JMCH Journal of Maternal and Child Health (2020), 5(1): 19-26
Masters Program in Public Health, Universitas Sebelas Maret
Research

The Contextual Effect of School on Self-Care in Children with Mental Retardation in Surakarta, Central Java

Janur Putri Wayanshakty[1)], Yulia Lanti Retno Dewi[2)], Eti Poncorini Pamungkasari[2)]

[1)]Masters Program in Public Health, Universitas Sebelas Maret
[2)]Faculty of Medicine, Universitas Sebelas Maret

ABSTRACT

Background: WHO analysis estimates the number of children with disabilities reaching 7-10% of the total population of children. The limitations of retarded children are influenced by age, physical condition, nutritional status of the child, and parenting in the family have a relationship in the level of independence of the children. This study aimed to analyze the factors that influence self-care in retarded children in Surakarta, Central Java.
Subjects and Method: This study was a cross-sectional study conducted in 15 special schools in Surakarta, Central Java, from June to July 2019. A sample of 200 mentally retarded children aged 9-17 years was selected by stratified random sampling. The dependent variable was self-care. The independent variables were age, nutritional status, mental retardation classification, maternal age, maternal education, maternal occupation, maternal knowledge, parenting style, and teacher support in school. The data were collected by questionnaire and analyzed by a multilevel multiple logistic regression run on Stata 13.
Results: Good self-care in mentally retarded children increased with aged ≥15 years (b= 4.61; 95% CI= 2.53 to 6.69; p<0.001), mild retardation (b= 2.02; 95% CI= 0.13 to 3.91; p= 0.036), maternal education ≥ senior high school (b= 1.23; 95% CI= 0.22 to 2.25; p= 0.017), and good maternal parenting style (b= 1.42; 95% CI= 0.21 to 2.62; p= 0.021). Good self-care decreased with under nourished children (b= -2.16; 95% CI= -3.44 to -0.87; p= 0.001), low maternal knowledge (b= -1.56; 95% CI= -2.90 to -0.22; p= 0.023), and weak teacher support (b= -3.34; 95% CI= -5.41 to -1.26; p= 0.002).
Conclusion: Good self-care in mentally retarded children increases with aged ≥15 years, mild retardation, maternal education ≥senior high school, and good maternal parenting style. Good self-care decreases with undernourished children, low maternal knowledge, and weak teacher support.

Keywords: self-care, mental retardation, children

Correspondence:
Janur Putri Wayanshakty. Masters program in Public Health, Universitas Sebelas Maret. Jl. Ir. Sutami 36A, Surakarta 57126, Central Java. Email: janurputri@gmail.com. Mobile: 08525-8870014

Cite this as:
Wayanshakty JP, Dewi YLR, Pamungkasari EP (2020). The Contextual Effect of School on Self-Care in Children with Mental Retardation in Surakarta, Central Java. J Matern Child Health. 5(1): 19-26.
https://doi.org/10.26911/thejmch.2020.05.01.03

BACKGROUND

One of the characteristics of retarded children in terms of social disability is not being able to take care of themselves, so that they need help from others (Pieter, 2017). The ability of self-care in mentally retarded children aged 9-17 years is in the low category. Children with intellectual disabilities who have been able to perform self-care without assistance as much as 38.6% and the rest still need help (Ramawati et al., 2012).

WHO analysis estimates the number of children with disabilities is 7% -10% of the total child population, around 295,250 children are in the community in coaching and supervising parents and families (Ministry of Health of the Republic of Indonesia, 2014).

In 2018 shows the proportion of disabilities at the age of 5-17 years is 3.3% (Ministry of Health of the Republic of Indonesia, 2018). People with mental retardation in Indonesia according to the results of a survey of the Ministry of Health of the Republic of Indonesia in 2012 amounted to 290,837 people (7.03%) (Ministry of Health of the Republic of Indonesia, 2014). One of the characteristics of the limitations of mentally retarded children is disruption in intellectual function and adaptive behavior (Astuti et al., 2018; Huang et al., 2016). Social inability is not being able to take care of themselves, so it requires the help of others (Pieter, 2017).

Ekaete et al. (2015) reported that mentally retarded children experience limitations in carrying out daily activities according to their severity. Daily activities that experience limitations such as toileting, wearing clothes, eating, and personal hygiene, but they can live normally like other children by practicing effectively, get motivation from parents and close supervision

Children with intellectual disabilities have limitations in their development that make daily activities dependent on others. These limitations are influenced by factors of age, physical condition, nutritional status of children and parenting and social support in the family have a relationship in the level of independence of children (Mlinac and Feng, 2016).

