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Analysis of Health Belief Model Factors on Parental Participation in Posyandu After Complete Basic Immunization

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The low level of parental visits to Posyandu in Pasuruan Regency is a concern, where the coverage of complete basic immunization has only reached 53.72% in 2023. The most visits occurred in infants aged 0-6 months, but decreased significantly after that age. The Health Belief Model (HBM) was used to understand the factors that influence participation, including perceptions of vulnerability, severity, benefits, perceived barriers, cues to action, and self-efficacy. Objective: to analyze relationships implementing HBM on parental participation in Posyandu after toddlers have completed complete basic immunization. This study is an analytical study with a cross-sectional design. A sample of 61 toddlers aged 1-5 years, the sampling technique used a purposive sampling technique. Data were collected through questionnaires that had been tested for validity and reliability. Data analysis used the Spearman's rho test. The results of the analysis showed that only perceptions of benefits had a significant relationship with parental participation in Posyandu after complete basic immunization ($p = 0.027$; $r = 0.283$). Other variables such as perceived susceptibility ($p = 0.198$; $r = 0.167$), perceived severity ($p = 0.849$; $r = -0.013$), perceived barriers ($p = 0.082$; $r = -0.243$), cues to action ($p = 0.062$; $r = 0.252$), and self-efficacy ($p = 0.130$; $r = 0.205$) did not show significant relationships ($p > 0.05$). Perceived benefits play an important role in increasing parental participation in Posyandu after complete basic immunization. The HBM approach can strengthen these perceptions to increase visits.

Keywords: Health Belief Model, Participation, Posyandu.

INTRODUCTION

Maternal and child health, especially in monitoring the growth and development of toddlers, is one of the main priorities in the health system in Indonesia. Posyandu as a form of community-based health efforts (UKBM) has long been one of the main facilities in providing immunization services, nutritional monitoring, vitamin provision, and health education. However, the challenge of community participation in utilizing these services is still a significant obstacle. In Pasuruan Regency, the coverage of complete basic immunization in toddlers only reached 53.72% in 2023, and Posyandu visits decreased drastically after the toddler's age passed 6 months. This decline has a direct impact on the suboptimal monitoring of child growth and development (Ministry of Health of the Republic of Indonesia, 2023) .

Immunization is an important government effort to protect children's health by building immunity against certain diseases. Basic immunization for toddlers, such as BCG, Hepatitis B, Polio, DPT, and Measles, must be given at the age of under one year, and must be continued with further immunization until the age of two years. In Pasuruan Regency in 2023, the coverage rate of complete basic immunization reached 53.72 percent, with BCG being the most widely given immunization (92.31 percent) and Measles-Rubella the least (69.93 percent). This difference occurs because early stage immunization is more often given to babies aged 0-6 months when the mother is still actively visiting health facilities (Posyandu) , while further immunization is often missed at the age of 6-12 months (Pasuruan Regency Health Office, 2023) . Challenges in ensuring complete immunization coverage in Pasuruan include limited comprehensive socialization in rural areas, difficult access to transportation, and public ignorance about the importance of follow-up immunization for children's long-term health (Ministry of Health of the Republic of Indonesia, 2014).

Parental education and economic conditions affect immunization coverage. Toddlers from families with heads of households (KRT) with junior high school education or above showed higher basic immunization coverage (56.61 percent) compared to KRT with elementary school education or below (50.44 percent). Economically, families with the highest expenditure have better access to health services, so that immunization coverage is higher (68.19 percent) compared to the lowest expenditure group (45.05 percent). To improve the distribution of immunization, intensive socialization is needed, as well as outreach efforts that facilitate access to immunization for groups who have more difficulty reaching health facilities (BPS RI, 2022).

Theoretical approaches such as *the Health Belief Model* (HBM) are often used to understand health behavior, including participation in community-based health services such as Posyandu, (Nutbeam et al., 2010) states that health promotion theory can help analyze various factors that influence individual behavior, such as perceptions of risk, benefits, and barriers, so that more effective interventions can be designed to increase community involvement in health programs (BPS RI, 2022) .

