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Determinant Influence on the Incident of Stunting Toddlers in the Working Area of the Johan Pahlawan Health Center, Johan Pahlawan District, West Aceh Regency

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Abstract

Human resources (HR) may be impacted by nutrient shortages, which may lead to stunting or short height (shortnes). Some 33.4% of West Aceh's population will experience stunting in the year 2023. In 2023, 42 instances of stunting were documented in the subdistrict by the Johan Pahlawan Health Centre UPTD. Toddler stunting in the Johan Pahlawan Health Centre working area, District, West Aceh Regency is investigated in this study. Factors such as economic level, parenting styles, nursing practices, knowledge of the mother, and full basic immunisation are considered. An empirical investigation is used in this situation. Included in the research were 84 individuals, 42 of whom served as case and 42 as control. Factors linked to the research included economic status, parenting style, nursing exclusively, complete basic vaccination, and maternal awareness. In 2023, the prevalence of stunted toddlers in the Johan Pahalawan Community Health Centre operating area, Johan Pahlawan District, West Aceh Regency was impacted by many factors. The most important of them was the presence or absence of exclusive breastfeeding, which had the biggest effect (OR= 12.105). The significance of exclusive breastfeeding and the prevention of stunting should be emphasised to pregnant women and mothers with toddlers via the continued education, intervention, counselling, and provision of films, brochures, and other brief messages by community health centres.

Keywords: Stunting, Exclusive breastfeeding, Toddlers, Mother's knowledge

Introduction

Health Organisation of the Russian Federation in the year 2023 Neither stunting nor the 10% malnutrition rate that the World Health Organisation (WHO) has tolerated nor addressed has been sufficiently handled so far. Global stunting cases peaked in 2020 at 153.4 million, declined to 150.9 million in 2021, and eventually reached 148.1 million in 2022, a drop of 22.3%, according to Das's research (2023) and acknowledged by the World Health Organisation (WHO). Indonesia ranks 17th out of 117 countries where all three of these dietary disorders in toddlers are prevalent, with 36% of short children living in Africa and 56% in Asia (Ministry of Health 2018). Thailand (16%), Singapore (4%), Myanmar (33%), and Vietnam (23%), all have far lower stunting rates than Indonesia (35%). According to Statarto (2018), Indonesia has the sixth-highest rate of childhood stunting worldwide.

After reaching 6.3 million in 2020 (or 26.9% of the total), the number of stunted persons in Indonesia increased to 5,253,404 in 2021 (or 24.4% of the total), and then to 4,558,899 in 2022 (or 21.6% of the total) (SSGI, 2023). Based on data collected by the Ministry of Health in the Republic of Indonesia in 2020, the province of Bali had the highest stunting prevalence at 14.42 percent, followed by East Nusa Tenggara at 43.82 percent, West Sulawesi at 40.38 percent, and West Nusa Tenggara at 37.5% (Samiati, 2022).

The Ministry of Health states that stunting happens when a person's nutritional intake falls short of what their body demands over time (2018). Inadequate nutrition and infections are direct causes of stunting; a person's socioeconomic level is impacted by several factors, including but not limited to the political and economic climate. There were 2,142,000 stunted people in Aceh Province in 2020, making up 34.8% of the total population. A slight decline from 2020 saw it fall to 1,733,623 in 2021, or 33.2% of the total population. They made up 31.2% of the population in 2022, or 1,413,259 people. Lastly, the stunting rate in 2023 was 29.4 percent. According to the numbers, Aceh's stunting percentage is still more than the RPJMA's target of 20%. From 468,078 (27.4%) in 2021 to 423,977 (30.4%) in 2022 and eventually to 33.4% in 2023, the number of children in the West Aceh area afflicted by stunting increased, according to the Indonesian Nutrition Status Survey (SSGI).

The number of stunting patients in the Johan Pahlawan sub-district increased dramatically from 192 in 2022 to 42 the following year. A comparatively high stunting proportion is seen in this sub-district, along with others in West Aceh. Among the several factors that contribute to stunting, some of which have been previously mentioned, is the fact that the Johan Pahlawan Health Center's service region has a higher stunting prevalence than other health centre service areas. Researchers feel it is critical to conduct study because the problems experienced by the five women in the initial observation are likely to be experienced by other mothers. As a result, the author has decided that a research named "The Effect of Determinant Factors on the Incidence of Stunting in the Working Area of the Johan Pahlawan Health Centre, Johan Pahlawan District, West Aceh Regency" is important.

