

## The effectiveness of Audiovisual Education and Spiritual Support Intervention on Anxiety Reduction and Hemodynamic Parameter Stabilization in Pre-Esophago Gastro Duodenoscopy (EGD) Patients: A Pre-Intervention Study

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### ABSTRACT

**Background:** Pre-procedural anxiety in esophagogastroduodenoscopy (EGD) patients can negatively impact cooperation and physiological stability, increasing procedural risks. This study evaluated the AVOGADO intervention, integrating audiovisual education and spiritual support, to reduce anxiety and stabilize hemodynamic parameters.

**Methods:** A Pre-Intervention Study was conducted on a 45-year-old male with chronic dyspepsia and moderate-to-severe anxiety (HAM-A > 25). The intervention was administered two days prior to the procedure. Anxiety levels were assessed using the Hamilton Anxiety Rating Scale (HAM-A), and hemodynamic parameters, including blood pressure, heart rate, and oxygen saturation, were measured at four time points: three days, two days, one day before, and on the day of the procedure.

**Result:** Anxiety decreased significantly, with HAM-A scores dropping from 26 (moderate-to-severe) to 10 (mild). Hemodynamic parameters improved, with blood pressure reduced from 150/90 mmHg to 130/82 mmHg and heart rate from 98 bpm to 80 bpm. Oxygen saturation remained stable.

**Conclusion:** The AVOGADO intervention effectively reduced anxiety and improved physiological stability in a pre-EGD patient. This simple, holistic approach offers promise for broader application in reducing anxiety in medical procedures. Further research with larger samples is recommended.

### KEYWORDS

*Pre-procedural anxiety, Esophagogastroduodenoscopy (EGD), AVOGADO intervention, Hemodynamic parameters*

## INTRODUCTION

Endoscopy is a critical healthcare service that involves the visualization of internal organs by inserting a fiber optic tube into body cavities and tissues (Kaminang et al., 2016). Many patients report various symptoms prior to undergoing an endoscopic procedure, including elevated blood pressure, increased heart rate, body temperature changes, and reduced immunity. These symptoms may lead to delays or cancellations of previously approved medical procedures, resulting in prolonged hospital stays, higher administrative costs, and worsened patient conditions (Majid et al., 2011). Besides physical

impacts, psychological effects, such as anxiety, are also commonly experienced by patients before endoscopy. Excessive anxiety can render patients uncooperative during the procedure (Kurniawan et al., 2017).

Several factors influence anxiety, which can be categorized into internal and external factors. Internal factors include experience, age, and gender, while external factors encompass family support and environmental conditions (Priyoto, 2015). Patients undergoing endoscopic procedures often experience anxiety due to insufficient information about the procedure, its potential side effects, or the results they

may receive (Nurhayati, 2018). Addressing pre-procedural anxiety is crucial, as heightened anxiety can cause patients to become less calm and cooperative, potentially disrupting the procedure or resulting in its postponement. Health education methods, such as providing information about endoscopic procedures through leaflets, audio, or audiovisual media, have been suggested as effective strategies for reducing anxiety (Toğaç & Yılmaz, 2021).

Pre-endoscopy health education can help alleviate patient anxiety by ensuring they know what to expect. Other benefits of pre-procedural education include meeting patients' informational needs, enhancing patient safety, improving psychological and physiological comfort, involving families in care, and reinforcing previously explained instructions (Maryunani, 2014)

A preliminary survey conducted at Prof. Dr. Margono Soekarjo General Hospital, revealed that all experienced mild anxiety before undergoing EGD. Patients reported a lack of clear understanding about the procedure, despite explanations from the attending physician. Some patients mistakenly perceived endoscopy as a surgical procedure involving incisions and pain. Seven out of ten patients scored 8–10 on the information needs assessment, indicating a strong demand for procedural information. This highlights the need for greater understanding and education about the phenomenon of pre-procedural anxiety in EGD patients.