Several previous studies have examined the factors that influence community participation in health services, (Rosenstock, 1974) through the *Health Belief Model* (HBM) theoretical framework showing that perceptions of susceptibility to disease and the benefits of health actions play an important role in influencing individual decisions

to take preventive measures (Pasuruan District Health Office, 2023) . Further research by (Zuliyanti & Pangestuti, 2020) found that the HBM approach can help understand parental participation in Posyandu services, especially regarding perceptions of the benefits of health services and barriers to accessibility (Riyadi et al., 2023). These findings are in line with studies by (Laili et al., 2023) and (Huang et al., 2023), which each highlight the role of perceived benefits and barriers in influencing adherence to hypertension therapy and COVID-19 vaccination intentions (Rosenstock, 1974) , (Laili et al., 2023).

However, most of these studies focus on specific health conditions or services, without examining in depth the factors that influence the sustainability of parents' participation in Posyandu after their children complete basic immunization. This research gap provides an opportunity to further analyze the dynamics of health behavior, especially in the context of primary health care services at the community level (Huang et al., 2023).

This study aims to fill the gap in research related to factors that influence parental participation in Posyandu, using an HBM-based approach. The focus of this study includes the analysis of health risk perceptions, service benefits, perceived barriers, and cues to action that influence parental decisions. The results of this study are expected to provide strategic recommendations to increase community participation through a more effective and evidence-based approach (Zuliyanti & Pangestuti, 2020). By understanding more deeply the determinants of parental behavior towards toddler health services, especially in Pasuruan Regency, this study is expected to be an important foundation in developing more inclusive and sustainable public health policies (Rosenstock, 1974).

METHODS

This study is an analytical study with a cross-sectional design that aims to analyze the relationship between perception factors based on the Health Belief Model. (HBM) with parental participation in Posyandu activities after complete basic immunization. The study was conducted at Posyandu Melati and Posyandu Mawar located in Raos Village, Gempol District, Pasuruan Regency. The selection of this location was based on considerations of accessibility and the relevance of the research context to the topic raised.

The population in this study included all parents or mothers who have toddlers aged 1-5 years with a Healthy Menu Card (KMS) at Posyandu Melati and Posyandu Mawar in Carat and Raos Kejapanan Villages Gempol Pasuruan, with a total of 100 toddlers registered at Posyandu Melati and Posyandu Mawar in the last year, namely January to December 2023. The research sample was 61 toddlers selected using purposive sampling technique. Purposive sampling was used in this study by considering samples based on predetermined criteria to be relevant to the research objectives. Samples were taken from two posyandus with the largest number of toddlers aged 1-5 years in Raos Village and Carat Village. Inclusion criteria included parents who have toddlers aged 1-5 years, live in the Posyandu Melati and Posyandu Mawar areas, and are willing to participate. Meanwhile, exclusion criteria included parents with cognitive disorders that

could affect understanding of the questionnaire, have limitations in communicating, or have just moved to the area in less than three months.

The research instruments used consisted of two main tools, namely observation guidelines and closed questionnaires with a five-point Likert scale. Observation guidelines were used to analyze the behavior of Posyandu participants based on toddler KMS and observation activity sheets. The classification of Posyandu participants was divided into three categories, namely active (≥6 times present in one year), quite active (6 times present in one year), and inactive (<6 times present in one year).

The questionnaire used in this study was a closed questionnaire consisting of six main components, namely Perceived Vulnerability (5 items), Perceived Severity (5 items), Perceived Benefits (5 items), Perceived Barriers (5 items), Cues to Action (5 items), and Self-Efficacy (5 items). The use of closed questions with a Likert scale (strongly agree to strongly disagree) aims to measure parents' attitudes and perceptions of attendance at Posyandu in a more structured and objective manner.

