

THE INFLUENCE OF PEER EDUCATORS AND LEAFLET MEDIA USING THE HEALTH PROMOTION MODEL (HPM) APPROACH ON BLOOD SUPPLEMENT TABLET CONSUMPTION COMPLIANCE BEHAVIOR

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KEYWORDS

Peer educators, media leaflets, health promotion models, compliance, blood supplement tablets

ABSTRACT:

Introduction: Anemia is a condition where the number of red blood cells or the concentration of hemoglobin in them is lower than normal or does not meet the body's needs. Based on 2018 Riskesdas data, the prevalence of anemia in adolescent girls aged 15-24% is 32%, while the prevalence of anemia in South Sulawesi adolescent girls of high school age is 34.5% and the prevalence of anemia is 33.3% of adolescent girls who experience anemia in the Regency Maros..

Objectives: Research purposes was analyze the influence of peer educators and leaflet media using the health promotion model (HPM) approach on blood supplement tablet consumption compliance behavior.

Methods: This type of research uses an experimental design with a Factorial Design design with 2 independent variables . This research used peer educators and leaflet media with two groups, namely the peer educator intervention group totaling 32 people and the leaflet media intervention group 32 people with a total of 64 people.

Results: After the implementation of peer educator and leaflet media, in general leaflet media has an effect on perceived benefits of action with a Rank value of 36.97. Peer educator and leaflet media have an effect on perceived barriers to action based on a Rank value of 36.37. Peer educator and leaflet media have an effect on self-efficacy based on a Rank value of 32.75. Peer educator and leaflet media have an effect on activity related based on a Rank value of 32.64. Peer educator and leaflet media have an effect on situation influence based on a Rank value of 35.63. Peer educator and leaflet media have an effect on interpersonal influence based on a Rank value of 36.41 and have an effect on the behavior of compliance in consuming iron supplement tablets.

Conclusions: The influence of peer educators and leaflet media on compliance behavior in consuming blood supplement tablets using the Health Promotion Model approach . In general, leaflet media has a significant effect on compliance behavior in consuming blood supplement tablets.

1. Introduction

Anemia is a condition where the number of red blood cells or the concentration of hemoglobin in them is lower than normal or insufficient for the body's needs (WHO, 2011). According to WHO, normal hemoglobin levels for women over 15 years of age are >12.0 g/dl (>7.5 mmol). [1] General symptoms of anemia are symptoms that arise due to target organ anoxia and the body's compensatory mechanisms for decreased hemoglobin in all types of anemia. These symptoms include weakness, fatigue, lethargy, headaches, dizziness, and dizziness in the eyes. [2] Prevention of anemia can be done by consuming blood supplement tablets regularly and consuming

nutritious foods. [3] According to WHO, the prevalence of anemia in adolescent girls is still quite high, where the prevalence of anemia ranges from 50-80%. [4]

Based on the results of the 2018 Basic Health Research report by Balitbangkes in Indonesia, the prevalence of anemia in young women is around 27.2% in the 15-24 year age group, while in teenagers.

For sons, the anemia rate is lower, namely 20.3%. So this causes anemia to become a major health problem in teenagers, especially young women. Several reasons for teenagers' non-compliance with consuming Fe tablets based on data obtained from health facilities are because teenagers feel they don't need to take Fe tablets (26.1%), they forget (20%), the taste and smell of Fe tablets are unpleasant (22.9%), side effects (8.9%), taken during menstruation (6.6%). [5]

As a result of observations of information obtained by nutrition officers at the Bantimurung Community Health Center, blood supplement tablets (TTD) have been distributed to SMAN 4 Maros through UKS/M teachers or UKS/M officers at the school, making the distribution ineffective because they are only entrusted by teachers without direct monitoring. by Puskesmas officers or UKS teachers or teachers who distribute blood supplement tablets to students. Information obtained by Puskesmas officers provided education about anemia and how to prevent anemia drinking TTD, but this activity is not effective because it is not carried out every month.