SUBJECTS AND METHOD

1. Study Design

This was an analytic observational study with a cross sectional design. The study was conducted in 15 special schools in Surakarta, Central Java, from June to July 2019.

2. Population and Sample

The population in this study consists of parents who have mentally retarded children aged 9-17 years who attended 15 special schools in Surakarta, Central Java. A sample of 200 mentally retarded children was selected by stratified random sampling.

3. Study Variables

The dependent variable was self-care. The independent variables were age, mental retardation classification, maternal education, parenting style, nutritional status, maternal knowledge, and teacher support.

4. Operational Definition of Variables

The age of the child is measured based on the date of birth. The measuring instrument used was a questionnaire. The measurement scale was a continuous, transformed into dichotomous, coded 0 for <median and 1 for ≥median.

Nutritional status was assessed by measuring a child's weight and height, classified according to the body mass index (BMI). The measurement scale was continous, transformed into dichotomous, coded 0 for good nutrition and 1 for malnutrition.

Developmental retardation was a classification based on IQ scores, divided into mild retardation and moderate retardation. The data were collected by medical record. The measurement scale was categorical, coded 0 for mild and 1 for moderate.

Maternal education was measured by looking at the last formal education of the mother of a mentally retarded child. The data were collected by questionnaire. The measurement scale was categorical, coded 0 for <senior high school and 1 for ≥senior high school.

Maternal knowledge about mental retardation includes the definition, types, characteristics of mentally retarded children, developmental retardation children, and the needs of retarded children are measured by

questionnaire. The measurement scale was continuous, transformed into dichotomous, coded 0 for good knowledge and 1 for poor knowledge.

Parenting style was defined as how mother take care of mentally retarded children in the family. The data were collected by questionnaire. The measurement scale was continuous, transformed into dichotomous, coded 0 for poor parenting style and 1 for good parenting style.

Teacher support was defined as the extent to which teachers give attention and guidance to mentally retarded students in school. The data were collected by questionnaire. The measurement scale was categorical, coded 0 for strong support and 1 for weak support.

Self-care included the ability of mentally retarded children to do personal hygiene, elimination, eating, drinking, dressing, mobilizing, socializing, communicating, housework and self-protection. The measurement scale was continuous, transformed into dichotomous, coded 0 for poor self-care and 1 for good self-care ability.

5. Research Ethic

This study was conducted based on research ethics, namely informed consent, anonymity, confidentiality, and ethical eligibility. The ethics permit in this study was obtained from the Ethics Commission of Dr. Moewardi hospital, Surakarta, Central Java, Indonesia, No. 845/VII/HREC/2019.

RESULTS

1. Sample Characteristics

Table 1 was showed sample characteristics for continuous data.

Table 1. Sample characteristics (continuous data)

Variable	n	Mean	SD	Min.	Max.
Mental retardation care	200	57.88	6.84	28	65
Children age	200	14.21	2.75	8	19
Children nutritional status	200	24.07	9.17	12	56
Maternal education	200	5.70	2.15	0	9
Maternal parenting	200	7.46	1.61	3	10
Teachers support	200	7.19	1.20	2	9

2. Univariate analysis

Table 2 shows 71 subjects (35.5%) with children <15 years and 129 study subjects (64.5%) with children ≥15 years. There were 115 children with malnutrition status in the study subjects (42.5%) and good nutrition in 85 subjects (57.5%). Children with mild mental retardation was 87.5%. Low maternal education was 99 (49.5%) and mothers with higher education were 101 (50.5%) subjects. Knowledge of mothers is low consisting of 139 subjects (30.5%) and mothers with good knowledge are 61 (69.5%) subjects. Mostly, children had good parenting style 81.0% and weak teacher support (80.5%).

3. The result of multivariate analysis

A multilevel multiple logistic regression were analyzed by STATA 13. Table 3 examined contextual effect of schools on self-care in mental retarded children by controlled age, Maternal education, parenting, nutrition status, maternal knowledge, and teacher support. Children aged ≥15 years (b= 4.61; 95% CI= 2.53 to 6.69; p <0.001), mild mental retardation (b= 2.02; 95% CI= 0.13 to 3.91; p= 0.036), high maternal education (b= 1.23; 95% CI= 0.22 to 2.25; p= 0.017), good parenting style (b= 1.42; 95% CI= 0.21 to 2.62; p= 0.021) increased self-care in mentally retarded children.

