwiryo, 2014), there is a so-called reaction phase in which parents with disabled children tend to be overprotective, pamper their children excessively, and forbid many activities. This treatment may cause the child to give up easily in the face of challenges.

Theoretically, children learn to control their emotions and behavior in accordance with social norms both directly through experience and indirectly by observing others in their environment. As the family home is the primary environment for children with restricted access to outside activities, family members are the strongest regulators of behavior and thus the main teachers of self-control. Several studies have documented a significant association between behavioral control applied by families and self-control in children (Li, Zhang, & Wang, 2015; Li, Li, & Newman, 2013; Shelleby et al., 2012). However, the current study found no significant correlation between the behavioral control domain and self-control among children with physical barriers. This finding is surprising on theoretical grounds, so we speculate the presence of confounding variables such as discipline. In the reaction phase, parents of children

with special needs tend to over-protect and forbid the child from participating in many activities' routine for typical children. Parents may also be reluctant to apply discipline, functional rules, and provide consequences for violations because they feel the child is unable to accept the consequences. Therefore, the child fails to learn what is acceptable and unacceptable in social settings. In addition, the child may have difficulty perceiving and internalizing self-control behavior due to the inconsistent application of discipline, rules, and consequences by other family members.

In line with our working hypothesis, general family functioning as measured by total FAD score was positively correlated with social competence, a major component of social-emotional skills according to Scarupa (2014). This finding is also in line with previous research reporting that the disabled children of well-functioning families tend to have high social-emotional skills despite environmental limitations (Bennett & Hay, 2007). Affective responsiveness and problem solving in particularly were strongly correlated with social competence, while affective involvement, behavior control, and role functioning had weaker effects. It is possible that the influences of these other factors may be confounded by uncontrolled variables, such as fatigue of participants due to the length of the questionnaire and different levels of education among participants. Indeed, many of the participants had only graduated from elementary school and expressed difficulty understanding unfamiliar words in the items such as "conflict" and "community".

Surprisingly, the communication dimension of family functioning had no significant influence on social-emotional skills development. This dimension quantified how members of a family unit exchange information, from clear, direct, and consistent (most effective) to vague, indirect, and inconsistent (least effective). Verbal communication is emphasized by the FAD because it is easier to measure compared to non-verbal communication, and most of the children in this study had limitations in verbal communication due to hearing or speech impairment. Thus, this result does not eliminate an important contribution of family communication style to social-emotional skills development by children with physical barriers. Further studies emphasizing the use of alternative forms of communication are warranted to address this issue.

A limitation of this study is the high proportion of children with hearing impairments compared to other physical barriers. Thus, these findings may be less applicable to children with other impairments. Further efforts such as collaborations with the city education office, Ministry of Education and Culture of the Republic of Indonesia, and institutions for children with special needs are warranted to collect these data from a more representative sample of families. Further, a larger and broader sample will allow for separate subgroup analyses of children with specific physical barriers. This study also excluded children with known intellectual disabilities, but we did not actually measure intelligence, so such double handicaps could have influenced the results. In addition, this study may have been influenced by the biased answers of parents (e.g., presenting family

function or their child's social-emotional skills development as better than in reality). Therefore, this study should be replicated with more objective assessment strategies for family functioning and social-emotional skills development.

General family functioning has a significant positive influence on the social-emotional skills development of children with physical barriers. Thus, programs aiming to develop these skills should include the whole family where possible and incorporate interventions promoting family functioning, particularly emotional responsiveness, emotional involvement, and problem solving. Hopefully, a harmonious relationship between the school and family can greatly facilitate social-emotional skills development by children with physical barriers.

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