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Article Review

Provision of Peanuts as Additional Food in Stunting Prevention for Pregnant Women During the COVID-19 Pandemic: A Systematic Review

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ABSTRACT

During pregnancy, meeting the needs of nutritious food and drinks is very much needed. The development and growth of the fetus including length and weight at birth is an illustration of one of the factors of the mother's nutritional status. To analyze and identify scientific evidence related to peanut as supplementary feeding in preventing stunting babies in pregnant women during the Covid-19 pandemic. This article is a systematic review. The PRISMA diagram was used based on a checklist to determine the articles to be analyzed. PICOT (P: pregnant women, I: peanut, C: -, O: stunting prevention, T: 2017 - 2022) and MESH. The databases used in the search for articles include Willey Online Library, Garuda, ProQuest, Science Direct, Google Scholar, and PubMed. There were 21,937 articles obtained from the search process from the database. There are 5 articles that were reviewed, from the result of the critcal assesment RCT CASP & JBI CASP check list for Quasi-Experimental. In the CASP RCT there are 11 questions, the initial 2 questions about research focus and sampling, if you have 2 answers Yes the article can be used. The JBI Critical Appraisal Checklist contains 9 questions, while the determination of the grade and level of each article uses Johns Hopkins Nursing Evidence-Based Practice. To assess the risk of bias, the authors used the Cochrane Risk Of Bias Assessment Tool which consists of 7 domains. Giving peanuts to pregnant women has a very significant effect in preventing stunting during the Covid-19 pandemic. This is because giving peanuts as additional food to pregnant women and toddlers can increase body weight and upper arm circumference of pregnant women, improve nutritional status, increase protein and energy intake, increase milk production in pregnant women, and increase the duration of pregnancy. The limitations of some articles obtained are some articles do not do blind in on giving treatment to participants, sample size some articles found little sample.

Keywords: *Arachis Hypogaea, Pregnant Women, Peanuts, PMT, Stunting.*

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INTRODUCTION

During pregnancy, meeting the needs of nutritious food and drinks is very much needed. The development and growth of the fetus including length and weight at birth is an illustration of one of the factors of the mother's nutritional status. The high level of poverty in Indonesia results in high rates of malnutrition which can affect the growth of the baby's brain, stunted fetal growth, the risk of infant death, increased morbidity, low birth weight, and can lead to stunting[1]. Stunting is a condition where there is chronic malnutrition due to insufficient nutritional intake from the fetus to the toddler's growth period [2].

As an effort to overcome the occurrence of malnutrition, the Indonesian government has created a program for providing supplementary food to pregnant women [3]. One of the food ingredients for supplementary feeding is peanuts, processed peanut foods can be in the form of porridge, formula drinks, supplements, biscuits and

processed food products in various forms [3,1,4,5]. Provision of additional food is very significant in fulfilling the nutritional needs and adequacy of pregnant women in reducing the prevalence of malnutrition in pregnant women and also stunting.

The prevalence of stunting in the world according to WHO data shows that in 2019 it was 22.4% and in 2020 it was 22% [6]. Whereas in data from the Central Statistics Agency the number of toddlers experiencing stunting in Indonesia in 2016 (14,43%), 2017 (14%), and 2018 (13,80%). In the province of South Sulawesi the prevalence of stunting was recorded in 2016 (20,2%), 2017 (17,90%) and 2018 (18,40%) [7].

Inadequate nutritional intake in pregnant women can result in babies with low birth weight (LBW) so that growth becomes stunted. Toddlers with low birth weight have a risk of leading to stunting by 1.7 times when compared to toddlers with normal birth weight. In a study conducted by Sukmawati et al., 2018 [8], shows that the nutritional status of the mother during pregnancy affects the incidence of stunting and there is a relationship between the baby's birth weight and stunting in toddlers [8]. The same thing was also reported through literature reviews and systematic reviews that for efforts to combat stunting toddlers by administering nutrients either singly or in combinations of 2-3 nutrients in multi-micro-nutrients have been carried out a lot and have had an inconclusive impact, preventing toddlers from becoming stunting [9]. Factors that can cause stunting are antenatal nutritional status during pregnancy in the form of insufficient protein, energy and iron. One of the countermeasures that can be done is to conduct health education for pregnant women so that they are more focused on paying attention to the nutritional intake during pregnancy [10]. Base on that phenomena, this review was conducted with the aim of analyzing and identifying scientific evidence related to peanut supplementary feeding in preventing stunting babies in pregnant women during the Covid-19 pandemic.

