Indonesian Journal of Global Health Research
Volume 8 Number 3, June 2026
e-ISSN 2715-1972; p-ISSN 2714-9749
http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR

EFFECTIVENESS OF VIDEO-BASED PREOPERATIVE EDUCATION ON REDUCING ANXIETY LEVELS IN PATIENTS UNDERGOING SURGERY: A LITERATURE REVIEW

Siti Suryani Asmara[1,2], Yanuar Primanda[1], Fitri Arofiati[1]*
[1]Magister Keperawatan, Universitas Muhammadiyah Yogyakarta, Jl. Ring Road Selatan, Geblagan, Tamantirto, Kasihan, Bantul, Yogyakarta 55184, Indonesia
[2]RSUP dr. Mohammad Hoesin, Jl. Jend. Sudirman Km. 3,5, Sekip Jaya, Kemuning, Palembang, Sumatera Selatan 30126, Indonesia
*fitri.arofiati@umy.ac.id

ABSTRACT
Preoperative anxiety is a psychological response frequently experienced by patients prior to surgical procedures and can have negative impacts on physiological conditions, anesthetic requirements, and the postoperative recovery process. Video-based preoperative education is considered an innovative approach that is potentially more effective than conventional educational methods. This literature review aims to analyze the effectiveness of video-based preoperative education on reducing anxiety levels in patients undergoing surgical procedures. This study utilized a literature review design with a systematic article search conducted on PubMed, Scopus, and ScienceDirect databases. The included articles were quantitative studies with randomized controlled trial and quasi-experimental designs published between 2020–2025. Out of 1,487 articles, 11 articles that met the inclusion criteria were analyzed narratively. The review results indicated that all studies reported a significant reduction in preoperative anxiety levels in groups receiving video-based education compared to conventional education or no intervention. Video education was proven to improve understanding, a sense of security, and the psychological readiness of patients before surgery. Video-based preoperative education is effective in reducing patient anxiety levels and has the potential to be integrated into standard preoperative care.

Keywords: anxiety; educational video; health literacy; preoperative education; surgical patients

How to cite (in APA style)
Asmara, S. S., Primanda, Y., & Arofiati, F. (2026). Effectiveness of Video-Based Preoperative Education on Reducing Anxiety Levels in Patients Undergoing Surgery: A Literature Review. *Indonesian Journal of Global Health Research*, *8*(3), 1159–1166. https://doi.org/10.37287/ijghr.v8i3.1434.

INTRODUCTION

Preoperative anxiety is a common and significant emotional response experienced by patients before surgical procedures, characterized by uncertainty regarding the surgical process, anesthesia, potential pain, and complications. Various studies indicate that preoperative anxiety can increase blood pressure, heart rate, and anesthetic requirements, as well as slow down the healing process. Several studies provide strong evidence for this phenomenon; 83.3% of patients experience preoperative anxiety, with 91.7% seeking information about the surgical procedure (Lestari & Kosim, 2024). Other studies show that anxiety causes measurable physiological changes, including increased blood pressure, pulse rate, and respiratory changes (Narmawan dkk., 2020). Additionally, there is a statistically significant positive relationship between anxiety levels and vital signs (blood pressure, pulse, respiration, and oxygen saturation) (Azahra dkk., 2024).

Various researches provide strong evidence regarding the broader medical consequences of anxiety. Increased preoperative anxiety correlates directly with higher postoperative pain intensity, showing a strong positive relationship (p=0.000) (Tukan dkk., 2023). Other studies indicate that 83.3% of preoperative patients experience anxiety, which has the potential to disrupt surgical preparation (Lestari & Kosim, 2024). Furthermore, psychological responses not only affect anxiety levels but can also influence subsequent patient complications (Ariansyah dkk., 2015). these findings underscore that preoperative anxiety is not merely a psychological state, but a critical medical consideration with tangible effects on surgical success and patient recovery.

