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The Effect of Giving Early Stimulation on Child Development Aged 12-24 Months : A Systematic Review

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ABSTRACT

Child development is a gradual change in body function with an increasing ability to make gross and fine movements, speak, and interact with the surrounding environment. In their development, children under two years of age still often experience growth and development disorders such as motor development disorders, language and communication development disorders, intellectual development disorders, and behavioral and emotional well-being disorders. This systematic review aims to giving information about the impact of offering stimulation on the growth of children aged 12-24 months, the systematic review adhered to the PRISMA guidelines the systematic review adhered to the Preferred Reporting tems for Systematic Review and Meta-Analysis (PRISMA) guidelines by filtering the titles and abstracts of the included articles using standard Microsoft Excel formulas. Multiple databases, including PubMed and ScienceDirect, were searched using appropriate keywords. Inclusion criteria encompassed English-written studies addressing pertinent subjects, presenting complete texts, and published within a specified timeframe.2018 to 2023. Five articles were reviewed with respondents aged 0-24 months. This article contains several types various kinds of stimulation, such as social interaction with children through talking and physical contact, then providing educational toys such as disassembling toys, puzzles, and story books, then introducing music and encouraging singing, drawing, and exploring the environment, such as providing appropriate challenges. with the child's level of development which can stimulate children's critical thinking abilities and creativity. It can be concluded from this study of several article that the government has attempted to improve child development to provide good care through daily stimulation to children, which also involves health service workers in improving children's growth and development.

Keywords: Child Development, Stimulation, Toddlers

1. INTRODUCTION

Development is a process of increasing and enhancing a person's ability to do activities in everyday life and is supported by optimal body functions. The childhood development period is a process of gradually changing body function with increasing ability to do rough movements and smooth movements, can speak, and interact with the surrounding environment. At an early age, there is improvement and progress in development the fast age from 0 to 2 years is commonly called the " Golden Age" phase (Kertamuda 2015).

Old children do not have enough two years to undergo an improvement process of growth and development of cells of the brain as well as nerve fibers until they

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branch and form a network of nerve complex brains. Connection between cell nerves This will influence all brain performance, starting from the ability to Study, walk, get to know letters, and socialize with the environment around, so child development must be detected as early as possible if an abnormality occurs (Kemenkes RI 2016).

In their development, toddlers often experience disturbances in growth and development. Growth and development disorders are one of the causes of infant and toddler deaths caused by several factors, such as congenital diseases in the form of congenital heart defects, genetic disorders, neurological disorders, and central nervous system disorders. In many cases, death in toddlers with developmental disorders is often the result of a combination of these factors. It is important to provide repeated monitoring, appropriate medical care, and support to minimize the risk of death and improve the child's quality of life. In 2019, there were 316.8 million cases of developmental conditions in children and adolescents globally. It is known that the number of cases in children under five years of age is around 32.2 million, with the 5 most common cases being hearing loss, disorders ADHD (Attention Deficit Hyperactivity Disorder), and vision problems (WHO, 2023.). World research results for WHO found that 54% of boys under five years old experienced developmental disorders in 2016, while in Indonesia, there were 7.51% of children under five years old who experienced developmental disorders (WHO 2018). Java East Province in 2018 still experienced disturbance development in children under five years with a percentage of 10% (Riskesdas 2018).

Child development is influenced by several factors, including pregnancy (prenatal), childbirth (perinatal), and after childbirth (postnatal) (Soetjiningsih. 2013). Several causal factors disturb development during pregnancy, such as intake malnutrition in the Mother, exposure to radiation, consumption of drugs, and infections. Causing factors disturbance development during childbirth covers prematurity, asphyxia, and LBW. While causal factors of disturbance development in the postnatal period include the nutritional status of children, illnesses suffered, and stimulation environment (Syafi'atur & Trias 2018).

Disturbance development is very important to pay attention to, so prevention needs to be done by giving Stimulation. Stimulation is giving Stimulation and encouragement to children to develop optimally. Giving Stimulation This becomes One important thing To encourage the child's ability to base the child's ability to get it to develop optimally. According to the study conducted by (Tama and Handayani 2021), there is a correlation between stimulation by parents with the development of children aged 12-36 months. And the another research form Bangladesh is giving support from other research reveals that the effectiveness of community-based child stimulation programs in rural areas significantly improves children's behavior by inviting children to talk, draw, and counsel their parents (Opel et al. 2019).

Based on this description, the authors are interested in further studying the relationship between providing stimulation by parents and child development using a systematic observation method, which is carried out to identify and interpret all research results that are relevant to the research questions and phenomena determined by comparing the words found.