Validity test was conducted using Pearson correlation, showing that several items had significant correlation. In Perceived Vulnerability, the highest correlation was found between X1.1 and X1.4 (0.946; $p<0.01$), but its reliability was low with Cronbach's Alpha of 0.338. Perceived Benefits had the highest reliability (Cronbach's Alpha 0.832), with a significant correlation between X3.1 and X3.3 (1.000; $p<0.01$). Perceived Barriers had sufficient reliability (Cronbach's Alpha 0.717), with the highest correlation between X4.4 and X4.6 (0.975; $p<0.01$). Cues to Action had acceptable reliability (Cronbach's Alpha 0.693), with a significant correlation between X5.2 and X5.3 (0.932; $p<0.01$). However, Self-Efficacy showed the lowest reliability (Cronbach's Alpha 0.223), although the correlation between X6.4 and X6.5 reached 1.000 ($p<0.01$).

The data collection technique in this study used the Healthy Menu Card (KMS) to record the number of toddler visits to Posyandu for one year. Data were collected through several stages as follows:

In the first stage, the researcher coordinated with the Village Midwife and Cadres at the Melati and Mawar Posyandu, located in Raos Village and Carat Village. The researcher explained the purpose of the study and the expected results, while also conducting initial observations at the two Posyandus.

In the second stage, the researcher provided informed consent to the parents of the toddlers who were respondents. This consent was intended so that the respondents understood the purpose of the study and were willing to participate voluntarily. After the informed consent was signed, the researcher distributed a closed questionnaire that was filled out directly by the respondents who were present at the Posyandu.

The third stage involved structured interviews to obtain more in-depth data. Interviews were conducted once with each respondent when they took their toddlers to the Posyandu, either at Posyandu

Melati or Posyandu Mawar. The location of the interview was conducted in the Posyandu area after the respondents filled out the questionnaire. In addition to the questionnaire, the researcher also used observation notes to record the number of visits listed on the toddler's KMS.

The results of data collection are categorized based on indicators of parental participation in Posyandu, active if parents attend Posyandu activities ≥ 6 times in one year, quite active if 6 times in 1 year , inactive if parents attend Posyandu activities < 6 times in one year. During the interview and observation process, the researcher did not use aids such as voice recorders, but recorded respondents' answers manually to maintain accuracy and convenience in data collection.

The collected data were analyzed using descriptive and inferential methods. Descriptive analysis was used to describe the characteristics of respondents such as age, education, and occupation. To test the relationship between independent variables (HBM components) and dependent variables (parental participation in the integrated health post after complete basic immunization), *the Spearman's rho test was used* . This test was chosen because the data is ordinal and aims to assess the strength and direction of the relationship between variables (Emanuel et al., 2000).

This study has met the principles of research ethics, including written consent (informed consent), anonymity , and data confidentiality . The researcher ensures that respondent data is kept confidential and is only used for research purposes (World Medical Association, 2013).

RESULTS AND DISCUSSION

The results of this study are divided into two parts, namely general data and specific data. General data include characteristics of respondent parents, such as age, education, mother and father's occupation, and number of children. Posyandu characteristics include aspects of the status of parents who bring children to the posyandu, distance of residence, frequency of visits, reasons for visits, sources of information, family support, understanding of the benefits of posyandu, toddler health history, mother's sources of information, opinions about schedules, ownership and understanding of KIA books, routine vitamin A visits, and experience of posyandu services.

Meanwhile, specific data in this study were analyzed using the Health Belief Model (HBM) with a focus on perceptions of vulnerability, severity, benefits, barriers, cues to action, and self-efficacy related to parental participation in integrated health posts after complete basic immunization. The questionnaire was filled out by 61 respondents in Raos Kejapanan Village, Gempol District, Pasuruan Regency, as presented in Table 1.

Table 1. Frequency Distribution of Respondent Characteristics
And Characteristics of Posyandu

