IMPORTANCE OF AUTISM DETECTION DEVELOPMENT PROBLEMS OF TODDLER-AGE CHILDREN IN DENSELY POPULATED SETTLEMENTS

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ABSTRAK

Abstrak: Masalah perkembangan anak terutama autis sering kali diabaikan di wilayah pemukiman padat penduduk dikarenakan tingginya tuntutan pekerjaan dan hipitan ekonomi orang tua sehingga anak berisiko tinggi mengalami keterlambatan penanganan. Autisme merupakan kesulitan dalam interaksi sosial, perilaku dan komunikasi terutama non verbal. Tanda dan gejala muncul pada anak berusia sebelum 36 bulan. Kegiatan PKM ini bertujuan mengidentifikasi masalah perkembangan anak autism dipemukiman padat penduduk menggunakan *modified checklist for autism in toddlers* (M - CHAT). Metode PKM ini adalah praktik pemeriksaan perkembangan anak menggunakan alat deteksi *modified checklist for autism in toddlers* (M - CHAT) kepada 13 anak toodler yang dilaksanakan di tempat mitra kami Yayasan Rahmat Empati di Pondok Empati, Jakarta Barat. Hasil pemeriksaan alat deteksi modified checklist for autism in toddlers (M - CHAT) pada anak toodler sebesar 100% tidak ditemukan masalah autisme. Penggunaan Modified checklist for autism in toddlers (M - CHAT) menjadi alat skrining pencegahan autisme yang mudah digunakan dan dilakukan secara rutin oleh mitra karena telah ditetapkan oleh Kementerian Kesehatan Republik Indonesia. Pemeriksaan perkembangan sejak dini pada anak toodler sangat penting untuk mendukung kesejahteraan mereka.

Kata Kunci: Interaksi Sosial; Balita; Deteksi Autisme; Daerah Berpenduduk Padat.

Abstract: Child development issues, especially autism, are often ignored in densely populated residential areas due to high work demands and the economic pressures of parents, so children are at high risk of experiencing delays in treatment. Autism is a difficulty in social interaction, behavior, and communication, especially non-verbal. Signs and symptoms appear in children under 36 months of age. This PKM activity aims to identify developmental problems of autism children in densely populated residential areas using the modified checklist for autism in toddlers (M - CHAT). This PKM method examines child development using the modified checklist for autism in toddlers (M - CHAT) detection tool for 13 toddlers, which was carried out at our partner Yayasan Rahmat Empati in Pondok Empati, West Jakarta. The results of the examination of the modified checklist for autism in toddlers (M - CHAT) detection tool in toddlers were 100% found to have no autism problems. A modified checklist for autism in toddlers (M - CHAT) is an easy-to-use autism prevention screening tool. It is carried out routinely by partners because it has been determined by the Ministry of Health of the Republic of Indonesia. Early developmental examinations in toddlers are very important to support their well-being.

Keywords: Social Interaction; Toddler; Autism Detection; Dense Population Areas.

A. INTRODUCTION

One of the developmental problems experienced by toddlers and often overlooked by parents is autism (Rahmahtrisilvia et al., 2022). Autism is a developmental disorder related to emotional reciprocity, behavior, social interaction, difficulty maintaining relationships with others, and difficulty communicating, especially nonverbally (Iskandar et al., 2024). The cause of autism in children is still unknown (Humaira & Mawardah, 2024). However, several studies have shown that autism is caused by problems with the genetic potential of brain development (intrinsic) that occurs in the womb and environmental factors (extrinsic) in children such as growth problems due to lack of nutrition (Salim et al., 2020a). This failure is a cause that affects the development of children, which has been going on since an early age (Regina Lestari et al., 2024).

World Health Organization (2022) reports that the prevalence of autistic children in the world is 1:100 children. In Indonesia, there has been a significant increase in autistic children, reaching 2.4 million children (Regina Lestari et al., 2024), with signs and symptoms starting to appear in children before the age of 36 months. However, the toddler age stage is the golden age stage (Sutiha et al., 2017). During this period, children experience the final stage of the gold standard of brain function acceleration since the first 1000 days of life (Scher, 2022), and their development is marked by speech and language skills, creativity, social awareness, emotional, and intelligence (Apriliyani et al., 2024; Hockenberry et al., 2017). This age stage is the basis for moral development and the foundation of a child's personality (Adimayanti & Siyamti, 2019). The role and sensitivity of parents are very much needed at the early stages of a child's age to maximize their growth and development (Saputra et al., 2023).