Methods

The researchers in this study employed a case control design-based quantitative analysis strategy. Researchers in case-control studies initially divide participants into two groups: "cases" (those who have actually experienced the disease's symptoms) and "controls" (those who have not). After that, they try to figure out why the cases had these impacts and the controls did not by looking for risk factors in the past. Finding out why kids in the Johan Pahlawan Kcamatan Johan Pahlawan West Aceh Regency aren't growing tall enough was the driving force for this research.

The Johan Pahlawan Subdistrict in West Aceh District is home to the Johan Pahlawan Health Centre, where this research took place. The years 2023 and 2024 were the focus of this investigation. In this study, researchers used two groups of 42 toddlers: one group with stunting and another group without. Because the sample ratio was one to one, eighty-four toddlers were considered for inclusion.

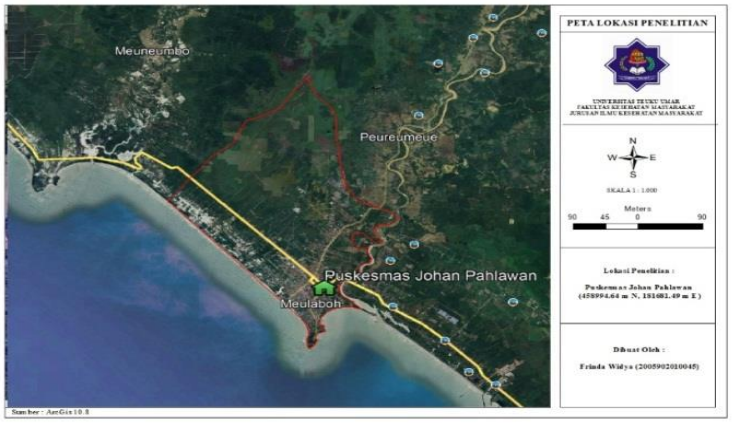

Figure 1. Research Location

Results

Bivariate Analysis

Table 1. Analysis of the effect of maternal knowledge on the incidence of stunting in toddlers in the Working Area of the Johan Pahlawan Health Center, Johan Pahlawan Subdistrict, West Aceh Regency in 2023.

Knowledge	Stunting				OR	CI	*P value*
	Stunting		Not Stunting				
	n	%	n	%			
Good	16	38,10	30	71,43	4,062	1,628- 10,136	0,003
Less Good	26	61,90	12	28,57			
Total	42	100	42	100			

Source: Data Processing Using SPSS Simple Logistic Regression

According to Table 1, both the stunting and non-stunting groups had varying levels of knowledge. The stunting group had a high level of information at 71.43%, while the non-stunting group had a low level of knowledge at 28.57%. A significant correlation was found between the degree of mother knowledge and the incidence of stunting in toddlers in the 2023 study area of the Johan Pahlawan Health Centre in Johan Pahlawan District, West Aceh Regency. A 95% confidence level and an α value of 0.05 in the statistical tests supported this, leading to an odds ratio (OR) of 4.062. Toddlers whose moms lacked sufficient knowledge were 4.062 times more likely to have stunting than toddlers whose mothers had sufficient knowledge. An alpha level of 0.003 was used.

Table 2. Analysis of the effect of exclusive breastfeeding on the incidence of stunting in toddlers in the Johan Pahlawan Health Center Working Area, Johan Pahlawan District, West Aceh Regency in 2023

Exclusive breastfeeding	Stunting				OR	CI	*P value*
	Stunting		Not Stunting				
	n	%	n	%			
Exclusive	17	40,48	32	76,19	4,706	1,838-12,048	0,001
Not Exclusive	25	59,25	10	23,81			
Total	42	100	42	100			

Source: Data Processing Using SPSS Simple Logistic Regression

Table 2 shows that compared to the non-stunting group, which includes 76.19 percent of toddlers who exclusively breastfeed, the stunting group only has 40.48 percent. Also, compared to the non-stunting group, the stunting group had a 23.81% higher rate of toddlers who do not breastfeed exclusively (59.52%). Statistical testing conducted in 2023 at the Johan Pahlawan Health Centre in the Johan Pahlawan District of West Aceh Regency revealed that stunting was 4.706 times more likely in children who did not consume breast milk exclusively compared to those who did. The results, which were backed by an α value of 0.05, demonstrated a strong correlation between the two variables. As an equal value, P= 0.001 was used.

