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Utilization of iodized salt in Halahalaya Hamlet, Kanreapia Village, Gowa Regency

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ABSTRACT
Salt is a dietary supplement and source of electrolytes for the human body. Salt contains iodine. Iodine is a trace mineral that must be present in the body to form thyroid hormones and is beneficial for the body's metabolism. Iodine deficiency leads to goiter disease at various stages, slows growth in children and adults, as well as lowers labour productivity. The purpose of this service activity is to find out the use of iodized salt in Halahalaya Hamlet, Kanreapia Village. This type of service is an observational activity with a population consisting of heads of households in 92 households in Halahalaya Village. Data on the use of iodized salt were collected through interviews and direct observation using questionnaires. The results of the service showed that out of 92 households, 87 households (94.6%) used packaged salt labelled iodine, 5 households (5.4%) did not use packaged salt labelled iodine, iodine test results of 12 households were white (13.0%).), light purple iodine test results in 20 households (21.7%), dark purple iodine test results in 60 households (65.2%). The conclusion of the service is that the availability of iodized salt in Halahalaya Hamlet, Kanreapia Village is sufficient, but there is still a lack of community understanding of the use of good iodized salt, therefore cross-disciplinary cooperation is needed to a growing community knowledge.

Keywords: economic status; iodine; iodized salt; surveys

ABSTRAK
Garam merupakan suplemen makanan dan sumber elektrolit bagi tubuh manusia. Garam mengandung yodium. Yodium merupakan trace mineral yang harus ada dalam tubuh untuk membentuk hormon tiroid dan bermanfaat untuk metabolisme tubuh. Kekurangan yodium menyebabkan penyakit gondok pada berbagai tahap, memperlambat pertumbuhan pada anak-anak dan orang dewasa, serta menurunkan produktivitas tenaga kerja. Tujuan kegiatan pengabdian ini adalah untuk mengetahui pemanfaatan garam beryodium di Dusun Halahalaya Desa Kanreapia. Jenis pengabdian ini adalah kegiatan observasional dengan populasi terdiri dari kepala rumah tangga pada 92 rumah tangga di Desa Halahalaya. Data penggunaan garam beryodium dikumpulkan melalui wawancara dan observasi langsung menggunakan kuesioner. Hasil pengabdian menunjukkan bahwa dari 92 rumah tangga, 87 rumah tangga (94,6%) menggunakan garam kemasan berlabel iodium, 5 rumah tangga (5,4%) tidak menggunakan garam kemasan berlabel iodium, hasil uji iodium 12 rumah tangga berwarna putih (13,0%) .), hasil uji iodium berwarna ungu muda pada 20 rumah tangga (21,7%), hasil uji iodium berwarna ungu tua pada 60 rumah tangga (65,2%). Kesimpulan dari pengabdian adalah ketersediaan garam beryodium di Dusun Halahalaya Desa Kanreapia sudah mencukupi, namun masih kurangnya pemahaman masyarakat terhadap penggunaan garam beryodium yang baik, oleh karena itu diperlukan kerjasama lintas disiplin ilmu kepada komunitas yang sedang berkembang pengetahuan.

Kata Kunci: *status ekonomi; yodium; garam beryodium; survei*

INTRODUCTION

The Good nutrition goes hand in hand with good health. The clinical symptom of malnutrition is abnormal growth and development of the body (Elia, 2017). Therefore, an understanding of how nutritional problems arise will be the basis for establishing prevention and management strategies. Nutritional status is directly influenced by two factors, namely adequate nutritional intake for the body's needs and a person's infection status, these two factors influence each other (Laswati, 2019).

Nutritional problems are major health problems in developing countries, both macronutrient deficiencies and micronutrient deficiencies (Godswill et al., 2020). Macronutrient deficiencies are caused by insufficient or unbalanced consumption of energy and protein, whereas micronutrient deficiencies are caused by insufficient consumption of vitamins and minerals. Long-term deficiency of macro and micronutrients can lead to malnutrition or malnutrition. Nutritional problems that can arise due to micro and macro nutrient deficiencies include chronic energy deficiency (SEZ), protein energy deficiency (KEP), vitamin A deficiency, growth retardation, iron anaemia, and iodine deficiency disorders (GAKY) (Anggraeni et al., 2020).