## METHOD

This study employed a pre-intervention design to evaluate the effectiveness of the AVOGADO

intervention in reducing anxiety and stabilizing hemodynamic parameters in patients undergoing esophagogastroduodenoscopy (EGD). The intervention integrated audiovisual education and spiritual support, aimed at addressing psychological and physiological responses associated with pre-procedural anxiety. The study was conducted at Prof. Dr. Margono Soekarjo General Hospital, Purwokerto, Indonesia. Ethical approval was obtained from the hospital's ethics committee prior to the commencement of the study. Participants were selected using purposive sampling based on the following inclusion criteria: Adult patients aged 18–65 years referred for EGD, diagnosed with moderate to severe anxiety (Hamilton Anxiety Rating Scale, HAM-A > 25), no use of anxiolytic medication during the study period, and ability to understand and provide informed consent. Exclusion criteria included severe psychiatric disorders, unstable medical conditions, or inability to complete the intervention sessions.

The AVOGADO intervention consisted of audiovisual education and spiritual support administered over two consecutive days before the EGD procedure. Audiovisual education provided information about the EGD procedure, its purpose, and expectations using an engaging video format. Spiritual support included calming audio accompanied by guided relaxation and spiritual messages tailored to the cultural and religious context of the patients.

The AVOGADO intervention begins with the preparation phase, where the audio-video player is checked to ensure it is ready and functioning properly, and patient data is reviewed to confirm inclusion in the intervention group. The implementation phase starts

with greeting the patient and introducing oneself, followed by a clear explanation of the intervention procedure. The patient is encouraged to remain calm in a seated or semi-seated position. Anxiety levels are assessed using an appropriate scoring tool, and hemodynamic parameters are measured non-invasively. A headset connected to a tablet is then placed comfortably on the patient's ears, and the AVOGADO recording is prepared. The volume is adjusted to the patient's preference, and once confirmed, the recording is played to initiate the therapy. Upon completion, the device is turned off, and the patient's anxiety level and hemodynamic parameters are reassessed.

After the intervention, the termination phase involves organizing and storing the equipment and informing the patient that the therapy is complete. Patients are also notified that further measurements will be conducted one and two hours after the session. The procedure concludes with a farewell and closing greeting.

Anxiety levels were measured using the Hamilton Anxiety Rating Scale (HAM-A) on four occasions: three days before the intervention (H-3), two days prior (H-2), one day prior (H-1), and on the procedure day (H-0). Concurrently, hemodynamic parameters, including blood pressure (systolic/diastolic), heart rate, and oxygen saturation, were recorded at the same intervals. Data were analyzed descriptively to identify trends in anxiety reduction and improvements in hemodynamic stability following the intervention. This analysis aimed to provide insights into the potential of AVOGADO as a supportive strategy for managing pre-procedural

anxiety and physiological responses in patients undergoing EGD.

## RESULT

A 45-year-old male patient, referred to as Mr. A, was diagnosed with chronic dyspepsia, necessitating an esophagogastroduodenoscopy (EGD). His medical history indicated well-controlled hypertension. Prior to the procedure, Mr. A did not receive anxiolytic medication. Three days before the procedure (Day -3), an anxiety assessment was conducted using the Hamilton Anxiety Rating Scale (HAM-A), yielding a score of 26, indicative of moderate to severe anxiety. Clinically, Mr. A's initial hemodynamic parameters were as follows: blood pressure of 150/90 mmHg, heart rate of 98 bpm, and oxygen saturation of 96%. Mr. A expressed significant concerns about the EGD, including anticipated pain and potential complications. Based on these findings, he was recommended to undergo the AVOGADO intervention for two days prior to the procedure. On Day -2, after the first intervention session, Mr. A exhibited mild anxiety reduction, evidenced by a more relaxed facial expression and improved understanding of the procedure after watching an educational video. His HAM-A score decreased to 21, indicating moderate anxiety. Hemodynamic parameters were stable, with a blood pressure of 145/88 mmHg, heart rate of 92 bpm, and oxygen saturation of 97%. On Day -1, Mr. A's condition further improved. Spiritual support provided a sense of peace, allowing him to feel calm and less fearful of the procedure. His HAM-A score decreased to 15, placing him in the mild to moderate anxiety category. Hemodynamic parameters showed further improvement, with a blood pressure of 138/85 mmHg,

