

## Ayo Centing Infographic: Unveiling Mothers' Perceptions on Stunting Prevention Media

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### KEYWORDS

perception; infographic media design; stunting prevention

### ABSTRACT

This study endeavors to devise a graphic information media design aimed at health education for the prevention of stunting. The utilization of infographics serves as an effective means to expeditiously and lucidly depict intricate information. A proficient infographic seamlessly integrates research findings and narrative elements with exemplary visual design to impart a memorable message. The translation of technical content to diverse populations assumes paramount importance in the domain of health education and promotion. The qualitative research design employed herein seeks to comprehensively explore the perceptions of informants regarding the "Ayo Prevent Stunting" (Ayo Centing) infographic media. The study population comprises children under five, attending Posyandu in a village within the Kotagajah District, with a sample size of 20 informants selected through simple random sampling. Data collection encompasses in-depth interviews with the aforementioned 20 direct informants. The research findings uniformly affirm the informants' confidence in the excellence and appropriateness of the infographic media's display, the intriguing simplicity of its title, alignment with readers' needs, relevance, correctness of sources, material comprehension, adherence to provisions, and safety of use. Notably, 17 informants expressed comprehension, while three did not. Regarding ease of access, 18 informants reported it as facile, while two indicated difficulty due to signal constraints. The "Ayo Prevent Stunting" (Ayo Centing) infographic emerges as a pertinent educational tool employed by health service institutions for stunting awareness. Informants facing comprehension challenges are advised to engage in re-reading, and those encountering access issues attributed to signal strength are encouraged to seek optimal signal conditions.

### INTRODUCTION

One of the main challenges currently facing the health sector in Indonesia is chronic malnutrition in children. The prevalence of chronic malnutrition (WW/U) for children with malnutrition and undernutrition in 2018 was 17.7 compared to Lampung's proportion of 15.9. Meanwhile, nutritional status based on TB/U in Indonesia in 2013 was 37.2% (Indonesian Ministry of Health, 2016), then there was a decline in 2018, namely 30.8% (Indonesian Ministry of Health, 2018). Lampung Province's prevalence of chronic nutrition is 42.6, ranking sixth highest in Indonesia (Indonesian Ministry of Health, 2016); in 2018, it fell to 37.3 (RI Ministry of Health, 2020).

Stunting is caused by several factors, namely family and household factors, inadequate provision of additional food, breastfeeding, and infectious diseases. Stunting will have an impact on children's survival, both short- and long-term. The short-term impact of stunting is disruption of brain development, intelligence, and metabolic disorders in the body. Meanwhile, the long-term impact of stunting is a decrease in cognitive abilities and learning achievement, decreased immunity so that people get sick quickly, and a high risk of developing diabetes, obesity, heart disease, cancer, stroke, and disability in old age, as well as poor work quality—competition results in low economic productivity (Indonesian Ministry of Health, 2016). The incidence of stunting in the Kotagajah Community Health Center area is still fluctuating. The incidence of stunting in the Kotagajah Community Health Center area in 2019 was 221 children (19%); in 2020, there were 72 children (18%), and in 2023, there were 57 children (4.4%) data from Kotagajah Health Center 2023.

Cadres are Posyandu officers who are always in contact with mothers of toddlers, including those experiencing stunting. The number of Posyandu cadres in Gajah City is 140 people from 26 existing Posyandu. Stunting is handled through health education, carried out twice a year. The media in health education are PowerPoint presentations and leaflets, with

lectures, questions and answers, and discussion methods. In 2018, milk and egg assistance was provided for stunting toddlers.

This learning model increases the level of understanding and recognition in imagination. Infographics can combine different educational elements into one. The use of this infographic can also be distributed quickly and easily via electronic media. The importance of using infographics in education can also increase the consideration of learning to understand topics clearly by looking rather than reading (Al-Mohamadi, 2017). Visual messages thrive in health communication, namely clarifying complex information, expanding knowledge, and increasing attention and understanding (King A. et al., 2014). The problem is the need for health education to be carried out using different media, namely infographic media, considering that we are now in the information era. Infographic media illustrates information with minimal text and is also a visual summary. Rahmadita's research (2018) The influence of health education with infographics via social media on first aid practices in accidents for online motorcycle taxi drivers. The results of health education research using infographic media increased knowledge ( $p=0.000$ ), attitudes ( $p=0.010$ ), and actions ( $p=0.000$ ).

## **METHOD**

### **Design**

This research design is a qualitative study to explore in-depth mothers' perceptions of infographic media in preventing stunting. Data collection used in-depth interviews with 20 direct informants. Qualitative studies do not use a population (non-population research) because the sampling is purposive—analysis based on the informant's understanding in in-depth interviews.

