

Animated video education on the level of knowledge of Gastroesophageal Reflux Disease (GERD) in teenager

Nurromsyah Nasution¹, Dinda Rahmadaningsih², Orita Satria³

^{1,3}Lecturer of S1 Nursing Study Program, STIKes Medika Seramoe Barat, Indonesia

²Student of S1 Nursing Study Program, STIKes Medika Seramoe Barat, Indonesia

ARTICLE INFO

Article history:

Received Jun 25, 2024

Revised Jun 27, 2024

Accepted Jul 12, 2024

Keywords:

Animation Videos

GERD

Knowledge

Teenager

ABSTRACT

Background: GERD is one of the most frequently encountered and currently experienced problems an increase in prevalence every year. Apart from an unhealthy lifestyle, lack of knowledge can also be a risk factor for teenagers experiencing GERD. With the sophistication of technology, we can easily increase our knowledge with various media, one of which is animated video media. This type of research is quantitative research using a quasi-experiment design with one group pre-test post-test. This research collected data at SMA N 2 Meulaboh. The sample in this study was 210 respondents using probability sampling techniques. Data analysis used the Wilcoxon test. The research results found that applying animated videos could influence the level of knowledge about GERD in adolescents with a P value of 0.000. Research conclusion: There is an influence of animated videos on the level of knowledge of GERD in adolescents.

This is an open access article under the [CC BY-NC](https://creativecommons.org/licenses/by-nc/4.0/) license.



Corresponding Author:

Nurromsyah Nasution,

S1 Nursing Study Program, STIKes Medika Seramoe Barat,

Jl. Industry, Seuneubok, Kec. Johan Pahlawan, West Aceh Regency, Aceh 23616, Indonesia

Email: nurromsyah@gmail.com

INTRODUCTION

Gastroesophageal Reflux Disease (GERD) is a symptom or complication of backflow of stomach contents from the esophagus to the oral cavity, which can irritate the respiratory tract (Priscilla et al., 2017). The severity of GERD is determined by the duration of exposure of the esophagus and other organs to Hydrogen Chloride (HCL) (Fass et al., 2021). The duration of exposure is influenced by the ability of the esophagus to empty (Didik Kuswono & BunYurizali, 2021). So it can be concluded that Gerd is a clinical condition that develops when the composition of gastric reflux causes symptoms such as nausea, vomiting, premature satiety, bloating and belching or complications that cause discomfort in Gerd sufferers.

GERD is a common clinical problem experienced by millions of people throughout the world, including in North America with an estimated incidence of 18.1-27.8% (Clarrett & Hachem, 2018). The global prevalence of GERD events based on research Zhang et al., (2022) in 204 countries and regions from 1990-2019 reached 783.93 million cases. The prevalence rate of GERD throughout the world is around 15%-25%, for East Asia it is 5.2%-8.5% (Poddar, 2019). The prevalence of GERD sufferers tends to increase with age, especially in the adolescent to adult age group. The number of GERD sufferers is increasing starting from the age group 17 to 20, 31 to 40 years as many as 13

patients (11.2%), then in the age group 41 to 50 years to 28 patients (24.1%), and in the older age group from 50-60 years reached 55 patients (47.4%) (Putri R et al., 2021).

Based on the results of research in Indonesia, the prevalence of GERD diagnosed using endoscopy has increased by 22.8% (Maret-Ouda et al., 2020). The high incidence of GERD is caused by poor, unbalanced and long-lasting eating patterns which will have negative impacts (Fox & Gyawali, 2023). Ajjah et al., (2020) the results of the prevalence of GERD sufferers among students in the Medical Education Study Program, Faculty of Medicine, Syah Kuala University were around 17.6% with poor eating patterns at 17.1%. The increasing development of technology, industry and increasingly advanced socio-economic improvements are changing the behavior and lifestyle of teenagers to follow the trend of consuming foods low in nutrition and high in saturated fat such as instant noodles, snacks and foods containing spicy or sour ingredients (Montoro-Huguet, 2022; Nurromsyah Nasution; Orita Satria, 2023). High intake of salt and cereals, excessive consumption of meat and eggs and insufficient intake of fruit and vegetables are associated with a high incidence of GERD (Davood et al, 2021). In addition, several studies show that vegetables, fruit, and a high-fiber diet are inversely related to GERD (Leiman & Metz, 2019).