2. RESEARCH METHODS

Study Selection and Outcome Measure

A systematic examination was undertaken to investigate the impact of parental stimulation on child development. Adherence to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines was ensured during the composition of the systematic review (Moher et al. 2009). Two databases, namely PubMed and ScienceDirect because this database has extensive literature coverage in various fields of science, including health sciences, science, and technology, were accessed utilizing a

variety of keywords. These keywords were sourced from Medical Subject Heading (MeSH) terms, including 'early childhood stimulation' and 'Child Development.' During the search process, Boolean operators including AND, OR, and NOT were utilized.

Study selection and Outcome Measure

The inclusion criteria included in selecting this journal were that it consisted of quantitative studies in English language, focusing on pertinent subjects, furnishing complete texts, and being published between 2018 and 2023. Abstract, Case reports, systematic or narrative reviews lacking full texts were omitted from this review procedure.

Data Extraction

The systematic review in this research means that the author independently filters the abstract titles of the articles found using Microsoft Excel. To reconcile discrepancies in article selection, two separate members of the research team formally evaluated the quality of the articles using the center of Evidence-Based Medicine (CEBMa) assessment tool for Cross-sectional studies (Shannon 2002). Each systematic review includes protocols for critiquing or appraising research evidence. This evaluation aims to evaluate research methods and avoid bias in method preparation and data analysis.

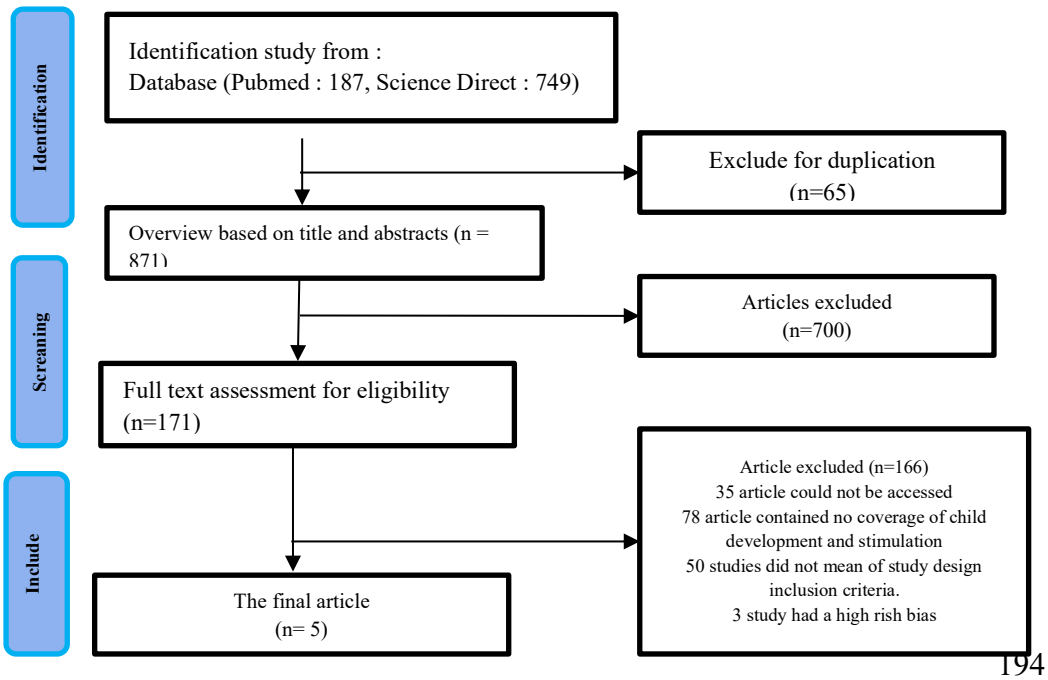
Data Abstraction and Synthesis

The analysis in this review provides information, namely results and conclusions of each study by the guidelines for writing systematic reviews. The first step was identifying subthemes and themes, sorting them, and checking them by all authors. The results of the data synthesis will be displayed in Table 2. Table 2 shows the author, year, country, objectives, type of research, data collection, exposure, and outcomes.

3. RESULTS AND DISCUSSION

Screening Result and Assessment of Article Quality

From all 936 articles were found in 2 databases. An initial examination of the results of duplicate articles found 65 articles by filtering the titles and abstracts of the included articles using standard Microsoft Excel formulas that were the same, so they were excluded. Further examination of the abstracts and titles found 700 excluded articles, leaving 171 articles. A total of 35 articles were not open-access, so they were excluded. A total of 78 articles contained no coverage of child development and stimulation. So, the articles analyzed were five articles that met the inclusion requirements.



Tabel 1. Assessing the quality of articles with a cross-sectional design study using appraisal tools from the Center of Evidence-Based Medicine (CEBM).