Table 3. Analysis of the effect of complete basic immunization with the incidence of stunting in toddlers in the Johan Pahlawan Health Center Working Area, Johan Pahlawan Sub-district, West Aceh Regency in 2023

Immunization	**Stunting**				**OR**	**CI**	***P value***
	Stunting		**Not Stunting**				
	n	%	n	%			
Complete	17	40,48	30	71,43	3,676	1,480-9,132	0,005
Incomplete	25	59,52	12	28,57			
Total	42	100	42	100			

Source: Data Processing Using SPSS Simple Logistic Regression

Table 4.11 reveals that 71.43 percent of stunted toddlers had full basic immunisation status, which is greater than the non-stunting group's 28.57 percent. It also shows that 59.52 percent of stunted toddlers had incomplete basic vaccination. In the 2023 study area of Puskesmas Johan Pahlawan District Johan Pahlawan West Aceh Regency, the prevalence of complete basic immunisation has a substantial influence on the risk of stunting in toddlers. An odds ratio (OR) of 3.676 was produced by statistical tests that were conducted with a 95% confidence level and an α value of 0.05, which support this. Toddlers with an incomplete basic immunisation status are 3.676 times more likely to experience stunting than toddlers with a full status. The p-value selected is 0.005. **Tabel 4** Johan Pahlawan Health Centre Working Area, Johan Pahlawan District, West Aceh Regency, 2023 Stunting Incidence Rate by Parental Pattern

Parenting	**Stunting**				**OR**	**CI**	***P value***
	Stunting		**Not Stunting**				
	n	%	n	%			
Good	13	30,95	26	61,90	3,625	1,469-894	0,005
Less Good	29	69,05	16	38,10			
Total	42	100	42	100			

Source: Data Processing Using SPSS Simple Logistic Regression

With respect to table 4. While 30.95 percent of respondents in the stunting group and 61.90 percent in the non-stunting group reported having great parenting styles, 69.05 percent in the stunting group and 38.10 percent in the non-stunting group reported having poor parenting styles. In 2023, researchers at the Johan Pahlawan Health Centre in West Aceh Regency found that toddlers whose parents were not very adept at taking care of them had an odds ratio

(OR) of 3.625, meaning that stunting was 3.625 times more likely to occur in the former group than in the latter. The results, which were backed by a 95% confidence level and an α value of 0.05, provided strong evidence of an association between parenting and stunting occurrence. The corresponding result was P = 0.005.

Table 5. Analysis of the effect of economic status with the incidence of stunting in toddlers in the Working Area of the Johan Pahlawan Health Center, Johan Pahlawan Subdistrict, West Aceh Regency in 2023

Economic Status	Stunting				OR	CI	*P value*
	Stunting		Not Stunting				
	n	%	n	%			
High	11	26,19	23	54,76	3,411	1,363- 8,542	0,009
Low	31	73,81	19	45,24			
Total	42	100	42	100			

Source: Data Processing Using SPSS Simple Logistic Regression

The data in Table 5 reveal that whereas 54.76% of the non-stunting group had a high income, only 26.19% of the stunting group did. Additionally, 73.81 percent of the stunting group had a low income, which was greater than 45.24% of the non-stunting group. Statistical tests with a 95% confidence level and an α value of 0.05 demonstrated a significant correlation between parental income and the prevalence of stunting in toddlers in the Johan Pahlawan Health Centre's operating area in West Aceh Regency in 2023. A child's risk of stunting increases by 3.411 times compared to a toddler whose parents have a high income, according to the odds ratio (OR) of 3.411. P= 0.009 is the equivalent value.