heart rate of 88 bpm, and oxygen saturation of 98%. On the day of the procedure (Day 0), Mr. A entered the operating room with a calm demeanor and reported minimal anxiety. His HAM-A score had decreased to 10, within the mild anxiety category. Hemodynamic parameters remained stable, with a blood pressure of 130/82 mmHg, heart rate of 80 bpm, and oxygen saturation of 98%. Overall, the patient's psychological and physiological responses demonstrated significant improvement following the AVOGADO intervention, highlighting its effectiveness in managing pre-procedural anxiety.

**Tabel 1. Daily Hemodynamic Parameters**

Day	Blood Pressure (mmHg)	Heart Rate (bpm)	Oxygen Saturation (%)
D-3	150/90	98	96
D-2	145/88	92	97
D-1	138/85	88	98
H-0	130/82	80	98

## DISCUSSION

The AVOGADO intervention has been proven effective in significantly reducing patients' anxiety levels from moderate-to-severe to mild. This reduction is accompanied by improvements in hemodynamic parameters, such as blood pressure stabilization and heart rate reduction, which are critical for minimizing the risk of complications during esophagogastroduodenoscopy (EGD) procedures. These findings indicate that the combination of audiovisual education and spiritual support can have a substantial clinical impact. Its efficacy reflects a better understanding of patients' needs, particularly in managing anxiety before invasive medical procedures.

A key component of the AVOGADO intervention is audiovisual education. By providing patients with

detailed information about the EGD procedure through video presentations, the intervention helps alleviate fear of the unknown. In psychology, delivering information through visual and auditory channels has been shown to effectively reduce anxiety responses, as it allows the brain to anticipate upcoming situations (Gross & Thompson, 2007). Clear information also addresses misconceptions that may heighten limbic system activation, which is involved in fear responses (Rahmayati & Handayani, 2016). This form of education provides cognitive control to patients, enabling them to feel mentally prepared for the procedure. In addition to education, spiritual support plays a pivotal role in this intervention. Spiritual support not only fosters a sense of safety but also helps patients feel more in control through calming emotional connections. Practices such as prayer and other spiritual activities promote the release of endorphins—commonly known as happiness hormones—leading to a physiological reduction in anxiety (Koenig, 2012). This approach is particularly relevant in societies with strong religious or spiritual values, where faith often serves as an emotional strength during stressful situations.

The interaction between audiovisual education and spiritual support creates a profound synergistic effect. While education offers cognitive control through rational information, spiritual support provides emotional control through calmness and reassurance. This approach aligns with the cognitive-emotional control theory, which posits that anxiety reduction requires simultaneous interventions targeting both aspects (Kristiano et al., 2021b). The combination of these strategies ensures comprehensive management

of patients' anxiety from both psychological and emotional perspectives. The reduction in anxiety also directly impacts hemodynamic parameters, such as blood pressure and heart rate, which tend to stabilize as sympathetic nervous system activity decreases. Stabilizing these parameters is particularly critical for patients with comorbidities such as hypertension, as it reduces the risk of complications during EGD. These positive outcomes demonstrate that anxiety management benefits not only psychological well-being but also has significant physiological implications (Putriyanti & Tina, 2020).

The AVOGADO intervention represents a simple yet effective approach to reducing anxiety and improving hemodynamic parameters in pre-EGD patients. This intervention underscores the importance of holistic healthcare approaches that simultaneously address cognitive, emotional, and physiological aspects. Further studies with larger sample sizes and more diverse populations are needed to confirm and expand upon these findings.

## CONCLUSION

The AVOGADO intervention, which integrates audiovisual education and spiritual support, shows potential in reducing patients' anxiety levels and contributing to the stabilization of hemodynamic parameters, such as blood pressure and heart rate. These outcomes may help minimize complications during EGD procedures. Audiovisual education enhances patients' understanding of the procedure, providing cognitive control, while spiritual support fosters emotional calmness and reassurance. Together, these elements offer a holistic approach to

managing anxiety from both psychological and physiological perspectives.

