The Correlations of Knowledge and Mother’s Visit Compliance with Growth Trends of Children Under Five Post Pandemic at Integrated Service Post Program in Sidoarjo District

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ABSTRACT

Growth trends of children under five are affected by several factors including mother’s knowledge and mother’s visit compliance to Integrated Service Post Program. During the COVID-19 pandemic mother’s visit to Integrated Service Post Program decreased, so this study to analyse the correlations of mother’s knowledge and mother’s visit compliance with growth trends of children under five post pandemics at Integrated Service Post Program in Sidoarjo District. The sample of 49 children under five. Collected data through interviews and observing growth chart to see growth trends. In this study, the average age of mothers under five was 31 years old, had a Diploma/Bachelor degree, had less knowledge, had a good level of visit compliance to Integrated Service Post Program, but most of the growth trends of childrens under five are not matched. The study shows that there is relationship between knowledge and mother’s visit compliance to the Integrated Service Post Program with the post-pandemic growth trend of children under five. Therefore, it is hoped that Integrated Service Post Program cadres can educate mothers under five about the importance of Integrated Service Post Program and mother can learn about how to read growth trends of children under five.

INTRODUCTION

Growth and development are two aspects that must be considered in every individual. The level of a child's achievement in development varies depending on age. Growth is the process of increasing size or quantity that occurs in individuals quantitatively. Growth does not occur due to new additions, but rather to perfection. The increase in the resilience of structures and functions of the body that are more complex, which is a product of maturation mechanisms, is called development.¹

The phase of children under five years old is a period of rapid growth and development, making it a crucial phase in an individual's developmental process. Therefore, the success factors of growth and development in children in the future are the development and growth during the toddler years.²

Monitoring the growth of toddlers is crucial to prevent the escalation of nutritional problems that contribute to the rise in infant and toddler mortality rates. The United Nations Children's Fund stated in 2019 that infant mortality rates remain concerning, with the highest number of infant deaths occurring within the first month in the Sub-Saharan Africa region. Every year, 2.6 million infants worldwide fail to survive beyond one month, with one million reported to die at birth. In Indonesia, approximately 35 million toddlers are still at risk if the target child mortality rate is not achieved.³
Therefore, to address the increasing nutritional challenges, Indonesia has established Community Health Centers as community-based healthcare facilities. However, considering the vast geographical considerations, limited healthcare personnel, and the broad operational areas of Puskesmas, their performance cannot reach everyone. Consequently, to strengthen the relationship between community health services, particularly maternal and child healthcare, and the citizens, Puskesmas is assisted by the Integrated Integrated Service Post Program. Integrated Service Post Program functions as a place for empowering communities and enables easy access to basic healthcare services. Its primary goal is to reduce maternal and infant mortality rates.⁴

In the Riskesdas 2018 survey, the achievement of the service program, as assessed by maternal visits to Integrated Service Post Program, was found to be low. Irregular scheduling by the cadres responsible for Integrated Service Post Program and their lack of consideration for local community activities have contributed to the low attendance of mothers at Integrated Service Post Program. Consequently, this could pose a constraint to increasing community involvement in Integrated Service Post Program due to the low quality of Integrated Service Post Program services. It can be interpreted that the level of success in healthcare utilization is underutilized.⁵

Based on the results of the Basic Health Research, 2018 survey on the proportion of measuring the height/length of toddlers by province, East Java obtained the third-best rating, reaching 80% in the percentage of measurements conducted ≥8 times in the last year. However, in terms of the proportion of weight measurements for toddlers, it still stands at 54.6% in the percentage of measurements conducted ≥8 times in the last year. The results provided tend to be unstable, potentially disrupting toddler growth. This is attributed to the continued low compliance of maternal visits to Integrated Service Post Program.⁶

Growth and development are influenced by two factors, namely direct and indirect factors. Direct factors include inadequate energy intake and the presence of infectious diseases. Indirect factors include, among others, the level of knowledge and the lack of compliance with maternal visits to Integrated Service Post Program. Therefore, mothers should be provided with more education and motivation to adhere to visiting Integrated Service Post Program regularly, allowing for maximum utilization of Integrated Service Post Program services and more optimal monitoring of toddler growth. Monitoring toddler growth can serve as early detection of issues in toddlers.⁷

Based on the preliminary research results obtained through direct observation of one Integrated Service Post Program cadre and reviewing the data on maternal visits to toddlers over the past year, fluctuations were observed. In January, the percentage was 37.5%, increasing to 44.7% in February. It then decreased to 30% in March, rose again in April, May, and June to 37%, 38.5%, and
38.5% respectively. From July to November, there were fluctuations, with percentages ranging from 41.6% to 32.2%.

