

# Positive Deviance Behavior Towards Stunting Prevention in Gunung Maddah Sampang Village

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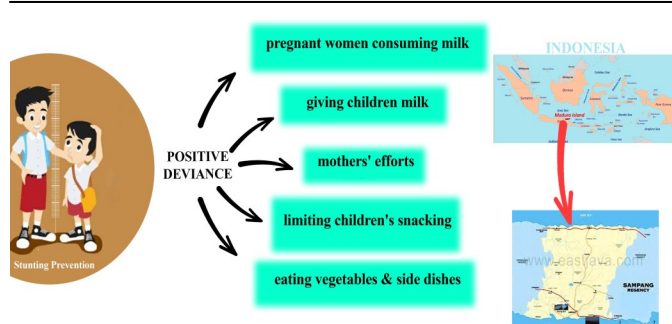
## ABSTRACT

The high prevalence of stunting is a major nutritional problem that must be resolved because it is a threat to the future of Indonesian children. One of the efforts to prevent stunting needs to be done by searching for solutions that can be practiced by the general public by applying positive deviance to improve behavior in fulfilling nutritional content in pregnant women and children. The purpose of this research is to identify and study positive deviance behavior to prevent stunting. The research method used is the qualitative method. The research was conducted for 28 months (February 2020-June 2022) in Gunung Maddah Village, Sampang Regency, Madura Island, East Java, Indonesia. Data collection techniques included the results of Focus Group Discussions (FGDs), in-depth interviews, and observations obtained from 55 informants including mothers of toddlers, parents/parents-in-law, community members, cadres, and health workers. Data analysis techniques included content analysis consisting of data preparation, data editing, and data cleaning. The results showed that positive deviance behavior to prevent stunting in Gunung Maddah Sampang Village included the consumption of milk by pregnant women, the provision of milk to children (breast milk and/or cow's milk), mothers' efforts to overcome eating difficulties, limiting and regulating children's snacking habits, and the consumption of rice with vegetables and side dishes.

## ABSTRAK

Tingginya prevalensi stunting merupakan permasalahan gizi utama yang harus segera diatasi. Hal ini disebabkan, permasalahan tersebut merupakan ancaman bagi masa depan anak Indonesia. Upaya pencegahan stunting salah satunya perlu dilakukan sebagai pencarian solusi oleh masyarakat luas dengan menerapkan penyimpangan positif untuk memperbaiki perilaku pemenuhan kandungan gizi pada ibu hamil dan anak. Tujuan penelitian ini adalah untuk mengidentifikasi dan mempelajari perilaku positif deviasi untuk mencegah stunting. Metode penelitian yang digunakan adalah metode kualitatif. Penelitian dilakukan selama 28 bulan (Februari 2020-Juni 2022) di Desa Gunung Maddah, Kabupaten Sampang, Pulau Madura, Jawa Timur, Indonesia. Teknik pengumpulan data menggunakan hasil Focus Group Discussion (FGD), wawancara mendalam, dan observasi yang diperoleh dari 55 informan yang meliputi ibu balita, orang tua/mertua, warga masyarakat, kader, dan petugas kesehatan. Teknik analisis data menggunakan analisis isi yang terdiri dari persiapan data, pengeditan data, dan pembersihan data. Hasil penelitian menunjukkan bahwa perilaku penyimpangan positif untuk mencegah stunting di Desa Gunung Maddah Sampang adalah ibu hamil mengonsumsi susu, memberikan susu pada anak (ASI dan atau susu sapi), upaya ibu mengatasi kesulitan makan, membatasi dan mengatur kebiasaan jajan anak, dan pola makan serta konsumsi nasi ditambah sayuran dan lauk pauknya.

## GRAPHICAL ABSTRACT



### Keyword

behaviour  
growth disorders  
pregnant women  
positive deviance  
stunting

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## INTRODUCTION

Stunting has become a global health problem. Stunting is a state of growth retardation among toddlers caused by chronic nutritional deficiency, particularly during the critical period of the First 1000 Days of Life (1000 HPK) (Fitrotuzzaqiyah & Rahayu, 2022). Indonesia is one of the countries that has a very high and serious prevalence of stunting experienced in children under the age of five (toddlers). The Basic Health Research (Riskesdas) in 2018 showed that the prevalence of stunting in children under five years of age was 30.8% (Ministry of Health RI, 2019).

