

## The Effect of Giving Temulawak Honey Cookies (Curcuma zanthorrhiza) on Toddler Weight Gain

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### ABSTRACT

Nutritional problems in South Kalimantan need more attention. This is because toddlers (aged 0-59 months) who experience nutritional problems in the Weight/Age (W/U) indicator, namely the poor nutrition category, are at a prevalence of 5.5% above the national figure of 3.9% Data from the Banjarbaru Guntung Payung Health Center based on BB/U there are toddlers with poor nutritional status as much as 36% and poor nutritional status as much as 11%. One of the efforts to prevent undernourished children under five is by Quasy experimental research design with One Group Pre test and Post test designs. The research sample was 30 toddlers aged 24-59 months who were undernourished according to age as a result of weighing at the Guntung Payung Health Center in May-June 2021. The general purpose of this study was to modify supplementary feeding (PMT) to toddlers by giving honey and ginger supplements in cookies to improve the nutritional status of toddlers or toddlers to normal nutritional status. The research instrument used was a questionnaire and direct weighing of children under five. Descriptive and statistical data analysis used paired t-test. The results of the paired t test showed that there was an effect of giving ginger honey cookies (Curcuma zanthorrhiza) ( $p=0.000$ ) on the weight gain of toddlers in Guntung Payung Village, Banjarbaru.

**Keywords:** Cookies, honey, curcuma zanthorrhiza, toddler weight

### INTRODUCTION

Indonesia is a developing country that has complex problems, especially in terms of nutrition. The trend of nutritional problems in Indonesia is the triple burden of malnutrition which includes overweight (overweight), chronic malnutrition which is characterized by short stature (stunting) and poor nutrition (wasting). Poor nutritional status in toddlers will affect growth, development, intelligence and can cause other diseases.<sup>1</sup> Prolonged difficulty eating will affect the child's growth and development process, one of which is weight loss and this can make children malnourished.<sup>2</sup> Decreased appetite is experienced by about 25% of toddlers in Indonesia. This decrease in appetite will have an impact on decrease in food intake and can result in weight loss.<sup>3</sup> Traditional medicine in Indonesia to overcome lack of appetite is one of them by giving herbal honey and temulawak (curcuma xanthorrhiza). High levels of glucose (dextrose) and fructose (levulose) in honey are easily absorbed by the intestines along with other organic substances, so that it can act as a stimulus and improve appetite.<sup>4</sup> Temulawak can increase appetite in

patients with primary anorexia because ginger contains substances active curcumin per 100gr as much as 2.20% which can help smooth the digestive process and correct abnormalities in bile, so that the process of absorption of food in the intestine is better. Temulawak contains curcumin and curcuminoids. Curcumin has an effect pharmacology as antihepatotoxic (preventing liver), antioxidants, and reduce levels of liver damage and functions as a detox.

While temulawak contains curcuminoids and essential oils that help the performance of bile and pancreas so that the absorption of food in better in the gut. There is an increase in work from bile and pancreas will increase food digestion process. Combination of honey and ginger will increase the efficacy both in increasing appetite. Nutritional problems in South Kalimantan need to be given more attention. This is because toddlers (aged 0-59 months) who experience nutritional problems in the Weight/Age (BB/U) indicator, namely the poor nutrition category, are at a prevalence of 5.5% above the national figure of 3.9%, while for the city of Banjarbaru the category is Malnutrition is at 6.2%, which is above the

provincial figure of 5.4%.<sup>6</sup> Secondary data collection at the Guntung Payung Health Center Banjarbaru based on BB/U, there are children under five with poor nutritional status as much as 36% and poor nutritional status as much as 11%.<sup>7</sup>

The general objective of this study was to modify the provision of additional food (PMT) to toddlers by supplementing honey and ginger on cookies to improve the nutritional status of under-fives or poor children to normal nutritional status in order to reduce the number of undernourished and malnourished children under five in the South Kalimantan region, especially in the Guntung Manggis Village area.