Currently, iodine deficiency disorder (GAKY) is one of the main nutritional problems in Indonesia, with clinical manifestations similar to the iceberg phenomenon. The prevalence and prevalence of GAKY is calculated as the total goitre ratio (TGR). TGR in school children can illustrate the problem of IDD in the community. So, to find out the TGR rate in the community, it is enough to conduct a survey on school-age children (recommended between 6 and 12 years) (Pratiwi et al., 2015).

The main cause of iodine deficiency is iodine deficiency from daily consumption of food and beverages. Iodine is a micronutrient needed by the human body to form the thyroxine hormone (Hatch-McChesney &; Lieberman, 2022). The hormone thyroxine regulates growth, physical development and intelligence. Iodine is present in the body in very small amounts, about 0.00004% of body weight, or 15 to 23 mg. Groups prone to iodine deficiency problems are women of childbearing age (WUS), school-age children, young children, and pregnant women (Agustin et al., 2015).

Global data according to UNICEF in 2021 showed that among 202 countries, 91.1% of the population consumed iodized salt, with the highest consumption rate at 97.1% in Palestine. And according to WHO, it is estimated that nearly 2 billion people in 192 WHO member countries have low and inadequate iodine intake, of which 36.5% of the population are school-age children (6-12 years). In Southeast Asia alone, 96 million children have low iodine levels, followed by Africa with 50 million children with low iodine levels. Based on the results of basic health research (2018), it seems that household iodized salt coverage in terms of iodine consumption is still far from the target of 90% universal iodized salt (USI) because the level of iodized salt coverage in households in Indonesia has only reached 77.1% (Kementerian Kesehatan Republik Indonesia, 2018). According to Kementerian Kesehatan RI (2018), it seems that the consumption coverage of iodized salt is still far from the USI (Universal Salt Iodized) target of 90%. Currently the percentage of households that have enough iodized salt nationally is only 77.1%. Globally, IDD is a problem in 118 countries and affects 1.5 million people. At least 12% of them suffer from mumps, 11.2 million fools, and more than 43 million suffer from mental disorders to varying degrees.

Table 1. Frequency Distribution Based on Respondent Characteristics

Characteristics	Frequency (n=317)	Percentage (%)
Jenis Kelamin		
Men	146	46,1
Women	171	53,9
Age		
0-5 month	2	0,6
6-23 month	10	3,2
24-59 month	8	2,5
5-9 year	34	10,7
10-18 year	52	16,4
19-59 year	194	61,2
>60 year	17	5,4
Education Status		
Never school	70	22
Ungraduated elementary school	71	22,4
Elementary school	98	30,9
Junior high school	41	12,9
senior high school	29	9,3
Diploma-in-a-year	5	1,6
Graduated from college	3	0,9
Employment Status		
Students/schools	69	21,8
Farmer/farm laborer	106	33,5
Laborer/driver/domestic helper	2	0,6
Entrepeunere	4	1,3
Trade	2	0,6
Village Government	2	0,6
Village staff	2	0,6
Electerity Officer	1	0,3
Health workers	1	0,3
Not Work	128	40,4
Total Revenue		
IDR 150,000 – IDR 1,000,000	69	75
IDR 1,100,000 – IDR 3,990,000	20	21,7
IDR 4,000,000 or more	3	3,3

The most common strategy is iodized salt, which is why this section focuses on process indicators for evaluating national iodized salt programs. Based on the results of observations of iodine concentration in salt and the proportion of households that consume enough iodized salt, the interpretation will be more accurate if it is known the amount of salt consumed by each person. In general, daily salt intake is assumed to be between 5 and 10 grams per person per population number (Akbar et al., 2021).

Table 2. Data by Household Salt Packaging Type

Salt Finishing	Total (n=92)	Percentage (%)
Iodine labeled	87	94,6
Not labeled iodine	5	5,4

Geographically, the location of Kanreapia village is about 90 km east of the city of Makassar, the capital of South Sulawesi province. The geographical location of Kanreapia village is a mountainous plateau, with an altitude of about 1,500 km above sea level. Looking at the geographical conditions of the Halahalaya village area, it is located at an altitude of 1,500 km above sea level, above sea level or you could say mountainous in this region. This service aims to determine the use of iodized salt in Halahalayah Village, Kanreapia, Gowa Regency.