Given the above description, the researcher is interested in conducting a study on "The Relationship between Knowledge and Compliance of Maternal Visits to Integrated Service Post Program with the Trends in Toddler Growth at Integrated Service Post Program Villa Jasmine 3, Sidoarjo District." This is due to the insufficient knowledge of mothers and the lack of compliance with maternal visits to Integrated Service Post Program, which can have a negative impact on the health status of toddlers. In this study, the researcher selected toddlers registered at Integrated Service Post Program in Sidoarjo District, as the research subjects.

MATERIALS AND METHODS

The type of research conducted is an analytical study with a Cross-Sectional approach carried out at Integrated Service Post Program Villa Jasmine 3 in Sidoarjo Regency from December 2022 to June 2023, involving 49 mother respondents. The sampling technique used was simple random sampling. Data collection began with respondents filling out an informed consent form to request their availability for data collection. Subsequently, interviews were conducted using a questionnaire instrument, checking Integrated Service Post Program attendance records, and reviewing the Growth Monitoring Card by visiting the Integrated Service Post Program and the respondent’s homes.

After collecting and processing the data, the next step was editing, grouping, and data analysis. Additionally, the data were presented in the form of frequency distribution tables and cross-tabulations, and chi-square tests were conducted.

RESULTS

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother’s Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-25 years</td>
<td>11</td>
<td>22.4</td>
</tr>
<tr>
<td>26-30 years</td>
<td>15</td>
<td>30.6</td>
</tr>
<tr>
<td>31-35 years</td>
<td>11</td>
<td>22.6</td>
</tr>
<tr>
<td>&lt;35 years</td>
<td>12</td>
<td>24.4</td>
</tr>
<tr>
<td>Education Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junior High School</td>
<td>2</td>
<td>4.08</td>
</tr>
<tr>
<td>Senior High School</td>
<td>21</td>
<td>42.8</td>
</tr>
<tr>
<td>Diploma/Degree</td>
<td>26</td>
<td>53.06</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>24</td>
<td>48.9</td>
</tr>
<tr>
<td>Civil Servant</td>
<td>8</td>
<td>16.3</td>
</tr>
<tr>
<td>Privat Employee</td>
<td>11</td>
<td>22.4</td>
</tr>
<tr>
<td>Entrepreneur</td>
<td>4</td>
<td>8.6</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>4.08</td>
</tr>
<tr>
<td>Number of children</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Journal homepage: https://jone.poltekkesdepkes-sby.ac.id
The research findings indicate that the majority of respondents were aged 26-30 years, comprising 15 respondents (30.6%). In terms of education, 26 respondents (53.06%) had completed Diploma/Degree programs. Regarding occupation, 24 respondents (48.9%) were homemakers. Additionally, 22 respondents (44.8%) had one child. Concerning toddlers, 12 respondents (24.4%) had children aged 25-36 months, with the majority being male, totaling 27 toddlers (55.1%), and 46 toddlers (93.87%) were classified as having normal nutritional status.

Table 2. Frequency Distribution of Knowledge Level, Compliance Level, and Growth Trend

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>20</td>
<td>40.8</td>
</tr>
<tr>
<td>Fair</td>
<td>29</td>
<td>59.2</td>
</tr>
<tr>
<td><strong>Compliance Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non compliant</td>
<td>22</td>
<td>44.8</td>
</tr>
<tr>
<td>Compliant</td>
<td>27</td>
<td>55.2</td>
</tr>
<tr>
<td><strong>Growth Trend</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not appropriate</td>
<td>33</td>
<td>67.3</td>
</tr>
<tr>
<td>Appropriate</td>
<td>16</td>
<td>32.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>49</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Research 2022

The research findings indicate that the majority of respondents had a fair level of knowledge, comprising 29 respondents (59.2%). Regarding compliance level, 27 respondents (55.2%) were categorized as compliant. Additionally, 33 respondents (67.3%) were observed to have growth trends that were not appropriate.
Table 3. Cross-Tabulation between Knowledge Level and Compliance with Growth Trend