GERD can occur in all ages, but the fastest growth occurs in children and adolescents. Up to 25% of teens experience symptoms of GERD, according to the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). GERD can become a problem if it is not treated because over time, stomach acid reflux damages the tissue lining the esophagus, causing inflammation and pain. In teenagers, long-standing, untreated GERD can cause permanent damage to the esophagus. Teenagers experiencing GERD are said to be because more and more are overweight, making it possible for GERD to occur, which is caused by teenagers' love of junk food, French fries, pizza and so on (Memorial Care, 2023). The quality of adolescent health is one of the most important parts of the human life cycle, because some of the health problems that occur during adulthood are closely related to the lifestyle behavior of adolescents (Didik Kuswono & BunYurizali, 2021)(Borodina & Morozov, 2020). Based on a survey conducted by Adinda, (2020) respondents aged 15-18 years had never heard of GERD. During adolescence, a human's physical function almost reaches its peak. In this phase, human physical health reaches an optimal point which will form the foundation of health in the future. GERD also affects the quality of life if it is not treated quickly, it will result in sufferers becoming chronic, and teenagers' academic performance will decline due to the impact of the signs and symptoms felt by GERD sufferers, teenagers lacking concentration and not attending school (Salem et al., 2018)(Awadalla N. J., 2019).

Knowledge is what is known or the result of the work of knowing. The work of knowing is the result of knowing, being aware, realizing, understanding and being clever. Knowledge is all property of the mind or the contents of the mind, thus knowledge is the result of the process of human efforts to know (Suedi, 2016). Knowledge is all ideas, thoughts, ideas, concepts and understanding that humans have about the world and everything in it, including humans and their lives (Soelaiman, 2019).

In an effort to increase this knowledge, we can take advantage of technological sophistication from various media, one of which is by using animated video media. Animated video as a learning medium has benefits for users, where this animated video is a combination of elements such as audio, text, video, images and sound which are then combined into one so that it becomes an attractive media for students and users (Hendra et al., 2023). Animated video is a medium that combines audio media with visual media so that it can attract students' attention, be able to present objects in detail, and can help understand relatively difficult lessons (Apriansyah, 2020). The results of research (Mahri & Wandu, 2022) say that there is an influence on proving that animated video media is considered effective in efforts to increase knowledge.

RESEARCH METHOD

The type of research used by researchers is quantitative with a Quasi Experimental Research design to look for certain treatment of other people in controlled conditions with a one group pre-test post-test approach involving one group before and after implementing the intervention (Polit DF, 2018). The existing group was given a pretest, then given treatment, and finally given a posttest. By administering a Guttman scale knowledge questionnaire, and showing a 4 minute 56 second animated video that provides information about the definition, causes, signs and symptoms, management, complications and prevention of GERD. Compared to other learning methods such as PowerPoint presentations which are easier to get bored of, the use of animated video-based media can help students understand GERD better and more interestingly. The pre-test assessment of knowledge about GERD was carried out by filling out a Guttman scale questionnaire. Then displays an animated video with a duration of 4 minutes 56 seconds conveying information about the meaning, causes, signs and symptoms, treatment, complications and prevention of GERD. After watching the video, a post test assessment was carried out by distributing a new questionnaire to assess knowledge about GERD. This study aims to analyze the influence of animated videos on the level of knowledge of gastroesophageal reflux disease (GERD) in adolescents.

The location of this research is SMA Negeri 2 Meulaboh Kec. Johan Pahlawan Kab. Aceh Barat. The population in this study were students of class X and XI. The sampling technique used is probability sampling with a proportional stratified random sampling technique where each heterogeneous population is divided into layers that are completely separated from each other, and samples can be taken randomly from each stratum using the Slovin formula. The number of students selected for the sample in this study was 210 people, for the period February-March 2024. Researchers collected data using questionnaires, and analyzed univariate data with frequency distribution while bivariate used the Wilcoxon test.