METHOD

Study Design

This study used a systematic review research design which was compiled based on the PRISMA checklist [11].

Article Criteria

The questions used to review articles in journals are in accordance with PICOT (**P**: patient is pregnant mother, **I**: arachis hypogaea / peanut, **C**: control, placebo, or any intervention, **O**: stunting prevention, **T**: 2017 – 2022) and MESH : pregnant mother* OR pregnants AND peanut OR peanuts OR arachis hypogaea AND stunting. The research question in this systematic review is whether giving peanuts as an additional food can prevent stunting in pregnant women during a pandemic ?

Description of PICOT

P	**Pregnant women**
I	Peaunut OR arachis hypogaea
C	-
O	Stunting prevention
T	2017 - 2022

Study Identification

We searched for articles using the Willey online library database, Garuda, Proquest, Science Direct, Google Scholar, and PubMed.

Eligibility Criteria

The number of articles obtained from the search process was 21,937. Then the articles were filtered in the form of articles that were full-text & open access, articles for the last 5 years, English and Indonesian so that there were 5.009 articles. Furthermore, articles are screened, namely the type of document must be in the form of research articles & associated data so that 20 articles are obtained. In the final process, duplicate articles were excluded and the type of article was not in the form of RCT, experimental, quasi-experimental, intervention so that the total number of articles included was 5 articles (Figure 1).

Data Extraction

In this study, the data extracted in each included article are title, author, country, research design, intervention, instruments, results, and conclusions (Table 6). Methods in each article are identified, summarized, categorized by theme, and systematically synthesized.

Article Quality Assessment

To assess the feasibility of the articles that have been included, they were screened through the RCT Critical Appraisal Skills Program (CASP) and the JBI Critical Appraisal Checklist. In the CASP RCT there are 11 questions, the initial 3 questions about research focus and sampling, if you have 2 answers Yes the article can be used, and the next 8 questions assess the quality of the article in the blinding segment of the sample, effect size, precision, and applicability of the research results to the population local (Table 1) [12]. The JBI Critical Appraisal Checklist contains 9 questions, three questions concerning sampling and research focus, if you have two responses Indeed, you can use the article (Table 2) [13]. While the determination of the grade and level of each article uses Johns Hopkins Nursing Evidence-Based Practice (Table 3) [14]. Systematic review of randomized controlled trials (RCTs), with or without meta-analysis (Level 1), consistent, generalizable results, sufficient sample size for the study design, adequate control, definitive conclusions, and consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence (High Quality). Quasi-experimental study—systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis (Level 2), reasonably consistent results; sufficient sample size for the study design; some control; and reasonably definitive conclusions (Good Quaity). Insufficient sample size for the study design; little evidence with contradictory outcomes; unable to make conclusions (poor quality or significant quality) additionally study that is not experimental, combined RCTs, quasi-experimental and non-experimental research, or only non-experimental studies, in a systematic manner, with or without meta-analysis a meta-synthesis or a qualitative investigation combined with or without a systematic review (Level 3).

To assess the risk of bias, the authors used the Cochrane Risk Of Bias Assessment Tool which consists of 7 domains (Table 4) [15]. Random sequence is provide enough information about the allocation sequence generation process to enable an evaluation of whether or not comparable groups should be produced. Allocation concealment is if intervention assignments might have been predicted before or during enrollment, explain the strategy utilized to hide the allocation process in enough detail. Blinding of participants and personnel is describe all the steps taken, if any, to prevent researchers and trial participants from learning which intervention a participant got. Provide any details about the effectiveness of the planned blinding. Blinding of outcome assessment is describe all the methods (if any) utilized to keep the outcome assessment blind to the participant's intervention. Provide any details about the effectiveness of the planned blinding. Incomplete outcome data is enumerate each primary result's completeness in terms of outcome data, taking into account attrition and analysis exclusions. Indicate if attrition and exclusions were disclosed, the total number of participants in each intervention group (in comparison to the total number of randomly assigned participants), any reported exclusions or attrition causes, and any reinclusions in the review's analysis. Selective reporting is describe the investigation of selective result reporting and the findings. Anything else, ideally prespecified is indicate any significant worries you have regarding bias that aren't addressed in the tool's other domains.