### **Participants**

This research included 20 mothers of toddlers in the Gajah City area, Central Lampung. The sampling technique used was purposive sampling, with the criteria being that mothers were aged 20-35 years and had at least one child under five.

### **Instrument**

The main instrument in this research is the researcher himself. Researchers used a semi-structured interview guide containing questions about mothers' perceptions of stunting infographic media. Interviews were conducted in-depth with all participants.

### **Data analysis**

Data from interviews were analyzed qualitatively following data reduction, data presentation, and conclusion. Test the validity of the data using source triangulation. Data analysis was carried out by interpreting the content from the results of in-depth interviews.

## **RESULTS AND DISCUSSION**

This study delves into the perspectives of mothers with toddlers concerning the infographic media entitled "Ayo Prevent Stunting." The investigation involved in-depth interviews with mothers as key informants. The findings reveal several vital insights. Firstly, all informants universally perceive the display of the infographic media as commendable, emphasizing the variety of images, simplicity of sentences, and overall attractiveness that captures readers' interest. Second, the title of the infographic media garners unanimous agreement for its interest-inducing quality, attributed to its uniqueness and simplicity. Thirdly, opinions diverge on the ease of understanding the infographic, with the majority (85%) finding it accessible,

while a minority (15%) expressing difficulties due to small font size and unfamiliar abbreviations. The subsequent sections detail further perceptions, encompassing the belief in reader comprehension, relevance to readers' needs, simplicity of presentation, reliance on valid sources, adherence to regulations, ease of access, and the perceived safety of accessing the infographic on cellphones. These nuanced insights provide a comprehensive understanding of how mothers perceive and interact with the informative media designed to address stunting prevention.

Mothers of toddlers' perceptions of the infographic media titled *Ayo Prevent Stunting* (*Ayo Centing*) Data was collected through in-depth interviews with mothers of toddlers as informants. The results of the in-depth interview are as follows:

### ***Mother's perception of the display of infographic media***

All informants believe that the display of infographic media is reasonable and appropriate. As said, "..... The images used are varied, the sentences used are simple, so they are easy to understand. The appearance is attractive, attracting readers' interest .....". Infographics have been recognized for their ability to convey information concisely and with impact. It is particularly relevant in health promotion, as shown Ramadhan et al. (2023), who utilize WhatsApp as a health promotion platform by using posters and infographic videos to increase toothbrushing behavior (Ramadhan et al., 2023). Using infographics in this context shows their potential to influence behavior and perceptions positively.

Some critical analysis regarding mothers' perceptions of infographic media displays:

1. All informants (mothers) stated that the display of infographic media was excellent and appropriate. It shows that infographic media has succeeded in presenting an attractive appearance.
2. Infographic media uses varied images so they are not monotonous; they also help make information more accessible and easier to understand. The images used are relevant to the target material and context.
3. The sentences used are simple, so they are easy to understand. It is advantageous because infographic media targets all groups, including homemakers. The use of complicated language will make understanding easier.
4. Informants assess the appearance as attractive to attract readers' interest. An attractive media appearance is significant, so readers are interested in reading its information.
5. You also need to pay attention to the size and type of font, layout arrangement, color selection, image, and text composition, all of which affect the overall appearance. Appearance evaluation needs to be done thoroughly.
6. Apart from the physical appearance, it is also necessary to evaluate the appearance of the content, such as writing structure, consistency, depth, and completeness of the material so that it is easy for readers to understand.

Based on the data obtained, These are some critical analyses regarding mothers' perceptions of the appearance of infographic media. The positive perception from these mothers shows the success of infographic media in presenting visual displays.

### ***Mother's perception of the title of the infographic media***

all informants believed that the title of the infographic media was interesting: as said, " ..... Use a unique and simple title, so that it will increase the reader's curiosity...". The perception of mothers towards the title of infographic media is crucial as it influences their engagement and interest in the content. The informants' belief that the title of the infographic media is

interesting aligns with the findings of those who emphasized the importance of well-designed visual and textual elements in infographics to capture attention and enhance learning (Barlow et al., 2021). Incorporating well- designed visual and textual elements in infographics aligns with dual- coding theory, which suggests that combining imagery and text leads to a synergistic effect on learning. Moreover, infographics effectively communicate medical information, as highlighted by those who demonstrated infographics to communicate landmark glaucoma trials (Henein & Mathew, 2021). A crossover study showed that infographic abstracts were more effective than the title alone in generating research interest, measured as the amount of social-media interactions, article downloads, and reads. Furthermore, the impact of infographics on knowledge and medical adherence, as demonstrated, supports the notion that the title of the infographic media plays a crucial role in conveying information effectively (Chongpornchai et al., 2021). The study revealed that using motion infographic media increased knowledge test scores and medical adherence. The results of knowledge test scores were consistent with an increase in the percentage of medical adherence. In summary, mothers' perception of the infographic media title is supported by research considering the importance of well-designed visual and textual elements to capture attention, communicate medical information effectively, and enhance knowledge and adherence. The following is a critical analysis of mothers' perceptions of infographic media titles:

1. All informants (mothers) thought the infographic media title was intriguing. It shows that the title chosen is appropriate and can arouse the reader's curiosity.
2. Informants suggest using unique and straightforward titles. A unique title has the power to attract attention, while a simple title makes it easier to remember.
3. A good title should be short, concise, and clear and describe the content or theme of the infographic media. If it is shorter and straightforward, the title can be more precise.
4. Choosing keywords in the title requires attention to words often searched for by target readers. It makes infographic media more accessible when readers search for related information.
5. On the other hand, titles that are too bombastic and excessive also need to be avoided because they can be considered exaggerations and disappoint readers.
6. The title should be created after the infographic media content is complete so that the title chosen truly reflects the entire content.

It is a critical analysis regarding informant perceptions about infographic media titles. A good title is essential to attract the attention of potential readers so they are interested in reading the information in it.

### **Mothers' perception of infographic media being easy to read and understand**

Mothers' perceptions about infographic media being easy to read and understand: 17 out of 20 informants said they believed that infographic media was easy to read and understand: as stated, ".....the text is not too long, the size of the letters are right, not too small or large, use the language is simple, that is, it uses everyday language so it is easy to understand, the material is concise and clear but does not reduce the information to be conveyed.....". Meanwhile, 3 out of 20 informants said that infographic media was difficult to understand ".....the size of the letters is a little small, the use of several abbreviations and terms that are rarely heard, so it is difficult for ordinary people to understand...".

Based on the informants' perceptions, 17 out of 20 informants expressed confidence in the ease of reading and understanding infographic media. They appreciated the concise and explicit nature of the content, emphasizing the use of simple language and appropriate font size. This positive perception aligns with the findings, which highlighted infographics'



effectiveness in facilitating independent learning, particularly in the context of English language acquisition at the secondary level (Dewantari et al., 2021). The study emphasized the role of infographics in enhancing understanding and knowledge retention, supporting the informants' positive perception of the ease of understanding infographic media.

However, 3 out of 20 informants found the infographic media somewhat challenging to understand due to the small font size and uncommon abbreviations and terms. This challenge is consistent with the findings of those who discussed the importance of visual media in improving knowledge and attitudes, particularly in maternal compliance with iron tablet consumption during pregnancy (Siswati et al., 2021). The study highlighted that inadequate counseling and fear among patients could affect their perception and understanding of health-related information, which resonates with the informants' concerns about the complexity of particular infographics.

In summary, the informants' perceptions regarding the ease of reading and understanding infographic media are supported by research emphasizing the effectiveness of infographics in facilitating learning and knowledge retention. However, the challenges expressed by some informants align with the findings related to the impact of visual media on knowledge and compliance, particularly in the context of maternal health. The following is a critical analysis of mothers' perceptions regarding the ease of reading and understanding infographic media:

1. Most informants (17 out of 20 people) stated that infographic media was easy to read and understand. It shows that the infographic media has generally succeeded in conveying information well.
2. The text is short, so reading is not boring. However, you also need to pay attention to the sequence of information and layout appearance.
3. Choose the right font size, not too big or small. Fonts that are too small will make your eyes tired when reading. We recommend that the font size be 10-12 pt for easy reading.
4. Simple language, namely everyday language, makes it easier for mothers from various educational backgrounds to understand information.
5. The material is presented concisely but is dense in information and does not reduce the substance conveyed. Visualization in the form of pictures and diagrams helps clarify the material.
6. On the other hand, 3 out of 20 informants stated that infographic media was somewhat challenging to understand for several reasons: the font size was too small, and the use of abbreviations that ordinary mothers did not commonly understand. This input needs to be considered to improve the media.

That is a critical analysis based on data related to mothers' perceptions regarding ease of reading and understanding of infographic media. In general, the media is relatively easy to understand but still needs improvement to increase ease of understanding for all target readers.

### ***The mother's perception is about stunting if they read this infographic media.***

The mother believes readers will understand stunting if they read this infographic. All informants said they were confident readers would know and understand their reading material. As stated, ".....the appearance is interesting, not boring, the use of language is easy to understand.....". The perception of mothers regarding the comprehensibility of infographic media is crucial in ensuring effective communication of information, particularly on complex topics such as stunting. The informants' confidence that readers would understand the material presented in the infographic media is supported by research on the effectiveness of various educational interventions in increasing knowledge and understanding among target

audiences, demonstrating the effectiveness of health education videos in significantly increasing knowledge about stunting among women of childbearing age (Nuraini et al., 2021). This finding supports the notion that visual media, such as infographics, can effectively convey information and enhance understanding, aligning with the informants' confidence in the comprehensibility of the material.