RESULTS AND DISCUSSIONS

Results

The results of the frequency distribution of characteristics of Gastroesophageal Reflux Disease (GERD) respondents in adolescents can be seen from table 1.

Table 1. Frequency distribution of characteristics of Gastroesophageal Reflux Disease (GERD) respondents in adolescents

Gender	F	%
Man	97	46,2
Woman	113	53,8
Total	210	100,0

In table 1 it is known that the distribution of characteristics of the majority of respondents is female, with 113 respondents (53.8%).

Table 2. Wilcoxon test results before and after implementing the DASH Diet Pattern in GERD Adolescents

	N	Mean	Std.Deviation	Maximum	Maximum	P Value
Pretest	210	2.76	.530	1	3	0.000
Posttest	210	1.50	.658	1	3	

Based on the table of Willcoxon test results in the Animation Video pre-test carried out on 210 respondents and obtained a mean of 2.76 and std, deviation of 0.530, the minimum of which is 1, a maximum of 3 and obtained a p-value of $0.000 < \alpha 0.05$, then the Animation Video posttest was carried out on 210 respondents and obtained a mean of 1.50 and a std deviation of 0.658, which is a

minimum of 1 and a maximum of 3, so you get a p-value of $0.000 < \alpha 0.05$, this means that there is a significant influence between the influence of animated videos on the level of knowledge of Gastroesophageal Reflux Disease (GERD) in teenagers.

Discussions

Based on the results of the Wilcoxon test, a p-value of $0.000 < 0.05$ was obtained, which means that the application of animated videos can increase knowledge of GERD in adolescents. GERD, which is often suffered by teenagers, has a negative impact on teenagers' lives, one of which is hampering the education that teenagers are pursuing (MemorialCare, 2023). It is important to recognize risk factors related to lifestyle, such as smoking, alcohol and consumption of acidic foods, chocolate, caffeinated drinks and carbonated drinks, drugs are some of the factors that increase the risk of GERD in adolescents (Fox & Gyawali, 2023)(Herdiana, 2023).

Animation Video is one of the techniques chosen and applied to increase knowledge, according to the results of research conducted by (Mahri & Wandu, 2022) proving that animated video media is considered effective in efforts to increase knowledge, this is supported by research conducted by Ningrum et al., (2024) which states that education based on animated video media is very effective in increasing knowledge. Animated video is a combination of audio, image, photo and graphic media into one.

A study by Annisa et al., (2024) found that before being given education using animated videos, a pretest was given with the results of all respondents (100%) with a score of ≤ 56 , which means that the majority of respondents had the category of lacking knowledge, whereas after carrying out the posttest on 57 students have a good category with a score of ≥ 76 and 1 student is in the sufficient knowledge category with a score of 56-75. So it can be seen from this value that the average knowledge after being given the educational video is greater than before being given the educational video. Ningsih et al., (2024) which obtained results of differences in the level of knowledge before and after being given counseling with the media animated videos. The level of knowledge of respondents who had not received counseling obtained results in the poor category of 70%, while the results of respondents' knowledge after the animation video counseling obtained results in the good category of 90%.

The results of this research can be concluded that the application of animated videos can increase knowledge in teenagers. This research is in line with previous research which proves that animated video media is very effective in increasing teenagers' knowledge about Gastroesophageal Reflux Disease (GERD).

CONCLUSION

Teenagers' ignorance of GERD and poor eating habits, such as a penchant for quick noodles, snacks, and meals with sour or spicy components, are to blame for the high prevalence of GERD in this age group. It is also intended that by providing an animated film that illustrates the meaning, symptoms, effects, and preventative measures of GERD, teens' awareness of the condition would grow. In addition, it can serve as a better source of information for future study by advancing our understanding of the significance of teenage awareness of GERD. There is a need for collaboration between schools and teachers to increase awareness of teenagers towards GERD by providing youth health promotion with the output of this research being animated videos and also the need to monitor healthy snacks that are sold in school spaces.

