The Use of Media in Stunting Extension to Adolescents at Senior High School, Langsa City

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Abstract

BACKGROUND: Stunting is still a severe problem in today's youth. One of the causes of stunting nutrition problems is the ignorance of adolescents about adolescent nutrition and nutritional problems that occur. Knowledge of adolescent nutrition about health and nutritional problems, especially stunting, is needed to break the intergenerational chain of stunting in the future. One of the efforts to deal with stunting in adolescents is counseling using media.

AIM: The aim of the study was to Knowing the Use of Media in Stunting Counseling for Teenagers at Langsa High School.

METHODS: This type of research is a quasi-experiment with a two-group pre-test and post-test design. The test used was the Paired Sample t-Test and Independent t-Test with a significance level (α) of 0.05 (95%).

RESULTS: The results showed differences in the knowledge of the students of Senior High School 1 Langsa after the Leaflet and tik to intervention with the mean value after the leaflet intervention 18.63 and the mean difference being 1.188. The mean value after the tick-tock intervention is 17.44, and the mean difference is 1.188 with a p = 0.005. This value implies differences in the knowledge of Senior High School 1 Langsa students after the intervention using leaflets and TikTok. In the attitude aspect, there are differences in the students' attitudes of Senior High School 2 Langsa after the Leaflet and TikTok intervention, with the mean value after the leaflet intervention 40.13 and the mean difference being 3,958. The mean value after the tick-tock intervention is 36.17, the mean difference is 3,958, and p = 0.011. This value means that there are differences in the attitudes of students at Senior High School 2 Langsa after the Leaflet and TikTok intervention was carried out.

CONCLUSION: The use of TikTok and Leaflet media has proven effective in stunting counseling for adolescents in high school in Kota Langsa. This is evidenced by the statistical results that show differences in knowledge and attitudes of Senior High School 1 and Senior High School 2 students after the intervention using leaflets and TikTok (p = 0.005).

Introduction

Stunting is one of the nutritional problems that has become a significant concern and has become the target of various nutritional interventions. Stunting is a condition of failure to grow in children so that the child's height is shorter than normal children his age. The WHO states that as many as 150.8 million children, or 22.2% of the world’s child population, were stunted in 2017. Indonesia ranks as the country with the third-highest prevalence of stunting in the Southeast Asia Region. In Indonesia, the prevalence of stunting in adolescents aged 13–18 is 25.7%, with 7.2% classified as very short and 18.5% classified as short [1]. Adolescence is a transitional phase of life from children to adults, where there is a period of accelerated growth with rapid increases starting from an increase in height, weight, psychological, and sexual maturity. Adolescent nutritional needs increase according to growth, adolescent nutritional needs up to 50% of body weight and bone mass and more than 20% of the adolescent height [2].

The current stunted prevalence has decreased compared to 2017, 36.8%, but stunting in adolescents aged 13–18 years in Indonesia is still categorized as a public health problem with moderate severity. Some of the causes of the high prevalence of stunting in Indonesia are poor parenting practices, limited health services, lack of access to nutritious food, and access to clean water and sanitation [3].

Consumption and adequacy of nutrients are significant to support growth and development in adolescence. Optimal growth and development will produce youth with quality resources [4]. The quality and capacity of youth measure the success of future nation-building. In addition, teenagers, especially young women, are the hope of the nation to produce the next generation of healthy and quality. A severe adolescent problem is still an age that is vulnerable to stunting.

One of the causes for the emergence of stunting nutrition problems is that there is still ignorance of adolescents about their nutrition and nutritional problems. Knowledge of adolescent nutrition about health and nutritional problems, especially stunting, is
needed to break the intergenerational chain of stunting in the future. Knowledge of nutrition and health needed by adolescents includes several aspects: Knowledge of the function of nutrients, sources of nutrients, and knowledge of nutritional problems. One of the efforts to deal with stunting in adolescents is counseling using media. The use of social media among adolescents is almost ubiquitous [3], [4]. Social media allow the dissemination of health information in different forms such as blogs, podcasts, tweets, Facebook pages, or YouTube posts and videos [5]. Social media are a source for adolescents to seek information about oral health [6].