Similarly, 's study on the effect of simulation puzzle games on increasing mothers' knowledge about stunting prevention and feeding patterns in children aged 0-24 months provides further evidence of the potential of interactive and visually engaging educational tools in improving understanding (Sari & Aprianti, 2023). The positive impact of these interventions on knowledge enhancement supports the informants' belief that readers would understand the material presented in the infographic media.

On the other hand, it emphasizes the importance of using media in stunting extension to adolescents, highlighting the need for knowledge dissemination to break the intergenerational chain of stunting (Lina et al., 2022). It underscores the significance of effective communication through media, including infographics, to ensure that the message reaches and is understood by the target audience.

In summary, the informants' confidence in the comprehensibility of the material presented in the infographic media is supported by research demonstrating the effectiveness of various educational interventions in increasing knowledge and understanding among different target groups. The following is a critical analysis regarding the mother's perception that readers will understand about stunting if they read infographic media:

1. All informants were confident that readers would understand the stunting material in infographic media.
2. Media displays that are attractive and exciting are essential in increasing readers' interest and understanding of the material.
3. Using easy-to-understand language makes it easier for readers to understand the messages and information you want to convey about stunting.
4. Understanding the material is seen from the appearance and language and the depth and completeness of the material's content. Therefore, an in-depth evaluation regarding stunting is needed.
5. It is necessary to try to understand stunting material by target readers, not only based on the perceptions of research informant mothers. It ensures the understanding and effectiveness of infographic media as an educational medium.
6. The mother's statement, which is very confident that readers will understand, must be tested for validity. The positive perception of mothers could be due to social desirability factors resulting in overestimation.

Several critical analyses related to mothers' perceptions show that infographic media effectively conveys understanding about stunting to target readers based on existing data. Further trials are needed regarding understanding stunting material through this media.

### **Mothers' perceptions about infographic media are relevant to readers' needs.**

Mothers' perceptions about infographic media are relevant to readers' needs. All informants said they were confident that infographic media was appropriate to readers' needs, especially for mothers with babies and toddlers, as stated, "..... With this infographic media, informants increase knowledge about stunting in children, in accordance with current health conditions, where stunting incidents are still often found in the surrounding environment.....". The perception of mothers regarding the relevance of infographic media to readers' needs, especially for mothers with babies and toddlers, is essential for effective communication and knowledge dissemination. The informants' confidence in the appropriateness of infographic

media aligns with the potential impact of visual communication tools in addressing specific informational needs.

Research emphasizes the role of infographics in facilitating independent learning, particularly in educational contexts (Dewantari et al., 2021). It supports the notion that infographic media can effectively cater to the specific learning needs of mothers, aligning with the informants' confidence in the relevance of the media in addressing the issue of stunting in children.

Furthermore, the study on developing an animated infographic module in Arabic grammar learning highlights the potential of infographics to address specific educational needs and enhance learning outcomes (Hamid et al., 2020). It underscores the adaptability of infographic media to cater to diverse learning requirements, including those related to health and child development.

Moreover, the research on infographics, assessment, and digital literacy emphasizes the influential role of infographics in shaping the opinions of their audience due to their user-friendly and quick-read format (Darcy, 2022). It supports the informants' confidence in the appropriateness of infographic media for mothers, indicating that such media can effectively address their specific informational needs related to child health and development. In summary, the informants' confidence in the relevance of infographic media to readers' needs, particularly for mothers with babies and toddlers, is supported by research highlighting the adaptability and effectiveness of infographics in addressing specific educational and informational requirements. The following is a critical analysis regarding the mother's perception that infographic media meets the needs of readers:

1. All informants stated that they were confident that infographic media was relevant to readers' needs, especially mothers with babies and toddlers.
2. However, this statement is subjective based on the mothers' point of view as research informants. A more comprehensive survey of the information needs of target readers is needed.
3. Infographic media is designed to provide stunting education to mothers of toddlers. However, the content and method of delivering information needs to be adapted to the specific needs of mothers of toddlers.
4. For example, is the information detailed enough and easy to put into practice to prevent stunting in children? Or is the information conveyed in line with the local culture and situation of mothers of toddlers?
5. An in-depth study is needed to determine whether the stunting infographic media created is genuinely a solution and valuable for mothers of toddlers in preventing stunting in their environment.
6. Evaluation of information needs to involve a team of nutrition and child health experts so that content recommendations align with the educational needs of mothers of toddlers in preventing stunting.