This research has several limitations, namely that the journals that will be used as support will be difficult to find and the research time is relatively short. Apart from that, there are still other variables and factors that can explain the dependent variable that are not yet known. It is hoped that the results of this research will increase the knowledge of researchers and readers about GERD. It is also hoped that these results can increase the understanding of researchers and readers about other variables that are considered to have a significant influence on the dependent variable.

This research is also expected to expand supporting theories that can be used to compare results in drawing conclusions.

ACKNOWLEDGEMENTS

The cooperation of several parties made it possible to conduct this research effectively. For this reason, the researcher would like to express gratitude to STIKes Medika West Seromoe, the principal of SMA Negeri 2 Meulaboh, and the research location for their excellent cooperation in conducting this study.

References

- Adinda, N. (2020). *Perancangan Media Informasi Bagi Remaja Mengenai GERD Melalui Aplikasi*. (pp. 1-16). Repository Perpustakaan Itenas.
- Ajjah, F. F., Mamfalutti, B., Imansyah, T. R., & Putra, T. (2020). Hubungan Pola Makan dengan Terjadinya GERD. *Journal of Nutrition College*, 9(3), 169-179.
- Annisa, N., Nurdin, A., Tihardimanto, A., Rimayanti, U., & Ahmad, A. (2024). Open access Open access. *Citizen-Based Marine Debris Collection Training: Study Case in Pangandaran*, 7(4), 56-61.
- Awadalla N. J. (2019). *Personal, academic and stress correlates of gastroesophageal reflux disease among college students in southwestern Saudi Arabia: A cross-section study*. *Annals of medicine and surgery* (2012), 47, 61-65. <https://doi.org/10.1016/j.amsu.2019.10.009>.
- Borodina, G., & Morozov, S. (2020). Children With Gastroesophageal Reflux Disease Consume More Calories and Fat Compared to Controls of Same Weight and Age. *Journal of Pediatric Gastroenterology and Nutrition*, 70(6), 808-814. <https://doi.org/10.1097/MPG.0000000000002652>
- Clarrett, D. M., & Hachem, C. (2018). Gastroesophageal Reflux Disease (GERD). *Missouri Medicine*, 115(3), 214-218.
- Didik Kuswono, A., & BunYurizali, R. R. A. (2021). *Kejadian Gastroesophageal Reflux Disease (GERD)*. 36-44.
- Fass, R., Boeckstaens, G. E., El-Serag, H., Rosen, R., Sifrim, D., & Vaezi, M. F. (2021). Gastro-oesophageal reflux disease. *Nature Reviews. Disease Primers*, 7(1), 55. <https://doi.org/10.1038/s41572-021-00287-w>
- Fox, M., & Gyawali, C. P. (2023). Best Practice & Research Clinical Gastroenterology Dietary factors involved in GERD management. *Best Practice & Research Clinical Gastroenterology*, xxx, 101826. <https://doi.org/10.1016/j.bpg.2023.101826>
- Hendra, Afriyadi, H., Tanwir, Hayati, N., Supardi, Laila, S. N., Prakasa, Y. F., Ahmad, R. P. H., & Asyhar, A. D. A. (2023). *Media Pembelajaran Berbasis Digital (Teori & Praktik)* (Efitra & Sepriano (eds.); Pertama). PT.Sonpedia Publishing Indonesia.
- Herdiana, Y. (2023). Functional Food in Relation to Gastroesophageal Reflux Disease (GERD). *Nutrients*, 15(16). <https://doi.org/10.3390/nu15163583>
- HNedaeidarzadeh-Esfahani, Davood Soleimani2, Salimeh Hajiahmadi, Shima MoradiNafiseh Heidarzadeh, S. M. N. (2021). *Dietary Intake in Relation to the Risk of Reflux Disease: A Systematic Review*. 26(December), 6.
- Leiman, D. A., & Metz, D. C. (2019). Gastroesophageal Reflux Disease. *Clinical Gastrointestinal Endoscopy*, June, 268-278. <https://doi.org/10.1016/B978-0-323-41509-5.00024-4>
- Mahri, M. M., & Wandu, W. (2022). Pengaruh Media Video Animasi Terhadap Pengetahuan Tentang Perawatan Organ Reproduksi Pada Remaja Putri. *Jurnal Pendidikan Teknologi Informasi (JUKANTI)*, 5(2), 324-332. <https://doi.org/10.37792/jukanti.v5i2.580>
- Maret-Ouda, J., Markar, S. R., & Lagergren, J. (2020). Gastroesophageal Reflux Disease: A Review. *JAMA*, 324(24), 2536-2547. <https://doi.org/10.1001/jama.2020.21360>
- MemorialCare. (2023). *Penyakit Orang Dewasa Yang Lebih Banyak Diidap Remaja*.
- Montoro-Huguet, M. A. (2022). Dietary and Nutritional Support in Gastrointestinal Diseases of the Upper Gastrointestinal Tract (I): Esophagus. *Nutrients*, 14(22), 1-24. <https://doi.org/10.3390/nu14224819>
- Ningrum, D., Setiadi, D. K., Sejati, A. P., & Fauziyah, R. N. (2024). Pengaruh Pendidikan Berbasis Media Video Animasi Terhadap Pengetahuan Ibu Tentang Protein Hewan Untuk Mencegah Balita Stunting. *Jurnal Riset Kesehatan Poltekkes Depkes Bandung*, 16(1), 238-251. <https://doi.org/10.34011/juriskesbdg.v16i1.2411>
- Ningsih, N. S., Halimah, H., Femala, D., Herlina, R., & Susatyo, J. H. (2024). Pengaruh Penyuluhan Media Video Animasi Terhadap Pengetahuan Cara Memelihara Kesehatan Gigi Pada Siswa-Siswi Kelas III B