Peer educator is a communication process, information and education carried out by peers, namely circles a group, can group peer student, group student, fellow colleague profession, type sex. Activity peer seen very effective in the framework of IEC, because of the explanation given by someone from among themselves it will be easier to understand. [6] Peer education programs primarily focus on prevention and early intervention harm reduction information. Peer groups have a strong influence on teenagers, it is understandable that teenagers spend more time outside the home together with their peers as a group. [7]

The success of health education cannot be separated from things related to learning, one of which is the use of media. Attractive media will make teenagers confident so that they can accelerate cognitive, affective and psychomotor changes. The use of media in the process of delivering educational material varies greatly, such as through sound, audio-visual and print media. [8] Media that can be used include leaflets. Leaflet is a media in the form of a foldable sheet, containing printed writing and certain images for conveying health information or messages. Based on previous research, leaflets were considered effective in increasing the subject's knowledge. This research showed that there was an increase in the average knowledge of young women between before and after being given education about anemia using leaflets. [9]

Health promotion interventions with peer educators and leaflet media in improving a person's behavior can be carried out using the health promotion behavior approach in the Health Promotion Model (HPM) which will be reflected in perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related 7 affect, interpersonal influence, situation influence, commitment to a plan of action and behavior. [10]

2. Objectives

Research purposes was analyze the influence of peer educators and leaflet media using the health promotion model (HPM) approach on blood supplement tablet consumption compliance behavior.

3. Methods

This type of research uses an experimental research design with a Factorial Design design with 2 independent variables. This research used peer educators and leaflet media using two groups by conducting training for peer educators and providing leaflet media related to blood supplement tablets and anemia. In this research, research subjects were first given a pretest to determine the extent of the abilities of young women before being given intervention in the form of health education, namely education carried out by peer educators and leaflet media.

After being given an initial test, the young women were then given treatment, namely peer educators and media leaflets about preventing anemia by consuming blood supplement tablets. After completing education by peer educators and providing media leaflets, the young women were then given a final test (posttest) within four weeks after being given the posttest.

Then, after the posttest results, a comparison was made between the peer educators and the leaflet media used to see which media were effectively used in the compliance behavior of consuming blood supplement tablets.

This research took place at SMAN 4 Maros when the research was carried out from 08 January to 08 February 2024. The population in this study was 145 teenage girls in class X. The sample in this study used the Federer formula $(t-1)(r-1) \geq 15$, so the sample size is 32 people in each group. The sample in this study was 64 class X SMAN 4 Maros divided into 2 intervention groups. Data analysis used the Wilcoxon range test and the Mann Whitney test with a degree of significance ($\alpha=0.05$).

4. Results

Perceived Benefits Of Action

After implementing peer educators and leaflet media on the perceived benefits of action, leaflet media had more influence on compliance behavior in consuming blood supplement tablets. Table 1 above informs that there were the same number of respondents with peer educators and leaflet media, namely 32 respondents.

The average pre test score for the peer educator intervention group was 27.91, while the overall number of ranks for the pre test for the peer educator intervention group was 893.00 and the average pre test score for the media leaflet group was 37.09. The total number of ranks for the overall pre test for the intervention group leaflet media amounting to 1187.00.

Meanwhile, the average post test score for the peer educator intervention group was 28.03, the overall number of ranks for the post test for the peer educator intervention group was 897.00 and the average post test score for the media leaflet group was 36.97, while the overall number of ranks for the post test for the media leaflet intervention group was 36.97. 1183.00. Based on Table 5.25, the Mann-Whitney pre test for the peer educator intervention group and the leaflet media intervention group obtained a Zcount of -1.981 with a significance value of 0.048. The significance value is greater than 0.05 so there is no difference between the two groups. Meanwhile, in the post test of the peer educator intervention group and the leaflet media intervention group, the Zcount was -1.927 with a significance value of 0.054. The significance value is greater than 0.05 so there is no difference between the two groups.