Multivariate Analysis

Table 6. Multivariate Analysis

No	Variabel	P value	OR	Confidence Interval
1	Exclusive breastfeeding	0,000	12,105	3,018 – 48,547
2	Mother's Knowledge	0,004	6,052	1,749 – 20,938
3	Complete Basic Immunization	0,020	4,160	1,248 – 13,865
4	Parenting Pattern	0,015	4,347	1,324 – 14,268
5	Economic Status	0,066	3,027	0,929 – 9,860

Source: Data Processing Using SPSS Simple Logistic Regression

Table 6 reveals that in 2024, the Johan Pahlawan District, West Aceh Regency, which is home to the Johan Pahlawan Health Centre, had an exclusive breastfeeding rate that was 12.105 times greater than the national average. Researchers found that this rate affected the prevalence of stunting in toddlers.

Discussion

1. The Effect of Maternal Knowledge on the Incidence of Stunting in Toddlers

In the Johan Pahlawan District of West Aceh Regency, there was a strong correlation between maternal knowledge and the incidence of stunting from 2023 to 2024 (OR=6.52, P = 0.004). Stunting is less common in

toddlers whose moms have more education, according to one study. As a result of their ignorance of stunting and its long-term effects, many mothers attribute their children's small stature to genetics rather than poor dietary choices. A mother's ability to comprehend her child's physical traits, the effects of stunting, its origins, and methods for promoting normal development are all hindered by her lack of knowledge about the condition. Stunting is more common in children whose mothers are uninformed of the problem, hence it is crucial for mothers to educate themselves on the subject. The effectiveness of stunting prevention initiatives is significantly improved when mothers are well-informed on the condition, including its symptoms, meaning, causes, consequences, and methods for prevention.

This study agrees with Ramdaniati's (2019) findings on the impact of cleanliness, maternal awareness, and toddler features on the stunting prevalence in the Labuan sub-district of the Pandanglang district. A strong correlation between women's level of education and the prevalence of stunting in toddlers was found in the data. When Puspasari (2021) looked at what causes stunting in children between the ages of 24 months and 1 year, they came to similar conclusions. According to the findings, stunting was more prevalent in toddlers whose moms had greater levels of education. Our results corroborate previous research showing that children of mothers with higher levels of education are more likely to experience stunting (AL, 2021). The prevalence of stunting in toddlers was shown to be significantly correlated with the level of awareness among mothers.

In the presence of maternal knowledge, children have a better chance of improving their nutritional state and reaching growth maturity. If moms don't know much about stunting, bad eating habits, and what makes for optimal growth and development, they are less likely to be concerned about providing their children with the right food in the right amounts (AL, 2021).

2. The Effect of Exclusive Breastfeeding on the Incidence of Stunting in Toddlers

In the Johan Pahlawan District of West Aceh Regency, it was shown that stunting is substantially correlated with exclusive breastfeeding in 2023. A p-value of 0.000 was associated with this connection, which had an odds ratio (OR) of 12.105. The practice is mentioned in this research, which is in line with previous studies that have linked toddler stunting to exclusive breastfeeding. The fact that many new mothers begin supplementing their infants' diets with sugar and honey before they reach six months of age may be a contributing factor. Babies are often given formula and other nutrition by their moms before they reach six months old. This is because, according to the reasoning, stunting may happen in toddlers when they aren't breastfed exclusively. Breast milk helps infants grow normally by boosting their immune systems, which shields them from diseases that may otherwise delay their maturation. Breast milk has several benefits, one of which is that it is easily absorbed by the body. This means that it has the potential to improve overall development, including height.

These findings corroborate those of a study by Agustina (2019) in the Pidie region that looked at the Ruebee health center's operating area and the correlation between stunting, exclusive breastfeeding, birth weight, and parental practices. A reduced incidence of stunting was linked to exclusive breastfeeding, according to the results. Research in Padang city, Indonesia, has looked at the link between stunting and exclusive breastfeeding in infants and toddlers up to the 59th month of life (Putri, 2020), which is in line with other research. The findings demonstrated that toddlers in Padang city had a decreased stunting rate when they were exclusively breastfed. In line with previous research, this

study (SJMJ et al., 2020) investigates the correlation between stunting and exclusive breastfeeding. An link between toddler stunting and exclusive breastfeeding was shown to be statistically significant with an odds ratio (OR) of 61 in this investigation. This study follows previous ones in looking at the link between stunting and not nursing in toddlers (defined as children aged 24–60 months) (Pramulya, 2021). Stunting was more common in children who were breastfed exclusively between 20 and 60 months of age, according to the study.