## METHOD

This study is a Quasy Experiment (quasi-experimental design) with a One Group Pre test and Post test design because in this study the aim was to see the development and weight gain of toddlers before and after treatment. The research was carried out at the Guntung Payung Health Center Banjarbaru, South Kalimantan Province, the time of the study will be carried out for 1 (one) month, namely in October 2021. The population in this study were all toddlers in Guntung Payung Village, there were 78 toddlers. The research sample was toddlers aged 24-59 months who were underweight according to age based on the results of weighing at the Puskesmas in May-June 2021. There were 30 undernourished toddlers in Guntung Payung Village and their weight was weighed. Respondents in this study were mothers or closest people who took care of toddlers who had been designated as

samples. The sampling technique used the all sampling method. Respondent's identity, including: data on respondent characteristics (mother's identity, place/date of birth, address, age, education, occupation, religion, ethnicity and number of biological children). Meanwhile, the sample identity includes: data on the characteristics of children under five (name, age, gender) which is collected using the sample identity form. The instruments used in this study were questionnaires, digital scales and the Nutrisurvey program which were taken from primary data.

Univariate analysis with frequency distribution table, bivariate analysis to see the effect of giving cookies with the addition of temulawak honey on the increase in the weight of undernourished children under five in Guntung Payung Village, a paired difference test was performed. The first step is to test for normality if the data is normally distributed, then the test used is the dependent T test with a 95% confidence level.

## RESULT AND DISCUSSION

Based on Table 1, it is known that the dominant respondent has 2-3 children (63.3%), the gender of the toddler is male (56.7%), Parents' education is high school (SMA) (63.6%), and occupation farmer parents (36.7%), and the effect of giving ginger honey cookies (*Curcuma zanthorriza*) on toddler body weight can be seen in Table 2, while the organoleptic test of ginger honey cookies (*Curcuma zanthorriza*) based on shape, color, crispness, aroma and taste can be seen in Figure 1.

**Table 1. Frequency Distribution of Number of Children, Gender of Toddlers, Parents' Education, and Parents' Occupation**

Variable	Frequency	Percentase (%)
<b>Number of Children</b>		
1 Child	8	26,7%
2-3 Child	19	63,3%
> 3 Child	3	10,0%
<b>Toddler Gender</b>		
Girl	13	43,3%
Boy	17	56,7%
<b>Parent Education</b>		
Sarjana	10	33,3%
SMA	19	63,6%
SD	1	3,3%
<b>Parent's Job</b>		
Honorary Teacher	1	3,3%
Private Employees	8	26,7%
Farmer	11	36,7%
Enterpreneur	6	20,0%
Does not Work	4	13,3%

Variable	Frequency	Percentase (%)
<b>Toddler Weight Gain</b>		
Go on	24	80%
Permanent	2	6,6%
Down	4	13,3%

Source: Primary Data 2021

**Tabel 2. The Effect of Giving Ginger Honey Cookies to Toddlers' weight gain**

Variable	N	SE	Mean	SD	p-Value
Toodler Weight Gain (Pre & Post)	30	0,0716	0,37	0,3923	0,000