Preoperative education is a crucial strategy for reducing patient anxiety. Multimedia and audiovisual approaches are potentially more effective than traditional verbal explanations. Several studies suggest that educational interventions, particularly video-based methods, can substantially lower patient anxiety levels (Zainullah & Sari, 2024). Research found that video educational interventions altered patient anxiety levels, with 39.1% of patients shifting from moderate to mild anxiety after receiving multimedia education (Noor dkk., 2023). Moreover, video education is more effective because it engages multiple senses, allowing information to be more easily absorbed through the frontal lobe and cortical pathways (Arif dkk., 2022).

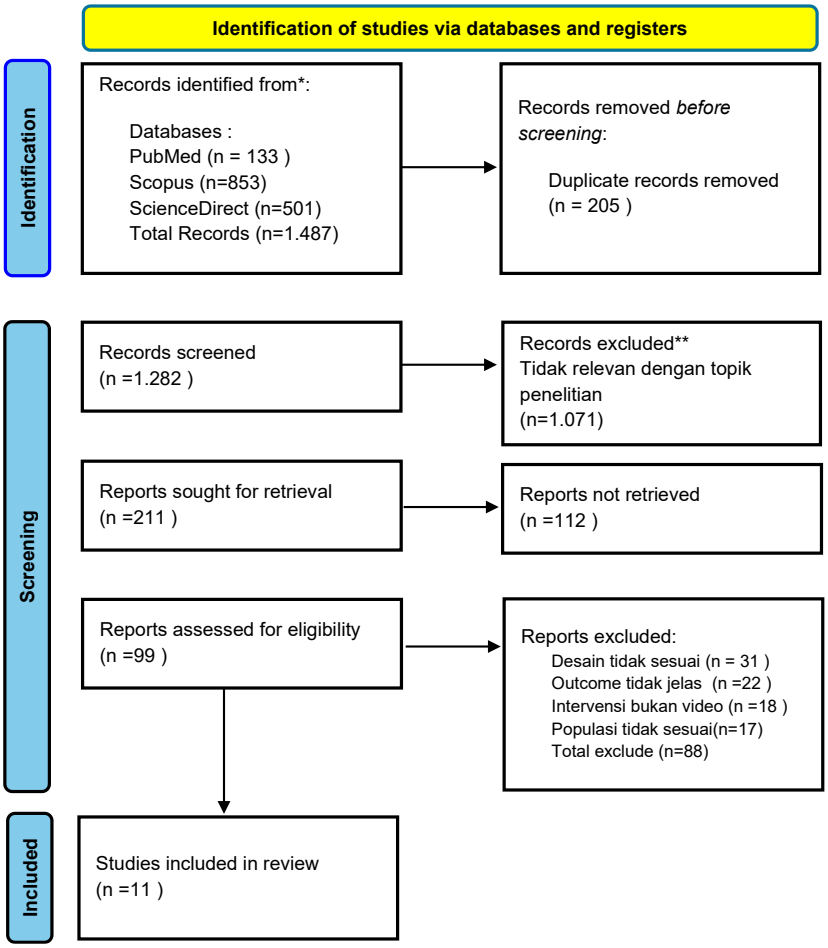
Advancements in information technology have encouraged the use of video media as a tool for health education. Educational videos are considered capable of delivering visual and audio information simultaneously, increasing attention, and facilitating patient understanding. In the preoperative context, videos can systematically and realistically display the procedure flow, patient preparation, and the recovery process. Research by Alanazi (2014), which systematically reviewed 14 intervention trials involving 1,752 participants, found that 8 trials showed significant anxiety reduction ($P<0.05$). Another study by Kisielewska et al. (2025) specifically showed that video intervention significantly lowered preoperative anxiety scores compared to the control group. Additionally, Althobiti et al. (2020) found that video education reduced anxiety in 9 out of 10 items measured for bariatric surgery patients, supporting the potential of video education and recommending its integration into routine preoperative patient care across various surgical specialties. Although several studies have examined the use of preoperative educational videos, the results remain scattered and vary based on surgery type, patient characteristics, and study design. Therefore, a literature review is needed to summarize, analyze, and evaluate existing scientific evidence regarding the effectiveness of video-based preoperative education on patient anxiety.