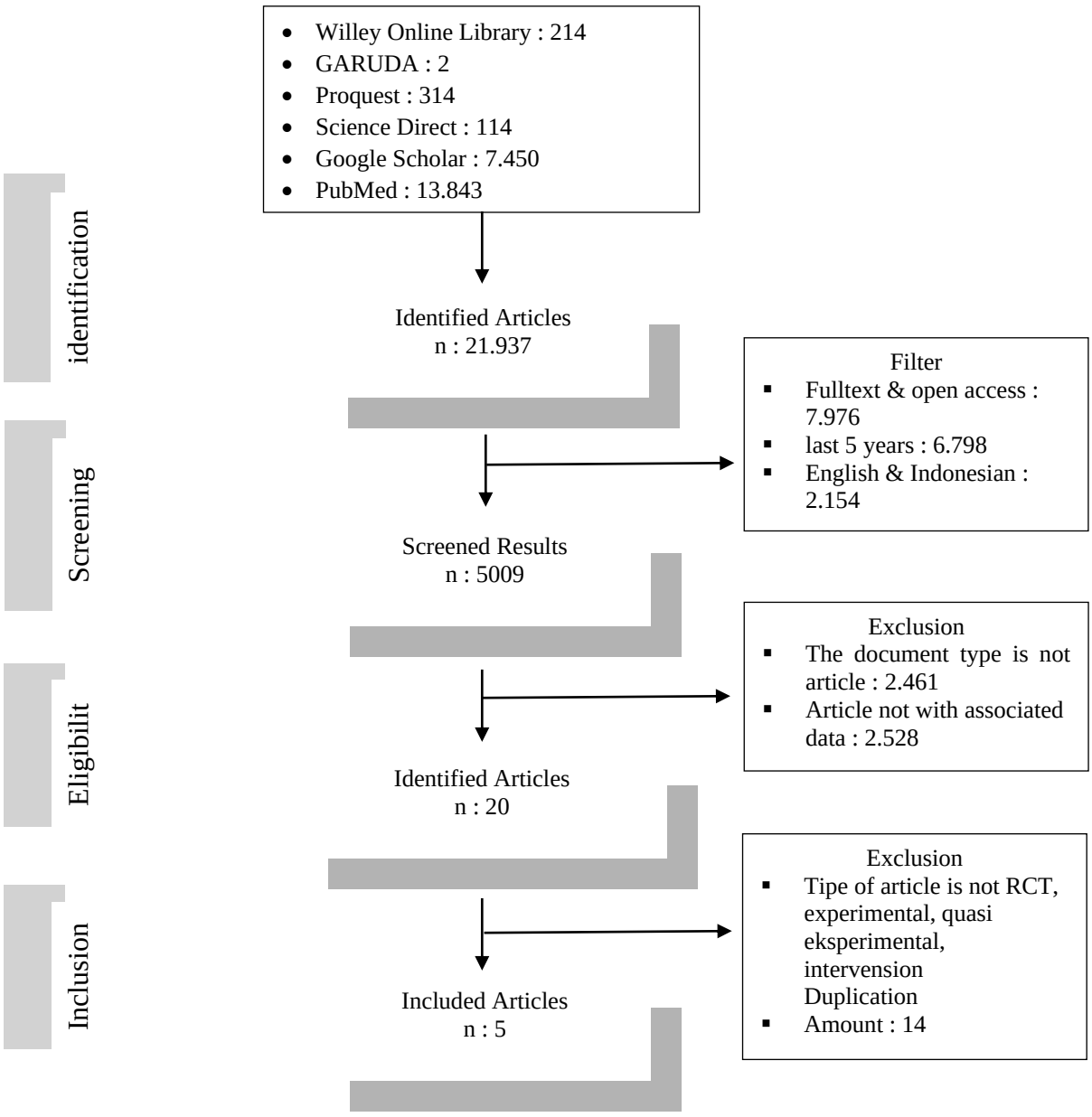

Figure 1. Article Selection and Exclusion Flowchart

Table 1. CASP RCT

Question of Critical Appraisal	Feeney et al, 2017	Utami et al, 2017	Susiloretni et al, 2021	Kok et al 2022
Did the study address a clearly focused research question ?	Yes	Yes	Yes	Yess
Was the assignment of patients to treatments randomised?	Yes	Yes	Yes	Yes
Were all of the patients who entered the trial properly accounted for at its conclusion?	Yes	Yes	Yes	Yes
Were patients, health workers and study personnel 'blind' to treatment?	Can't Tell	Can't Tell	Can't Tell	No
Were the groups similar at the start of the trial (characteristics baseline) ?	Yes	Yes	Yes	Yes
Aside from the experimental intervention, were the groups treated equally?	Yes	Yes	Yes	Yes
How large was the treatment effect? (p-value)	Yes	Yes	Yes	No
How precise was the estimate of the treatment effect? (MD & CI)	Yes	Yes	Yes	Yes
Can the results be applied to the local population, or in your context?	Yes	Yes	Yes	Yes
Were all clinically important outcomes considered?	Yes	Yes	Yes	Yes
Are the benefits worth the harms and costs?	Yes	Yes	Yes	Yes

Table 2. JBI CASP Checklist for Quasi-Experimental

Question of Critical Appraisal	Batubara & Siregar, 2021
Is it clear in the study what is the "cause" and what is the "effect" (i.e. there is no confusion about which variable comes first) ?	Yes
Were the participants included in any comparisons similar ?	Yes
Were the participants included in any comparisons receiving similar treatment / care, other than the exposure or intervention of interest ?	Yes
Was there a control group ?	No
Were there multiple measurements of the outcome both pre and post the intervention / exposure ?	Yes
Was follow up complete and if not, were differences between groups in terms of their follow up adequately desribed and analyzed ?	Yes
Were the outcomes of participants included in any comparisons measured in the same way ?	Yes
Were outcomes measured in a reliable way ?	Yes
Was appropriate statistical analysis used ?	Yes