Counseling with media is an alternative in finding information and delivering material choices, and counseling media require extension workers to choose which media they like. The choice of specific counseling media is related to needs. In general, it relates to the preferences concerned with these media. The media used in this study were leaflets and TikTok. A leaflet is a folded sheet of paper containing printed text and pictures on a specific topic for specific goals and purposes [7], [8].

Whereas TikTok, a short video-sharing social network, currently represents one of the most popular social media applications globally, with approximately 62% of all users between 10 and 29 years [9]. Despite its success in terms of the number of users, studies to understand the use of TikTok are scarce [10]. Especially since it is unlikely that all social media search results apply to TikTok, each social media platform has a unique design, attracts different user groups [11], and causes different potentials for immersion or “addiction” [12] or misinformation. Therefore, based on the above background, this study aims to determine media use in counseling on stunting adolescents in Langsa City High School.

Methods

This study used a quasi-experiment with a two-group pre-test and post-test design. The first group was given stunting counseling treatment with millennial media tools, namely, the TikTok application, while the control group was also given stunting counseling treatment with leaflets. The first group is Senior High School in urban areas (Public Senior High School) Langsa City, while the second group is Senior High School in rural areas Senior High School 2 Langsa City. This research was conducted at Senior High School 1 and Senior High School 2 in Langsa City from September 1 to November 2021. The population of this research was 173 students at Senior High School 1 Langsa City and 90 students at Senior High School 2 Langsa City. The sample of this research is Senior High

School 1, with as many as 64 respondents with each group as many as 32 students, and Senior High School 2 as many as 48 students with each group as many as 24 students. Univariable analysis with descriptive statistics and presented in a frequency distribution table. Bivariable analysis was carried out for normality test, and then Pairet Sample t-test and dependent t-test were performed with a significance level (α) of 0.05 (95%) if the data were normally distributed, and Wilcoxon Sign Test if the data were not normally distributed.

Results

Table 1 shows that of the 32 respondents before stunting counseling, the majority had good knowledge 19 (59.38%), all of them had a positive attitude 32 (100%), and all had good behavior 32 (100%).

Table 1: Frequency distribution of knowledge, attitudes, and behaviors of adolescents at Senior High School 1 Langsa (Public Senior High School) before the extension intervention using Leaflets

| Variable             | Intervention (n = 32) | Total | % |
|----------------------|----------------------|-------|---|
| Packing              |                       |       |   |
| Good                 | 19                   | 19    | 59.38|
| Enough               | 13                   | 13    | 40.62|
| Total                | 32                   | 100   |   |
| Attitude             |                       |       |   |
| Positive             | 32                   | 32    | 100 |
| Negative             | 0                    | 0     | 0   |
| Total                | 32                   | 100   |   |
| Behavior             |                       |       |   |
| Good                 | 32                   | 32    | 100 |
| Not Good yet         | 0                    | 0     | 0   |
| Total                | 32                   | 100   |   |

Primary data source (Processed, 2020).

Table 2 shows that of the 32 respondents after stunting counseling using leaflets, all of them had good knowledge of 32 (100%), all of them had a positive attitude of 32 (100.0%), and all of them had good behavior 32 (100%).

Table 2: Frequency distribution of knowledge, attitudes, and behaviors of adolescents at Senior High School 1 Langsa after the Extension Intervention Using Leaflets

| Variable             | Intervention (n = 32) | Total | % |
|----------------------|----------------------|-------|---|
| Knowledge            |                       |       |   |
| Good                 | 32                   | 32    | 100 |
| Enough               | 0                    | 0     | 0   |
| Not enough           | 0                    | 0     | 0   |
| Total                | 32                   | 100   |   |
| Attitude             |                       |       |   |
| Positive             | 32                   | 32    | 100 |
| Negative             | 0                    | 0     | 0   |
| Total                | 32                   | 100   |   |
| Behavior             |                       |       |   |
| Good                 | 32                   | 32    | 100 |
| Not Good yet         | 0                    | 0     | 0   |
| Total                | 32                   | 100   |   |

Primary data source (Processed 2020).