METHODS

This service is an observational activity carried out in RW 001 Halahalaya Village, Kanreapia Village, Kuncio Pao District, Gowa Regency. Data collection was carried out for 7 days, from 6 to 12 July 2023, using in-depth interviews with heads of households by visiting each household and direct observation. Participants in this activity included heads of households living in RW 001 Halahalaya Village with the number of informants for this activity as many as 92 people. The results of the activity are then made recommendations for the local government through hearings. The data we obtain is primary data which will then be processed univariately with spearman correlation tests using SPSS software

RESULTS AND DISCUSSION

Based on table 1, the frequency distribution of respondents' characteristics in RW 001 Halahalayah Hamlet, Kanreapia Village, Pao District, Gowa Regency, there were 317 respondents, including 146 men (46.1%) and 171 people (53.9%). %) female. Age characteristics of the youngest respondents 0 to 5 months as many as 2 people (0.6%), age characteristics of respondents over 60 years as many as 17 people (5.4%), especially the lowest education scores of respondents who did not or did not attend school as many as 70 people (22%), while the most college graduates as many as 3 people (0.9%), especially respondents' employment scores: 69 people (21.8%) classified as students or schools, 106 people (33.5%) work as farmers / agricultural laborers, 2 people each (0.6%) work as laborers / drivers / domestic helpers, shop owners, village officials, village staff, 4 people (1.3%) work as self-employed people, 1 person above each PLN employee and employee health facilities, and 128 people (40.4%) do not work, the characteristics of respondents have a total income of 69 RTs (75%) with a monthly income of Rp 150,000. – IDR 1,000,000, 20 RTs (21.7%) with monthly income of IDR 1,100,000 – IDR 3,990,000 and 3 RTs (3.3%) with monthly income of IDR 4,000,000.

Table 3. Household Income Level Frequency Data

Iodine Test Results	Total	Percentage (%)
White/non-iodized	12	13
Light purple/iodized <30ppm	20	21,7
Dark purple/iodized >30ppm	60	65,2

Table 4. Correlation of Income and Salt Use

Iodine Test Results	Total (n=92)	Percentage (%)
White/non-iodized	12	13
Light purple/iodized <30ppm	20	21,7
Dark purple/iodized >30ppm	60	65,2

Based on table 2 showing the type of household salt packaging in RW 001, that out of 92 RTs, there are 87 RTs (94.6%) that use iodine-labeled salt packaging and as many as 5 RTs (5.4%) that do not use labeled salt packaging.

Based on table 3 showing the results of household salt iodine test in RW 001, Halahalaya Hamlet, Kanreapia Village, Tombolo pao District, Gowa Regency shows that out of 92 RTs, there are 12 RTs (13.0%) whose iodine test results are white or classified as non-iodized salt, as many as 20 RTs (21.7%) whose iodine test results are light purple or classified as salt containing iodine <30 ppm, and as many as 60 RT (65.2%) whose iodine test results are dark purple or classified as salt containing iodine >30 ppm. Table 4 shows the correlation between income and the use of iodine salt. The majority of respondents' use >30ppm iodine salt despite their low income.

Table 5 shows the results of bivariate analysis between household economic income groups with the use of iodized salt obtained a probability value (p value) is 0.003, which is smaller than 0.05 so that it can be concluded that there is a significant relationship between household economic income group variables and the use of iodized salt. The value of the spearman correlation coefficient (r) of 0.389 indicates the strength of the moderate relationship. From the results of bivariate analysis, there is a relationship between household income and the use of iodized salt because high and low income also affects the amount of salt used at home which is a source of micronutrients, namely iodized salt.

Salt is one of the food needs and is a source of electrolytes for the human body. Although Indonesia is a salt producing country, most of the needs of good quality salt must still be imported from abroad, especially in this case iodized salt and industrial salt (Astutik, 2017). Iodine is one of the trace elements that must exist in the body, has the function of forming thyroid hormones and is beneficial for the body's metabolism. Iodine Deficiency Disorder (GAKY) is one of the micronutrient problems in Indonesia that has a direct or indirect impact on the survival and quality of human resources (Nugroho et al., 2021).