Table 3. Level Evidence and Quality Quides (Johns Hopkins Nursing Evidence-Based Practice)

(Author, Year)	Evidence Levels	Quality Guides
(Feeney et al, 2017), I/A (Utami et al, 2017), I/A (Susiloretni et al, 2021), I/A (Kok et al 2022), I/A	**Level I** Experimental study, randomized controlled trial (RCT). Systematic review of RCTs, with or without meta-analysis.	**A High quality:** Consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence.
(Batubara & Siregar, 2021), II/B	**Level II** Quasi-experimental study Systematic review of a combination of RCTs and quasi-experimental, or quasi-experimental studies only, with	**B Good quality:** Reasonably consistent results; sufficient sample size for the study design; some control, fairly definitive

	or without meta-analysis. **Level III** Non-experimental study Systematic review of a combination of RCTs, quasi-experimental and non-experimental studies, or non-experimental studies only, with or without meta-analysis Qualitative study or systematic review with or without a meta-synthesis.	conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence. **C Low quality or major flaws:** Little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn.

Table 4. Biased Risk Assessment

(Author, Year)	Random sequence generation (Selection bias)	Allocation concealment (Selection bias)	Blinding of participants and personel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other sources of bias (other bias)
(16)[16]	+	+	?	?	+	+	+
(3)[3]	+	+	+	+	+	+	+
(1)[1]	+	?	-	-	+	?	?
(17)[17]	+	+	?	+	+	+	+
(18)[18]	+	?	+	+	+	+	+

Noted : (+) Low biased risk, (-) High biased risk, (?) Unclear risk of bias

RESULTS

Characteristics Study

In this systematic study, there were 5 articles obtained where the type of research was randomized control trial (RCT) and quasy experimental. All of the articles obtained, they were published from 2017 to 2022. The research was conducted in the United Kingdom, Indonesia and Belgium. All respondents in this study were pregnant women, breastfeeding mothers and infants/ toddlers with a total sample of 15-909 samples.