Table 2. Sample characteristics (categorical data)

Independent Variable	Frequency	%
Mental care		
Good	156	78
Poor	44	22
Children age		
Median (<15 years old)	71	35.5
Median (≥15 years old)	129	64.5
Children nutritional status		
Lacking	115	42.5
Good	85	57.5
Developmental Classification		
Light	175	87.5
Medium	25	12.5
Maternal Education		
Low	99	49.5
High	101	50.5
Maternal Knowledge		
Poor	139	30.5
Good	61	69.5
Maternal Parenting		
Lacking	38	19.0
Good	162	81.0
Teachers' Support		
Weak	161	80.5
Strong	39	19.5

Lack of nutrition (b= -2.16; CI 95%= -3.44 to -0.87; p= 0.001), low maternal knowledge (b= -1.56; CI 95%= -2.90 to -0.22; p= 0.023), low teacher support (b= -3.34; CI 95%= -5.41 to -1.26; p= 0.002) decrease the self-care ability of mentally retarded children. Schools have a contextual effect on the self-care abilities of mentally retarded children by 12.08%.

Table 3. Multilevel multiple logistic regression analysis of the factors that influence self-care in children with mental retardation

Independent Variables	b	95% CI		p
		Upper Limit	Lower Limit	
Fixed Effect				
Age (≥15 years old)	4.61	2.53	6.69	<0.001
Nutritional Status (poor)	-2.16	-3.44	-0.87	0.001
Mental Retardation (mild)	2.02	0.13	3.91	0.036
Maternal Education (high)	1.23	0.22	2.25	0.017
Maternal Knowledge (poor)	-1.56	-2.90	-0.22	0.023
Parenting style (good)	1.42	0.21	2.62	0.021
Teacher Support (poor)	-3.34	-5.41	-1.26	0.002
Random Effect				
Special School				
Var (constants)	0.45	0.34	6.00	
Log like hood = -64.02				
LR test vs. Logistic Regression				
p=0.152				
ICC = 12.08%				

DISCUSSION

1. The effect of age on self-care in children with mental retardation

Age in mentally retarded children helped in predicting children's mental development. In addition, age can also help to see the right time to teach and train mentally retarded children with self-care skills. School age is an important period in child development. At this stage, children showed their own characteristics and learn to perform self-care independently (Magiati et al., 2014). Erickson's development theory explained that children at school age (6-18 years old) have industry vs. inferiority problems, which mean children at this age were expected to be able to obtain independence obtained through their surroundings (Ramawati, 2012).

Growth and development during schooling would accelerate at the age of 10-12 years old, in general, physical activity in children is getting higher and strengthening their motor skills to do sports activities such as; running, climbing, jumping rope, and the ability of quality of life and independence in children would increase (Ramadhani et al., 2018).

2. The effect of nutritional status on self-care in children with mental retardation

Good nutritional status occurred when the body got enough substances that were used efficiently to enable physical growth, brain development, ability to work and optimal health. Differences in the nutritional status of children with intellectual disabilities with normal nutritional status where children with intellectual disabilities have deficits in the intake of energy, protein, iron, and vitamins. Iron deficiency in children was associated with cognitive learning and behavior disorders (Groce et al., 2014).

The nutritional status of children with mental retardation would affect daily activities both at home or at school. Poor nutritional status has a direct effect on the child's central nervous system and reduced children's activity as a form of saving energy or due to lack of energy to actively carry out activities (Onis, 2017).

3. The effect of mental retardation classification on self-care in children with mental retardation

Mental retardation classification in this study was divided into mild mental retardation and moderate mental retardation. The difference between mild mental retardation and moderate mental retardation was motor ability in mentally retarded children which was very influential with self-care and social skills (Pieter, 2017). One of the physical characteristics of mentally retarded children was motor weakness in self-care ability. Motor strength was needed in the coordination of movements, control of movements, and suitability of the movements to be done (Ramawati et al., 2012).

4. The effect of maternal education on self-care in children with mental retardation

Highly educated mothers showed support for families in terms of education and higher social relationships, as well as reducing stress levels in providing care so that can help children to improve social abilities that support children's independence (Fikriyyah et al., 2018; Gilson et al., 2017). A study by Na'imah et al., (2017) showed that the supporting factor for parents' acceptance of children with mental retardation was parental education. The higher level of parent education was expected to have better knowledge of self-care. This statement was reinforced by the statement of Machalicek et al. (2015) which stated that the higher a person's education, the greater the use of knowledge and skills.

