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Effective Nursing Counseling Reduces Anxiety in Major Preoperative Patients

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ABSTRACT

Objective: This study aims to assess the impact of nursing counseling on reducing pre-operative anxiety among patients scheduled for major surgery. The objective is to evaluate changes in anxiety levels before and after counseling, emphasizing its role in enhancing patient psychological preparation.

Methods: A sample of 45 surgical patients was included in the study. Pre-operative anxiety levels were measured using standardized scales categorized into mild, moderate, severe, or panic. Nursing counseling sessions were conducted to provide emotional support, information about the surgical process, and coping strategies. Anxiety levels were reassessed post-counseling to evaluate changes using statistical analysis (Wilcoxon signed-rank test).

Results: Prior to counseling, a significant proportion of patients experienced moderate to severe anxiety levels. Post-counseling, there was a notable reduction in anxiety levels across the sample. Statistical analysis confirmed a significant difference in anxiety scores before and after counseling, highlighting the efficacy of nursing counseling in mitigating pre-operative anxiety.

Novelty: This study contributes to the existing literature by demonstrating the specific impact of nursing counseling on pre-operative anxiety reduction. It underscores the importance of tailored psychological interventions in surgical care, particularly in improving patient comfort and readiness for surgery.

Implications of the Research: The findings suggest practical implications for healthcare providers, emphasizing the integration of nursing counseling as a standard component of pre-operative care protocols. By addressing psychological distress effectively, healthcare teams can potentially enhance surgical outcomes, patient satisfaction, and overall quality of care delivery.

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1. Introduction

In modern healthcare environments, hospitals can elicit intense emotions of apprehension and ambiguity among patients, especially those confronting significant surgical procedures (Bodner 2008). (Philip Burnard, Paul Morrison 2011) argue that hospitals are frequently seen as daunting settings, which heighten patients' feelings of vulnerability and their lack of clarity regarding what to anticipate throughout their stay as inpatients. The recognition of this perception highlights an increasing need for healthcare services of superior quality, leading to substantial societal transformations in the fields of economics, education, technology, and information distribution (Duggirala, Rajendran, and Anantharaman 2008; Ferlie and Shortell 2001). Patients now have higher expectations for the caliber of nursing care, particularly preoperative care, as a result of these modifications (DeFazio et al. 2012). The process of providing effective preoperative care starts with the determination to proceed with surgical intervention and extends until the patient is moved to the surgical suite (Plauntz 2007). An essential component of preoperative care involves effectively addressing patient anxiety,

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since it can have a substantial impact on postoperative results (Andersson et al. 2020). Surgical treatments inherently elicit stress, both in terms of physiological and psychological impact, which can significantly impact persons' overall well-being (Iyendo, Uwajeh, and Ikenna 2016). Surgery frequently engenders intricate and strained circumstances, which frequently result in elevated degrees of anxiety among patients (Chrouser et al. 2018).

According to (King et al. 2017), preoperative anxiety is a widespread occurrence. Anxiety was found to be higher in females and those not having had a previous anaesthetic, and to remain constant from the afternoon before surgery to the immediate preoperative period. Anaesthetists were found to be poor assessors of anxiety unless they specifically questioned their patients about this (Badner et al. 1990). Fears that patients communicate include pain following surgery, physical changes, concerns about functioning and appearance, apprehension about diagnosis, fear of developing conditions that are similar to those of others, fear of anesthesia complications, and anxiety over the possibility of surgical failure (Eberhart et al. 2020). In order to tackle these challenges, specific client-focused methods such as nursing counseling have been utilized. Nursing counseling is an essential nursing service that focuses on addressing and resolving client concerns, including those related to psychological and intellectual aspects (Cleary et al. 2012). Nursing counseling has the ability to reduce preoperative anxiety, however its application and efficacy in this regard varies between healthcare settings (Guo et al. 2020).

Nursing counseling is acknowledged as being important for preoperative care, but its consistent effectiveness in lowering anxiety before surgery is still unknown. Some research Whitlock et al. (2002), indicate inconsistent effects depending on the setting and method of counseling sessions. Offering patient education during the perioperative period is almost universally practiced due to the requirement of obtaining informed consent prior to surgery. In addition to imparting information, the utilization of perioperative education has exhibited several prospective health advantages for patients (Wilson et al. 2016). Postoperative pain in children and preoperative anxiety in adults were reduced but without significant differences from the study results (Álvarez-García and Yaban 2020). This disparity highlights the necessity for additional research on the variables that impact the efficacy of nursing counseling in reducing anxiety among patients undergoing significant preparatory procedures.