Parents are the determinants in determining parenting patterns to care for and protect children so that their growth and development are optimal (Sa'diyah et al., 2024). Parents must be able to meet bio-psychosocial needs consisting of care and affection (Safitri et al., 2023). However, parents experience challenges in understanding and need to be more sensitive in providing parenting patterns (Salim et al., 2020b). As a result, children experience problems with children who have difficulty interacting, communicating, and behaving undetected (Iskandar et al., 2024; Sutiha et al., 2017). This problem is often experienced by working fathers and mothers in low-income economies so that they have to meet the family's daily needs. This problem occurs in urban areas that live in densely populated areas (Humaira & Mawardah, 2024).

Densely populated areas do not have public spaces such as green open spaces and children's playrooms (Iskandar et al., 2024). Densely populated settlements have also been shown to reap various problems such as low economic problems (Regina Lestari et al., 2024), health problems, nutritional status problems, children, high-stress levels, many threats, punishments,

and violations of regulations (Setianingsih et al., 2018). It is not surprising that child development problems are neglected in this situation, so children are at high risk of autism (Safitri et al., 2023). A standard and easy-to-use screening tool is needed to detect these problems in children from an early age (Kusdiyati, 2018).

Detecting autism problems in children early using the modified checklist for autism in toddlers (M - CHAT) (Rahmahtrisilvia et al., 2022). The modified autism detection tool for toddlers (M-CHAT) is an autism screening tool containing 23 questions for parents of children aged 18-36 months (Hockenberry et al., 2017). The questions asked to parents are about the development of the child's behavioral, emotional, social, understanding, and self-confidence aspects. Parents simply answer the statements "Yes" and "No" (Padila et al., 2019). The goal is to detect autism early so that children can immediately receive treatment related to self-development strategies by learning to optimize their potential (Rahmahtrisilvia et al., 2022; Salim et al., 2020a). There are six important questions for the M-Chat assessment: numbers 2, 7, 9, 13, 14, and 15. If answered, it does not mean the child is at high risk of autism(Padila et al., 2019).

This examination can be conducted in community services, schools, health centres, and integrated health posts (Kemenkes RI, 2019). Examiners can do it monthly to detect and evaluate the child's development (Salim et al., 2020a). The Ministry of Health has designated this tool as a tool for detecting autism in children, as stated in the book Stimulation, Detection, and Early Intervention for Growth and Development (SDIDTK) ((Kemenkes RI, 2019; Padila et al., 2019).

Based on this background, we are interested in carrying out community service by conducting early detection screening for autism in toddlers using the modified autism checklist for toddlers (M - CHAT) who live in densely populated settlements. This activity aims to identify autism problems in toddlers using a questionnaire using the modified autism checklist for toddlers (M - CHAT) in densely populated settlements and provide educational interventions for autistic children.

B. METHOD

The implementation of this community service activity was carried out at Pondok Empati Indonesia Care Jalan Pekojan II no 129 c, Tambora District, West Jakarta, Special Capital Region of Jakarta. The partner's vision is to catalyze professionals, communities, organizations, and other institutions to realize a comprehensive transformation in urban underprivileged communities. The partner's mission is to mobilize communities, non-governmental organizations, and professionals to collaborate for the welfare of urban underprivileged communities. This foundation is a non-profit institution and the implementation of this community service can only be attended by 2 members of the foundation.

The implementation of the activity begins with reviewing the data of the child's parents, conducting anthropometric examinations by assessing the child's weight based on age (BB/U) assessing weight status, body length or height based on age (PB/U or TB/U) assessing height, short or very short, weight per body length or height (BB/PB or BB/TB) to assess nutrition in children, and continued with an examination of the child's development related to autism using the modified checklist for autism in toddlers (M - CHAT) detection tool.