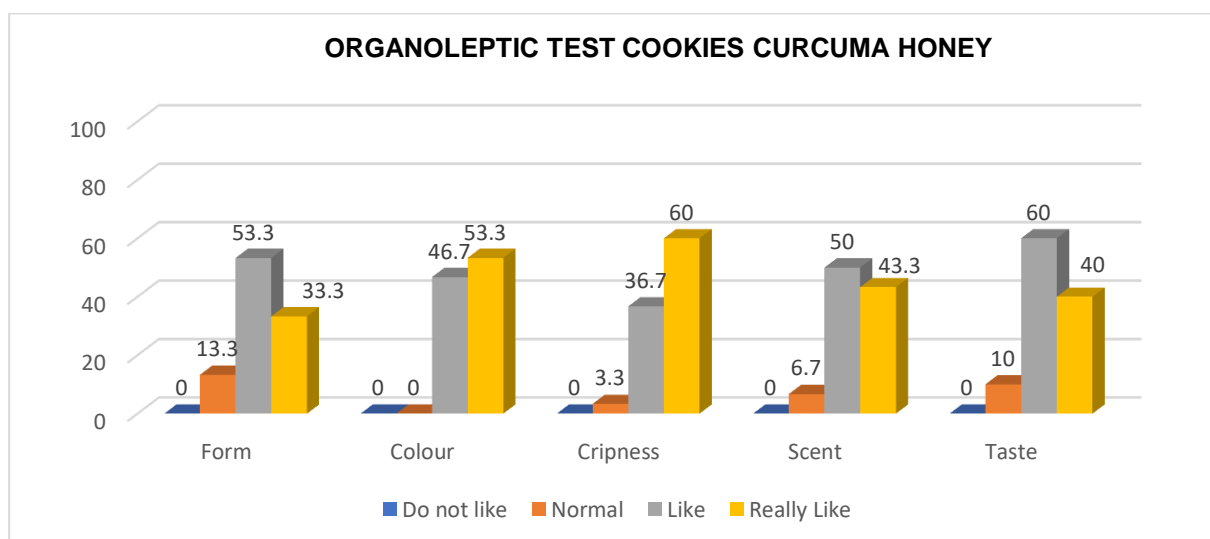
Source: Primary Data, 2021

The results of the statistical test obtained a value of = 0.000, that there was a difference before and after giving Temulawak honey cookies (*curcuma zanthorriza*) to the weight gain of children under five in the working area of the Guntung Payung Health Center, Banjarbaru City in 2021, this is supported by data on the weight gain of children under five years old. increased (80%) during the administration of temulawak honey cookies (*Curcuma zanthorriza*) and organoleptic test data which showed the percentage >50% of respondents liked the given ginger honey cookies (*Curcuma zanthorriza*).

The results obtained during organoleptic tests on respondents and children under five were carried out as many as 60% of respondents chose the category of liking the taste of Temulawak honey cookies (*Curcuma zanthorriza*) because there was no bitter taste

in cookies, this was caused by the addition of honey and premium chocolate which was low in fat so that remove the unpleasant taste of ginger in cookies.<sup>8</sup>

Appetite is a state that encourage someone to satisfy his desire in terms of eating, old child 1 year old begins to show desire in terms of eating. There are times children like only one type of food and refuse other foods. 2 years old child have an erratic diet and start having trouble eating or being picky food. Lack of appetite is a common problem for toddlers. This situation caused by several factors, namely organic disease (organ dysfunction) organs), psychological and regulatory eat bad So that in a long time sufficient the child's nutrition is not met, and it is said that the child it is malnourished. While the consequences caused by malnutrition prolonged is a disease of malnutrition.



**Figure 1. Graph of Organoleptic Test Percentage of Temulawak Honey Cookies**

Body weight is the most important anthropometric measure in infancy and toddlerhood. Measurement of body weight is used to assess the results of an increase or decrease in all existing tissues in the body, such as body fluids so that the nutritional status and growth and development of children can be known, body weight can also be used as a basis for calculating doses and food needed for treatment, The signs of a child having difficulty eating can vary, such as eating in small portions, showing a reluctance and even refusing when it is time to eat, vomiting or spouting food that has entered the child's mouth, eating for a long time and playing with food, not at all. Willing to put food in mouth, spilling food and rejecting bribes from parents, only wants to eat liquid or mashed food, likes certain types of food and gets bored quickly with the food served. Difficulty eating problems in toddlers can be a serious problem because at this age children need more energy and nutrition for growth. The problem of nutritional deficiencies that originates from a lack of appetite, especially in children after weaning causes the child to lack protein-calories which can cause permanent brain damage, because at this age is the golden period where if brain damage occurs it is irreversible (hard to recover).<sup>9</sup>

The results of statistical tests based on table 1 of 30 children who were monitored for weight before and after giving cookies for 1 month found more than half of the weight gain categories were 24 children (80%). The weight gain category is indicated to occur because during the first weighing and the first week of giving ginger honey cookies, it is given at the same time as the distribution of deworming drugs for toddlers which can increase appetite in toddlers, WHO weight assessment based on age with NCHS (National Center for Health Statistics) standards, namely using percentile as follows: less or equal percentile with three included in the category of malnutrition. Weight assessment based on height according to WHO, namely using the percentage from the median as follows: between 89–100% are said to be malnourished moderate and less than 80% is said to be acute malnutrition (wasting). Assessment of weight based on height according to NCHS standards i.e. using percentiles as follows the 75–25% percentile says normal, the 10% percentile is said to be moderately malnourished, and less than percentile is said to be severely malnourished.<sup>10</sup>

Traditional treatments to overcome lack of appetite, one of which is by giving ginger. Temulawak is widely known to increase appetite, for generations it has been believed to

have the effect of increasing appetite.