While these preliminary findings are promising, they are based on a pre-experimental design with a single case, limiting the ability to draw broad conclusions about the intervention's effectiveness. Further research involving larger sample sizes and more rigorous methodologies is necessary to validate these results and assess their generalizability. This study highlights the potential for developing similar interventions tailored to other medical contexts, contributing to the ongoing pursuit of evidence-based and patient-centered healthcare practices.

## REFERENCES

- Gross, J. J., & Thompson, R. A. (2007). *Handbook of Emotion Regulation*. Guilford Press.
- Kaminang, G. A., Waleleng, B. J., & Polii, E. B. I. (2016). Profil Endoskopi Gastrointestinal di RSUP Prof. Dr. R. D. Kandou Manado Periode Januari - Agustus 2016. *Jurnal E-Clinic (ECI)*, 4(2), 121–126.
- Koenig, H. G. (2012). *Spirituality in Patient Care: Why, How, When, and What* (3rd ed.). Templeton Foundation Press.
- Kristiano, Y. E., Kosasih, C. E., & Nuraeni, A. (2021). Intervensi untuk Menurunkan Kecemasan Keluarga yang Mendampingi Pasien Kritis di Intensive Care Unit: Literature Review. *Jurnal Keperawatan*, 9(2), 123–135. [https://www.researchgate.net/publication/362095208\\_Intervensi\\_Untuk\\_Menurunkan\\_Kecemasan\\_Keluarga\\_Yang\\_Mendampingi\\_Pasien\\_Kritis\\_Di\\_Intensive\\_Care\\_Unit\\_Literature\\_Review](https://www.researchgate.net/publication/362095208_Intervensi_Untuk_Menurunkan_Kecemasan_Keluarga_Yang_Mendampingi_Pasien_Kritis_Di_Intensive_Care_Unit_Literature_Review)

- Kurniawan, A., Armiyati, Y., & Astuti, R. (2017). Pengaruh Pendidikan Kesehatan Pre Operasi Terhadap Tingkat Kecemasan Pada Pasien Pre Operasi Hernia Di Rsud Kudus. *Jurnal Keperawatan*, 6(2), 139–148.
- Majid, A., Judha, M., & Istianah, U. (2011). *Keperawatan Perioperatif*. Gosyen Publishing.
- Maryunani, A. (2014). *Asuhan keperawatan Perioperatif – Pre Operasi (Menjelang Pembedahan)*. Trans Info Medika.
- Nurhayati, E. (2018). Pengaruh Konseling Pre-Prosedur Esofagogastroduodenoskopi (EGD) terhadap Penurunan Kecemasan di Unit Endoskopi RSUD Dr. Soetomo Surabaya. *Universitas Muhammadiyah Surabaya*.
- Priyoto. (2015). *Perubahan dalam Perilaku Kesehatan Konsep dan Aplikasi*. Graha Ilmu.
- Putriyanti, C. E., & Tina, S. A. (2020). Pemberian Media Audiovisual terhadap Perkembangan Anak. *Syntax Literate: Jurnal Ilmiah Indonesia*, 5(10), 1041–1051.  
<https://media.neliti.com/media/publications/330365-pemberian-media-audiovisual-terhadap-per-e727439e.pdf>
- Rahmayati, E., & Handayani, R. S. (2016). Perbedaan Pengaruh Terapi Psikoreligius dengan Terapi Musik Klasik terhadap Kecemasan Pasien Pre Operatif di RSUD dr. H. Abdul Moeloek Provinsi Lampung. *Jurnal Keperawatan*, 4(1), 45–56.  
<https://medika.respati.ac.id/index.php/Medika/article/download/416/pdf>
- Toğaç, H. K., & Yılmaz, E. (2021). Effects of preoperative individualized audiovisual education on anxiety and comfort in patients undergoing laparoscopic cholecystectomy: randomised controlled study. *Patient Education and Counseling*, 104(3), 603–610.