Based on the results of research conducted, it shows that in the peer educator intervention group, the average perceived benefits of action in the pre-test was 27.91 and after the post-test was carried out it increased to 28.03. However, based on the pre and post test, the mean score for changes in compliance behavior in consuming blood supplement tablets was higher in the leaflet media intervention group with a pre test score of 37.09 and a post test of 36.97. [table 1]

Perceived Barriers To Action

Table 1 informs that there were the same number of respondents with peer educators and leaflet media, namely 32 respondents. The average pre test score for the peer educator intervention group was 30.28, while the overall number of ranks for the pre test for the peer educator intervention group was 969.00 and the average pre test score for the media leaflet group was 34.72. The total number of ranks for the overall pre test for the media leaflet intervention group amounting to 1111.00. Meanwhile, the average post test score for the peer educator intervention group was 33.64, the overall number of ranks for the post test for the peer educator intervention group was 1076.50 and the average post test score for the media leaflet group was 31.36, while the overall number of ranks for the post test for the media leaflet intervention group was 31.36. 1003.50. Based on table 2, the Mann-Whitney pre test for the peer educator intervention group and the leaflet media intervention group obtained a Zcount of -.961 with a significance value of 0.336. The significance value is greater than 0.05 so there is no difference between the two groups. Meanwhile, in the post test of the peer educator intervention group and the leaflet media intervention group, the Zcount was -.491 with a significance value of 0.623. The significance value is greater than 0.05 so there is no difference between the two groups. However, based on the post test, the mean change score in compliance with blood supplement tablet consumption was higher in the peer educator intervention group

After the implementation of peer educators and leaflet media on perceived barriers to action peer educators had more influence on compliance behavior in consuming blood supplement tablets. Based on the results of research conducted, it shows that in the leaflet media intervention group, the average perceived barrier to action in the pre-test was 34.72 and after the post-test was carried out it increased to 231.36. However, based on the pre and post test, the mean score for changes in blood supplement tablet consumption behavior was higher in the peer educator intervention group with a pre test score of 30.28 and after the post test it increased to 33.64.

Perceived Self Efficacy

Table 1 informs that there were the same number of respondents with peer educators and leaflet media, namely 32 respondents. The average pre test score for the peer educator intervention group was 31.73, while the overall number of ranks for the pre test for the peer educator intervention group was 1015.50 and the average pre test score for the media leaflet group was 33.27, while the overall number of ranks for the pre test for the media leaflet intervention group was 1064.50 . Meanwhile, the average post test value for the peer educator intervention group was 32.25, the overall number of ranks for the post test for the peer educator intervention group was 1032.00 and the average post test value for the media leaflet group was 32.75, while the overall number of ranks for the post test for the media leaflet intervention group was 32.75. 1048.00.

Based on table 1, the Mann-Whitney pre test for the peer educator intervention group and the leaflet media intervention group obtained a Zcount of -.332 with a significance value of 0.740. The significance value is greater than 0.05 so there is no difference between the two groups. Meanwhile, in the post test of the peer educator intervention group and the media leaflet intervention group, the Zcount was -.108 with a significance value of 0.914. The significance value is greater than 0.05 so there is no difference between the two groups. However, based on the pre and post test, the mean change score in adherence to consuming blood supplement tablets was higher in the leaflet media intervention group.

Activity Related Affect

Table 1 informs that there were the same number of respondents with peer educators and leaflet media, namely 32 respondents. The average pre test score for the peer educator intervention group was 28.80, while the overall number of ranks for the pre test for the peer educator intervention group was 921.50 and the average pre test score for the media leaflet group was 36.20, while the overall number of ranks for the pre test for the media leaflet intervention group was 1158.50. . Meanwhile, the average post test score for the peer educator intervention group was 32.36, the overall number of ranks for the post test for the peer educator intervention group was 1035.50 and the average post test score for the media leaflet group was 32.64, while the overall number of ranks for the post test for the media leaflet intervention group was 32.64. 1044.50.

Based on table 1, the Mann-Whitney pre test for the peer educator intervention group and the leaflet media intervention group obtained a Zcount of -1.608 with a significance value of 0.061. The significance value is greater than 0.05 so there is no difference between the two groups. Meanwhile, in the post test of the peer educator intervention group and the leaflet media intervention group, the Zcount was -.108 with a significance value of 0.952. The significance value is greater than 0.05 so there is no difference between the two groups. However, based on the pre and post test, the mean change score in compliance with blood supplement tablet consumption was higher in the medial leaflet.

Situation Influence

Table 1 informs that there were the same number of respondents with peer educators and leaflet media, namely 32 respondents. The average pre test score for the peer educator intervention group was 30.41, while the overall number of ranks for the pre test for the peer educator intervention group was 973.00 and the average pre test score for the media leaflet group was 34.59, while the overall number of ranks for the pre test for the media leaflet intervention group was 1107.00 . Meanwhile, the average post test score for the peer educator intervention group was 29.38, the overall number of ranks for the post test for the peer educator intervention group was 940.00 and the average post test score for the Leaflet media group was 35.63, while the overall number of ranks for the post test for the Leaflet media intervention group was 35.63. 1140.00.