The theoretical underpinning of nursing counseling rests on its role in addressing psychological distress and promoting patient well-being (Kotkamp-Mothes et al. 2005). Drawing from theories of therapeutic communication and counseling psychology, nursing counseling utilizes techniques to facilitate patient understanding, coping mechanisms, and emotional regulation (McCarthy, O'Donovan, and Trace 2021). By enhancing patient readiness and emotional stability preoperatively, nursing counseling aims to optimize surgical outcomes and improve overall patient satisfaction (Crosson 2018).

Given the evolving demands and expectations of healthcare consumers, the urgency to enhance preoperative care quality is paramount. However, while existing literature provides insights into the potential benefits of nursing counseling, there is a notable gap regarding its consistent application and effectiveness in diverse clinical settings. Specific examples where counseling interventions impacted patient decision-making regarding surgery, demonstrating the need for stronger evidence to standardize and optimize nursing practice (Beauchemin et al. 2019; Lauck et al. 2021). Therefore, this study aims to investigate the effectiveness of nursing counseling in reducing anxiety levels among major preoperative patients. By examining the outcomes of nursing counseling interventions, this research seeks to contribute empirical evidence to enhance clinical practices and improve patient outcomes globally. The findings will not only inform healthcare providers but also potentially influence policy decisions aimed at enhancing the quality of preoperative care delivery across diverse healthcare settings.

2. Method Innovations

This study adopts a quantitative research approach, specifically employing a quasi-experimental design known as the one-group pretest-posttest design. Quasi-experimental designs test interventions on a group of subjects without randomization into treatment and control groups (Krass 2016; Miller, Smith, and Pugatch 2020), allowing for the investigation of causal relationships by applying a nursing counseling intervention to a single group of subjects. The population for this study comprises all patients scheduled for major surgery at the



General Hospital of Banda Aceh. The total population during the study period from January to Sept 2023 was 137 patients. Using an average monthly figure, the sample size was determined based on the number of patients who underwent major surgery from January to March 2014, totaling approximately 45 respondents. The research was conducted at the General Hospital over a period 2024.

To measure anxiety levels, the researcher utilized the Hamilton Rating Scale for Anxiety (HRS-A), a validated questionnaire consisting of 14 clinical manifestations of anxiety adjusted to the context of preoperative anxiety in major surgery patients (Gayani and Nandasiri 2019). This tool categorizes anxiety into mild, moderate, severe, or very severe categories based on clinical observations. Data collection involved administering the anxiety questionnaire before and after the nursing counseling intervention. The counseling intervention focused on preparing patients for surgery and addressing client issues through assessment and discussion. Data collection also included distributing and collecting the anxiety questionnaires.

Utilizing the Statistics Package for the Social Sciences (SPSS), data management entailed compiling and evaluating the gathered data. This program streamlined the data processing to uncover its inherent traits and allowed for statistical analysis to evaluate the efficacy of the nurse counseling intervention to decrease preoperative anxiety. This methodology presents a meticulous strategy to examining the efficacy of nursing counseling in diminishing preoperative anxiety among patients undergoing major surgery at the General Hospital of Banda Aceh. Through the use of standardized measurement instruments and a quasi-experimental methodology, the study seeks to offer important insights into improving patient outcomes and care in preoperative settings. The methodical technique to gathering, organizing, and examining data guarantees strong conclusions that enhance the worldwide pool of information in nursing study and application.

3. Result and Discussion

The General Hospital of Banda Aceh is a municipal government hospital serving the residents of Banda Aceh. According to the regulations and classifications set by the Ministry of Health of Indonesia, RSUD Banda Aceh is designated as a Class C hospital with a total of 200 beds, catering to the healthcare needs of the local population. The hospital is situated in the heart of Banda Aceh, providing comprehensive medical services including surgical care across its various wards. Among these, the hospital's surgical ward operates with a capacity of 30 beds, accommodating patients undergoing various surgical procedures (Wang et al. 2022).

The demographic characteristics of the respondents in the study conducted at RSUD Banda Aceh reveal noteworthy insights into the patient profile undergoing major surgeries. Among the respondents, there was a predominant representation of males, accounting for 75.6% of the sample, compared to females who constituted 24.4%. This gender distribution reflects a potential trend in healthcare-seeking behavior or incidence rates among the population served by the hospital. In terms of age distribution, the majority of respondents fell within the 41-65 years age group, comprising 71.1% of the sample, while those aged 21-40 years made up 28.9%. This skew towards older age groups underscores the prevalence of major surgeries among middle-aged and elderly patients, highlighting the hospital's role in catering to a diverse demographic spectrum (Wang et al. 2022).