Author, year	Did the study address a focused question/ issue?	Is the research method (study design) appropriate foranswering the research question	Is the method of selection of the subjects (employees, teams,divisions, organizations) clearly described?	Could the way the sample was obtained introduce(selection)bias?	Was the sample of subjects representative regarding thepopulation to which the findings will be referred?	Was the sample size based on pre-study considerations ofstatistical power?	Was a satisfactory response rate achieved ?	Are the measurements (questionnaires) likely to be valid andreliable?	Was the statistical significance assessed?	Are confidence intervals given for the main results?	Could there be confounding factors that have not beenaccounted for?	Can the results be applied to your organization?	Quality
(Venancio et al, 2022)	Y	Y	Y	Y	Y	Y	C	C	Y	Y	Y	Y	M
(Russell et al, 2022)	Y	Y	Y	Y	C	Y	Y	Y	Y	Y	Y	Y	M
Lukanga & Nyanda, 2023)	Y	Y	Y	Y	Y	Y	C	C	Y	Y	Y	Y	M
(Gaikwad et al, 2020)	Y	Y	Y	Y	N	N	C	C	Y	Y	Y	Y	M
(Urke et al, 2018)	Y	Y	Y	Y	Y	Y	C	Y	Y	C	Y	Y	M

Notes: Y = yes, C= can't tell, N = No, M= moderate overall quality, L = low overall quality

Table 2 Characteristic of research

Author	design	participant	exposure	outcome	result
(Venancio et al, 2022)	This was a cros sectional study	The total population was 6447 with children aged 0-59 months during vaccination in October 2019	- Harsh discipline: e slapping - Handbook for children's health - Caregiver involvement in a minimum of four stimulating activities - Spending more than two days watching TV or using tablets/smartphones - Enrolling in early childhood programs Manufactured toys - Household items used as toys Reading materials	According to development	- the study results showed that there was significanc between engagement of caregivers ins timulating activities with child development is p < 0,05
(Russell, et all., 2022)	This wa a cross sectional study	has conducted a national household survey with a population of 499 children aged 18-29 monthsTop of Form	Caregiver interaction (early stimulating activities) - danger sins primary caregiver can recall - physical punishment - books in home - child left alone - maternal engagement - paternal engagementin	The results of the ECS provide suggestions for health interventions and also to pay attention to nutritional issues so that parents can encourage children's development from an early age.	A notable relationship was observed between participation in early stimulating activities and child development, with adjusted p-values ranging from 0.002 to 0.017.
(Lukangan & Nyanda, 2023)	This was a cross sectional study	Quantitative data : 334 respondents was obtained for this study.	Stimulation service : -home visiting ECD centre clinic outreach	There is according with child development	Home visit services by health workers provide a good and beneficial impact on child

					development with an Exp (B) value of 2.746
(Gaikwad e all, 2020)	This was a cross sectional study	Primary caregivers (mother or father) of Infants and toddlers aged 0-3 years, along with frontline workers (FWs), including anganwadi workers (AWWs) from the Department of Women Development and Child Welfare, accredited social health activists (ASHAs), and auxiliary nurse midwives (ANMs) from the Department of Health and Family Welfare in the state of Telangana.	Attitude: The fundamental aspects of a child's health, cognitive development, and emotional well-being. Demonstrating affection and providing responsive stimulation. Engaging in early stimulation practices.	Caregivers lacked full awareness regarding the extent to which these practices contribute to their child's development.	In several intervention methods providing stimulation, parents show awareness by always inviting their children to carry out reading activities (91%), playing (94%), telling stories, and singing (79%), which are factors that encourage children's intelligence and brain comprehension. However, they lacked awareness that these activities should commence before the age of 3, and their implementation of such activities was also minimal. While parents and caregivers give affection and love to children by donating time together (99%) them (46%), and engaged in conversation (59%), they were not cognizant that these actions contribute to the cognitive and emotional development of the child.
(Urke et all, 2018)	This wa cros sectional study)	A total of 2786 children were included in this study population with	- Mother's involvement in activities with the child.	The role of psychsocial stimulation by parents towards children as a	Maternal involvement in activities and psychosocial stimulation

		biological mothers aged 15-49 years. The data that has been collected is known to be used to access ECS measures, and eight children do not live with their mothers.and those with multiple entries (n=42) were excluded. The final weighted sample size amounted to 2736 children.	- father's involvement in spending time with children and inviting them to play - Child attends early learning program	parenting practice can increase optimal child development	showed a clear and significant correlation with Early Childhood Development (ECD) across all samples, including the full sample, rural areas, and the lowest wealth quintile.

Aim of the Research

The five articles that have been obtained provide information that has tested the correlation between parental stimulation and child development. This observation focuses on parenting methods in which parents provide intervention to children, as well as on aspects of motor skills and language with others.