East Java has a higher prevalence of stunting among children under five than the national average at 32.8%, and in Sampang District, it reached 47.9% (Ministry of Health RI, 2019). Thus, stunting is considered a serious public health problem in the subdistrict of Sampang. One of them is in the Gunung Maddah Village area, where the prevalence of stunting is in the high category at 53.1% compared to the coastal area of 31.5%. Therefore, this matter must be taken seriously by the government and the community in an integrated manner, from the village, sub-district, and district levels.

This stunting prevalence is higher than the WHO threshold of very high prevalence (30%) (De Onis et al., 2019). A large number of cases of stunting among toddlers is a reflection of child growth and development disorders in Indonesia, which will harm human resources in the future. Ultimately, stunting can hamper economic growth, increase poverty, and widen socioeconomic inequality. Currently, Indonesia is still facing a serious stunting problem in children under five years of age (toddlers). Basic Health Research (Riskesdas) in 2018 showed that the prevalence of stunting in children under five was 30.8%. In East Java, the prevalence of stunting in children under five is higher than the average prevalence at the national level, namely 32.8%, and in Sampang Regency it reaches 47.9% (Ministry of Health RI, 2019).

Many factors cause stunting, such as low food consumption, infectious diseases, low socioeconomic status, low maternal nutritional status before pregnancy, maternal nutritional status during pregnancy, family food security, poor parenting practices, lack of access to clean water, environmental hygiene, and sanitation (FAO et al., 2018). The incidence of stunting can also be caused by maternal parenting factors such as feeding related to the selection and method of eating and the level of nutritional adequacy of toddlers who are less. Inadequate levels of nutrients can affect the incidence of stunting. Some nutrients such as energy, protein, zinc, and vitamin A have a role in the incidence of stunting (Femidio & Muniroh, 2020).

Nutrition problems can be prevented by recognizing the root causes that occur in the community so that the handling of nutrition problems can be done fundamentally at the source of the problem. One approach that can be used in preventive and promotive efforts in the community is the positive deviance approach (Bella, 2020). Positive deviance is one of the efforts that can be undertaken to solve nutrition problems based on families and communities, by identifying various behaviors of mothers and caregivers who have well-nourished children but come from underprivileged families and spreading positive habits to other families who have undernourished children (Fitriani, 2020). The concept of positive deviance is based on the observation that in every population or community, there are some individuals or groups with successful behaviors that find better solutions to problems. Based on the literature review that has been carried out, positive deviation studies have been carried out in various fields such as organizational development, tourism, criminology, leadership, and nutritional problems. However, in nutritional issues, most research examines aspects of expected behavior change. This research examines existing behaviors that can contribute to reducing stunting specifically in the Madurese community.

The positive deviance approach brings about sustainable behavioral and social change by identifying solutions that already exist in the system. In the context of nutrition and health, positive deviance behavior shows that low-income communities can also have good nutrition. The novelty aspect of the research lies in the uniqueness of the Madurese tribe when compared to other tribes in the East Java region. The Madurese tribe has an attachment to culture and strong social relations. This has a big influence on parenting patterns involving the extended family and mother-in-law. Based on the background description above, it is necessary to identify positive deviance behavior in preventing stunting in children in Gunung Maddah Village so that positive behavior in mothers who have normal nutritional children can spread information to mothers who have malnourished children.

## METHODS

This research was conducted using qualitative methods with a phenomenology approach. The study was conducted over five months (February 2020-June 2020) in Gunung Maddah Village, Sampang Regency, located on Madura Island, East Java, Indonesia. Qualitative data were collected from 55 informants including mothers of toddlers, parents/parents-in-law, community members, cadres, and health workers.

The data collection technique of this research included: 1) Focus Group Discussion (FGD) with 20 key informants divided into two FGD groups, namely grandmother/mother-in-law and neighbor groups as well as health workers and cadres; 2) In-depth interviews with 25 key informants, namely mothers, parents/mother-in-law, and health workers (nutritionists/midwives); 3) Observation in 10 families related to childcare activities.

Data collection was conducted by trained enumerators and supervised by researchers. Almost all enumerators were Madurese. Data analysis in this study was conducted

using content analysis, which involved data preparation, data editing, and data cleaning. Transcripts of the data were collected and then processed and categorized. The supporting instruments included FGD guidelines, in-depth interview guidelines, and observation guidelines that had been developed by researchers according to the research context.