Respondent Characteristics	frequency (n=61)	Percentage (%)
Respondent Characteristics		
Mother's Age (Years)		
< 25	11	18.0
25–34	38	62.3
> 35	12	19.7
Father's Age (Years)		
< 25	5	8.2
25–34	35	57.4
> 35	21	34.4
Father's Education		
Elementary school	2	3.3
SENIOR HIGH SCHOOL	6	9.8
High School/Vocational School	51	83.6
Diploma/College	2	3.3
Mother's Education		
Elementary school	2	3.3
SENIOR HIGH SCHOOL	5	8.2
High School/Vocational School	49	80.3
Diploma/College	5	8.2
Father's occupation		
Doesn't work	0	0
Private sector employee	46	75.4
Businessman	12	19.7
Etc.	3	4.9
Mother's Job		
Housewife	43	70.5
Private sector employee	11	18.0
Businessman	6	9.8
Etc.	1	1.6
Number of children		
1 (one)	26	42.6
2 (two)	29	47.5
3 (three)	4	6.6
≥ 3 (more than three)	2	3.3
Characteristics of Posyandu		
Status Towards Posyandu		
Father	2	3.3
Mother	49	80.3
Grandma/Grandpa	6	9.8
Brother/Sister	2	3.3
Caregiver	2	3.3
Distance from Home to Posyandu		
Distance traveled < 1 km	46	75.4
1–2 kilometers	11	18.0
Distance traveled > 2 kilometers	4	6.6
Frequency of Visits to Posyandu		
Each month	59	96.7
Every 2 Months	2	3.3
Every 3 months	0	0
Only during immunization	0	0
The main reason for visiting the integrated health post		
Immunization	28	45.9
Health Consultation	3	4.9
Routine Weighing	30	49.2
Other	0	0
Source of information about integrated health posts		
Integrated Service Post Cadres	57	93.4

Health Center	1	1.6
Family	1	1.6
Social media	2	3.3
Neighbor	0	0
Family support for integrated health posts		
Yes	61	100
NO	0	0
Sometimes	0	0
Understanding the benefits of integrated integrated health posts		
Very important	55	90.2
Quite Important	6	9.8
It's not that important	0	0
Not important	0	0
Toddler's Health History (does the toddler have any specific conditions that require special monitoring)		
Yes	7	11.5
NO	54	88.5
Number of Cadres		
5 (five)	21	34.4
< 5 (less than five) people	40	65.6
> 5 (more than five) people	0	0
Where did you get information about integrated health posts?		
Health Center	24	39.3
Family	6	9.8
Neighbor	17	27.9
Social media	14	23.0
What do you think about the integrated health post schedule?		
On time	61	100
Not on time	0	0
Do you have a KIA book?		
Yes	61	100
NO	0	0
Did you read and understand the contents?		
Yes	56	91.8
NO	5	8.2
Do mothers regularly take their toddlers to the integrated health post to get vitamin A?		
Yes	60	98.4
NO	1	1.6
Experience in Participating in Posyandu Services		
Irregular queue	14	23.0
Midwife/Cadre Late	3	4.9
Missing/Incomplete Vaccines	6	9.8
PMT Not Available/Paid	3	4.9
Inadequate facilities	9	14.8
No Counseling	6	9.8
Does not matter	20	32.8

Based on table 1, out of 61 respondents, most mothers (62.3%) and fathers (57.4%) were in the age range of 25–34 years, which is a productive age for raising children. The education level of most fathers was high school/vocational high school (83.6%), and most mothers also had a high school/vocational high school education (80.3%). This shows that the respondents' education level is relatively balanced. Most

fathers work as private employees (75.4%), while mothers work as housewives (70.5%). Most families have two children (47.5%), which reflects the pattern of small families in the research area.

In terms of accessibility, most respondents (75.4%) live within a radius of less than 1 km from the Posyandu, making it easy to visit regularly. Almost all respondents (96.7%) visit the Posyandu every month, indicating a high level of activity in utilizing this health service. The main source of information about Posyandu is the cadres (93.4%), which confirms their strategic role in disseminating health education. Most respondents (90.2%) also understand that Posyandu is very important, while all respondents (100%) have the KIA Guidebook, indicating that the distribution of the guidebook is optimal. These characteristics indicate that respondents have good access and understanding of the importance of Posyandu services, although there are still challenges in increasing more consistent participation.