5. The effect of maternal knowledge on self-care in children with mental retardation

Somene's knowledge was gained from experiences that came from various sources such

as the media, close relatives, mass media, electronic media, manuals, and health personnel (Mardiawati, 2019). Interest in seeking information to increase knowledge about mentally retarded children differed in children's age and education.

The study of Gilson et al. (2017) stated that the more mature the child was, the more rarely mothers seek information through various media. Mothers with higher education access more information about mental retardation through downloadable websites and guidelines. Parents with high knowledge about disability affected the acceptance of disabilities owned by children, so as to reduce stress levels in care (Peer and Hillman, 2014).

6. The effect of parenting on self-care in children with mental retardation

One of the factors driving children's independence is parenting. Parents who always spoil their children would make children unable to be independent (Haris and Haris, 2019). Ma'mun and Prameswarie (2016) stated that parenting was the most widely applied mental retardation parent was democratic parenting. Children who were educated in democratic parenting generally tend to show temporary aggressiveness (anger and hatred) in constructive actions.

This type of parenting was more conducive in educating the character of children, especially children with mental retardation, because parents who were rational always base their actions on ratio or thought, prioritize the interests of children, but do not hesitate to control their children (free conditional and responsible). Parental involvement is an important mediator for children's skills (Perry-Jenkins et al., 2019).

7. The effect of teacher support on self-care in children with mental retardation

The attention of mental retardation children in learning can not last long easily move to another object that is sometimes not at all interesting or meaningless. Collaborative teaching strategies by teachers support progress in students' social abilities (Woodman et al., 2016).

Children with intellectual disabilities need encouragement to achieve, children with mental retardation were children who have low self-confidence. Children with intellectual disabilities were also considered less able to be independent and work like normal children in general, their existence in the community was still in doubt, therefore, teachers play a role in helping mentally disabled children to be able to live independently in carrying out daily activities without having to depend on the help of people around (Nogay, 2013).

8. The effect of special school on self-care in children with mental retardation

School is one of the factors that increase children's development. A good and quality school environment would make the child a quality person too. In addition, the attitude of their friends at school can also affect children's development. Schools have a positive impact on adaptive behavior, academic and social interaction (Woodman et al., 2016).

AUTHOR CONTRIBUTION

Janur Putri Wayanshakty as the main author played a role in conducting study interventions, formulating research articles, and processing data. Yulia Lanti Retno Dewi played a role in the formulation of the framework of study. Eti Poncorini Pamungkas played a role in the formulation of research methods and discussion of research results.

CONFLICT OF INTEREST

There was no conflict of interest in this study.

FUNDING AND SPONSORSHIP

This study was self-funded.

ACKNOWLEDGEMENT

Acknowledgments were conveyed by authors to the Principal of SLB School in Surakarta who allowed this research to be carried out. Thank you to all mothers of children with mental retardation who have been willing and cooperative to become research subjects.

REFERENCE

Astuti FD, Salimo H, Pamungkasari EP (2018). Factors associated with the risk of autism in children under five years of age: a path analysis evidence from Banten. Matern Child Health J, 3(4): 278–286. https://doi.org/10.26911/thejmch.2018.03.04.05

Ekaete R, Arikpo M, Chukwudi NEOM, John J, Agbu M (2015). Mentally retarded children and deficits in daily living skills: case study of calabar municipality local government area, cross river state, Nigeria. IOSR-JRME, 5(2): 2320–7388. https://doi.org/10.9790/-738805232126

Fikriyyah S, Adriani RB, Murti B (2018). What are the factors that affect the risk of parenting stress in mothers with disability children? A new evidence from Sukoharjo. Matern Child Health J, 3(2): 156–165. https://doi.org/10.26-911/thejmch.2018.03.02.08

Gilson CB, Bethune LK, Carter EW, McMillan ED (2017). Informing and equipping parents of people with intellectual and developmental disabilities. Intellectual and Developmental Disabilities, 55(5): 347–360. https://doi.-org/10.1352/1934-955655.5.347

Groce N, Challenger E, Berman-Bieler R, Farkas A, Yilmaz N, Schultink W, Kerac M (2014). Malnutrition and disability: Unexplored opportunities for collaboration. Pediatr Int Child H, 34(4): 308–314. https://doi.org/10. 1179/20-46905514Y.0000000156