Honey contains fructose (about 38.5%) and glucose (about 31.0%) so it is similar to synthetic sugar syrup produced in reverse, about 48% fructose, 47% glucose, and 5% sucrose. Most honey contains sugar and contains only small amounts of vitamins or minerals. Weight gain is affected by food consumption. Food consumption in children can be increased by increasing appetite. One alternative is to use traditional ingredients, namely giving ginger honey. The chemical content of ginger that can increase appetite include curcuminoids and essential oils (xanthorrhizol, germacon and others).

Essential oils and curcumin play a role in improving the work of the digestive organs, stimulating the bile wall, secreting bile and stimulating the release of pancreatic juice which contains amylase, lipase and protease enzymes to improve the digestion of carbohydrates, fats and proteins. This effect results in an increase in food consumption due to increased absorption of food substances. There is an increase in the absorption of food by the body, so the need for protein, carbohydrates and so on for the development of body cells and the formation of enzymes and hormones will be met. other organic compounds, so that it can act as a stimulus and improve appetite. Giving ginger honey as an appetite supplement is expected to increase body weight in toddlers.<sup>12</sup> Honey has benefits for meeting children's nutritional needs, increasing children's immune systems, restoring health after recovering from illness or surgery, and stimulating appetite, Traditional medicine to overcome lack of appetite eat, one of them by giving ginger. Curcuma is widely known to increase appetite, significantly hereditary has been believed to have the effect of increasing appetite eat. Curcuma can increase appetite in patients with primary anorexia because Temulawak contains curcumin which is able to correct abnormalities bile, so that the process of absorption of food in the intestine is more good.<sup>13</sup> Giving ginger and honey simultaneously to children on a regular basis can increase appetite in children, so that with increased appetite, children will experience weight gain.<sup>14</sup>

The difference in the measurement results of 30 respondents can be seen in table 2 to see the effectiveness of increasing body weight before being given temulawak and honey with the intervention group SE 0.0716, the mean difference is 0.37 SD 0.3923 with a p-value of 0.000 which means giving temulawak and honey effective against weight gain in children. Honey contains high levels of fructose and glucose so that honey can be absorbed

directly without having to convert it into a simpler form of sugar. The sugar in honey can be easily absorbed by the body.<sup>15</sup>

Temulawak contains substances that are good for digestion, if the digestion in the body works well then the nutrients will be more easily absorbed by the body. If digestion is good, appetite increases, then children will find it easier to eat all kinds of food they like. It can increase weight in children. This weight gain is influenced by an increase in appetite which affects food intake. Honey contains high levels of fructose and glucose so that honey can be absorbed directly without having to convert it into a simpler form of sugar. Glucose levels in honey will accelerate the work of insulin in storing glucose in cells and lowering glucose in the blood. This will accelerate the decrease in insulin levels in the body. High fructose does not require the help of insulin to store in the body's cells.<sup>16</sup> Previous research has shown an increase in the weight of children with poor nutritional status who received treatment by giving ginger and honey experienced an increase because temulawak contains essential oils that can increase appetite. So that the child will like the food and in the end the child's weight will increase.