The target of this activity is children aged 18 months to 36 months with only 13 children participating in the work area of partners who support government programs to reduce child development problems. The selection of the location is based on information gathering from community service program partners. The proposed solutions are (1) providing positive information for parents regarding the importance of detecting growth problems in children early on, (2) providing education on preventing developmental disorders in children, and (3) directing parents to bring their children to be referred to health services that have a child growth and development polyclinic in the Tambora District Area, West Jakarta, Special Region of Jakarta. The stages of community service program activities include: (1) Planning; (2) Implementation; (3) Monitoring and Evaluation.

1. **Planning**

The planning process begins with collecting initial information through field surveys to determine the needs of partners related to developmental issues in children who have never been in the partner's area, common perceptions with partners regarding the implementation of activities, preparation of instruments by introducing autism detection screening tools in children that have been determined by the government using the modified checklist for autism in toddlers (M - CHAT).

2. **Implementation**

The implementation stage of the child development examination is divided into the following stages: (1) Socialization by introducing the importance of periodic child development examinations to prevent child development disorders to parents; (2) Child development examinations are carried out, examination of child development problems by the implementing team consisting of 3 lecturers with scientific specifications in Child Nursing, Community Nursing, Medical-Surgical Nursing, and Basic Nursing assisted by KKM DIII Nursing students from Krida Wacana Christian University and 2 members of the Indonesia Care foundation partner with a screening tool filling method by filling out a questionnaire directly to the participant's parents. (3) Providing education regarding interventions to overcome child development disorders to each parent from the results of autism risk development examinations in children aged 18 months to 36 months by providing educational flyers based on the Stimulation, Detection, and Early

Intervention of Growth and Development (SDIDTK) guidebook published by the Ministry of Health of the Republic of Indonesia.

3. Monitoring and Evaluation

The next stage is monitoring activities regarding parents' understanding of this activity by providing education and autism prevention flyers for children. The evaluation stage is in the form of checking the data that has been obtained and conveying information that has been obtained in the development examination from the use of the modified checklist for autism in toddlers (M - CHAT) screening tool to partners. The data obtained is analyzed and presented in the form of a frequency distribution.

After this program is completed, it is expected to increase public knowledge about the Child Development Problem Prevention program by the Ministry of Health of the Republic of Indonesia for children aged 18 months to 36 months and provide knowledge about interventions in the form of stimulation to overcome child development problems by providing proper attention and care at home so that it can be applied in everyday life.

C. RESULTS AND DISCUSSION

This community service activity was carried out on May 29, 2024. Before carrying out the activity, contact the Indonesia Care Foundation to make a time contract with parents and children aged 18-36 months. The number of children who attended the activity was 13 children. This community service activity began with material on the importance of autism detection screening (Figure 1).

Figure 1. Socialization of the importance of autism detection in toddlers

In the second stage, the community service team conducted an anthropometric examination of the child to determine the child's nutritional status and conducted screening using the modified checklist for autism in toddlers (M - CHAT) in Figure 2. In the next stage, the community service team informed the results of the screening by giving praise to the child's parents, providing education on prevention and steps to overcome autism in children to improve child growth and development, and providing educational brochures (Figure 3).

Figure 2: Screening modified checklist for autism in toddlers (M - CHAT) in toddler children

Figure 3: Providing preventative education and ways to improve social interaction, communication and behavior in toddler children

This community service activity will be held on May 29, 2024. Before carrying out the activity, contact the Indonesia Care Foundation to make a time contract with parents and children aged 18 - 36 months. Thirteen children attended this activity. Based on the results of the characteristics of toddler children, it is dominated by boys at 69.3%, fathers work 92% as private employees, mothers are 100% housewives, parents' income is > 2.5 million to 3.5 million per month at 38.4%, 76% have no history of other illnesses, children's growth is not short at 92 %, and good nutritional status (-2 SD to +1 SD) was 92%. Their characteristic data are in Table 1.