Table 5. Characteristics of The Study

Author / Year	**Country**	**Research Design**	**Mean (SD) of Age**	**Participant**		
				Intervensi	***Control***	***Placebo***
Feeney et al, 2017	London (United Kingdom)	RCT	7.8 (5.8)	319	321	N/A
Utami et al, 2017	Indonesia	RCT	27	20	22	42
Batubara & Siregar, 2021	Indonesia	Quasi Experimental	20.5	15	N/A	N/A
Susiloretni et al, 2021	Indonesia	RCT	24.8±3.7	30	17	N/A
Kok et al 2022	Belgia	RCT	33.4±9.33	879	909	N/A

Noted : N/A = not avilable

Article Quality Assessment

In the study conducted, in assessing the feasibility of an included article, the authors used the RCT Critical Appraisal Skills Program (CASP) and the JBI Critical Appraisal Checklist. There were 5 articles assessed with the type of RCT and quasy experimental research designs. From the research, most of the articles have explained the randomization of the sample, the purpose of the study, the homogeneity of the sample and its applicability to the local population (Tables 1 & 2). In addition, to assess the feasibility of an article from this study using the level of evidence and quality guides (Johns Hopkins Nursing Evidence-Based Practice). There were 5 articles assessed in this study, where the research conducted by Feeney et al. (2017), Utami et al. (2017), Susiloretni et al. (2021), Kok et al. (2022) are at level I/A quality (high quality). Whereas in the Coal & Siregar research. (2021) it is at level II/B quality (good quality) (Table 3).

Effects of Giving Peanuts in Stunting Prevention for Pregnant Women and Babies/Toddlers

Several studies have shown that giving peanuts as an additional food to pregnant women and toddlers shows very significant and good results in preventing stunting. There was an increase in body weight and upper arm circumference between groups of pregnant women and the increase in the treatment group was higher than the control ($\rho<0.005$). The peanut formula group had a higher increase in nutritional status than the other groups. The peanut formula group also showed an increase in protein and energy intake above the adequacy rate compared to other groups [1],then the average consumption of peanuts per week (grams) FFQ in the first month where the consumer group is 298 (93.4%), median 7, while in the avoiders group 313 (97.5%), median 0.0 and ρ value of both group in the first month of intervention was <0.01. Then the intervention in the first 6 months, consumers 319 (100%), median 7.9, avoiders 321 (100%), median 0.0 and ρ value for both groups is <0.01[16]. The effect of giving peanut extract to increase milk production in pregnant women with ρ value: 0.001 in 11 people (73.4%) of the total sample[3], increased the duration of pregnancy (+0.20 weeks, 95% CI 0.05 to 0.36, ρ : 0.010), birth weight (50.1 g, 8.11 to 92.0, p = 0.019), birth length (0.20 cm, 0.01 to 0.40, p = 0.044) , chest circumference (0.20 cm, 0.04 to 0.37, p = 0.016), arm circumference (0.86 mm, 0.11 to 1.62, p = 0.025) [18].

Table 6. Synthesis Grid

No.	Title	Reseacher & Country	Study Design	Interventioni	Sample Size	Instrument	Result
1.	Impact of peanut concsumption in The LAP Study : feasibility, growth, and nutrition.	Feeney, et al.[16], United Kingdom	RCT	Infants aged 4 to <11 months with severe eczema and/or egg allergy were randomly assigned to eat or avoid peanuts until 60 months of age. Participants randomized to peanut consumption (except those with a diagnosed peanut allergy) were advised to eat at least 6 grams of peanut protein per week distributed over three or more meals per week until age 60 months.	The consumers group had 319 participants, while the avoiders group had 321 participants with a total of 640 participants.	Anthropometry, monitoring the consumption of peanuts is the Food Frequency Questionnaire (FFQ).	There were no differences in anthropometric measurements or energy intake between groups at each visit. Regular consumption of peanuts causes differences in food intake. Consumers have a higher intake of fat and avoiders have a higher intake of carbohydrates; the difference was greatest in the upper quartile of peanut consumption. Protein intake remained consistent between groups. The average consumption of peanuts per week (grams) FFQ in the first month where the consumer group is 298 (93.4%), the median is 7, while in the avoiders group there are 313 (97.5%), the median is 0.0 and the ρ value of the two groups in the first month of intervention was <0.01. Then the intervention in the first 6 months, consumers 319 (100%), median 7.9, avoiders 321 (100%), median 0.0 and the ρ value of the two groups is <0.01.
2.	Provision of red bean, peanut, and soybean formula drinks on the nutritional status of chronic energy deficient pregnant women.	Utami, et al.[3], Indonesia	RCT	The intervention was carried out for 30 days by giving 300 ml of drink which was divided into 4 treatment groups which were given the formula of red beans (A), peanuts (B), and soybeans (C). while the control group (D) was given formula milk for pregnant women according to what was given by the puskesmas.	The subjects in the study group were 20 peanuts, 22 soybeans, 22 red beans, and 20 pregnant women's milk. So the total sample was 84 people.	Subject characteristic questionnaire and food frequency questionnaire (FFQ), nutrition survey.	There was no difference between experimental and control group in BMI wether before and after the intervention. There was an increase in body weight and upper arm circumference of pregnant women between groups and the increase in the treatment group was higher than that of the control group (p<0.005). The peanut formula group had a higher increase in nutritional status than the other groups. In addition, the peanut formula group also showed an increase in protein and energy intake above the adequacy rate compared to the other groups. The study conclude that the nutritional status of pregnant women who received peanut formula was higher than those who were given red bean, soybean, and formula milk for pregnant women. Moreover, energy and protein intake were higher in pregnant women who received peanut formula.