An benefit of exclusive breastfeeding is that it boosts infant growth, especially height, since calcium is more quickly absorbed from breastmilk than from formula or breast milk replacements. Babies who are breastfed exclusively tend to grow taller and have more typical development compared to those who are given formula. Breast milk, with its higher calcium content and ease of absorption, is ideal for preventing stunting and maximising development, especially in terms of height. (Pramulya et al., 2021).

3. Effect of Complete Basic Immunization on the Incidence of Stunting

Full basic immunisation was found to be significantly related to the incidence of toddler stunting in the working area of the Johan Pahlawan Health Centre, Johan Pahlawan Subdistrict, West Aceh Regency in 2023, with a score of 4.160 and a P value of 0.020. The phrase "full basic immunisation" is used in this study in line with previous research that linked the vaccination to a decreased stunting incidence in children. For many reasons—including family resistance, the child's sickness during the planned immunisations, and her own admission that she was too busy with housekeeping to make repeated journeys to the posyandu—the mother did not provide complete basic immunisations. Children are less likely to have stunting as a result of vaccines that protect them from infectious diseases. A child's capacity to eat healthily may be compromised if they often experience illness.We agree with Wanda et al. (2021) that there is a link between the frequency of stunting and a child's basic vaccination history. Full basic immunisation rates were shown to be correlated with stunting rates. Imelda et al. (2018) investigated stunting in children at the Biromaru health clinic from the ages of 2 to 5, and their findings are consistent with ours. Results showed that immunisation status was associated with a lower risk of stunting in toddlers at Biromar Health Centre. The findings of this research are in agreement with those of Sutriawan (2020). According to the research titled "The association between toddler stunting and vaccination status and history of infectious diseases," this link was investigated. Stunting is more common in children whose immunisation status is known, according to this study.Stunting is only one of several diseases and ailments that toddlers need immunisations to prevent. Full immunisation may help reduce stunting. Immunisation is very important for kids' health. A higher risk of illnesses is associated with a lack of immunisation or a history of incomplete vaccination in children. When youngsters are sick, they often don't feel hungry. As a result of the rejection, children reduce their vitamin consumption, which might potentially hinder their growth as their bodies fail to absorb enough of the essential nutrients. Toddlers may be more vulnerable to illness if their immune systems aren't adequately protected via immunisation. Children whose illnesses are left untreated are more likely to have stunting (Sutriyawan, 2020).

4. Effect of Parenting on the Incidence of Stunting

The operating area of the Johan Pahlawan Health Centre in Johan Pahlawan District, West Aceh Regency, had a noteworthy influence of parenting practices on the prevalence of stunting in 2023 (0R = 4.347 P value = 0.015).

Consistent with previous research, this study also found that children whose parents used certain parenting techniques were more likely to have stunting. Moms often give snacks like chiki, candies, and chocolate at least once a day to their kids instead of breakfast and three square meals a day. This makes snacks appear more tempting than the big meals. Young people who don't practise good hygiene are more likely to experience stunting, and they are also more likely to nibble on unhealthy foods while they're out and about and less likely to prepare nutritious meals at home. Children are less likely to eat enough since they are less hungry and more prone to getting ill from not washing their hands regularly.Following in the footsteps of earlier research, this study confirms what Kaloko (2022) found a link between parental income and the frequency of stunting in children aged 2 to 5. Toddlers whose parents take an active role in their care had a much lower risk of stunting, according to one study. This study continues previous research by investigating the link between maternal characteristics, parenting styles, and supplemental feeding as they pertain to stunting rates in Gorontalo (Nurdin, 2019). The study's findings suggest a strong correlation between parenting styles and the prevalence of stunting in toddlers. Rahmayana (2014) examined the prevalence of stunting in children between the ages of 24 and 59 months at the Asoka II Posyandu in the coastal region of Barombong village, Tamalate sub-district, Makassar city, and discovered a correlation between the mother's parenting style and the condition. Previous research on similar subjects has shown findings that are consistent with our own. Stunting in toddlers is more common in homes where mothers are the primary carers, according to one research.Nutritional health is positively impacted when a mother's parenting style prioritises assisting her kid with healthy eating and maintaining personal hygiene. The caregiving duties of the mother and the family have a significant impact on a child's development and growth. Whether or whether they breastfeed, women who eat healthily, serve their children balanced meals, and control their portion sizes may help their children achieve better nutritional status. Women may help their children stay healthy by washing their hands often before and after handling food, as well as after using the restroom, petting animals, and defecating (Rahmayana, 2014).