The data triangulation conducted in this study focused on community positive deviance behavior that affects the nutritional status of children in preventing stunting. Data triangulation was carried out through source and method triangulation to obtain valid results. The ethical review of this research was carried out by the Health Research Ethics Commission of the Faculty of Nursing, Airlangga University with Number 1901-KEPK dated February 5, 2020.

## RESULTS

The characteristics of the informants can be seen in [Table 1](#). Based on the table, it can be seen that the majority of the informants are women, mostly in the age range of 25-34 years, and their dominant occupation is in the informal sector consisting of farmers, laborers, and traders/sellers. The majority have resided in rural areas for a period of > 10 years. Among the informants, 28% had family members who were stunted, while 27% did not.

Based on the results of the Focus Group Discussion (FGD), in-depth interviews, and observations, most informants do not understand stunting and cannot determine whether a child is stunted or not. Informants are more aware of the problem of stunted or mid-gest children and can determine a stunted child because of the physical condition that looks different. For them, stunting is a normal and common condition. Short children are perceived to occur due to genetic factors. If the parents or family are short, the child will be short.

*"If the parents are short, the child is short, if they are tall, they are tall. Usually, the grandfather is also tall so it's hereditary" (SS, 40 years old)*

**Table 1***The characteristics of the informants*

	Characteristics	Frequency	Percentage
Gender			
	Male	15	27
	Female	40	73
Age			
	15-24 years	14	25
	25-34 years	22	40
	35-44 years	13	24
	45-54 years	4	7
	≥ 55 years	2	4
Occupation			
	Informal sector	52	95
	Formal Sector	3	5
Residence			
	Rural	55	100
	Urban	0	0
Length of stay			
	< 10 years	7	13
	>10 years	48	87
Nutritional status of toddlers			
	stunting	28	51
	not stunted	27	49

*"I don't know if stunting is a nutrition deficiency" (BS, 34 years old)*

On the other hand, informants also knew and realized that there were tall children even though their parents were short. When asked further why this happened, they did not know the answer. They could determine that their children were taller than other children or that their children or grandchildren were taller than their parents when they were young but could not determine whether their children were stunted or not.

Most informants also did not know the causes of stunting. This is mainly due to the belief and knowledge that children's height is influenced by the genetics of their parents or grandparents. They do not consider stunting to be a problem for children's growth and development because short children can still perform normal activities, both physical (playing, running) and cognitive (school academics). Informants think that stunting has nothing to do with the nutritional problems of children or toddlers.

*"If stunting is a short child, because of chronic malnutrition" (AA, 25 years old)*

*"If it's not a problem here, the important thing is that you don't get sick, can still go to school, can play" (MC, 27 years old)*

Following the results of the Focus Group Discussion (FGD), in-depth interviews, and observations, there are five positive deviance behaviors related to stunting in Gunung Maddah Village:

Based on in-depth interviews and Focus Group Discussions (FGDs), it was found that pregnant women in Gunung Maddah Village who drink milk have children who are not stunted. Milk was sourced through buying it themselves, bought by parents, or given by the puskesmas. Female parents in the research location provide material support to their children from marriage to having children, including buying milk when their children are pregnant.

*"When I was pregnant, I drank milk, and my husband bought it maybe, that's why my child is not stunted" (NA, 19 years old)*

*"The midwife's advice is to drink milk to increase nutrition. I was afraid that I would be malnourished because when I was a pregnant woman, I vomited. Sometimes my husband buys milk, sometimes my parents do" (AS, 22 years old)*

*"I drink milk from the puskesmas. I got it when I checked with the puskesmas. I was told to drink it so that the mother and baby would be healthy" (RS, 21 years old)*

Many mothers in Gunung Maddah Village understand the importance of providing exclusive breastfeeding to new-borns. The results of this study show that milk is a drink that contributes greatly to the fulfilment of children's nutritional intake. Normal children are given milk either breast milk or cow's milk. In addition, the results of this study also show that the average macronutrient intake of children is sufficient (except fat), but the average micronutrient intake (except zinc and vitamin A) is still far below the needs of children.