Table 3 shows that of the 32 respondents before stunting counseling using TikTok, the majority had good knowledge 21 (65.63%), the majority had a
positive attitude 25 (78.13%), and all of them had good behavior 32 (100%)

Table 3: Frequency distribution of knowledge, attitudes, and behaviors of adolescents at Senior High School 1 Langsa before the counseling intervention using TikTok

| Variable       | Intervention (n = 32) | Total (n = 32) | %     |
|----------------|-----------------------|----------------|-------|
| Knowledge      |                       |                |       |
| Good           | 21                    | 21             | 65.63 |
| Enough         | 8                     | 8              | 25    |
| Not enough     | 3                     | 3              | 9.37  |
| Total          | 32                    | 32             | 100   |
| Attitude       |                       |                |       |
| Positive       | 25                    | 25             | 78.13 |
| Negative       | 7                     | 7              | 21.87 |
| Total          | 32                    | 32             | 100   |
| Behavior       |                       |                |       |
| Good           | 32                    | 32             | 100   |
| Not good yet   | 0                     | 0              | 0     |
| Total          | 32                    | 32             | 100   |

Table 4 shows that of the 32 respondents after stunting counseling using TikTok, the majority had good knowledge of 30 (93.75%), all of them had a positive attitude 32 (100%), and all of them had good behavior 32 (100%)

Table 4: Frequency distribution of knowledge, attitudes, and behaviors of adolescents at Senior High School 1 Langsa (public senior high school) after the counseling intervention using TikTok

| Variable       | Intervention (n = 32) | Total (n = 32) | %     |
|----------------|-----------------------|----------------|-------|
| Knowledge      |                       |                |       |
| Good           | 30                    | 30             | 93.75 |
| Enough         | 2                     | 6              | 6.25  |
| Not enough     | 0                     | 0              | 0     |
| Total          | 32                    | 32             | 100   |
| Attitude       |                       |                |       |
| Positive       | 30                    | 30             | 93.75 |
| Negative       | 2                     | 6              | 6.25  |
| Total          | 32                    | 32             | 100   |
| Behavior       |                       |                |       |
| Good           | 32                    | 32             | 100   |
| Not good yet   | 0                     | 0              | 0     |
| Total          | 32                    | 32             | 100   |

Table 5 shows that of the 24 respondents before stunting counseling, and the majority had sufficient knowledge of 13 (54.7%), all of them had a positive attitude 24 (100%), and all of them had good behavior 24 (100%).

Table 5: Frequency distribution of knowledge, attitudes, and behaviors of adolescents at Senior High School 2 Langsa before the extension intervention using leaflets

| Variable       | Intervention (n = 24) | Total (n = 24) | %     |
|----------------|-----------------------|----------------|-------|
| Knowledge      |                       |                |       |
| Good           | 5                     | 5              | 20.83 |
| Enough         | 13                    | 13             | 54.17 |
| Not enough     | 6                     | 6              | 25    |
| Total          | 24                    | 24             | 100   |
| Attitude       |                       |                |       |
| Positive       | 24                    | 24             | 100   |
| Negative       | 0                     | 0              | 0     |
| Total          | 24                    | 24             | 100   |
| Behavior       |                       |                |       |
| Good           | 24                    | 24             | 100   |
| Not good       | 0                     | 0              | 0     |
| Total          | 24                    | 24             | 100   |

Table 6 shows that of the 24 respondents after stunting counseling using leaflets, the majority had good knowledge 16 (66.7%), all of them had a positive attitude 24 (100%), and all of them had good behavior 24 (100%).