Table 1. Data characteristics of participants

Child Characteristics		No risk of Autism		High risk of Autism		Total	
		n	%	n	%	n	%
Sex	Boy	9	69,3	0	0	9	69,3
	Girl	4	30,7	0	0	4	30,7
Father's occupation	Doesn't work	0	0	0	0	0	0
	Self-employed	0	0	0	0	0	0
	Private sector employee	12	92	0	0	12	92
	Government employees	1	8	0	0	1	8
Mother's occupation	Housewife	13	100	0	0	13	100
	Self-employed	0	0	0	0	0	0
	Private sector employee	0	0	0	0	0	0

Child Characteristics		Interpretation M - CHAT				Total	
		No risk of Autism		High risk of Autism			
		n	%	n	%	n	%
	Government employees	0	0	0	0	0	0
Parents' Income	1.5 million to 2.5 million / month	2	15,3	0	0	2	15,3
	> 2.5 million to 3.5 million / month	5	38,4	0	0	5	38,4
	> 3.5 million to 4.5 million / month	3	23	0	0	3	23
	> 4.5 million to 5.5 million / month	2	15,3	0	0	2	15,3
	> 5.5 million / month	1	8	0	0	1	8
History of other diseases	None	10	76	0	0	10	76
	Respiratory (Pneumonia, Tuberculosis, Asthma, Bronchopneumonia)	1	8	0	0	1	8
	Sanitation (Diarrhea)	1	8	0	0	1	8
	Infection (Dengue Hemorrhagic Fever, Hepatitis, Typhoid)	1	8	0	0	1	8
	Congenital or Neurological (Down Syndrome, Attention Deficit Hyperactivity Disorder (ADHD), Autism)	0		0	0	1	5,9
Child growth based on Height per Age (TB/U)	Normal	12	92	0	0	12	92
	Stunted	1	8	0	0	1	8
	Severely stunted	0		0	0	0	0
Z score value (IMT/U)	Severely wasted (<-3 SD)	0		0	0	0	0
	Wasted (- 3 SD to <- 2 SD)	1	8	0	0	1	8
	Normal (-2 SD to +1 SD)	12	92	0	0	12	92
	Overweight (> + 2 SD to +3 SD)	0		0	0	0	0
	Obese (> + 3 SD)	0		0	0	0	0

The results of screening using the modified checklist for autism in toddlers (M - CHAT) questionnaire from the results of the presentation of each questionnaire question can be seen in Table 2. There are six essential questions for assessment on M-CHAT, namely numbers 2, 7, 9, 13, 14 and 15. Answer no to 2 who answer "No," then the child is at risk of autism, or if you find three other questions that are not essential points, answer "No," then the child is at risk of autism. Based on questions from the modified checklist for autism in toddlers (M - CHAT) questionnaire, the service team found that all the critical questions were answered "Yes" by all mothers on the essential point questions and had been evaluated by the service team. In addition, the answers given by the mother to other statements with the answer "No" did not exceed 3 points (Table 2).

Table 2. Modified checklist for autism in toddlers (M - CHAT) examination instrument in children

No	Questionnaire		Respondent	
			n	%
1	Does your child enjoy being swung, bounced on your knee, etc.?	No	0	0
		Yes	13	100
2	Does your child take an interest in other children?	No	0	0
		Yes	13	100
3	Does your child like climbing on things, such as up stairs?	No	0	0
		Yes	13	100
4	Does your child enjoy playing peek-a-boo/hide-and-seek?	No	1	8
		Yes	12	92
5	Does your child ever pretend, for example, to talk on the phone or take care of dolls, or pretend other things?	No	0	0
		Yes	13	100
6	Does your child ever use his/her index finger to point, to ask for something?	No	0	0
		Yes	13	100
7	Does your child ever use his/her index finger to point, to indicate interest in something?	No	0	0
		Yes	13	100
8	Can your child play properly with small toys (e.g. cars or bricks) without just mouthing, fiddling, or dropping them?	No	1	8
		Yes	12	92
9	Does your child ever bring objects over to you (parent) to show you something?	No	0	0
		Yes	13	100
10	Does your child look you in the eye for more than a second or two?	No	1	8
		Yes	12	92
11	Does your child ever seem oversensitive to noise? (e.g., plugging ears)	No	1	8
		Yes	12	92
12	Does your child smile in response to your face or your smile?	No	0	0
		Yes	13	100
13	Does your child imitate you? (e.g., you make a face-will your child imitate it?)	No	0	0
		Yes	13	100
14	Does your child respond to his/her name when you call?	No	0	0
		Yes	13	100
15	If you point at a toy across the room, does your child look at it?	No	0	0
		Yes	13	100
16	Does your child walk?	No	1	8%
		Yes	12	92
17	Does your child look at things you are looking at?	No	0	0
		Yes	13	100
18	Does your child make unusual finger movements near his/her face?	No	3	23
		Yes	10	77
19	Does your child try to attract your attention to his/her own activity?	No	0	0
		Yes	13	100
20	Have you ever wondered if your child is deaf?	No	1	8
		Yes	12	92
21	Does your child understand what people say?	No	0	0
		Yes	13	100
22	Does your child sometimes stare at nothing or wander with no purpose?	No	0	0
		Yes	13	100
23	Does your child look at your face to check your reaction when faced with something unfamiliar?	No	0	0
		Yes	13	100