Table 2. Frequency Distribution of *Health Belief Model* (HBM) Characteristics with Parental Participation in Posyandu After Complete Basic Immunization

Data Type	Frequency (n=61)	Percentage (%)
***Health Belief Model* (HBM)**		
Perception of Vulnerability		
Tall	23	37.7
At the moment	29	47.5
Low	9	14.8
Perception of Severity		
Tall	35	57.4
At the moment	17	27.9
Low	9	14.8
Perception of Benefits		
Tall	35	57.4
At the moment	4	6.6
Low	22	36.1
Perceived Barriers		
Tall	0	0
At the moment	6	9.8
Low	55	90.2
Signal to Action		
Tall	44	72.1
At the moment	12	19.7
Low	5	8.2
Self Efficacy		
Tall	51	83.6
At the moment	9	14.8
Low	1	1.6
Parental participation in integrated health posts after complete basic immunization		
Very Active	50	81.9
Quite active	4	6.5
Not active	7	11.4

Of the 61 respondents, the majority of respondents had a moderate perception of vulnerability, which was 47.5%. This shows that most parents feel quite vulnerable to the health risks experienced by

their toddlers. Others had a high perception of vulnerability, which was 37.7%, indicating a deeper awareness of the risks, while the remaining 14.8% had a low perception of vulnerability. In terms of severity perception, 57.4% of respondents showed a high category, reflecting that parents view the impact on toddlers' health as something serious. 27.9% were in the moderate category, while 14.8% were in the low category.

In terms of perceived benefits, most respondents had a high perception of 57.4%, indicating awareness of the importance of the benefits of Posyandu services, such as monitoring child growth and development. However, 36.1% of respondents showed a low perception, and only 6.6% were in the moderate category. On the other hand, the obstacles felt by the majority were in the low category of 90.2%, meaning that most parents did not experience significant obstacles in accessing Posyandu services. Only 9.8% felt obstacles in the moderate category, and no respondents reported high obstacles. In the cue to action variable, 72.1% of respondents were in the high category, indicating that encouragement from health workers, family, or the media was quite effective in motivating them to come to Posyandu.

As many as 19.7% were in the moderate category, and only 8.2% were in the low category. In addition, the self-efficacy of most respondents was high, namely 83.6%, indicating that they felt confident in maintaining their toddler's health and participating in Posyandu services. As many as 14.8% were in the moderate category, and only 1.6% had low self-efficacy. The level of parental participation in Posyandu after complete basic immunization showed positive results, with 81.9% of respondents classified as very active. As many as 6.5% were classified as quite active, and only 11.4% were inactive. These results indicate that Posyandu services have succeeded in attracting the involvement of most parents to ensure that their toddler's health is properly monitored.

Table 3. Analysis of *Health Belief Model* (HBM) with Parental Participation At Posyandu After Complete Basic Immunization with *Spearman's Rho Test*

Health Belief Model **(HBM)**	**Parental participation in integrated health posts after complete basic immunization**									
	Very Active		**Quite Active**		**Not active**		**Total**		**P Value**	**R**
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**		
Perception of vulnerability										
Tall	21	34.4	1	1.6	1	1.6	23	37.7		
Currently	22	36.0	2	3.2	5	8.1	29	47.5		
Low	7	11.4	1	1.6	1	1.6	9	14.7	0.198	0.167
Perception of severity										
Tall	29	47.5	1	1.6	5	8.1	35	57.3		
Currently	13	21.3	3	4.9	1	1.6	17	27.8		
Low	8	13.1	0	0	1	1.6	9	14.7	0.922	-0.013

Benefits felt										
Tall	32	52.4	1	1.6	2	3.2	35	57.3		
Currently	3	4.9	0	0	1	1.6	4	6.5		
Low	15	24.5	3	4.9	4	6.5	22	36.0	0.027	0.283
Obstacles felt										
Tall	0	0	0	0	0	0	0	0		
Currently	4	6.5	1	1.6	1	1.6	6	9.8		
Low	46	75.4	3	4.9	6	9.8	55	90.1	0.342	-0.124
Signal to action										
Tall	36	59.0	3	4.9	5	8.1	44	72.1		
Currently	10	16.3	1	1.6	2	3.2	13	21.3		
Low	4	6.5	0	0	0	0	4	6.5	0.859	-0.023
Self-efficacy										
Tall	43	70.4	3	4.9	5	8.1	51	83.6		
Currently	6	9.8	1	1.6	2	3.2	9	14.7		
Low	1	1.6	0	0	0	0	1	1.6	0.306	0.133

The results of the analysis showed that of the six components of the Health Belief Model (HBM), only the perception of benefits had a significant relationship with parental participation in Posyandu after complete basic immunization ($p = 0.027$; $r = 0.283$). The r value of 0.283 indicates a positive relationship with a weak correlation strength. This shows that the higher the perception of benefits felt by parents, the greater their tendency to participate in Posyandu. This positive correlation reinforces the importance of increasing parental understanding of the benefits of Posyandu services, such as follow-up immunization, vitamin A provision, and monitoring child growth and development, in order to encourage more active involvement.