Table 6: Frequency distribution of knowledge, attitudes, and behaviors of adolescents at Senior High School 2 Langsa after the Extension Intervention Using Leaflets

| Variable       | Intervention (n = 24) | Total (n = 24) | %     |
|----------------|-----------------------|----------------|-------|
| Knowledge      |                       |                |       |
| Good           | 7                     | 7              | 29.7  |
| Enough         | 14                    | 14             | 58.3  |
| Not enough     | 3                     | 3              | 12.5  |
| Total          | 24                    | 24             | 100   |
| Attitude       |                       |                |       |
| Positive       | 21                    | 21             | 87.5  |
| Negative       | 3                     | 3              | 12.5  |
| Total          | 24                    | 24             | 100   |
| Behavior       |                       |                |       |
| Good           | 24                    | 24             | 100   |
| Not good       | 0                     | 0              | 0     |
| Total          | 24                    | 24             | 100   |

The analysis results showed that the average value of the knowledge, attitudes, and behavior of Senior High School 1 Langsa students before the...
extension intervention using leaflets and TikTok with a mean value of 164.73 with a standard deviation of 23.288. Meanwhile, the average value of the knowledge, attitudes, and behavior of Senior High School 1 Langsa students after the counseling intervention using leaflets and TikTok is shown in Table 9.

The results of the analysis showed that the mean value of knowledge, attitudes, and behavior of Senior High School 2 Langsa students before the extension intervention using leaflets and TikTok with a mean value of 154.59 with a standard deviation of 23.255, while the mean value of knowledge, attitudes, and behavior students of Senior High School 2 Langsa after the counseling intervention using leaflets and TikTok with a mean value of 168.3 with a standard deviation of 23139 (Table 10).

**Bivariate analysis**

The statistical test used is the Dependent t-test (Paired t-test), and the Independent t-test aims to determine the difference in the mean between knowledge, attitudes, and behavior in the intervention and control groups, namely, before and after being given counseling. The level of significance using \( p < 0.05 \) at 95% confidence interval.

**Analysis of paired sample t-test**

Table 11 shows that the results of the paired sample t-test on the score results at Senior High School 1 Langsa obtained knowledge, attitudes, and behaviors before and after the intervention using leaflets obtained a significance value of \( p = 0.000 \) (\( p < \alpha [0.05] \)), it can be concluded that there is an effect of counseling using leaflets on students of Senior High School 1 Langsa.

While at Senior High School 2 Langsa, the results of the paired sample t-test of knowledge were obtained, before and after the intervention using leaflets obtained a significance value of \( p = 0.000 \) (\( p < \alpha [0.05] \)), this value implies that there is sufficient knowledge of using leaflets for students of Senior High School 2 Langsa. Attitudes of Senior High School 2 Langsa students before and after the leaflet intervention was given a significance value of \( p = 0.002 \) (\( p < \alpha [0.05] \)). This value shows an attitude effect after the leaflet intervention is given. In the intervention using TikTok on knowledge obtained before and after being given the TikTok intervention, a significance value of \( p = 0.000 \) was obtained, which means (\( p < \alpha [0.05] \)), there is an effect of knowledge on the provision of TikTok intervention. Attitudes and behavior have a significant value; attitudes get a \( p = 0.375 \) and a behavior value of \( p = 0.151 \) which means (\( p > \alpha [0.05] \)), so it can be concluded that there is no effect of giving TikTok intervention to female students. Senior High School 2 Langsa.

**Independent analysis of sample t-test**

Table 12 shows a difference in knowledge after the Leaflet and TikTok intervention for Senior High School 1 Langsa students; the mean value after the leaflet intervention is 18.63, and the mean difference is 1.188. The mean value after the TikTok intervention is 17.44, and the mean difference is 1.188 and \( p = 0.005 \) (\( p < \alpha [0.05] \)), which means that there is a difference in knowledge of Senior High School 1 Langsa students after the intervention using leaflets and TikTok. The Senior High School 2 Langsa showed differences in