Even though the informants felt that the infographic media met their needs, a more detailed study involving various relevant stakeholders was needed to ensure this.

### ***The mother's perception of infographic media is simple.***

The mother's perception of infographic media is simple; all informants said they believed that infographic media was simple in presenting the material: as stated, ".....Use of simple language, simple and complete material, attractive appearance, material arranged neatly and sequentially, so that it is easy for readers to understand.....". The perception of mothers regarding the simplicity and appropriateness of infographic media is crucial in ensuring effective communication and knowledge dissemination, particularly on topics relevant to child health and development. The informants' confidence in the simplicity and relevance of

*infographic media aligns with the potential impact of visual communication tools in addressing specific informational needs.*

*Research emphasizes the role of infographics in facilitating independent learning, particularly in educational contexts (Dewantari et al., 2021). It supports the notion that infographic media can effectively cater to the specific learning needs of mothers, aligning with the informants' confidence in the relevance of the media in addressing the issue of stunting in children.*

*Furthermore, the study evaluating online comics among students highlights the potential of visually engaging educational tools in improving understanding and knowledge retention (Radeswandri et al., 2021). It underscores the adaptability of infographic media to cater to diverse learning requirements, including those related to health and child development.*

*Moreover, the research on students' perceptions of the application of infographics as instructional media in promoting their writing abilities provides further evidence of the potential of infographics to address specific educational needs and enhance learning outcomes (Hamer et al., 2022). The positive impact of these interventions on knowledge enhancement supports the informants' belief that readers would understand the material presented in the infographic media.*

*In summary, the informants' confidence in the simplicity and relevance of infographic media is supported by research demonstrating the effectiveness of various educational interventions in increasing knowledge and understanding among different target groups. The following is a critical analysis regarding the mother's perception that infographic media is simple:*

- 1. All informants assessed that infographic media was straightforward in conveying the material.*
- 2. Simple language makes it easier for all readers to understand the message conveyed. Nevertheless, to remain standard, you must also pay attention to spelling and grammar.*
- 3. The material is presented quite concisely but with complete information. Visualization in pictures and charts helps make complex material simpler to understand.*
- 4. It is essential to pay attention to the order in which the material is presented (coordination) so that the logical flow of information is easy for readers to follow from beginning to end.*
- 5. Evaluation of simplicity is seen from not only the appearance and language but also the substance and structure of the writing material itself. Good material is simple but in-depth and complete with facts.*
- 6. It is necessary to test the understanding of the material by the target readers, whether they agree that the material is simple enough to understand or whether they still find it difficult to understand.*

*Even though the informant felt that the material was quite simple, further evaluation and testing were still needed regarding the simplicity of the material in terms of substance and writing structure.*

### ***Mother's perception regarding the source of infographic media material***

*Mother's perception regarding the source of infographic media material: All informants said they were confident that infographic media had used correct (valid) sources: as stated, ".....The material was delivered by experts in their field, based on clear and reliable sources....". The perception of mothers regarding the sources of infographic media material is essential for ensuring the credibility and reliability of the information presented. The informants' confidence in using correct and valid infographic media sources aligns with the*



importance of source credibility in influencing perceptions and attitudes toward shared content.

Research by Dedeoğlu (2019) emphasizes the significance of source credibility in shaping perceptions of shared content on social media, highlighting its positive impact on the importance attached to non-participant shared content (Dedeoğlu, 2019). It underscores the influence of source credibility on the perceived value and relevance of information, supporting the informants' confidence in the validity of the sources used in infographic media.

Furthermore, the study on substance use among young mothers analyzed Facebook posts to understand the sources of information and perceptions related to substance use (Oram et al., 2018). The findings indicated the potential influence of social media as a source of information, highlighting the need for reliable and accurate sources to counteract misinformation and promote accurate knowledge dissemination.

Moreover, the research explored the influence of information sources on vaccine perceptions, emphasizing the need to pay attention to the negative impact of social media and the positive impact of healthcare providers as reliable sources of information (Volkman et al., 2020). It highlights the critical role of credible sources in shaping perceptions and attitudes towards health-related information, aligning with the informants' confidence in the validity of sources used in infographic media.

In summary, the informants' confidence in using correct and valid sources in infographic media is supported by research highlighting the influence of source credibility on perceptions and attitudes toward shared content, particularly in the context of health-related information. The following is a critical analysis of mothers' perceptions regarding the source material in infographic media:

1. All informants stated they were confident that the infographic media had used correct (valid) sources in their material.
2. However, this statement is subjective because the informants do not necessarily know the sources of material used in infographic media.
3. In-depth verification and validation by experts or researchers are needed regarding the suitability of stunting material in infographic media with reliable health and nutrition facts.
4. Material sources must include theoretical references and the latest credible stunting research results to confirm their validity.
5. Experts or researchers also need to ensure that the substance of the stunting material in the infographic media is complete so that all critical information is noticed.
6. It is necessary to investigate whether the sources and creators of the infographic media material are competent experts in stunting and child nutrition.