<table>
<thead>
<tr>
<th>Variable</th>
<th>Growth Trend</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appropriate</td>
<td>Not Appropriate</td>
</tr>
<tr>
<td>Knowledge Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>15</td>
<td>75</td>
</tr>
<tr>
<td>Fair</td>
<td>1</td>
<td>3.4</td>
</tr>
<tr>
<td>Compliance Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Compliant</td>
<td>14</td>
<td>51.9</td>
</tr>
<tr>
<td>Compliant</td>
<td>12</td>
<td>9.1</td>
</tr>
</tbody>
</table>

Source: Research 2022

The research findings suggest that among the 20 mothers with good knowledge, the majority of their toddlers had growth trends that were in line with Minimal Weight Gain for 3 months, totaling 15 toddlers (75%). Conversely, among the 29 mothers with poor knowledge, the majority of their toddlers' growth trends did not adhere to Minimal Weight Gain for 3 months, comprising 33 toddlers (67.34%). The output from the Chi-square cross-tabulation test yielded a p-value of 0.000, indicating a significant relationship between maternal knowledge and toddler growth trends.

Similarly, regarding compliance level, it can be concluded that among the 27 compliant mothers, the majority of their toddler's growth trends were in line with Minimal Weight Gain for 3 months. Conversely, among the 22 non-compliant mothers, the majority of their toddler's growth trends did not adhere to Minimal Weight Gain for 3 months. The output from the Chi-square cross-tabulation test yielded a p-value of 0.001, indicating a significant relationship between maternal visit compliance and toddler growth trends.

**DISCUSSION**

**Respondent Characteristics**

The characteristics of the respondents reveal insights into factors affecting toddler growth trends. The majority of respondents were in their early adulthood, with ages ranging from 26 to 30 years, comprising 15 respondents (30.6%). The average age of mothers with toddlers was 31 years. This age group signifies the reproductive phase when individuals become parents and are expected to understand parental responsibilities. However, not all mothers within this age range may share the same level of awareness regarding their child's growth and development.

Education level also plays a significant role. Among the 26 mothers with a Diploma/Degree education, 14 toddlers did not exhibit growth trends in line with Minimal Weight Gain for 3 months. Education often correlates with one's thought process and decision-making abilities. However, it's possible that the lack of informal knowledge about health programs such as Integrated Service Post
Program (integrated health post) contributed to this discrepancy. Hence, mothers need not only formal education but also informal education to understand the importance of programs like Integrated Service Post Program in monitoring their child's growth.

Occupation is another influential factor. Among the 24 mothers who were homemakers/unemployed, 14 toddlers didn't follow Minimal Weight Gain trends for 3 months. A family's economic status, influenced by the mother's employment, can impact a child's growth as it affects the availability and variety of food. In interviews, some mothers mentioned economic constraints leading to repetitive and less nutritious food choices, potentially contributing to poor growth trends and susceptibility to infections.

In terms of the number of children, among the 22 mothers of toddlers who had only one child, there were 13 toddlers whose growth trends did not adhere to the Minimal Weight Gain for a period of 3 months. The number of children can influence the development of toddlers as it can affect psychosocial factors such as the lack of love and affection. This could be attributed to mothers who are new to motherhood, resulting in suboptimal practices of Proper Nutrition for Toddlers, leading to inadequate nutrition for the child. Additionally, the lack of knowledge about child-rearing practices could also be a significant factor.

At the age of toddlers, among 12 toddlers aged 25-36 months, there were 7 toddlers whose growth trends did not match the Minimal Weight Gain standards for 3 months. This can occur because children aged 25-36 months are very active and move around a lot. It can also occur because toddlers aged 25-36 months have reduced breast milk intake, which needs to be supplemented with nutritious complementary foods. Additionally, it may happen because toddlers engage in excessive physical activity as they are at their most active stage during this age range. Furthermore, feeding difficulties may arise because mothers lack understanding of Proper Nutrition for Toddlers, and toddlers may be affected by infectious diseases such as diarrhea.

The most common gender in this study is male, with 27 toddlers, while females’ number 22 toddlers. Among the 27 male toddlers, 14 of them exhibited growth trends that did not align with the Minimal Weight Gain standards for 3 months. This could be attributed to the stimulation of androgenic hormones and the presence of the Y chromosome in male children, which tend to develop more rapidly. Therefore, the development of male toddlers should be monitored more closely.