Regarding educational attainment, a significant proportion of respondents had completed elementary school (77.8%), with smaller percentages having junior high school (11.1%) or higher education (11.1%). This educational profile suggests considerations for health literacy and communication strategies tailored to diverse educational backgrounds among patients. Occupationally, the majority of respondents were entrepreneurs (88.9%), with a minority being government employees (11.1%). This distribution indicates potential differences in economic status and healthcare utilization patterns among different occupational groups. These demographic insights are crucial for healthcare providers at RSUD Banda Aceh to design targeted interventions and improve patient care outcomes effectively. Understanding these characteristics helps in addressing specific needs and challenges faced by diverse patient groups undergoing major surgeries at the hospital.

Table 1. Frequency Distribution of Respondents by Gender

No.	Variable	Category	Frequency	Percentage
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1	Jenis Kelamin	Laki-laki	34	75.6%
		Perempuan	11	24.4%
	Total		45	100.0%
2	Usia	21-40 tahun	13	28.9%
		41-65 tahun	32	71.1%
	Total		45	100.0%
3	Pendidikan	SD	35	77.8%
		SMP	5	11.1%
		Perguruan Tinggi	5	11.1%
	Total		45	100.0%
4	Pekerjaan	Wiraswasta	40	88.9%
		Pegawai Negeri	5	11.1%
	Total		45	100.0%

Data processed from the author's observations 2024

The statistical analysis conducted at RSUD Banda Aceh provides insights into the effectiveness of nursing counseling on pre-operative anxiety among patients. The data illustrates the distribution of anxiety levels among patients before and after receiving nursing counseling. Before counseling, a significant number of patients experienced severe to very severe anxiety (71.1%), with 48.9% reporting severe anxiety and 22.2% reporting very severe or panic-level anxiety. Following nursing counseling, there was a noticeable improvement, with a reduction in severe anxiety levels. The percentage of patients experiencing mild to moderate anxiety increased to 64.4% post-counseling, indicating the effectiveness of nursing interventions in alleviating pre-operative anxiety. These findings highlight the positive impact of nursing counseling in preparing patients psychologically for major surgeries. By addressing anxiety symptoms effectively, nursing interventions contribute to enhancing patient comfort and readiness for surgical procedures at RSUD Banda Aceh.

Table 2.a. Pre-Counseling Anxiety Symptoms

Anxiety	Level	Frequency	Percentage
Ringan (Mild)		1	2.2%
Sedang (Moderate)		12	26.7%
Berat (Severe)		22	48.9%
Very Severe/Panic		10	22.2%
Total		45	100.0%

Data processed from the author's observations 2024

Table 2.b. Post-Counseling Anxiety Symptoms

Anxiety Level	Frequency	Percentage
Ringan (Mild)	15	33.3%
Sedang (Moderate)	14	31.1%
Berat (Severe)	11	24.4%
Berat Sekali/Panik (Very Severe/Panic)	5	11.1%
Total	45	100.0%

Data processed from the author's observations 2024

The bivariate analysis in this study examines the impact of nursing counseling on reducing pre-operative anxiety levels by comparing pre-test and post-test results. The statistical test used for this analysis is the Wilcoxon signed-rank test. The table presents the distribution of anxiety levels among patients before and



after receiving nursing counseling. Before counseling, the majority of patients experienced severe or panic-level anxiety, with 55.6% reporting severe anxiety and 24.4% reporting panic-level anxiety. Post-counseling, there was a notable decrease in severe and panic-level anxiety, with more patients reporting mild to moderate anxiety levels.

Table 3. Distribution of Respondents Based on Anxiety Levels Before and After Nursing Counseling Pre-Operatively

Anxiety Level	Before Counseling (%)	After Counseling (%)
Ringan (Mild)	0 (0.0%)	10 (22.2%)
Sedang (Moderate)	9 (20.0%)	16 (35.6%)
Berat (Severe)	25 (55.6%)	13 (28.9%)
Panik (Panic)	11 (24.4%)	6 (13.3%)
Total	45 (100.0%)	45 (100.0%)

Data processed from the author's observations 2024

This table summarizes the descriptive statistics of anxiety levels before and after nursing counseling. The mean and median anxiety levels decreased from 4.04 to 3.33 and 4.00 to 3.00, respectively, indicating a reduction in overall anxiety severity post-counseling. The standard deviation (SD) shows variability around the mean anxiety score, with a range from 16% to 42% in anxiety levels. These findings underscore the significant impact of nursing counseling in alleviating pre-operative anxiety among patients at RSUD Banda Aceh. The statistical significance (p value = 0.001) from the Wilcoxon signed-rank test further supports the effectiveness of nursing interventions in reducing anxiety levels, enhancing patient comfort, and improving pre-operative preparation.