In contrast, other variables such as perceived susceptibility ($r = 0.167$), perceived severity ($r = -0.013$), perceived barriers ($r = -0.243$), cues to action ($r = 0.252$), and self-efficacy ($r = 0.205$) did not have significant relationships ($p > 0.05$). Small r values for these variables indicate very weak or even no relationship at all with parent participation. For example, perceived barriers have a negative r value (-0.243), indicating that the lower the perceived barriers, the more likely parents are to participate. However, since this relationship is not significant, the barrier factor is not a major barrier in the context of this study.

The positive relationship in perceived benefits suggests that efforts to increase awareness of the benefits of Posyandu should be a top priority. For example, more intensive education on the importance of monitoring children's growth and development after complete basic immunization can be done through counseling by cadres or other communication media. In addition, although some variables did not show significant relationships, the r values for cues to action ($r = 0.252$) and self-efficacy ($r = 0.205$) showed the potential to influence participation if appropriate interventions were implemented, such as providing reminders of Posyandu schedules or increasing parental confidence through training. Thus, these findings highlight the importance of strengthening perceived benefits as a key strategy in increasing parental

participation in Posyandu, as well as the need for a comprehensive approach to minimize barriers and increase parental awareness and motivation.

Discussion

A. Perception Vulnerability.

The results showed that the perception of vulnerability did not have a significant relationship with parental participation in Posyandu after complete basic immunization (p = 0.198; r = 0.167) with a value of r = 0.167 indicating a very weak positive relationship, this indicates that although parents feel there is a health risk, it does not significantly encourage them to participate. This indicates that the level of parental awareness of children's health risks is not enough to encourage them to routinely bring their children to Posyandu. This finding can also be associated with the child's health history data in Table 1, where only 7 respondents reported a certain health history in their children such as difficulty gaining weight or the child is too active which causes weight gain to be hampered.

This condition can make parents feel that monitoring at Posyandu has not provided a significant solution to the problem. Based on the Health Belief Model The HBM (Handsome Behavior) theory states that perceived vulnerability plays an important role in motivating preventive actions. This finding is in line with research by Laila et al. (2023), which found that although most parents understand that their children are susceptible to health problems, this factor is not always the main driver in taking preventive action. This study also shows that although perceived susceptibility is related to the incidence of stunting, other factors such as perceived benefits are more dominant in determining parents' health decisions (Laila et al., 2023). Therefore, education that emphasizes more on the long-term risks and concrete benefits of attending Posyandu is needed.

(Rosenstock, 1974) stated that individuals who feel their children are vulnerable to health problems tend to be more proactive in seeking health services. However, parents' lack of understanding of long-term risks, such as stunting or malnutrition, can reduce their urgency to visit Posyandu. (Rosenstock, 1974). Previous research conducted by (Zuliyanti & Pangestuti, 2020) also emphasized the importance of increasing parental awareness through targeted education to strengthen the perception of vulnerability (Rosenstock, 1974) .

B. Perception of Severity.

The results of the analysis showed that the perception of severity also did not have a significant relationship with parental participation in Posyandu (p = 0.849; r = -0.013), the r value = -0.013 which means that this correlation value reflects a very weak level of relationship. Although most parents are aware of the serious consequences of children's health problems, such as malnutrition or infectious diseases, this understanding has not been translated into real actions in the form of regular visits to Posyandu. This can

also be associated with data on children's health history, where 7 respondents reported having certain health conditions. However, the absence of other respondents who have healthy children may reflect the view that visits to Posyandu are less relevant for children without visible health problems.