### **Perceptions about infographic media do not violate regulations.**

Perceptions about infographic media do not violate regulations. All informants said they were confident that infographic media did not violate applicable regulations: ".....The use of language and images is good and polite and does not plagiarize other people's work...". The perception of mothers regarding the compliance of infographic media with regulations is crucial for ensuring ethical and legal standards in information dissemination. The informants' belief that infographic media does not violate applicable regulations aligns with the importance of ethical and legal compliance in media content.

Research using infographics to reduce the adverse effects of jargon on intentions to vaccinate against COVID-19 emphasizes the significance of ethical considerations in information dissemination (Riggs et al., 2022). It underscores the importance of clear and ethical communication in public health messaging, aligning with the informants' confidence in the compliance of infographic media with regulations.

Furthermore, the study on disseminating program impact using infographic reports highlights the ethical considerations in health communication and information dissemination (Olfert et al., 2019). The use of clear and informative infographics in health promotion aligns with the informants' confidence in the ethical presentation of infographic media.

Moreover, the research on infographics, assessment, and digital literacy emphasizes the influential role of infographics in shaping perceptions and attitudes due to their user-friendly and quick-read format (Darcy, 2022). It supports the informants' confidence in infographic media's ethical and compliant nature, indicating that such media can effectively address their specific informational needs related to child health and development.

In summary, the informants' confidence in the compliance of infographic media with regulations is supported by research emphasizing the importance of ethical and legal standards in media content creation and dissemination. Here is the analysis critical regarding the mother's perception that infographic media does not violate regulations:

1. All informants stated that they were confident that infographic media did not violate applicable regulations, such as using polite language and images and not plagiarizing other people's work.
2. However, this statement is premature because the informants cannot ensure that infographic media is free from copyright infringement or plagiarism.
3. A comprehensive review by media and legal experts is needed regarding the legal and ethical aspects of creating this stunting infographic media.
4. One thing that needs to be ensured is the authenticity of the material presented, only taking legal references from other parties' publications without properly including the source.
5. Apart from that, it is necessary to check whether the use of existing images, photos, and illustrations has received permission from the copyright holder to avoid copyright infringement.
6. The language and messages of health communication media must also be polite and not conflict with the Standard Operational Procedures for stunting education by the authorized agency.

A study by relevant experts is needed to ensure legality and compliance with the code of ethics in designing and delivering messages about stunting in infographic media.

### **Mothers' perceptions of access to infographic media**

Mothers' perceptions about access to infographic media: 18 out of 20 informants said that infographic media was easy to access: as said, "..... Practical, and easy to access anywhere and anytime, how to use it is clear, easy and does not require additional applications.....". Meanwhile, 2 out of 20 informants said infographic media was not easy to access ".....Difficult to access due to limited internet quota and inadequate cellphone capacity.. .". The perception of mothers regarding the accessibility of infographic media is crucial for ensuring the effective dissemination of information. The informants' belief that infographic media is easy to access aligns with the potential impact of accessible and user-friendly educational tools in improving knowledge dissemination and understanding.

Research emphasizes the importance of presenting complex information in a simplified manner, particularly with the increase in accessible information and multimedia concepts (Çaka & Dursun, 2022). It supports the informants' confidence in the ease of access to infographic media, indicating its potential to convey information to a broad audience effectively.

Furthermore, the study on the influence of video format on engagement and performance in online learning provides insights into the impact of different media formats on accessibility and engagement (Lackmann et al., 2021). It underscores the importance of

practical and accessible media formats, aligning with the informants' confidence in the ease of access to infographic media.

Moreover, the research on differences in social media monitoring practices based on child and parent gender provides insights into the influence of social media on information accessibility and communication practices (Wallace, 2021). It highlights the potential of social media as a platform for accessible information dissemination, supporting the informants' confidence in the ease of access to infographic media.

In summary, the informants' confidence in the ease of access to infographic media is supported by research emphasizing the importance of accessible and user-friendly educational tools in improving knowledge dissemination and understanding. The following is a critical analysis of mothers' perceptions regarding the ease of accessing infographic media:

1. Most informants (18 out of 20) stated that infographic media was accessible anywhere and anytime. It is the advantage of online media.
2. Operating and using the media is also considered easy and does not require special applications or abilities. The user experience of the media is relatively user-friendly.
3. However, 2 out of 20 informants stated that access was difficult due to limited internet quota and inadequate cellphone specifications. This problem of infrastructure and social inequality needs to be looked at,
4. It is necessary to ascertain whether the minimum specifications for accessing this infographic media are affordable for most potential readers from the group of mothers of toddlers or vice versa.
5. The development team also had to ensure media compatibility across devices, from low-end to high-end smartphones.
6. Accessibility and affordability for this target group are crucial so that infographic media can function optimally as an educational medium for social stunting prevention.