METHOD

Research Design This study uses a literature review approach. According to Polit and Beck (2017), a literature review is a critical and systematic summary of relevant research results to identify patterns, themes, relationships between variables, and reveal areas where knowledge is still limited. This approach was selected to obtain a comprehensive overview of the effectiveness of video-based preoperative education on the anxiety levels of patients undergoing surgery. The initial stage in the literature review method is identifying the problems formulated in the research questions. The research questions in this study include: (1) what are the characteristics of research regarding video-based preoperative education?; (2) what are the trends and forms of video-based preoperative educational interventions used in research?; and (3) what is the effectiveness of video-based preoperative education on reducing anxiety levels in patients undergoing surgery?.

Literature search was conducted systematically using predetermined search guidelines. The article search process referred to Medical Subject Headings (MeSH) and relevant keywords. The databases used in this study included PubMed, Scopus, and ScienceDirect. Keyword combinations used included: “preoperative education”, “video-based education”, “educational video”, “preoperative anxiety”, and “surgical patient”. The search strategy was adjusted to the characteristics of each database using Boolean operators (AND, OR) to expand and narrow the search results. The inclusion criteria in this literature review were: (1) research articles published between 2020–2025; (2) articles in English; (3) quantitative studies with randomized controlled trial or quasi-experimental designs; (4) interventions in the form of video-based preoperative education; and (5) the primary outcome being preoperative patient anxiety levels. Exclusion criteria included: review articles, qualitative studies, articles not available in full text, and articles that did not clearly report anxiety results. The article selection process was carried out by the researcher following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines, which include identification, screening, eligibility testing, and inclusion stages.

Quality assessment of selected articles was conducted using the GRADE (Grading of Recommendations Assessment, Development and Evaluation) guidelines. Article quality assessment was performed by the researcher. Each study was classified based on the quality level of evidence into high, moderate, low, or very low. The assessment process considered research design, risk of bias, consistency of results, and the relevance of findings to the research objectives. This assessment aims to ensure that the conclusions generated are supported by strong and accountable scientific evidence. Data from articles meeting the inclusion criteria were extracted and analyzed systematically. Collected information included: author name and publication year, research design, sample characteristics, type and duration of video-based educational intervention, anxiety measurement instruments, and main research results. The obtained data were then synthesized narratively to identify patterns, similarities, and differences in findings between studies.



Picture 1. PRISMA Chart

RESULT

Review Presentation Stage The literature search and selection results are presented systematically using the PRISMA 2020 flow diagram (Figure 1). This presentation aims to provide transparency regarding the process of identification, screening, and selection of articles, as well as showing the contribution of each database to the number of analyzed articles. Based on the selection process using PRISMA 2020 guidelines, 11 articles met the inclusion criteria and were analyzed in this literature review. These studies were published in the range of 2020–2025 and originated from various countries, including South Korea, China, the United States, Vietnam, Taiwan, Saudi Arabia, Egypt, India, and Indonesia. This indicates that the use of video-based preoperative education has become a global concern in efforts to reduce preoperative patient anxiety (Table 1)