In terms of nutritional status, the majority of toddlers, accounting for 46 toddlers (93.87%), were classified as having normal nutritional status. Additionally, 1 toddler (2.05%) was categorized as severely malnourished, while 2 toddlers (4.08%) were classified as malnourished. Among the 46
toddlers with normal nutritional status, 31 toddlers exhibited growth trends that did not align with the Minimal Weight Gain standards. This could be attributed to mothers not paying enough attention to their toddlers, particularly in terms of meal preparation and following the 4-star Proper Nutrition for Toddlers guidelines. During the interviews, some mothers mentioned that they were unable to prepare meals or breastfeed their toddlers due to being busy with work.

Knowledge

Based on Table 2, it is evident that 29 respondents (59.18%) have a poor level of knowledge, while 20 respondents (40.81%) have a good level of knowledge. This could be attributed to the inadequate attention given by mothers to the information provided at the Integrated Health Post. As a result, it seems that the respondents did not receive adequate education at the Integrated Service Post Program, or it could also be due to the fact that mothers only adhere to the principle of visiting the Integrated Service Post Program, getting their toddlers weighed, receiving supplementary feeding, and then leaving without receiving any education at the Integrated Service Post Program.

Mothers with adequate to good knowledge are understood to be familiar with the utilization and functions of the Integrated Health Post, as well as the activities conducted therein. They are also knowledgeable about the nutritional status of their toddlers, which can be monitored through the Growth Monitoring Card available in the Maternal and Child Health Book. Therefore, mothers are aware of the importance of visiting the Integrated Service Post Program to monitor their child's growth and development. Thus, maternal knowledge about the Integrated Service Post Program serves as the foundation for raising awareness and promoting regular visits. Mothers with better knowledge about the Integrated Health Post are more likely to be actively engaged in Integrated Service Post Program activities. Additionally, they will motivate other mothers to participate in Integrated Service Post Program visits.

Compliance with Health Center Visits

Based on the compliance measurement results presented in Table 2, it is observed that the majority of mothers with toddlers are compliant with visits to the Integrated Health Post, comprising 27 respondents (55.2%), while only 22 respondents (44.8%) are non-compliant. On average, respondents visit the Integrated Service Post Program 8 times. Mothers of toddlers need to be motivated by explaining the benefits of attending Integrated Service Post Program visits. If successfully motivated, mothers can utilize the Integrated Service Post Program to its maximum potential. Failure to attend Integrated Service Post Program visits results in mothers being unaware of the crucial information provided at Integrated Service Post Program regarding child growth, lack of
motivation from health workers in addressing toddler-related issues, and inability to monitor their child's growth effectively.\textsuperscript{20}

Mothers’ participation in attending the Integrated Health Post reflects their self-awareness and responsibility towards their respective toddlers. In today’s era, mothers can easily acquire knowledge about health and access Integrated Service Post Program activities. However, the differentiating factors lie in mothers' willingness and available time. The lack of motivation can lead to varying levels of compliance with maternal visits. Mothers are motivated to bring their children to Integrated Service Post Program when they receive encouragement from their environment.\textsuperscript{21} However, attending Integrated Service Post Program is crucial because monitoring the growth and movement of toddlers can be observed through the Growth Monitoring Card. The Growth Monitoring Card also serves for early detection of problems in child growth. One of the Integrated Service Post Program activities is weighing, followed by plotting on the KMS based on weight and age, so that any abnormalities can be promptly reviewed.\textsuperscript{22}

**Growth Trend**

Based on the growth trend measurement results obtained by examining the Growth Monitoring Card over four consecutive months from September to December 2022, it was found that the majority of toddlers experienced weight gain that did not comply with the Minimal Weight Gain standards for three months, totaling 33 toddlers (67.34%). Meanwhile, only 16 toddlers (32.66%) exhibited weight gain that complied with the KBM standards for three months. This could occur due to toddlers experiencing infectious diseases, inadequate Proper Nutrition for Toddlers practices, reduced breast milk contribution for toddlers aged 6 months and above, and highly active toddler activities combined with inadequate food intake.\textsuperscript{23} Additionally, the nutritional status of Indonesian children has not undergone significant changes.\textsuperscript{24}