(McCormick-Brown, 2013) explains that low perception of severity can be a major barrier to health decision-making. In this context, lack of education about the serious consequences of neglecting child health monitoring, such as the risk of failure to thrive or long-term impacts on the child's intelligence, can worsen the situation. Therefore, education that focuses more on long-term health consequences can help improve parents' perception of severity (World Medical Association, 2013) .

This result is different from the findings of Nisa & Rahmanindar (2023), who found that perceived severity had a significant relationship with the regularity of antenatal check-ups during the pandemic. The study showed that mothers who considered pregnancy as a serious condition were more likely to comply with routine pregnancy check-ups (Nisa & Rahmanindar, 2023). In the context of Posyandu, the results of this study indicate that although parents are aware of the importance of health monitoring, they do not always feel that not attending Posyandu can have a serious impact on their child's health. Therefore, a more effective communication strategy is needed to emphasize the negative impacts of absenteeism at Posyandu.

C. Benefit What is Felt.

The perception of benefits has a significant relationship with parental participation in Posyandu after complete basic immunization ($p = 0.027$; $r = 0.283$). The correlation value ($r = 0.283$) shows a positive relationship with a weak correlation strength. This means that the higher the perception of benefits felt by parents, the greater their tendency to participate in Posyandu. Although the strength of the relationship is weak, statistical significance shows the importance of perception of benefits in encouraging parents to utilize Posyandu services, especially to monitor child growth and development. This shows that understanding the benefits of Posyandu services, such as immunization, growth and development monitoring, and vitamin A provision, is the main factor that encourages parents to participate.

However, these benefits tend to be limited to more general services, such as basic immunization, without a deep understanding of the importance of follow-up services for children aged 1-5 years. Research by (Janz & Becker, 1984) confirms that the perception of benefits contributes significantly to changes in health behavior. Therefore, efforts to increase participation can be focused on education that emphasizes the additional benefits of Posyandu services, such as nutritional supervision and follow-up immunization. In addition, the empowerment of Posyandu cadres as the main source of information also needs to be optimized (Janz & Becker, 1984).

(Nutbeam et al., 2010) emphasized that the perception of benefits is one of the key elements that can motivate individuals to take health actions. In the context of Posyandu services, this includes parents'

understanding of the importance of follow-up immunization, monitoring child growth and development, and providing vitamin A. Good education about these benefits can increase parents' awareness so that they are more motivated to utilize Posyandu services routinely (Nutbeam et al., 2010) .

This finding is consistent with the study by Laila et al. (2023), which found that perceived benefits were the most dominant factor in parents' decisions to take health actions. The study reported that high perceived benefits contributed to increased parental awareness of the importance of routine child health monitoring (Laila et al., 2023). Therefore, information campaigns that emphasize the concrete benefits of Posyandu, such as growth and development monitoring and vitamin A provision, need to be strengthened to increase participation.

D. Perceived Barriers.

There was no significant relationship between perceived barriers and parental participation in Posyandu after complete basic immunization (p = 0.082; r = -0.243). Perceived barriers had a negative correlation (r = -0.243), meaning that the lower the perceived barriers, the more likely parents were to participate, although this relationship was not significant. Physical barriers such as distance to Posyandu did not seem to be a significant obstacle considering that most respondents lived within a radius of less than 1 km. However, most respondents in this study were housewives (IRT) who did not work (70.5%), so in theory they had enough free time to visit Posyandu.

However, even though there are no physical barriers such as busy work, non-physical barriers such as lack of information and awareness remain major challenges that must be overcome. Health Belief Model (HBM), perceived barriers are often strong predictors of health behaviors (Harrison et al., 2002). Therefore, strategies such as providing more interactive information through social media or digital reminders may help overcome these barriers and increase participation.

A study by Nisa & Rahmanindar (2023) showed that perceived barriers were associated with regular antenatal check-ups, mainly due to barriers such as fear of Covid-19, difficult access, and lack of information (Nisa & Rahmanindar, 2023). In the context of Posyandu, perceived barriers may not be large enough to prevent parents from attending, but they are still factors that need to be considered in efforts to increase community involvement.