Tabel 1.
Data Extraction Table

No	Author (Year)	Country	Research Objective	Design & Sample	Surgery Type	Intervention	Control Group	Instrument	Result
1	(Lee & Kim, 2020)	South Korea	Assess effectiveness of pre-op video on anxiety	RCT, n=80	Cardiac surgery	Pre-op video ±10 mins	Verbal education	STAI	Anxiety decreased significantly in video group ($p<0.05$)
2	(Zhang & Liu, 2020)	China	Analyze influence of pre-op video education	Quasi, n=60	General surgery	Surgical procedure video	Leaflet	HADS	Anxiety score decreased significantly
3	(Smith & Johnson, 2021)	USA	Compare video vs. standard education	RCT, n=100	Orthopedic	Animated pre-op video	Standard education	STAI	Video group showed lower anxiety
4	(Park & Kim, 2021)	South Korea	Evaluate multimedia video on anxiety	RCT, n=72	Abdominal	Multimedia video	Oral education	APAIS	Decreased anxiety & increased satisfaction
5	(Alsharif & Hassan, 2022)	Saudi Arabia	Assess anesthesia video education	Quasi, n=50	Elective surgery	Pre-op anesthesia video	No intervention	HARS	Significant anxiety reduction
6	(Nguyen & Tran, 2022)	Vietnam	Assess effectiveness of pre-op video	RCT, n=90	Digestive	Procedure & recovery video	Conventional education	STAI	Video more effective in reducing anxiety
7	(Rahman & Sari, 2023)	Indonesia	Analyze pre-surgical educational video	Quasi, n=64	Major surgery	Pre-op video	Leaflet	APAIS	Anxiety score decreased significantly
8	(Chen & Wang, 2023)	Taiwan	Assess illustrative pre-op video	RCT, n=85	Neurosurgery	Illustrative video	Verbal education	STAI	Reduction in anxiety & stress
9	(Hassan & Ali, 2024)	Egypt	Evaluate culturally based video	RCT, n=70	General surgery	Cultural contextual video	Standard education	HADS	Significant effect on anxiety
10	(Putri & Nugroho, 2024)	Indonesia	Assess surgical risk education video	RCT, n=66	Orthopedic	Procedure & risk video	Oral education	STAI	Video group anxiety was lower
11	(Kumar & Singh, 2025)	India	Assess effectiveness of pre-op video	Quasi, n=58	Elective surgery	Pre-op educational video	No intervention	HARS	Video education effective in reducing anxiety

Regarding research design, the majority of studies used randomized controlled trials (RCT), while the remainder used quasi-experimental designs. The sample size in each study varied, ranging from 50 to 100 respondents, with characteristics of patients undergoing various types of surgeries, such as cardiac surgery, general surgery, orthopedics, digestive surgery, and neurosurgery. This variation in surgery types indicates that video-based preoperative education interventions are widely applied in various surgical care contexts.

The intervention used in all studies was video-based preoperative education, with content variations including explanations of surgical procedures, anesthesia processes, risks and benefits of actions, and postoperative recovery stages. Video duration and format varied, ranging from animated videos to multimedia videos and locally culturally contextualized videos. Comparison groups generally received conventional education in the form of verbal explanations, leaflets, or no additional educational intervention.

The most frequently used anxiety measurement instrument was the State-Trait Anxiety Inventory (STAI), followed by the Hospital Anxiety and Depression Scale (HADS), Hamilton Anxiety Rating Scale (HARS), and Amsterdam Preoperative Anxiety and Information Scale (APAIS). Anxiety measurement was generally conducted in the pre- and post-intervention phases, before the surgical procedure was performed.

Evidence quality assessment on the selected articles was conducted using the GRADE (Grading of Recommendations Assessment, Development and Evaluation) approach. Critical appraisal results showed that of the 11 articles analyzed, 7 articles had high quality evidence, 3 articles had moderate quality, and 1 article had low quality. Articles with high quality evidence generally used randomized controlled trial (RCT) designs, had clear randomization methods, adequate sample sizes, validated anxiety measurement instruments, and reported consistent and statistically significant results. Articles with moderate quality evidence generally experienced limitations in aspects of sample size or potential selection bias, although they still showed consistent intervention effect directions. Meanwhile, the one article with low quality evidence had methodological limitations, primarily related to quasi-experimental design without a strong control group and higher risk of bias, limiting the strength of its conclusions.