### Table 9: Distribution of average values of knowledge, attitudes, and behaviors of Senior High School 1 Langsa students (n = 32)

| Variables before intervention | Mean   | SD   | Variables after intervention | Mean   | SD   |
|-------------------------------|--------|------|-----------------------------|--------|------|
| Knowledge of Senior High School 1 Langsa students before intervention using Leaflet | 16.09  | 2.291| Knowledge of Senior High School 1 Langsa students after intervention using Leaflet | 18.63  | 1.264|
| Attitudes of Senior High School 1 Langsa students before intervention using Leaflet | 37.38  | 4.054| Attitudes of Senior High School 1 Langsa students before intervention using Leaflet | 43.22  | 5.604|
| The behavior of Senior High School 1 Langsa students before intervention using Leaflet | 30.13  | 4.449| The behavior of Senior High School 1 Langsa students before intervention using Leaflet | 33.16  | 4.629|
| Knowledge of Senior High School 1 Langsa students prior to intervention using TikTok | 15.69  | 2.879| Knowledge of Senior High School 1 Langsa students after intervention using TikTok | 18.31  | 1.447|
| Attitudes of Senior High School 1 Langsa students before intervention using TikTok | 36.47  | 6.091| Attitudes of Senior High School 1 Langsa students before intervention using TikTok | 41.88  | 5.499|
| The behavior of Senior High School 1 Langsa students before intervention using TikTok | 28.97  | 3.524| The behavior of Senior High School 1 Langsa students before intervention using TikTok | 31.84  | 3.557|
| Average                              | 164.73 | 23.288| Average                       | 187.05 | 22.503|

### Table 10: Average distribution of knowledge values, attitudes, and behaviors of Senior High School 2 Langsa students (n = 32)

| Variables before intervention | Mean   | SD   | Variables after intervention | Mean   | SD   |
|-------------------------------|--------|------|-----------------------------|--------|------|
| Knowledge of Senior High School 2 Langsa students before intervention using Leaflet | 13.63  | 2.810| Knowledge of Senior High School 2 Langsa students after intervention using Leaflet | 16.71  | 2.293|
| Attitudes of Senior High School 2 Langsa students before intervention using Leaflet | 36.88  | 4.317| Attitudes of Senior High School 2 Langsa students before intervention using Leaflet | 40.13  | 5.033|
| The behavior of Senior High School 2 Langsa students before intervention using Leaflet | 28.38  | 5.671| The behavior of Senior High School 2 Langsa students before intervention using Leaflet | 30.00  | 4.212|
| Knowledge of Senior High School 2 Langsa students before intervention using TikTok | 13.83  | 2.665| Knowledge of Senior High School 2 Langsa students after intervention using TikTok | 17.54  | 2.000|
| Attitudes of Senior High School 2 Langsa students before intervention using TikTok | 35.29  | 3.793| Attitudes of Senior High School 2 Langsa students before intervention using TikTok | 36.17  | 5.346|
| The behavior of Senior High School 2 Langsa students before intervention using TikTok | 26.58  | 3.999| Behavior of Senior High School 2 Langsa students before the intervention using TikTok | 27.75  | 4.255|
| Average                              | 154.59 | 23.255| Average                       | 168.3  | 23.139|

https://oamjms.eu/index.php/mjms/index
attitudes after the Leaflet and TikTok intervention; the mean value after the leaflet intervention was 40.13. The mean difference was 3.958 and the mean value after the TikTok intervention was 36.17, and the mean difference was 3.958, and $p = 0.011$ ($p < \alpha [0.05]$), which means that there are differences in the attitudes of Senior High School 2 Langsa students after the Leaflet and TikTok interventions were carried out.

Table 12: Differences in knowledge, attitudes, behavior after leaflet and TikTok interventions for students of Senior High School 1 Langsa and Senior High School 2 Langsa

| Variable | Mean | SD | SE | p-value | n |
|----------|------|----|----|---------|---|
| Knowledge after being given intervention | 18.31 | 0.758 | 0.048 | | |
| Leaflet Senior High School 1 Langsa | 17.44 | 0.875 | | | |
| Knowledge after being given a TikTok intervention at Senior High School 1 Langsa | 43.22 | 1.344 | 0.337 | | |
| Leaflet Senior High School 1 Langsa | 41.88 | 1.344 | | | |
| Attitude after being given the intervention | 33.16 | 1.313 | 0.208 | | |
| Leaflet Senior High School 1 Langsa | 31.84 | 1.313 | | | |
| Behavior after being given the TikTok intervention at Senior High School 1 Langsa | 16.71 | -0.833 | 0.186 | | |
| Knowledge after being given a TikTok intervention at Senior High School 2 Langsa City | 17.54 | -0.833 | | | |
| Leaflet Senior High School 2 Langsa | 40.13 | 3.958 | 0.011 | | |
| Attitude after being given the intervention | 36.17 | 3.958 | | | |
| Leaflet Senior High School 2 Langsa | 30.00 | 2.250 | 0.072 | | |
| Behavior after being given leaflet | 27.75 | 2.250 | | | |
| Behavior after being given the TikTok intervention at Senior High School 2 Langsa | | | | | |