Based on table 1, the Mann-Whitney pre test for the peer educator intervention group and the leaflet media intervention group obtained a Zcount of -.905 with a significance value of 0.365. The significance value is greater than 0.05 so there is no difference between the two groups. Meanwhile, in the post test of the peer educator intervention group and the leaflet media intervention group, the Zcount was -1.352 with a significance value of 0.176. The significance value is greater than 0.05 so there is no difference between the two groups. However, based on the pre and post test, the mean change score in adherence to consuming blood supplement tablets was higher in the leaflet media.

Interpersonal Influence

Table 1 informs that there were 138 respondents with peer educators and leaflet media, namely 32 respondents. The average pre test score for the peer educator intervention group was 31.03, while the overall number of ranks for the pre test for the peer educator intervention group was 993.00 and the average pre test score for the media leaflet group was 33.97, while the overall number of ranks for the pre test for the media leaflet intervention group was 1087.00 . Meanwhile, the average post test score for the peer educator intervention group was 28.59, the overall number of ranks for the post test for the peer educator intervention group was 915.00 and the average post test score for the media leaflet group was 36.41, while the overall number of ranks for the post test for the media leaflet intervention group was 36.41. 1165.00.

Based on Table 1, the Mann-Whitney pre test for the peer educator intervention group and the leaflet media intervention group obtained a Zcount of -.672 with a significance value of 0.502. The significance value is greater than 0.05 so there is no difference between the two groups. Meanwhile, in the post test of the peer educator intervention group and the media leaflet intervention group, the Zcount was -1.716 with a significance value of 0.086. The significance value is greater than 0.05 so there is no difference between the two groups. However, based on the pre and post test, the mean change score in adherence to consuming blood supplement tablets was higher in the leaflet media.

Table 1: Results of Ranks and Mann Whitney Test Differences in the Influence of Peer Educators and Leaflet Media to behavior approach in the Health Promotion Model (HPM)

	Group	n	Mean Of Ranks	Sum Of Ranks	Mann-Whitney	Z	Asymp.Sig (2-tailed)
Pretest Perceived Benefits Of Action	Peer Educator	32	27.91	893.00	365,000	-1,981	,048
	Leaflet Media	32	37.09	1187.00			
Posttest Perceived Benefits Of Action	Peer Educator	32	28.03	897.00	369,000	-1,927	,054
	Leaflet Media	32	36.97	1183.00			
Pretest Perceived Barrier To Action	Peer Educator	32	30.28	969.00	441,000	-.961	,336
	Leaflet Media	32	34.72	1111.00			
Posttest Perceived Barrier To Action	Peer Educator	32	33.64	1076.50	475,500	-.491	,623
	Leaflet Media	32	31.36	1003.50			
Pretest Perceived Barrier To Action	Peer Educator	32	31.73	1015.50	487,500	-.332	,740
	Leaflet Media	32	33.27	1064.50			
Posttest Perceived Barrier To Action	Peer Educator	32	32.25	1032.00	504,000	-.108	,914
	Leaflet Media	32	32.75	1048.00			
Pretest Perceived Barrier To Action	Peer Educator	32	28.80	921.50	393,500	-1,608	-.061
	Leaflet Media	32	36.20	1158.50			
Posttest Perceived Barrier To Action	Peer Educator	32	32.36	1035.50	507,500	.108	,952

	Leaflet Media	32	32.64	1044.50			
Pretest Perceived Barrier To Action	Peer Educator	32	30.41	973.00	445,000	-.905	,365
	Leaflet Media	32	34.59	1107.00			
Posttest Perceived Barrier To Action	Peer Educator	32	29.38	940.00	412,000	- 1,352	,176
	Leaflet Media	32	35.63	1140.00			
Pretest Perceived Barrier To Action	Peer Educator	32	31.03	993.00	465,000	-.672	,502
	Leaflet Media	32	33.97	1087.00			
Posttest Perceived Barrier To Action	Peer Educator	32	28.59	915.00	387,000 -	- 1,716	,086
	Leaflet Media	32	36.41	1165.00			

5. Discussion

Perceived Benefits Of Action

Based on the results of research conducted, it shows that in the peer educator intervention group, perceived benefits of action in general, leaflet media had a significant influence compared to peer educators. Leaflets are considered effective in increasing a person's knowledge. This is because with leaflet media it makes it easier to remember educational material and can increase understanding and acceptance of information for teenagers.