- SDN 41 Sungai Ambawang. *Jurnal Ilmiah Global Education*, 5(1), 686-692. <https://doi.org/10.55681/jige.v5i1.2460>
- Nurromsyah Nasution; Orita Satria. (2023). *Pengaruh Pola Diet DASH Terhadap Kejadian Gastroesophageal Reflux Disease (GERD) Pada Remaja*. 6(2), 941-947.
- Poddar, U. (2019). Gastroesophageal reflux disease (GERD) in children. *Paediatrics and International Child Health*, 39(1), 7-12. <https://doi.org/10.1080/20469047.2018.1489649>
- Polit DF, B. C. (2018). *Essentials of Nursing Research: Appraising Evidence For Nursing Practice*. 9th Editio. Philadelphia: Wolters Kluwer Health.
- Priscilla, Lemone, Karen M. Burke, B. (2017). *Buku Ajar Keperawatan Medikal Bedah: Gangguan Gastrointestinal " Diagnosis Keperawatan NANDA Pilihan, NIC & NOC Ed. 5*. Buk Kedokteran EGC: Jakarta.
- Putri R, I. S., Abbas N, I., & Pintoko K, V. (2021). Peran Ayah dalam Pendampingan Pembelajaran Jarak Jauh. *Biomorfologi*, 29(1), 21-26.
- Salem, S., Algethami, M., Sulayyih, H., & Alosaimi, H. (2018). *Gastroesophageal Reflux Disease among Pilgrims during the Hajj Period (1438 Hegira) : Prevalence and Impact on the Quality of Life*. 70(January), 828-834. <https://doi.org/10.12816/0043990>
- Soelaiman, D. A. (2019). *Filsafat Ilmu Pengetahuan Pespektif Barat dan Islam*.
- Suedi. (2016). *Penantar Filsafat Ilmu* (N. Januarini (ed.); cetakan pe, Issue 3). PT. Penerbit IPB Press.
- Zhang, D., Liu, S., Li, Z., & Wang, R. (2022). Global, Regional And Nationa Burden Of Gastroesophageal Reflux Disease, 1990-2019: Update From GBD 2019 Study. *PUBMED*. <https://doi.org/10.1080/07853890.2022.2074535>