Temulawak is efficacious in treating asthma, pain waist, treating ulcers, overcoming pain headache, stomachache, as well as a supplement appetite enhancer for children. The content of ginger essential oil called xanthorrhizol is a source of enhancing supplements appetite. Temulawak essential oil can occur because of its choleric properties, namely accelerating gastric emptying and digestion and absorption of fat in the intestine, then secrete various hormones that regulate the increase appetite, In addition, the function of honey in general is to meet the nutritional needs of children who not enough food for growth normally, increase the body's resistance in children, restore health after recover from illness/surgery, stimulate appetite eat. Meanwhile, in the control group that was not treated, the child's weight could increase due to the supplementary feeding program from the puskesmas so that the child's nutritional needs were met and the child's weight could increase. However, this increase in body weight was more in the case group who were given temulawak and honey, meaning that ginger and honey had an effect on increasing body weight in children.<sup>17</sup>

## CONCLUSION

Based on the results of research from 30 respondents under five, the results of statistical tests showed that there was an effect of giving

cookies honey temulawak (Curcuma zanthorriza) on weight gain of toddlers at the Puskesmas, as well as an increase in the nutritional status of toddlers who originally had poor nutritional status to normal and good nutritional status.

## REFERENCES

1. Hardiansyah dan Supariasa. Penilaian Status Gizi. Jakarta: ECG; 2017.
2. Setyaningrum. 2018. Penentuan Fraksi Aktif Ekstrak Temulawak (Curcuma Zanthorrhiza) sebagai Antioksidan. Bogor. Fakultas Matematika Dan Ilmu Pengetahuan Alam.
3. Bentian I, Mayulu N, Rattu AJM. Faktor Resiko Terjadinya Stunting pada Anak Tk di Wilayah Kerja Puskesmas Siloam Tamako Kabupaten Kepulauan Sangihe Propinsi Sulawesi Utara. JIKMU. 2017; 5(1): 1-7.
4. Puspitasari L. Kreasi dan Inovasi COMUT (Coklat Temulawak Imut) Penambah Nafsu Makan. Jurnal ABDIMAS-HIP: Pengabdian Kepada Masyarakat. 2020; 1(2): 88-93.
5. Prayudo AN, Novian O. Koefisien transfer massa kurkumin dari temulawak. Widya Teknik. . 2018; 14(1):26-31.
6. Riset Kesehatan Dasar. Badan Penelitian dan Pengembangan Kesehatan Kementerian Kesehatan RI; 2018.
7. Puskesmas Guntung Payung Banjarbaru; 2021
8. Septiana AT, Handayani I, Winarsi H. Aktivitas antioksidan dan sifat fisikokimia madu temulawak (curcuma zanthorrhiza roxb) yang ditambah ekstrak jahe (zingiber officinale rosc). Jurnal Aplikasi Teknologi Pangan. 2019; 8(4): 155-60.
9. Anwar RY, Irawati N, Masri M. Hubungan antara Higiene Perorangan Dengan Infeksi Kecacingan Usus (Soil Transmitted Helminths) Pada Siswa SDN 25 dan 28 Kelurahan Purus, Kota Padang, Sumatera Barat Tahun 2013. Jurnal Kesehatan Andalas. 2016; 5(3): 600-07.
10. Rahim F. Faktor Risiko Underweight Balita Umur 7-59 Bulan. Jurnal Kemas. 2017; 9(2): 115-21.
11. Diniyyah SR, Nindya TS. Asupan energi, protein dan lemak dengan kejadian gizi kurang pada balita usia 24-59 bulan di Desa Suci, Gresik. Amerta Nutrition. 2017; 1(4): 341-50.
12. Renny F, Arief YS, Armini NKA. Curcuma and Honey Increases Body Weight of Toddler. Jurnal Ners. 2020; 5(1): 49-54.

13. Utami WT, Heli ASK. Effect of Vitamins, Honey and Temulawak on the Appetite Improvement of Children Age 2 Years in Sembung Sukorame Lamongan. *Asuhan Kesehatan: Jurnal Ilmiah Ilmu Kebidanan dan Keperawatan*. 2018; 6(2): 44-9.
14. Prayudo AN, Novian O. Koefisien transfer massa kurkumin dari temulawak. *Widya Teknik*. 2018; 14(1): 26-31.
15. Ahmad Said. *Khasiat dan Manfaat Temulawak*. Jakarta: Sinar Wadja Lestari; 2016
16. Ronny. Madu Temulawak Meningkatkan Berat Badan Anak Usia Toddler. *Jurnal Ners*. 2019; 5(1): 49-54.
17. Wijayakusuma, Hembing. *Penyembuhan dengan Temulawak*. Jakarta: Sarana Puspa Prima; 2017.