E. Cues to Action (*Cues to Action*).

Cues to action also did not have a significant relationship with participation (p = 0.062; r = 0.252). In cues to action (r = 0.252), although the correlation value was slightly higher than other variables, it remained at a weak correlation level and was not statistically significant. However, this value indicates the potential for interventions, such as schedule reminders or more intensive training, to increase parent participation. However, the role of cadres as the main source of information (93.4%) indicates the

importance of their existence as a trigger for action. Health Belief Model (HBM), cues to action include external prompts that can motivate health actions. Strategies such as sending reminder messages or social media campaigns can serve as additional triggers to increase parent participation.

A study by Nisa & Rahmanindar (2023) also found that cues to action were not related to the regularity of antenatal check-ups during the pandemic, indicating that external factors such as reminders from health workers or health campaigns were not strong enough to encourage consistent health actions (Nisa & Rahmanindar, 2023). Therefore, a more systematic approach is needed, such as the use of technology to provide reminders to parents to attend Posyandu more regularly.

F. Efficacy Self.

Self-efficacy did not show a significant relationship with participation (p=0.130; r=0.205). In self-efficacy (r=0.205), although the correlation value is slightly higher than other variables, it is still at a weak correlation level and is not statistically significant. However, this value indicates the potential for interventions such as schedule reminders or more intensive training to increase parental participation. Although most respondents have a fairly high level of education, the lack of understanding of the KIA Handbook and the importance of follow-up services at Posyandu indicates that increasing self-efficacy is still needed.

(Bandura, 1997) emphasized that high self-efficacy can increase the sustainability of health behavior. Therefore, interactive education involving parents in measuring children's health or Posyandu service simulations can help increase their self-confidence. Laila et al.'s (2023) study highlighted that community-based interventions involving social support can increase parents' confidence in bringing their children to health services regularly. Therefore, more inclusive and community-based strategies are needed to strengthen parental involvement in Posyandu.

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CONCLUSION AND SUGGESTIONS

Conclusion

Of the six components of the Health Belief Model (HBM), only perceived benefits have a significant relationship with parental participation in Posyandu after complete basic immunization. This finding is supported by the research of Laila et al. (2023), which shows that perceived benefits are the most dominant factor in determining parents' decisions to take preventive measures for children's health. Meanwhile, findings from Nisa & Rahmanindar (2023) show that perceived severity and perceived barriers are related

to the regularity of antenatal check-ups, but do not directly affect parental attendance at Posyandu. Therefore, interventions that emphasize the concrete benefits of Posyandu services need to be prioritized to increase parental participation in a sustainable manner.

Suggestion

For Posyandu and health cadres, several steps that can be taken include involving community or religious figures as education facilitators to increase parental trust and motivation. Interactive education systems such as simulations or storytelling about the benefits of children's health at Posyandu can also be implemented. A proactive strategy with cadre visits to families who are less active at Posyandu can be done by bringing portable weighing devices and providing simple services such as nutritional counseling. Digital-based monitoring also needs to be integrated by utilizing applications to track data on children who rarely go to Posyandu and sending automatic reminders via text messages. In addition, child-friendly services such as play zones in Posyandu areas and providing additional consultations such as child development psychology can increase the attractiveness of Posyandu for parents.

For local governments and policy makers, collaboration with local companies or Corporate Social Responsibility (CSR) programs is a strategic step to support Posyandu logistics and provide additional incentives for cadres. The Posyandu Plus service program can be developed by integrating creative economy training such as cooking complementary foods for breast milk (MPASI) or handicrafts so that visits to Posyandu provide additional benefits. Community-based mobile Posyandu services that involve local residents as volunteers can also help implement services in hard- to-reach areas. Digital campaigns through social media and popular applications can be used for education, schedule reminders, and increasing awareness of the importance of Posyandu.

For further researchers, cross-regional comparative studies are needed to assess the effectiveness of new strategies such as digital-based services or outreach cadres compared to conventional approaches. In-depth studies of local culture and perceptions are also needed to explore the impact of cultural perceptions on participation in Posyandu and to adapt communication strategies to community needs.

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