Haris A, Haris A (2019). Improvement of mother knowledge who have children age 2-5 years about training toilet using a drawing media. Int J Nurs Stud, 4(2): 76–80. https://doi.org/10. 20849/ij-sn.v4i2.575

Huang J, Zhu T, Qu Y, Mu D (2016). Prenatal, perinatal and neonatal risk factors for intellectual disability: a systemic review and meta-analysis. PLoS ONE, 11(4): 1–12. https://doi.org/10.-1371/journal.pone.0153655

Kemenkes RI (2014). The situation of persons with disabilities. Jakarta: Kementerian Kesehatan RI.

Kemenkes RI (2018). Healthy portrait of Indonesia from Basic Health Research in 2018. Retrieved from http://www.-depkes.go.id/article/view/18110200-003/potret-sehat-indonesia-dari-riskesdas-2018.html

Ma'mun A, Prameswarie T (2016). The relationship between family parenting with parenting stress on parents of mentally retarded children at the Foundation for the Coaching of disabled children Palembang family introduction especially fathers and mothers based on family pediatrics: report of the task force on the family. Syifa Medika, 7(2): 45-55. https://-www.researchgate.net/publication/334969679_Hubungan_Pola_Asuh_Keluarga_gengan_Parenting_Stress_pada_Orangtua_Anak_Tunagrahuta_di_Yayasan_Pembinaan_Anak_Cacat_Palembang

Machalicek W, Lang R, Raulston TJ (2015). Training parents of children with intellectual disabilities: Trends, issues, and future directions. Curr Dev Disord Rep 2:110–118. https://doi.org/10.10-07/s40474-015-0048-4

Magiati I, Tay XW, Howlin P (2014). Cognitive, language, social and behavioural

outcomes in adults with autism spectrum disorders: a systematic review of longitudinal follow-up studies in adulthood. Clin Psychol Revi, 34(1): 78–86. https://doi.org/10.1016/j.cpr.2013.11.002.

Perry-Jenkins M, Laws HB, Sayer KNA (2019). Parents work and children's development: a longitudinal investigation of working-class family. J Fam Pshycol, 2(2). https://doi.org/10.1037//fam0000580.

Mardiawati D (2019). The relationship between knowledge and parent care patterns with mental retardation children ability in self-care. Journal Endurance, 4(1): 34–41. https://doi.org/10.22216/jen.v4i1.3167.

Mlinac ME, Feng MC (2016). Assessment of activities of daily living, self-care, and independence. Arch Clin Neuropsych, 31(6): 506–516. https://doi.org/10.1093/arclin/acw049

Na'imah T, Nur'aeni N, Septiningsih DS (2017). Happiness orientation for parents who have mild mental retardation children. Jurnal Psikologi Undip, 16(1): 32. https://doi.org/10.14710/jpu.16.1.32-39.

Nogay N (2013). Nutritional status in mentally disabled children and adolescents: A study from Western Turkey. Pak J Med Sci, 29(2): 614–618. http://dx.doi.org/10.12669/pjms.292.3194

Onis MD (2017). Child growth and development. Nutrition and Health in Developing Countries: 71-91 https://doi.org/10.1007/978-3-319-43739-2

Peer JW, Hillman SB (2014). Stress and resilience for parents of children with intellectual and developmental disabilities: A review of key factors and recommendations for practitioners. J Pol Pract Intellect Disabil, 11(2): 92–98. https://doi.org/10.1111/jppi.12072.

Pieter HZ (2017). The basics of communication for nurses. Jakarta: Kencana.

Ramadhani AN, Adriani RB, Salimo H (2018). Path analysis on the biopsychosocial determinants of quality of life among children with cerebral palsy. Matern Child Health J, 3(4): 301–307. https://doi.org/10.26911/thejmch.2018.03.04.08.

Ramawati D, Allenidekania A, Besral B (2012). The ability to care for mentally retarded children based on external and internal factors of the children. Jurnal Keperawatan Indonesia 15(2): 89-96. https://doi.org/10.7454/jki.v15i2.32.

Woodman AC, Smith LE, Greenberg JS, Mailick MR (2016). Contextual factors predict patterns of change in functioning over 10 years among adolescents and adults with autism spectrum disorders. J Autism Dev Disord Title, 46(1): 176–189. https://doi.org/10.1007/s10803-015-2561-z.