Methods and Techniques of Analysis

The majority of studies analyzed in this review were quantitative in nature. Semi-structured interviews were used for data collection purposes. The analytical approach used was to systematically analyze family respondents who had children under two yearls old. Total of five article have been described, and the article described have the quality of the moderate category and are presented in table 1.

Finding

Result from research indicate that the problem of deviations in child development is one of the public health problems faced by various countries. One factors that influences appropriate child development is the role of parents in providing good care for children. Good stimulation for children is designed to stimulate and nourish children's development in various aspects, including physical, cognitive, social, emotional, and language. Good stimulation provides positive experiences for children and a strong foundation for their future growth and development.

In these findings, it is known that there are still some children who come from families with low economic conditions, so they have yet to achieve optimal development abilities according to their age, both in terms of cognitive and good language skills. This issue was reported so that it received special attention with the planning of new programs in Zanzibar that were supported in digital form and advocated for supporting early childhood development. This program consists of visiting household environments, providing good parenting practices, and raising awareness of the importance of consuming nutritious food. Another program implemented to improve children's development is providing home visit services by health workers. This program has a positive impact, and it is possible that the development of children from the home visit home group is on the right track regarding the potential for achieving optimal child growth and development.

Studies conducted in rural areas show that parents have high knowledge about how to care for health and nutrition, but in terms of providing stimulation, they still don't know enough and are relatively low; this is influenced by local culture. Apart from that, There is a necessity for enhanced understanding, attitudes, and behaviors concerning stimulation and early education. While parents acknowledge the significance of activities such as reading, playing, and storytelling, they require further insight into their role in fostering children's brain development during the initial two years. Research conducted in Bangladesh also shows that parents realize the importance of providing appropriate stimulation for their children by providing quality education to young children through play activities, stories, and environmental exploration. Apart from that, the Bangladesh government also has a parent empowerment program to improve parenting skills regarding the importance of stimulation.

Interventions focusing on increasing parental knowledge and attitudes have proven effective in improving children's interactions with parents. With several group-based activities, this should be combined with home-based learning so that it provides opportunities for parents to share stories and discuss with their children This is supported by research conducted by (Huru, Mamoh, and Mangi 2022), which states that there is a significant relationship between the knowledge and attitudes given by parents regarding child stimulation and growth and development.

An intervention employed to promote children's development involves a digital platform that combines respondent tracking, delivering decision support, offering coaching and counseling, as well as disseminating audio/visual messages.

An intervention employed to promote children's development involves a digital platform that combines respondent tracking, delivering decision support, offering coaching and counseling, as well as disseminating audio/visual messages. When a government supports a digital system program, it can offer a great opportunity to explore initial findings in-depth, overcome analytical limitations, and evaluate the efficacy of different approaches in enhancing children's well being.

Based on the 5 countries that have been reviewed, it is stated that each country has its way of stimulating children. The stimulation provided, for example, in the country of Zanzibar, which is an archipelago, has shown a solid commitment to child development; even though Zanzibar is a developing country with significant economic and social challenges, Zanzibar encourages the development of the skills of parents and caregivers in caring for their children, such as health education. Children, psychosocial support for families, maintaining nutrition by providing additional food, and increasing access to health services to prevent disease transmission.

Meanwhile, in Brazil, which is an integral part of public policy, this country has several programs to stimulate children, namely the early childhood care and education program emphasising child-centred education, playing as a learning method and developing cognitive, social and emotional skills early on. Then, there is an early intervention program through home visits by social workers. This program is an effort made by several countries to emphasize the importance of stimulating children from an early age by forming a commitment to providing better access.

These articles show that most parents already know how to stimulate their children. This stimulation is divided into three age stages, namely 12-15 months, 15-18 months, and 18-24 months. From the third stage of age, > 75% of parents have stimulated children in the gross, fine motor, independence, and language aspects. Children develop fine motor skills under the age of two years, such as grasping objects with their fingers, taking toys to their mouths to bite, trying to draw with a pencil, and so on. Meanwhile, gross motor skills include lifting the head and chest when lying face down, walking steadily, jumping, kicking a ball, running, etc.

Conclusion

Most of the respondents are 0-24 months old and have various types of sex Women. Characteristics of families in research, educated middle, with no work and income below the Regency

The findings of several articles here show a positive relationship between the quantity of stimulation provided by parents and child development. This research also provides direction for developing several interventions at the household level, such as developing digital systems, and home visits by health workers so that they will trigger optimal child growth and development.

Recommendations

For Society

In light of the aforementioned findings It is recommended that there be more collaboration between local governments, especially health services, and social services, as well as involving the ministries of social development, gender and children, to concentrate efforts on developmental concerns.

For Future Researchers

The study, furthermore, can make more studies related to other variables that have yet to be researched, including nutritional status, care child, illness accompanying, and others.

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