*"My child was breastfed for up to 2 years, the cadre said so when the Posyandu was also told by the midwife to continue breastfeeding" (MM, 28 years old)*

*"The first child was fully breastfed, the second child was mixed with the canned milk, my milk didn't come out so instead of being hungry I gave the milk...." (ST, 30 years old)*

Nurturing mothers always try to get their children to eat regularly. Mothers stated that children should eat regularly and if the child is fussy and does not want to eat, they should try to feed them. Thus, some of the efforts made by mothers in Gunung Maddah Village to overcome children's eating difficulties include conditioning the eating atmosphere and increasing appetite. Conditioning the eating atmosphere involved inviting other children to eat together, carrying the child, the child is fed, eating while playing on a bicycle, and not giv-

ing other food or drink to the child before eating rice. To increase appetite, mothers gave herbal medicine, specifically "jamu temu ireng" made from "temu ireng" 1 segment, brown sugar to taste, and boiled water. This herbal medicine is made by pureeing temu ireng by grating or blending it, then squeezing the water and adding water and brown sugar. Some add honey to temu ireng herbal medicine. The herbal medicine is given to the child 1-2 times until the child wants to eat. Giving this herbal medicine is stopped if the child's appetite is good.

*"If you don't eat, try to eat. If you eat, you are invited to take a walk and coaxed, invited to play and ride a bike so that you eat a lot. Sometimes they also give temu ireng herbs that are bitter, so they add sugar. I don't give it much ... at most, one spoon, given water and palm sugar to reduce bitterness so the child doesn't resist. It is given until the child wants to eat because it can increase the child's appetite, at most 1 or 2 times given and then the child eats" (TM, 33 years old)*

*"Yes... invited to walk, play, and invite their friends to eat so that the child wants to eat. I don't give them snacks before mealtime because if I do, they won't eat at mealtime. I give curcuma to make them want to eat. Sometimes I take the child to a traditional healer to be massaged, and then the child wants to eat. They say it makes the stomach feel good" (MT, 34 years old)*

*"I give herbs temu ireng using palm sugar, then I massage the child to increase appetite" (SM, 36 years old)*

Parents in Gunung Maddah Village regulate their children's snacking habits. Parents of healthy children (not stunted) manage and do not give their children many snacks. They regulate snacking by snacking once a day, selecting snacks that can and cannot be consumed, and limiting the cost of spending on snacks to no more than IDR 5000. The allowed snacks are sausages and meatballs. Meanwhile,

the foods that are not allowed are crackers. The results of in-depth interviews and observations show that many parents allow their children to eat snacks or deliberately give snacks so that the child does not cry (fuss). In the case of some stunted children, parents spent IDR 15,000 - IDR 30,000 per day on snacks. Parents are often overwhelmed and distracted from their work if the child cries. Therefore, parents tend to follow their children's snack cravings.

*"I limit my child's snacks to IDR 5000 at most" (SM, 36 years old)*

*"If my child spends IDR 2000 or IDR 4000 a day, some other children spend up to IDR 30,000, because their parents give them snacks to keep them from being fussy while the parents work" (ST, 30 years old)*

The consumption of rice with vegetables and side dishes. The results show that these positive behaviours identified as preventing stunting include diverse food consumption. Children are fed rice with vegetables and side dishes. Children in Gunung Maddah often consume moringa vegetables, tempeh or tofu, and fish. The results of the present study found that many children over six months of age consumed only porridge with meatball soup or soup noodles or only fish soup or rice with soy sauce or crackers without any other food. In addition, sugar water is also given as a sauce for children's meals.

*"There are always vegetables, we consume vegetables that have been previously cleaned, there is a lot of moringa here; if the side dishes are tempeh, tofu, mackerel to ensure nutritional intake" (JA, 24 years old)*

*"Instead of snacks, I give fruit from the garden like papayas and bananas, usually told by a cadre named Mrs. Sahila to eat lots of fruits and vegetables" (TT, 27 years old)*

## DISCUSSION

Gunung Maddah Village is one of the stunting-specific locations with a high stunting prevalence rate of 53.1%. The results show that most people there do not understand or determine whether a child is stunted or not. Common characteristics in stunting toddlers besides short stature are height growth that is not consistent with age, having low cognitive abilities, and experiencing metabolic disorders that are at risk for various degenerative diseases in adulthood (World Health Organization, 2018).