The modified checklist for autism in toddlers (M - CHAT) questionnaire questions for children were answered well by parents of children who live in densely populated residential areas in Pekojan, West Jakarta, on May 29 2024. The screening results were dominated by 100% (n=13) of children not in the autism category (Table 3).

Table 3. Assessment of screening questionnaire modified checklist for autism in toddlers (M - CHAT).

Variabel		Responden	
		n	%
Examination Category modified checklist for autism in toddlers (M-CHAT)	Total score < 3 (No risk of Autism)	13	100
	Total score >3 (high risk of Autism)	0	0

Child development at the toddler age stage is very important. At this age stage, the role of parents is very necessary because it is not only to fulfill children's nutrition for brain growth but also to provide good parenting for children's emotional well-being in terms of socialization, communication, and behavioral competencies (Hilpriska Danal et al., 2024). However, parents, especially working fathers and mothers, face challenges in conveying this. Negligence and indifference will cause problems in child development, namely autism (Herna, 2022; Rahmahtrisilvia et al., 2022). Autism is not only caused by suboptimal brain development or complex neurodevelopment disorders. Still, it is caused by environmental factors characterized by difficulties in social communication from an early age and very minimal behavior and interests, with symptoms appearing before the child is three years old (Safitri et al., 2023; Sutiha et al., 2017). Signs and symptoms experienced by autistic children include ignoring sounds and sights, not wanting to react to social activities, not making eye contact, and touching and playing with other children (Apriliyani et al., 2024; Mutiara Putri et al., 2019). To minimize the risk of autism in children, parents must pay attention to nutritional needs to support children's brain development in the first 1000 days of life (Scher, 2022), but what is no less important is providing parenting patterns to support their growth and development (Kostanasios, 2024). Screening is needed to detect early problems in children's growth and development. The screening set by the government and can be used by health workers is the modified checklist for autism in toddlers (M - CHAT) questionnaire (Rahmahtrisilvia et al., 2022).

This screening is used in children aged 18 months to 36 months, and it has 23 questions answered by the child's caregiver or parent. Health workers validate statements from the child's parents. This examination did not find any problems in children with a 100% possibility of autism. However, data on the characteristics of children experiencing stunting and wasted nutritional status of 8% were found, which became a concern for the service team. The service team recommends that parents take their children to primary health

services (*Puskesmas*) for a medical examination to find out how to get treatment services and guidelines for reducing the prevalence of wasting and stunting. The service team provides praise and education to parents using a flyer on minimal management of autism in children and parenting guidelines that support child development (Cavalcante et al., 2015; Regina Lestari et al., 2024) including social skills training, behavioral therapy, speech therapy, occupational or physical therapy, and music therapy.

D. CONCLUSIONS AND SUGGESTIONS

Base on the interpretation of the results of autism detection in children using the modified checklist for autism in toddlers (M - CHAT), 100% of children aged 18 months to 36 months who live in densely populated residential areas were not detected with autism. In addition, two partner members from the Indonesia Care Foundation are able and understand the use of the modified checklist for autism in toddlers (M - CHAT) detection tool. It is expected that primary care facilities (*Puskesmas*) and the Indonesia Care Foundation will always carry out routine anthropometric examinations every 1 month so that they can carry out early management.

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