3.	The effect of giving peanut extract to increasing milk production in breastfeeding mothers in the village of Padang Baruas, North Padang Lawas Regency in 2020.	Batubara, et al.[1], Indonesia	Quasi Experimental	The intervention group was divided into two parts, namely pre-intervention and post-intervention with pregnant women as subjects.	The number of samples in this study were 15 people.	Questionnaire developed by researchers.	The results showed that giving peanut extract to pregnant women has a significant effect on increasing milk production with ρ value: 0.001 as many as 11 people (73.4%) of the total sample.
4.	Low-cost local food supplements could improve maternal and birth outcomes in Indonesia: A pilot randomised controlled trial	Susiloretni, et al.[17] Indonesia	RCT	The intervention group received LFS (local food supplements) and MMS (multiple micronutrient supplements). LFS is an energy balanced protein food supplement made from peanuts, chickpeas and fish. The control group received GFS (government food supplements) & iron and folic acid (IFA) supplements.	The intervention group was 30 people and the control group was 17 people.	Indonesian food nutrition survey software and structured interviews with questionnaires.	After 60 days of treatment, adherence to food and micronutrient supplements in the LFS group was 78.1% and 62.6% compared to 29.1% and 12.8% in the GFS group, respectively. After adjusting for baseline and main covariates, mothers in the LFS group were more likely to have increased MUAC (mean difference 0.60 cm; 95% CI 0.27, 0.92) and to increase gestational weight (mean difference 1 .02 kg; 95% CI 0.08, 1.97) compared to mothers in the GFS group. For birth outcomes, the LFS group had a reduced risk of birth weight <3000 g (adjusted odds ratio [AOR] 0.15; 95% CI 0.02, 0.98), caesarean delivery (AOR 0.11; 95% CI 0. 0.02, 0.60) and short birth length (AOR 0.07; 95% CI 0.01, 0.93) compared to the GFS group. Local food and MMS supplementation can improve maternal and child health at birth. Therefore, LFS administration may result in better adherence and better outcomes compared to centrally distributed GFS supplements.

5.	Prenatal fortified balanced energy-protein supplementation and birth outcomes in rural Burkina Faso : A randomized controlled efficacy trial.	Kok[18], Belgia	RCT	Women in the intervention group aged 15 to 40 years with gestational age <21 weeks and received daily BEP supplements and IFA tablets for the duration of their pregnancy. BEP supplementation was LNS in the form of energy-dense peanut paste fortified with MMN. 393 kcal and consists of 36% lipid, 20% protein, and 32% carbohydrates. Protein comes from soybeans (61%), milk (25%), and peanuts (15%).	The intervention group (BEP and IFA) totaled 879 participants and the control group (IFA) amounted to 909.	Anthropometry, Body Mass Index (BMI), and Mid Upper Arm Circumference (MUAC).	The intervention significantly increased gestational duration (+0.20 weeks, 95%CI 0.05 to 0.36, ρ : 0.010), birth weight (50.1 g, 8.11 to 92.0, P = 0.019), birth length (0.20 cm, 0.01 to 0.40, P = 0.044), chest circumference (0.20 cm, 0.04 to 0.37, P = 0.016), arm circumference (0.86 mm, 0 .11–1.62, P = 0.025), and decreased prevalence of LBW (−3.95 pp, −6.83 to −1.06, P = 0.007) as secondary outcome measures.