In child growth, several factors come into play, including dietary intake, infectious diseases, and caregiving practices. Toddlers who receive nutritious intake but frequently suffer from infectious diseases can affect their growth trends. Similarly, toddlers with inadequate nutrition intake may have weakened immune systems, which can also influence their growth trends.\textsuperscript{25} The feeding pattern of children is one of the crucial factors in their growth and development. Factors such as low rates of exclusive breastfeeding, early introduction of complementary foods, infectious diseases, and low consumption of energy-dense foods play significant roles in this regard.\textsuperscript{26}

In this regard, Integrated Service Post Program cadres must be active. If a toddler's growth trend has declined twice, they should be referred to the Community Health Center (Puskesmas) for intervention. However, this procedure has not been implemented at Integrated Service Post Program.
Consequently, many toddlers continue to experience declining growth trends without receiving intervention from health workers. If a significant number of toddlers fail to meet the Minimal Weight Gain (KBM) standards due to frequent infectious diseases, it underscores the importance of early intervention. In fact, a toddler's developmental progress significantly impacts their future development, highlighting the necessity for guidance and support from healthcare professionals.

The Relationship between Knowledge and Growth Trends

The analysis of the relationship between mothers' knowledge and growth trends of toddlers revealed that a larger proportion of toddlers whose mothers had inadequate knowledge had growth trends that did not comply with the Minimal Weight Gain standards, totaling 28 respondents (96.5%). The research findings indicate a significant relationship between knowledge and growth trends at Integrated Health Post in Sidoarjo District, as evidenced by the Asymp Sig (p) value of 0.000. Toddlers with low stimulation tend to have less development compared to toddlers with directed stimulation. Development involves the specialization of body cells, body tissues, organs, and the development of organ systems to fulfill functions. Development is progressive, directed, and integrated or coherent, thus, when mothers have good knowledge, the development of their toddlers is also good.

In this regard, action from the cadres is needed, specifically through conducting counseling sessions targeting not only mothers of toddlers but also pregnant women and prospective mothers about the importance of the Integrated Health Post as a monitoring center for child growth. Additionally, mothers of toddlers should actively seek information about child growth facts not only from Integrated Service Post Program but also from print media and social media. To ensure that the growth trend of toddlers aligns with the Minimal Weight Gain standards, mothers of toddlers must possess knowledge about Integrated Service Post Program.

Based on a research journal by Harahap in 2020, it is mentioned that not only knowledge is required but also good attitudes and thought patterns. This is because nowadays, there have been changes due to globalization, environmental factors, and economic status, resulting in less time spent with toddlers. Consequently, toddlers may not receive optimal attention in their growth process.

The Relationship between Compliance with Visits and Growth Trends

The analysis of the relationship between mothers’ compliance with visits and growth trends revealed that mothers who were not compliant with attending the Integrated Health Post had growth trends that did not comply with the Minimal Weight Gain standards, totaling 20 respondents (90.9%). The research findings indicate a significant relationship between mothers’ compliance with visits to Integrated Service Post Program and growth trends in Sidoarjo District, as evidenced by the Asymp
Sig (p) value of 0.000. Mothers with sufficient and good knowledge understand the utilization and function of Integrated Service Post Program, as well as the activities conducted there, and are aware of the nutritional status of toddlers, which can be observed through the Growth Monitoring Chart. Therefore, mothers are conscious of the importance of visiting Integrated Service Post Program to monitor their children's growth. Thus, mothers' knowledge about Integrated Service Post Program serves as the basis for awareness to make visits. Mothers who do not regularly visit Integrated Service Post Program have a 6.857 times greater risk of their children's growth not complying with the KBM standards compared to mothers who visit regularly.33

This is in line with the research journal on Nursing and Midwifery by Sugiyarti et al. in 2018, which states that the more active mothers are in attending Integrated Service Post Program, the more their toddler's growth aligns with the growth chart. This is supported by the fact that toddlers of mothers who are active in attending Integrated Service Post Program have a good growth trend (62.5%) compared to those whose mothers are inactive (10%).

**CONCLUSION**

This research demonstrates the correlation between maternal knowledge and compliance with Integrated Service Post Program visits with the growth trend of toddlers. Therefore, it is hoped that mothers will regularly attend Integrated Service Post Program to enhance their knowledge, thus ensuring the growth trend of toddlers aligns appropriately.

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