5. Effect of Economic Status on the Incidence of Toddler Stunting

According to data collected in 2023 from the Johan Pahlawan Health Centre in Johan Pahlawan District, West Aceh Regency, there was no significant association among socioeconomic class, income, and the incidence of stunting in toddlers (OR = 3.027, P value = 0.066). Early observational data reveal that socioeconomic status influences the frequency of stunting in toddlers, even if economic position was included in this investigation. The family's modest income is sufficient to meet the dietary requirements of all members, even the toddlers, since there are no dependents or family members. Also, the respondents employ moringa leaves and other affordable yet nutrient-dense alternatives that they may easily get at home.The current study follows earlier ones in North Sumatra's Langkat region by looking at how socioeconomic status and maternal nutrition affect birth weight, gestational age, and stunting rates (Lusiatun et al., 2020). There was no correlation between socioeconomic status and stunting rates in the Langkat district of North Sumatra. According to Holbala et al. (2020), "The Impact of Socioeconomic Factors on the Incidence of Stunting," Consistent with other studies, this one... The data did not indicate that socioeconomic status had an effect on stunting rates. This research (Hapsari et al., 2021) found that stunting in children aged 12-59 months is associated with a number of factors, including parental height, income, and nutrition knowledge on the part of mothers. It is still possible for babies from low-income households to enjoy a decent start in life if their parents can afford to provide

healthy meals using basic, inexpensive components. Nevertheless, Pribiyanti et al. (2019) failed to detect a correlation between the study's variables and the prevalence of stunting in toddlers within the Slogohimo health center's service area in Wonogiri Regency. With an odds ratio (OR) of 15.3, this research found that toddler stunting rates were associated with socioeconomic class. A mother's inability to provide a balanced food for her toddler due to financial hardship increases the likelihood that her kid may suffer from stunting if the trend continues.

Conclusion

Based on the results of the research and discussion that has been carried out, the researcher concludes that:

1. More than 61.90% of toddlers whose mothers do not know enough about the condition suffer from stunting. Statistical tests show that maternal knowledge affects the incidence of stunting in toddlers. The relationship is statistically significant (p = 0.005) and the odds ratio (OR) is 6.052, meaning that toddlers whose mothers have less knowledge are 6.052 times more likely to experience stunting than toddlers whose mothers have good knowledge. There was an increase in stunting in toddlers whose mothers did not breastfeed exclusively.
2. Over half (59.52%). According to statistical tests, there is a correlation between the number of cases of stunting and the frequency of exclusive breastfeeding. The p-value is 0.000, and the odds ratio (OR) is 12.105, meaning that compared to toddlers who are exclusively breastfed, those who are not have a 12.105 chance of experiencing stunting. Triple stunting was more common in toddlers who did not get full basic vaccines.
3. Over half (59.52%). According to statistical tests, there is a correlation between incomplete basic immunisation and stunting rates (p = 0.020, OR = 4.160). This means that compared to toddlers who receive full basic immunisation, those who do not have a 4.160 times higher risk of stunting.
4. Stunting is more common in toddlers whose moms are less involved in their care. About 69.5 percent. The statistical tests show that there is a correlation between maternal parenting and the prevalence of stunting. The p-value is 0.015 and the odds ratio (OR) is 4.347, meaning that toddlers whose mothers are less involved in their care are 4.347 times more likely to suffer from stunting than toddlers whose moms are more involved.
5. Stunting is more common in toddlers from low-income households (73.81%). There is no correlation between socioeconomic level and stunting in toddlers (OR= 3.027, p = 0.066).

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Author Contribution and Competing Interest

The author is involved in every step of the final project, from doing the preliminary survey to conducting research, analysing data, and finally completing the project. In this case, supervisors 1 and 2 were instrumental in ensuring that the author received the continuous direction and supervision necessary to complete the project to the author's satisfaction and in accordance with their requirements.

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