That is the critical analysis regarding the ease of accessing digital stunting infographic media based on existing data. The hope is that media will be easily accessible to all levels of society.

### ***Mother's perception regarding the safety of accessing infographic media***

Mother's perception regarding the safety of accessing infographic media. All informants said they were confident that this infographic media was safe to access and use on cellphones and did not damage cellphone data. As stated: ".....This infographic media contains clear and reliable information; of course, there is no virus that will damage cellphone data, not make cellphone memory full and slow down cellphone work.....". The perception of mothers regarding the safety of accessing infographic media is essential for ensuring the reliability and security of information dissemination. The informants' belief that infographic media is safe to access and use aligns with the importance of ensuring the security and integrity of digital content.

Research by emphasizing the effectiveness of infographics as a form of communication in public health, highlighting their potential to drive action and change behavior (Poplašen et al., 2019). It underscores the significance of ensuring the safety and reliability of infographic media, aligning with the informants' confidence in the safety of accessing such media.

Furthermore, the study on mothers' perceptions of the internet and social media as sources of parenting and health information provides insights into the importance of guidance regarding appropriate internet sources to improve the safety of infant care practices (Moon et al., 2019). It highlights the need for reliable and secure sources of information, supporting the informants' confidence in the safety of accessing infographic media.

Moreover, the research, by exploring the influence of information sources on vaccine perceptions, emphasizes the need for reliable and secure sources of information to ensure safety and accuracy (Volkman et al., 2020). It supports the informants' confidence in the

safety of accessing infographic media, indicating the importance of reliable and secure sources in shaping perceptions and attitudes. In summary, the informants' confidence in the safety of accessing infographic media is supported by research emphasizing the importance of reliable, secure, and accurate sources of information in digital content. The following is a critical analysis of mothers' perceptions about the safety of accessing infographic media:

1. All informants felt confident that infographic media was safe to access and would not damage data or slow down cellphone performance.
2. However, the actual level of security needs to be technically tested by an IT security expert, and more is needed to base it on the informant's lay opinion.
3. It is necessary to carry out a penetration test by an ethical hacker on the infographic media application system to ensure that there are no gaps in the code and software that are vulnerable to being infiltrated by malware or hacked.
4. Apart from that, it is necessary to check whether the application source code is free from viruses, worms, Trojan horses, or spyware, which could threaten the privacy and security of user data.
5. Sources of stored material and user data must also be safe from the risk of leaks that certain parties could misuse. Privacy protection and security of essential data are ensured.
6. The developer needs to be transparent regarding the application's security and privacy policies and continue to update it to be free from bugs and security gaps.

An in-depth audit is needed to minimize the risk of violating user security and privacy.

Following research, this learning model increases understanding and recognition of imagination. Infographics can combine different educational elements into one. The use of this infographic can also be distributed quickly and easily via electronic media. The importance of using infographics in education can also increase the consideration of learning to understand topics clearly by looking rather than reading (Al-Mohamadi, 2017).

Based on research (Ozdamli et al., 2016), the results showed that learning using infographics does not result in severe losses because infographics provide better visuals (the material is more accessible to memorize and understand). So, infographics can be used as learning material. Infographic media illustrates information with minimal text and is also a visual summary. According to research on the success of visual messages in health communication, namely clarifying complex information, expanding knowledge, and increasing attention and understanding (King A. et al. I, 2014).

The accessibility and ease of distribution of infographics via electronic media further contribute to their effectiveness in education. The visual nature of infographics allows for quick and easy dissemination of information, making them accessible to a broad audience. Additionally, research by Snyman and Penzhorn (2022) highlighted the need for sustained dialogue with target audiences to ensure effective communication, which is essential for the successful dissemination of infographics. Using infographics in education is efficacious in improving understanding and recognition through visual representation. The visual nature of infographics allows for the presentation of complex information in a simplified manner, making them a valuable tool for knowledge dissemination (Snyman & Penzhorn, 2022).