From the interpretation of the results in table 6 the synthesis of the grid above demonstrates excellent effectiveness in the feeding of the main ingredients of beans along with other derivative products in various processes. Where it is mentioned and shown can increase body weight and upper arm circumference of pregnant women, improve nutritional status, show increased intake of protein and energy, increasing milk production in pregnant woman, and increasing the duration of pregnancy

For measurements or instruments in several studies conducted systematically using anthropometry, for monitoring the consumption of peanuts are the Food Frequency Quistionnaire (FFQ), subject characteristic questionnaires, nutrition surveys, Indonesian food nutrition survey software and structured interviews with questionnaires, Body Mass Index (BMI), and Mid Upper Arm Circumference (MUAC).

DISCUSSION

This systematic review aims to analyze and identify scientific evidence related to peanut supplementary feeding in preventing stunting babies in pregnant women during a Covid-19 pandemic. There are 5 articles reviewed which are intervention research where the research design is RCT and quasy experimental. All of the articles obtained, they were published from 2017 to 2022. The research was conducted in the United Kingdom, Indonesia and Belgium. All respondents in this study were pregnant women, breastfeeding mothers and infants/toddlers with a total sample of 15-909 samples.

Giving peanuts as additional food to pregnant women and toddlers in the context of preventing stunting can increase body weight and upper arm circumference of pregnant women, improve nutritional status, show increased protein and energy intake [3, 19,20], increase milk production in pregnant women [1], and increase the duration of pregnancy [18]. However, giving peanuts should pay attention to allergic reactions in participants because this can create new problems for participants who will be intervened both in the community, family and health services [21].

From the source of the results of the research conducted a systematic review, it as found that the measurement tool or instrument used was in the form of anthropometry [16 , 5], Food Frequency Quistionnaire (FFQ) [16 , 3], Body Mass Index (BMI)[18], dan Mid Upper Arm Circumference (MUAC) [18].

In addition, in the assessment of articles using CASP, some investigators did not apply the method of blinding to some respondents, researchers, and members of the study. In research, the process of blinding is very important to prevent bias in the results of the study. In addition, in the assessment of articles using CASP, some researchers do not apply the method of blinding to some respondents, researchers, and members of the study. In research, the process of blinding is very important to prevent bias on the results of the research. By doing double blinding or single blinding this can affect the attitude of respondents or researchers in giving treatment to more objective respondents In addition, in the assessment of articles using CASP, some investigators did not apply the method of blinding to some respondents, researchers, and members of the study. In research, the process of blinding is very important to prevent bias in the results of the study. In addition, in the assessment of articles using CASP, some researchers do not apply the method of blinding to some respondents, researchers, and members of the study likes Feeney et al. (2017), Utami et al. (2017), Susiloretni et al. (2021). In research, the process of blinding is very important to prevent bias on the results of the research. By doing double blinding or single blinding this can affect the attitude of respondents or researchers in giving treatment to more objective respondents[21].

The application of nutritious feeding to pregnant women and toddlers in the context of preventing stunting can increase body weight and upper arm circumference of pregnancy women, improve nutritional status, show increased intake of protein and energy, increasing milk production in pregnant females, and increasing the duration of gestation and can be applied to local populations.

.There are limitations to several articles being reviewed, namely not explaining how much/dose of peanuts is given, how to process peanuts, and how many times peanut consumption should be consumed to avoid

allergies when pregnant women and toddlers consume these additional foods.

CONCLUSION

Giving peanuts (arachis hypogaea) to pregnant women has a very significant effect in preventing stunting during the Covid-19 pandemic. This is because giving peanuts as additional food to pregnant women and toddlers in the context of preventing stunting can increase body weight and upper arm circumference of pregnant women, improve nutritional status, show increased intake of protein and energy, increasing milk production in pregnant women, and increasing the duration of pregnancy. However, the limitations of some articles obtained are some articles do not do blind in on giving treatment to participants, sample size some articles found little sample and group control in one of the articles is not done only group intervention alone. As well as the lack of information about the mother's pregnancy age, the age of the baby and young and the length of the intervention of each article.

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CONFLICT OF INTEREST

The authors declare that this article has no financial or personal relationship or interest that significantly influences the results of this research. All authors contribute to the extraction and categorization of data. Methods in each article are identified, categorized to themes, summarized and systematically synthesized.

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