Daily iodine needs can be met in various ways, including preparing / giving food products from certain preparations rich in iodine. Biscuits are pastries, crispy, thin, flat and usually small in size. Biscuits can also be active if the ingredients added during production are physiologically active and have a positive effect on body health, for example biscuits enriched with fiber, calcium or vitamin A preservatives (Asikin & Anggraeni, 2022).

Table 4. Non-Parametric Correlation Test Results of Household Income Level with Salt Use

	Use of iodized salt		
Economic income	***N***	***p value***	***r***
	92	0,003	0,389

The body needs about 100 to 150 micrograms of iodine per person per day. Iodine plays a very important role in the production of thyroid hormones. This hormone plays a role in the body's metabolism. This iodine deficiency can cause goiter disease in various stages, endemic cretinism characterized by mental disorders, hearing loss, and growth disorders in children and adults (Hatch-McChesney& Lieberman, 2022). Iodine Deficiency Disorder (GAKY) is a group of symptoms that can occur due to a person's body constantly deficient in iodine for a long time and can be prevented by consuming iodine. according to SNI No. 01-3556-2010 concerning iodized salt for consumption and regulation of the Minister of Industry No. 42/MIND/PER11/2005 concerning processing, packaging and labeling of iodized salt, the iodine content added to salt is 30 to 80 mg KI03/kg salt (30 to 80 ppm).

In the service carried out at RW 001 Halahalaya Village, out of a total of 92 RTs, 12 RTs were found to contain iodized salt, but the iodine test results carried out showed negative white or salt-free results. iodine. iodine and in these 12 RT there is salt. The iodine test results were empty, but they claimed to buy salt labeled iodine and as many as 80 RTs had salt containing iodine and used it well, so it can be said that most of the salt in the product contains iodine. On the market contains good iodine and contains it in large quantities. Many people know the benefits of iodine.

The results of a previous study conducted in Telemung Village, Kalipuro District, Banyuwangi Regency in 2020 showed that the level of availability and use of iodized salt is generally more than the level of availability and use of non-iodized salt. This is because the people in Telemung village already know what benefits can be obtained from iodized salt and the consequences caused if iodine needs are not met (Agustin, 2015).

The results of a study conducted in Krebet Village, Jambon District, Ponorogo Regency found that out of 87 respondents, only a small part, namely 9 (10.3%) stored salt in a closed jar. The selection of iodized salt is appropriate, but it does not rule out the possibility that iodine consumed is also small. This can be caused by improper ways of storing. Salt should be stored in a closed container and not exposed to sunlight, keep away from stoves and fireplaces, store in glass jars / bottles, because if stored in a plastic container can experience a decrease in iodine levels. Iodine salt needs to be stored in a closed vessel or container, not exposed to light, not close to a damp place of water. This is to avoid decreasing iodine levels and increasing water content, because iodine levels decrease when exposed to heat and the remaining water content will attach iodine (Muftiana &; Munawaroh, 2016).

The results of a study conducted by Lamid et al., (2018) in 12 villages of East Java and West Nusa Tenggara Provinces showed that more than 86% of respondents in East Java used iodized salt while in West Nusa Tenggara only 10-16%. This shows that most respondents already know the benefits of iodized salt in addition to the support of the availability of iodized salt in the village so that the use of iodized salt in East Java is high. In addition, only a small percentage of respondents in East Java do not use iodized salt due to habitual factors and the price of iodized salt which is considered more expensive. These results are in line with the results of a study conducted in Telemung Village, Kalipuro District, Banyuwangi Regency (Kusmita &; Mandagi, 2021).

CONCLUSIONS

From the results of the activity, it can be concluded that most households in RW 001 Halahalaya Village, Kanreapia Village, Kuncio Pao District, Gowa Regency use iodized salt

containing a minimum of 30 to 80 ppm iodine. Although most use salt labelled iodine, some test results show differences between the content of the label and the actual content. For this reason, it is important to increase public awareness of the importance of choosing iodized salt for health. These results are then presented to the local government as input into the importance of salt use in the region. To address situations where salt is labelled iodine but test results show discrepancies between the label and the actual content, the role of education, salt quality control and interdisciplinary collaboration will be key to improving people's health and quality of life. village community RW 001 Halahalaya, Kanreapia village, Kuncio Pao sub-district, Gowa regency.

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