Primary data source (Processed 2020).

Discussion

There is a difference in the knowledge of Senior High School 1 Langsa students after the Leaflet and TikTok intervention with $p = 0.005$, which means there is a difference in the knowledge of the students of Senior High School 1 Langsa after the intervention using leaflets and TikTok. There is a difference in the Attitude of the students of senior high school 2 langsa after the leaflet, and TikTok intervention, a $p = 0.011$ is obtained, which means that there are differences in the attitudes of the students of senior high school 2 langsa after the leaflet and TikTok intervention. The use of media to prevent stunting in adolescents in this study was appropriate and effective. Counseling can increase knowledge, attitudes, and behavior about stunting prevention while providing information through leaflets or TikTok to adolescent students can increase adolescent knowledge. Leaflets and TikTok are teaching aids arranged based on the principle that human knowledge is received or captured through the five senses [13]. High school students are teenagers who are resources who will be able to improve the nutritional status of their offspring in the future if they have good knowledge. Nutrition education efforts are one of the most critical efforts in overcoming the problem of stunting. This effort is expected to make someone understand the importance of eating foods with high nutritional value to absorb knowledge, need excellent, and sufficient nutrition and have attitudes and actions that assess the importance of nutritional needs. Counseling can increase knowledge, attitudes, and behaviors about stunting prevention. Several studies have shown that young people, especially teenagers, often use Google searches and social media to find knowledge about mental health and other health [14]. The previous research has also identified that young people use social media to seek online help, health tips, and more [15]. However, the use of social media and its impact on young people’s mental health is often a matter of debate [16]. The paired sample t-test on the results of the scores at Senior High School 1 Langsa obtained knowledge, attitudes, and behaviors before and after the intervention using leaflets obtained a significance value of $p = 0.000$. Leaflet counseling in high school is very effective in increasing knowledge.

Leaflets have advantages in the form of durable information, covers many people, costs are not high, do not need electricity, can be carried easily, create a sense of beauty, facilitate understanding, and increase enthusiasm for learning. Another advantage is that targets can be adjusted and learned independently, provide detailed information, and easily create, reproduce and revise. Leaflets are teaching aids arranged based on the principle that human knowledge is received or captured through the five senses [17], [18]. The intervention using TikTok on knowledge obtained before and after the intervention was given a significance value of $p = 0.000$ which
means ($p < \alpha$ [0.05]). There is an influence of knowledge on the provision of TikTok intervention. Different users can attract different users and thus have different characteristics [19]. In addition, these videos can promote unscientific therapies and treatments and can change patients’ beliefs [20]. Therefore, consumers need to view the information published objectively to make effective health care decisions [21]. Social media allow the dissemination of health information in different forms such as blogs, podcasts, tweets, Facebook pages, or YouTube posts and videos [22]. For adolescents to seek information about oral health [23] to go through a process and take place in human interaction with the environment. The factors that influence the formation of behavior are internal and external. Internal factors include knowledge of intelligence, perception, emotion, and motivation. These factors function to process stimuli from outside. External factors include the surrounding environment, both physical and non-physical, such as climate, human, socio-economic, cultural, and so on [24].

**Conclusion**

TikTok and leaflet media have proven effective in stunting counseling for adolescents in high school in Langsa City. This is evidenced by the statistical results, which show differences in the knowledge and attitudes of Senior High School 1 and Senior High School 2 students after the intervention using leaflets and TikTok ($p = 0.005$).

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