The community in Gunung Maddah Village considers children with low body weight and height deficiency genetic. However, this does not apply if the parents' short stature is due to nutritional problems experienced by the parents (Fitriahadi, 2018). Genetic factors are not the main and only factor affecting development and growth in toddlers. Other factors influence the occurrence of stunting, one of which is the lack of intake of nutritional content during the mother's pregnancy which causes the child to have less height and weight (stunting) (Fadilah et al., 2020).

One way to minimize the occurrence of stunting is for communities in agricultural areas (Gunung Maddah Village) to apply positive deviance behavior. The positive deviance approach helps improve feeding practices that focus on changing the behavior of those who directly (caregivers) or indirectly (extended family members and the community) influence the nutritional status of children (Srivastava et al., 2019).

The results of positive deviance behavior found in Gunung Maddah Village include common community behaviors. Based on the results of the study, there are five positive deviance behaviors, among others, that provide good practices and habits including:

Milk Consumption for Pregnant Women Growth and development in children are determined by the conditions during the fetal period in the womb. Thus, pregnant women must have good health and nutritional status to sup-

port the health and safety of the fetus in the womb. The behavior of milk consumption in pregnant women has many benefits in fulfilling micronutrients and the needs of pregnant women and preventing stunting in the fetus in the womb. Milk contains protein, calcium, iron, folic acid, vitamin D, and other micro vitamins and minerals. A lack of these elements can lead to low birth weight and low height in the unborn baby (Sudigyo et al., 2023). Low birth weight affects mortality and morbidity in babies and increases risk factors for several chronic diseases (Achón et al., 2019).

Milk for Children (Breastfeeding and Cow's Milk) Providing milk to children is a positive behavior that can prevent stunting in Gunung Maddah Village. A healthy child is given either breast milk or cow's milk. In some cases of stunted children, milk is provided in a dilute solution. The first 1000 days of life determine the rest of life, making it essential to carry out nutritional interventions in the form of exclusive breastfeeding (Efendi et al., 2021). Breastfeeding until the child is more mature than 15 months or two years old can contribute to the intake of macro and micronutrients that are good for child growth.

The results showed that the average intake of macronutrients in children was sufficient except for fat. Meanwhile, the micronutrient intake, except zinc and vitamin A, is still far below the average. Zinc has a role in influencing growth hormones such as IGF-1, Growth Hormone (GH) receptor, and GH Binding Protein mRNA in the body to be low. So this low-growth hormone regulation system can inhibit linear growth. Even though the need is small, zinc is crucial to prevent stunting. In addition, vitamin A also has an essential role in preventing stunting. Vitamin A derivative, retinoic acid, influences other hormones that control skeletal tissue growth (Inzaghi et al., 2022).

WHO states that breast milk is the best and most ideal feeding that is safe, hygienic, and contains antibodies that help protect

against many common childhood diseases. Breast milk remains an essential source of energy and nutrients in children aged 6-23 months. Breast milk provides half of an infant's energy needs until one year of age and up to one-third of energy needs during the second year of life (World Health Organization, 2021).

Besides, the results showed that not only breast milk was given by mothers, but cow's milk was also given to children. Cow's milk is commonly used as a substitute and complement to breast milk. Cow's milk is a secretion from the nipples of cows that has nutritional value and is the best source of amino acids derived from animals (Alang et al., 2020). However, it should also be understood that no nutrient composition in cow's milk can resemble breast milk (Sinaga, 2021).

The ingredients in cow's milk include protein, carbohydrates, vitamin A, Vitamin B, Vitamin D, fat, calcium, zinc, iron, sodium, amino acids, calories, phosphorus, and water (Maris & Radiansyah, 2021). The ingredients of cow's milk also provide allergens that will be captured as foreign objects that are not easily tolerated in children, especially in the first six months of life (Ilmiasih, 2020). The majority of protein sources offered daily were eggs, fish, tofu, and tempeh, as well as the most commonly given vegetables, were moringa, mustard greens, and spinach (Bokilia et al., 2021).

Mothers' Efforts to Overcome Children's Feeding Difficulties Feeding difficulties in children are common problem faced by all mothers. Mothers with healthy children (not stunted) make various efforts to overcome this problem. Mothers create a comfortable and pleasant atmosphere or condition when children eat. If the child does not want to eat, the mother tries to persuade the child to finish the food (Merita & Hesty, 2019).