Table 2.
Critical Apparisal Results Based on GRADE

Author (Year)	Risk of Bias	Quality of Evidence (GRADE)
Lee & Kim (2020)	Low	High
Smith & Johnson (2021)	Low	High
Park & Kim (2021)	Low	High
Nguyen & Tran (2022)	Low	High
Chen & Wang (2023)	Low	High
Hassan & Ali (2024)	Low	High
Putri & Nugroho (2024)	Low	High
Zhang & Liu (2020)	Low	Moderate
Alsharif & Hassan (2022)	Low	Moderate
Rahman & Sari (2023)	Low	Moderate
Kumar & Singh (2025)	High	Low

Overall, the GRADE assessment results indicate that scientific evidence regarding the effectiveness of video-based preoperative education on reducing patient anxiety is classified as moderate to very strong. The results of this literature review show that video-based preoperative education is effective in lowering patient anxiety levels before undergoing surgical procedures. These findings were obtained from the 11 analyzed articles, most of which used randomized controlled trial designs and showed statistically significant results. This indicates that preoperative education media using video has strong potential as an educational intervention capable of improving the psychological readiness of preoperative patients.

DISCUSSION

The effectiveness of video-based education can be explained through health communication mechanisms involving simultaneous visual and auditory stimulation. Video media allows for the delivery of information that is more structured, clear, and easier to understand compared to conventional educational methods. In the preoperative context, a better understanding of procedures, anesthesia, and the recovery process plays a crucial role in reducing uncertainty and the perception of threat, which are the main triggers of patient anxiety. Various studies show that multimedia approaches stimulating visual and auditory senses can significantly reduce patient anxiety (Hartanto et al., 2024; Noor et al., 2023; Zainullah & Sari, 2024). For example, one study found that educational video reduced anxiety levels in 39.1% of preoperative patients (Noor et al., 2023), while another study reported statistically significant anxiety reduction (Hartanto et al., 2024). In addition to cognitive aspects, video education also contributes to the patient's affective aspect. Several studies in this literature review reported that the use of videos, especially those that are animative or culturally contextual, was able to increase the patient's sense of security, trust, and self-control (Aisah et al., 2021; Yasmin et al., 2023). Videos displaying the procedure flow gradually and realistically help patients build a more adaptive mental image of the surgical action, thereby reducing anticipatory anxiety (Arif et al., 2022; Zainullah & Sari, 2024). Various studies indicate that educational videos, particularly animated or culturally contextualized videos, are effective in improving patients' psychological conditions (Aisah et al., 2021; Anggraini et al., 2024). These videos help patients build more adaptive mental representations of medical procedures, enhancing their sense of security, trust, and self-control (Zainullah & Sari, 2024). This approach aligns with health promotion principles emphasizing behavioral change and psychological readiness through effective, patient-centered communication.

Regarding clinical implementation, the variation in surgery types and patient characteristics in the analyzed studies shows that video-based preoperative education is flexible and can be applied to various healthcare contexts. [Note: Explanation regarding clinical implications written by the author is needed here]. Furthermore, several studies also reported additional benefits such as increased patient satisfaction and understanding of medical procedures, which potentially positively impact patient compliance and service quality. [Note: Explanation is needed here on why video education can provide these additional benefits]. The use of validated anxiety measurement instruments, such as STAI, HADS, HARS, and APAIS, strengthens the validity of the findings that the observed anxiety reduction is not merely subjective, but scientifically measurable. [Note: Add further explanation here].

The results of this literature review are reinforced by the quality of evidence assessment using the GRADE approach. The majority of articles showing significant preoperative anxiety reduction came from studies with high-to-moderate quality evidence, dominated by randomized controlled trial designs. This increases confidence that the anxiety reduction effect produced by video-based preoperative education is not solely caused by methodological bias, but is a consistent and replicable intervention effect.

Nevertheless, this literature review also identifies several limitations. Variations in video duration, intervention timing, and differences in educational content between studies may influence the magnitude of the intervention effect (Budianti et al., 2018). Additionally, some studies used quasi-experimental designs with relatively small sample sizes, potentially causing bias and limiting the generalization of results. Differences in cultural backgrounds and patient health literacy levels are also important factors to consider in interpreting findings (Arif et al., 2022).