This is different from the results of research conducted by (Rotua, 2018) which showed that the average increase in Hb levels in the treatment group was 13,741, higher than the comparison group, namely 12,670. [11] However, this research is in line with research conducted by Agustina, Fransiska et al (2021) where there were differences in the level of knowledge of respondents before and after being given health education using leaflets and videos, there were 7 respondents (70%) with good levels of knowledge before given counseling increased to 9 respondents (90%), there was a difference in the level of sufficient and insufficient knowledge in the number of respondents after being given counseling, 1 respondent (10%) with a sufficient level of knowledge and 0 respondents (0%) with a low level of knowledge. [12] This shows that health promotion using leaflets and videos is effective in increasing mothers' knowledge regarding balanced nutrition in children.

Perceived Barriers To Action

Based on the Rank value in table 2, it shows that in general group intervention using peer educators has an influence on perceived barriers to action for students. This is because leaflet media is one of the learning media to channel messages from the sender to the recipient so that it can stimulate students' thoughts, feelings of attention and interest. This is in line with the results of research by Imra, Widefrita et al (2023) where PIK-R members who have carried out supervision regarding the consumption of blood supplement tablets found that there has been an increase in behavioral changes towards better compliance with the consumption of blood supplement tablets. This can be seen from the number of female students who complied with consumption before the empowerment, namely 15 people, whereas after the empowerment, the number of female students who complied with consuming blood supplement tablets was 47 people. This happened after empowerment by PIK-R members through education and supervision. The change in compliance with TTD consumption in a better direction was caused by the knowledge and attitudes of female students regarding anemia and TTD which had become better, resulting in the emergence of awareness, willingness and ability of female students to consume TTD. [13]

Perceived Self Efficacy

One of the factors that influence compliance with the consumption of blood supplement tablets is self-efficacy. According to self-efficacy, self-assessment is whether you can carry out good or bad actions, right or wrong, whether you can or cannot do what is required. Meanwhile, according to Luthan (2014), self-efficacy refers to self-confidence regarding one's ability to motivate the cognitive resources and actions needed to be successful in carrying out certain tasks. [14] Based on the rank values in table 3, it shows that in general group intervention using leaflet media has an influence on students' perceived self-efficacy. Leaflet media can be used to convey all types of information that students need to understand in concise and clear content. This is in line with research conducted by Alvian (2023) that based on interviews with several patients at the Kebonsari Community Health Center that researchers conducted, analysis of various opinions showed that delivering material using promotional media, leaflet media, was more effective than using online media, which was difficult to understand and not all people can use gadgets. [15]

Bandura documented four sources of self-efficacy: active mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states. Mastery experiences result from repeated successes and setbacks, and guide complex performance that contributes to self-regulation. Vicarious learning experiences occur through the observation of others or the example of others. Social persuasion includes praise, encouragement, and methods to convince people that they have the ability to perform certain behaviors. Somatic and emotional states are cues such as stress, pain, and mood states that have an influence on self-efficacy. [16]

Activity Related Affect

Health education is one intervention strategy that can be carried out in community areas. This research provides health education using a peer educator group approach and leaflet media. It is hoped that these two methods can improve attitudes and motivation in increasing compliance with the consumption of blood supplement tablets. Based on the Rank value in table 4, it shows that in general group intervention using Leaflet media has an influence on activity related affect on students. This is in line with research conducted by Silviani (2021), it is known that the average knowledge before being given the leaflet method was 51.61 with a min value of 27.3 and max 77.3 and after being given the leaflet method it was known that the average knowledge was 70.04 with a min value of 51.9 and a max of 84.40, it can be concluded that the average knowledge after the intervention has increased. [13]