Research on the effectiveness of infographic-based learning media on residual learning outcomes in social studies subjects with the results of one of the various technological media that can be used, namely infographics. This research reveals that the use of infographic-based learning media has a significant influence on student learning outcomes in social studies subjects. It proves that to achieve effectiveness in learning, teachers must create innovation and creativity in delivering learning materials to attract students' interest in learning. It will improve student learning outcomes (Masluhah, Afifah KR, 2022). Research



*on health education for the prevention and risk of dengue fever in Manga and Infographics with the results of social media treatment has been proven to have an effect in the form of increasing understanding of information, perceptions, and systematic attitudes towards dengue fever. Research on the development of media in the form of infographics as a support for physics learning in class*

*Research on Students' Perception of Infographics: A Visualization Tool on Strengthening Critical Thinking Skills. The results showed that students felt motivated, engaged, and supported when they used infographics to represent course material. Students argue that visualization through infographics can improve critical thinking and the construction of meaning and understanding. Infographic visualization also helps students clarify abstract material that may be difficult to explain orally and gain a clear understanding of specific information (Dewi et al., 2023). Research on Infographic Design as a Visualization of Geography Learning Media shows that good infographic design visualizes learning media. As a result of the literature review, visualization of media geography learning can make it easier for students to digest lessons well. With an exciting and complex illustration concept, this infographic design will attract the reader's attention. Especially for students and teachers (Akhmad et al., 2018).*

*According to research on The effectiveness of using infographics on academic achievement: A meta-analysis and a meta-thematic analysis. The results of a meta-analysis of 12 studies revealed that the use of infographics in the field of education has a positive influence on students' academic achievement. On the other hand, this conclusion is supported by data obtained from the qualitative research dimension, which is included in the meta-thematic aspect of this research. Within the scope of this study, it is possible to mention several strengths for future research. In the process of literature observation, it was observed that academic studies on using infographics in education and effective infographic design are limited to descriptive studies (Elaldi & Çifçi, 2021).*

*Research about the effects of Infographics on Developing Computer Knowledge, Skills, and Achievement Motivation among Hail University Students. This research shows that infographics effectively improve student learning achievement, e-learning, computer skills, and achievement motivation. This study highlights that infographics have great educational potential to improve students' skills and motivation. This research also reveals that static infographics significantly influence female students' learning, while animated infographics are effective for male students' learning. The results of the field trial (large group) were declared very feasible. The use of learning infographics can increase student interest in learning. It can be seen from students who are more interactive in learning history. Students become more likely to ask questions, answer questions, and ask questions related to the material provided. So, using learning infographics has proven effective as a good learning resource for students (Ibrahim & Alamro, 2021).*

*The effectiveness of infographics in education has also been supported by studies such as those conducted by Dogomeo and Aliazas's (2022), which emphasize the importance of different multimedia teaching materials, including infographics, in enhancing learning outcomes. Furthermore, Dogomeo and Aliazas's (2022) research demonstrated that infographics enhanced learners' performance and significantly improved their scientific knowledge. The research presented underscores the positive impact of infographics on academic achievement, learning outcomes, and student engagement. The findings highlight the potential of infographics as practical educational tools for enhancing learning experiences and improving student performance (Dogomeo & Aliazas, 2022).*

*Research about the development of Infographic Learning Media to Improve Student Learning Interests; using learning infographics can increase student interest in learning. It can be seen from students who are more interactive in learning history. Students become more*

likely to ask questions, answer questions, and ask questions related to the material provided. So, the use of learning infographics has been proven to be effective as a good learning resource for students (Mansur & Rafiudin, 2020).

## CONCLUSION

The studies explores the perceptions of 20 mothers with children under five towards the infographic media "Ayo Preventer Stunting" (Ayo Centing). The results indicate a general positivity in informants' perceptions of aspects of infographic media, including appearance, title, ease of understanding, suitability to reader needs, simplicity, and regulatory compliance. Most informants (17 out of 20) stated that this medium was easy to read and understand, while most (18 out of 20) found it easily accessible. All informants believe that readers will understand stunting and acknowledge the truth of infographic media information sources. However, some informants had difficulty understanding due to the small font size and use of unfamiliar abbreviations. In contrast, two informants faced accessibility barriers due to limited internet quotas and inadequate mobile phone specifications. While the study's results provide valuable insights, several limitations that affect the interpretation of the findings should be noted. The limited number of informants (20 mothers with children under five in one area) poses limitations to generalizing the results. The second limitation is the subjective approach based on mothers' perception as research informants and the absence of objective and comprehensive comprehension tests. In addition, the absence of a control group to compare the effectiveness of infographic media with other educational methods and the lack of expert reviews regarding the validation of content substance and its effectiveness in the context of stunting prevention add to the complexity of interpreting the results. Verification of the source of information or the creator of material on infographic media is also not carried out. Finally, this study only focuses on exploring perceptions without evaluating the adoption and concrete impact of the implementation of infographic media on stunting prevention behavior. Therefore, while the study's results provide valuable insights, it is necessary to interpret them considering the existing methodological constraints.

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