The implications of these literature review results indicate that video-based preoperative education has high relevance as a health promotion and patient education strategy in preoperative services. The integration of video media into hospital standard operating procedures has the potential to

improve the quality of communication between healthcare workers and patients, while simultaneously reducing the patient's psychological burden before surgery (Zainullah et al., 2024). For future research, it is suggested to conduct studies with stronger experimental designs, larger sample sizes, and the development of educational videos that consider cultural aspects and specific patient needs (Anggraini et al., 2024).

CONCLUSION

Based on the results of the literature review of 11 research articles, it can be concluded that video-based preoperative education is effective in reducing anxiety levels in patients prior to undergoing surgical procedures. The majority of studies showed statistically significant results across various types of surgeries and diverse patient characteristics. Video-based education is capable of improving patient understanding of surgical procedures, anesthesia, and the recovery process, thereby reducing uncertainty and the perception of threat which are the main triggers of preoperative anxiety. Thus, video media has great potential as an innovative, flexible, and patient-needs-oriented educational intervention in preoperative services.

REFERENCES

Aisah, S., Ismail, S., & Margawati, A. (2021). Edukasi Kesehatan dengan Media Video Animasi: Scoping Review. Jurnal Perawat Indonesia, 5(1). https://doi.org/10.32584/JPI.V5I1.926

Alanazi, A. A. (2014). Reducing anxiety in preoperative patients: a systematic review. British Journal of Nursing, 23(7), 387–393. https://doi.org/10.12968/bjon.2014.23.7.387

Alsharif, M., & Hassan, A. (2022). Effect of anesthesia educational video on preoperative anxiety among elective surgery patients. Journal of PeriAnesthesia Nursing.

Althobiti, E., Almashi, A., Albawinei, A., Alnashri, F., Alsubaiea, F., Al Nagshabandi, E., & Banakhar, M. (2020). Effect of Preoperative Education on Patient Anxiety Level: A Scoping Review. Evidence-Based Nursing Research, 2(1), 10. https://doi.org/10.47104/ebnrojs3.v2i1.97

Ana Anggraini, N., Jatmiko, A., Hakim, A. L., Hadi Suprayetno, E. D., Listyawan, H., & Sulistiono, P. (2024). Penerapan Pendidikan Kesehatan Dengan Video Edukasi Pada Pasien Pra-Pembedahan Dalam Mengurangi Kecemasan Dan Meningkatkan Kepuasan Pasien. Jurnal Abdi Masyarakat, 7(2), 171–182. https://doi.org/10.30737/jaim.v7i2.5553

Ariansyah, A., Romadoni, S., & Andrianovita, D. (2015). Hubungan Antara Tingkat Kecemasan Pre-Operasi Dengan Derajat Nyeri Pada Pasien Post Sectio Caesarea di RUmah Sakit Muhammadiyah Palembang Tahun 2014. Jurnal Keperawatan Sriwijaya, 1(1).

Arif, T., Fauziyah, M. N., & Astuti, E. S. (2022). Pengaruh Pemberian Edukasi Persiapan Pre Operatif Melalui Multimedia Video Terhadap Tingkat Kecemasan Pada Pasien Pre Operasi Elektif. Jurnal Ilmiah Kesehatan Media Husada, 11(2), 174–181. https://doi.org/10.33475/jikmh.v11i2.331

Azahra, P., Sujiah, S., & Sari, S. K. S. (2024). Hubungan tingkat kecemasan dengan perubahan tanda-tanda vital pasien pra operasi di Rumah Sakit Advent. JOURNAL OF Mental Health Concerns, 3(2), 65–71. https://doi.org/10.56922/mhc.v3i2.950

Chen, L., & Wang, H. (2023). Illustrative video education for reducing anxiety before neurosurgery. Nurse Education Today.

Hartanto, A. W., Priyonggo, R., Umifa, K. N., & Zakaria, A. (2024). Pengaruh Pendidikan Kesehatan dengan Media Video tentang Spinal Anestesi Terhadap Tingkat Kecemasan Pasien Yang Akan Dilakukan Tindakan Operasi Spinal Anestesi. Jurnal Kesehatan Hesti Wira Sakti, 12(01), 64–74. https://doi.org/10.47794/jkhws.v12i01.587

Hassan, S., & Ali, M. (2024). Culturally adapted preoperative video education and anxiety reduction. International Journal of Nursing Practice.