Situation Influence

Adolescent girls who suffer from untreated anemia will have an impact on stunted growth, reduced fitness and body freshness, are susceptible to infection and can reduce enthusiasm for learning and achievement. [17] Based on table 5, it shows that in general group interventions using leaflet media have an influence in situation influence on students. Previous research results suggest that if girls have active friends, engage in activities together with their peers, and receive encouragement from their peers to be active, they may experience more PA-related benefits, resulting in higher levels of PA. [18]

Interpersonal Influence

One of Pender's theoretical propositions states, "Family, peers, and health care providers are important sources of interpersonal influence which can increase or decrease commitment and involvement in health promotion behavior". [19] Based on the Rank value, it shows that in general group intervention using leaflet media has an influence on interpersonal influence on students. This is because students' understanding of reading leaflets is higher compared to the education provided by their peers.

Research shows that if a person has a positive attitude towards a behavior, and people close to him confirm the behavior, then he decides to carry out that behavior. Therefore, someone will be more likely to carry out healthy nutritional behavior when they feel expected by their family members and relatives and encourage them to frequently carry out this behavior. In this study, nurses and doctors were the people who had the most influence on healthy nutritional behavior in terms of interpersonal norms; these findings highlight the role of nurses in health promotion. Apart from that, children and husbands are the people who have the most influence on healthy

nutritional behavior in terms of interpersonal modeling; This emphasizes the role of social support following health promotion behavior. [20,21]

Risk factors of mortality includes the age and gender of the patient, the type of disease that caused it death in House Sick, type ward intrahospital, and intrahospital time to death.[21,22,23,24]

For evaluation results other after implementation HSEP like quality service take care stay, need done measurement number death in House disease, disease complication rates, nosocomial infection rates, and patient satisfaction in future studies, perhaps over a long period of time. period year Which long Far from year 2013 with the same interval after HSEP implementation.[1]

Conclusion

The difference in the influence of peer educators and leaflet media on perceived benefits of action is that in general leaflet media has an influence based on a rank value of 36.97 on compliance with consuming blood supplement tablets as an effort to prevent anemia in students. The difference in the influence of peer educators and leaflet media on perceived barriers to action is that in general peer educators have an influence based on a rank value of 36.37 on compliance with blood supplement tablet consumption as an effort to prevent anemia in students. The difference in the influence of peer educators and leaflet media on activity related affect. In general, leaflet media has an influence based on a rank value of 32.64 on compliance with consuming blood supplement tablets as an effort to prevent anemia in students. The difference in the influence of peer educators and leaflet media on situation influence. In general, leaflet media has an influence based on a rank value of 35.63 on compliance with blood supplement tablet consumption as an effort to prevent anemia in students. The difference in the influence of peer educators and leaflet media on interpersonal influence. In general, leaflet media has an influence based on a rank value of 36.41 on compliance with consuming 186 blood-added tablets as an effort to prevent anemia in students.

Saying Accept Love

We thank the SMAN 4 Maros school, the health staff from the Bantimurung Community Health Center and from the Indonesian Muslim University for your support.

Statement ethics

This research was conducted with permission from the Indonesian Muslim University Research Ethics Committee. The ethical permissions issued by Komisi Etik Penelitian Kesehatan Universitas Muslim Indonesia (KEPK UMI) No. 611/A.1/KEP-UMI/XII/2023 can be identified by the reference number register UMI012312612.

Consideration ethics

“Ethical issues including plagiarism, informed consent, infringement, falsification and/or falsification of data, multiple publication and/or submission, and redundancy have been fully observed by the authors.”

Financial support and sponsorship

Financial support for the research, authorship, and publication of this article was provided by the Directorate of Research, Technology, and Community Service. Directorate General of Higher Education, Research and Technology. Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia through a master thesis research scheme with Master Contract Number: 111/E5/PG.02.00.PL/2024, and Derivative Contract Number: 650/LL9/PK.00.PG/2024, 2252/B.07/UMI/VI/2024.

Conflict of interest

There is no conflict of interest

Authors' Contribution:

Henny Olivia (First Author), Introduction Writer/Methodologist/Main Researcher/Statistical Analyst (40%); Yusriani Y (Second Author), Introduction Writer/Methodologist/Main Researcher/Discussion Writer (40%); Alwi MK (Third Author), Methodologist/Assistant Researcher/Statistical Analyst (20%)

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