Mothers most often condition their children's eating atmosphere. In addition, the foods provided should be healthy and nutritious, and manage the portion of food to be consumed by the child to improve nutritional

status (Aksu & Öztürk, 2021). Furthermore, inviting other children (neighbors) to eat together at home can also make children eager to eat. Holding the child, feeding the child, and eating while playing on a bicycle are also methods that are often used by mothers so that children agree to eat. Also, mothers do not give other foods or drinks including snacks to children before they eat rice.

Mothers can also try to increase their child's appetite by giving herbs and supplements or massaging their children with a traditional healer. Some parents give appetite-enhancing supplements that are sold over the counter. Efforts made by mothers to overcome children's difficulties can increase children's food consumption. Adequate and regular consumption of food in children can increase the intake of nutrients needed for the growth and development of children. Mothers who give up easily in overcoming children's eating difficulties cause children to have high snack habits. Therefore, early childhood care is more protective, and stunting becomes more likely as children become more dependent on caloric intake from food, which should be increased (Sultana et al., 2019).

**Limiting and Regulating Children's Snacking Habits** Poor snack habits in children can result in children not getting a balanced nutritional intake and cumulatively can lead to impaired child growth. This requires attention to the frequency of snacks, consideration of the type of snacks, complete meals, timing, and feeding methods (Bella et al., 2020). In general, most snacks that children often consume are calorie-dense, high in salt, sugar, and fat content, and minimal in nutritional content such as snacks of cakes, biscuits, chips, and sweetened beverages (Hess et al., 2016).

The research results show that regulating snacks is done by snacking only once a day. In addition, in Gunung Maddah Village, many parents allow their children to have snacks or deliberately provide snacks so that they will stop their children from crying (fussing). Parents are often bothered and feel interrupted in

their work (especially mothers) if the child cries. In light of this, most parents tend to follow their children's requests to consume snacks or treats (Green et al., 2019).

The results also show that in some stunted children, the money spent on snacks is high enough, namely IDR 15,000 - IDR 30,000 per day. This money could have been used to buy snacks with sufficient nutritional value. However, the presence or absence of nutrition in snacks may not be considered by children (Raudhatusabrina et al., 2021).

**Composition of Rice with Vegetables and Side Dishes** Positive deviance by providing diverse food consumption such as rice with vegetables and side dishes is applied in Gunung Maddah Village. Providing healthy and nutritious food for children is very important for mothers in the process of child growth (Nafista et al., 2023).

Providing food to children can also be assisted by cadres and local health workers by holding educational programs on healthy and nutritious food preparations in fulfilling the needs of children's nutritional status. Education on healthy and nutritious food preparation is an activity that supports the understanding of mothers under monitoring from cadres

## CONCLUSIONS

In the same economic and geographical conditions, there is positive behavioral deviation that serves as a determining factor in children's nutritional status, ensuring that stunting does not occur. Forms of positive deviation behavior consist of consuming pregnancy milk during pregnancy to meet protein needs, providing exclusive breast milk for 2 years, being creative in providing food for children, regulating children's snack habits, and providing a variety of foods. Based on this research, recommendations can be made that can help overcome the problem of stunting. Recommendations for the village government include the need to increase the role of Dasawisma (empowerment community) and village officials to help provide infor-



mation on community nutrition, and to increase the movement to plant vegetables that can be consumed by the community. Recommendations for mothers and families include strengthening social support in the form of motivation and help to provide nutritious food, especially for those who are pregnant women, babies, and toddlers. Recommendations for future researchers include researching policies at the village and regional level, especially policies based on local wisdom. This research does not explore policy aspects.

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#### AUTHORS' CONTRIBUTIONS

Septishiya T. C. Dewi wrote the manuscript, reviewed the manuscript, analyzed the data and revised the manuscript. Riris D. Rachmayanti designed the study, formulated the concept, reviewed the manuscript, collected and analyzed the data, and performed the field work. Rian Diana reviewed and revised the manuscript. Ali Khomsan designed the study, formulated the concept, collected data, and performed the field. Hadi Riyadi and Aninditya A. Riswari designed the study, formulated the concept, collected data. All authors read and approved the final manuscript.

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#### COMPETING INTERESTS

The authors confirm that all of the text, figures, and tables in the submitted manuscript work are original work created by the authors and that there are no competing professional, financial, or personal interests from other parties.

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