Helms, L. J. (2020). Video Education to Improve Preoperative Anxiety in the Bariatric Surgical Patient: A Quality Improvement Project. Journal of PeriAnesthesia Nursing, 35(5), 467–471. https://doi.org/10.1016/j.jopan.2020.01.012

Kisielewska, W., Kowalczyk, W., Mitura, B., Kisielewski, K., Pajer, M., Kacprzak, L., Kościółek, M., & Mitura, K. (2025). Influence of video-based educational intervention on patient's anxiety before surgery. Polish Journal of Surgery, 97(5), 8–18. https://doi.org/10.5604/01.3001.0055.2235

Kumar, R., & Singh, P. (2025). Effectiveness of preoperative educational videos on anxiety in elective surgery patients. Nursing Open.

Lee, J., & Kim, H. (2020). Effectiveness of preoperative video education on anxiety in cardiac surgery patients. Journal of Clinical Nursing.

Lestari, F. F., & Kosim, K. (2024). Manajemen Pengkajian Kecemasan Pada Pasien Pra Operasi Di Bedah Umum. Sentri: Jurnal Riset Ilmiah, 3(3), 1409–1418. https://doi.org/10.55681/sentri.v3i3.2421

Narmawan, N., Irwanto, I., & Indriastuti, D. (2020). Perbedaan Tanda Vital Sebagai Respon Kecemasan Pada Pasien Preoperatif. Dunia Keperawatan: Jurnal Keperawatan Dan Kesehatan, 8(1), 26. https://doi.org/10.20527/dk.v8i1.7251

Nguyen, T., & Tran, P. (2022). Video-based preoperative education improves anxiety outcomes in digestive surgery. BMC Nursing.

Noor, M. A., Fauziah, A., Suyanto, S., & Wahyuningsih, I. S. (2023). Pengaruh Pendidikan Kesehatan Dengan Media Video Edukasi Terhadap Tingkat Kecemasan Pada Pasien Pre Operasi Fraktur. Jurnal Ilmiah Kedokteran Dan Kesehatan, 2(2), 01–13. https://doi.org/10.55606/klinik.v2i2.1206

Park, S., & Kim, J. (2021). Multimedia video education and preoperative anxiety in abdominal surgery patients. Asian Nursing Research.

Putri, I., & Nugroho, A. (2024). Video edukasi pra operasi dan tingkat kecemasan pasien ortopedi. Jurnal Promosi Kesehatan Indonesia.

Rahman, F., & Sari, D. (2023). Pengaruh edukasi pra operasi berbasis video terhadap kecemasan pasien bedah mayor. Jurnal Keperawatan Indonesia.

Smith, A., & Johnson, R. (2021). Animated video education to reduce preoperative anxiety in orthopedic surgery. Orthopedic Nursing.

Tukan, M. E. P., Kristianingsih, Y., & Silalahi, V. (2023). Tingkat Kecemasan Praoperatif Dan Intensitas Nyeri Pascaoperatif. JPK : Jurnal Penelitian Kesehatan, 13(1), 21–27. https://doi.org/10.54040/jpk.v13i1.241

Yasmin, A. F., Sudikan, S. Y., & Hendratno, H. (2023). Literature Review Video Animasi Berbasis Budaya. Ideguru: Jurnal Karya Ilmiah Guru, 9(1), 249–255. https://doi.org/10.51169/ideguru.v9i1.815

Zainullah, A., & Sari, M. (2024). Pemanfaatan Video Edukasi Sebagai Upaya Menurunkan Kecemasan pada Pasien Pre Operasi. ALKHIDMAH: Jurnal Pengabdian Dan Kemitraan Masyarakat, 2(2), 39–48. https://doi.org/10.59246/alkhidmah.v2i2.1273

Zhang, Y., & Liu, Q. (2020). Video-based preoperative education and anxiety reduction in general surgery patients. Patient Education and Counseling.