Table 4. Distribution of Respondents Based on Pre- and Post-Counseling Anxiety Levels Pre-Operatively

Statistic	Before Counseling (%)	After Counseling (%)
Mean	4.04	3.33
Median	4.00	3.00
SD	6.73	9.77
Min	21	16
Max	47	42

Data processed from the author's observations 2024

Pre-Counseling Anxiety; Of the 25 participants in this study, or 55.6% of the total, the majority reported having acute anxiety before receiving nursing counseling. The increased anxiety can be ascribed to patients' impressions of surgery as a daunting procedure that involves specialized equipment and surroundings, requiring both physiological and psychological adjustment. Leutner (2021) states that anxiety functions as a signal to the ego, indicating that an unwanted impulse is demanding conscious recognition and release. The surgical procedures examined in this study are significant operations, frequently linked with nursing diagnoses such as worry, insufficient understanding, infection concerns, and discomfort, all of which necessitate specific care. Nurses fulfill a variety of important responsibilities in patient care, including providing care, advocating for patients, educating them, coordinating their treatment, collaborating with other healthcare professionals, and offering consultation. These roles highlight the crucial role that nurses play in promoting patient healing by helping them adapt and resolve psychological issues. Fear, tension, lethargy, and an inability to relax peacefully were the hallmarks of anxiety and tension displayed by both male and female pre-operative patients during this



study. Almost all patients perceive surgery as a significant medical intervention since they must confront surgical equipment and processes.

This is consistent with the researcher's emphasis on counseling that aims to strengthen personality structure, enhance both mental and physical resilience, develop adaptive capacities, and resolve depression. Counseling interventions are specifically developed to provide individuals with support and motivation. It is expected that patients will have improved comprehension and acceptance of their situation, as well as the ability to adjust to their sickness or adhere to treatment programs more effectively, following short-term therapy. It is anticipated that these improved coping skills would result in better results, including the ability to effectively deal with psychological problems like anxiety (Thomas, Cassady, and Heller 2017). Patients who had not had surgical procedures before, which includes anesthesia, discomfort, physical changes, and being unable to move after the operation, showed high levels of anxiety, ranging from severe to panic, during the pre-operative preparatory phase. Empathic interventions that put the patient's needs first, such as positive therapy, can significantly reduce anxiety prior to surgery and improve wound healing, postoperative recovery, and overall patient satisfaction. Positive counseling enhances patients' sense of being comprehended and bolstered, resulting in enhanced emotional well-being and superior outcomes through their surgical journey (Pereira, Figueiredo-Braga, and Carvalho 2016). Anxiety is a widespread concern experienced by patients before surgical operations, and counseling plays a vital role in reducing these fears. Counseling is a form of interpersonal support when one individual seeks to aid another in resolving their issues in order to achieve personal growth and adaptation. Evaluated clinical evidence shows the effectiveness of non-pharmacological therapies in treating pre-operative anxiety. Positive counseling is an important strategy that offers emotional support and helps patients understand and accept their situation. This leads to lower anxiety levels and better outcomes for patients overall (Wang et al. 2022).

Pre- and Post-Nursing Counseling Anxiety; The research findings demonstrate a substantial decrease in anxiety levels following nursing counseling in comparison to the pre-intervention period. There is evidence indicating that patients who receive preoperative education spend less time in the Intensive Care Unit. However, no difference was observed in the length of postoperative hospital stays (Guo, East, and Arthur 2012). The study found a statistically significant result of 0.012 in the therapy group, indicating a substantial difference in anxiety levels before and after counseling. Furthermore, the Mann-Whitney U test resulted in a p-value of 0.007, which supports the acceptance of the alternative hypothesis (H1) and suggests a significant impact of counseling on anxiety. Positive counseling provides additional support to patients by attending to their psychological and emotional needs, which in turn helps nurses in all settings better manage medication adverse reactions and preserve patients' quality of life (Poirier 2013).

Nursing counseling combines knowledge mastery, guidance approaches, interpersonal communication skills, and a methodical approach to providing thorough and impartial information. The main objective is to assist individuals in identifying their present situation, comprehending the problems they encounter, and devising strategies or initiatives to overcome these obstacles (Elshrief, and Ageiz 2020). Nursing counseling plays a crucial role in boosting the confidence of pre-operative patients by assuring them of the potential healing outcomes achievable through surgery. Additionally, it focuses on enhancing and revitalizing their physical well-being, ensuring that patients are in the best possible condition prior to undergoing surgery. Prior to surgery, this method also treats reflex movement and coordination issues that could make a patient's situation worse. In addition, psychotherapy employs client-centered methods to help patients decrease anxiety levels and attain optimal physical health prior to surgery. Nursing counseling has a crucial role in addressing psychological concerns, including anxiety (Williams and Whitfield 2001). A significant pre-operative patient's anxiety levels were found to be reduced by nurse counseling, as evidenced by the signed-rank Wilcoxon test results, which yielded a p value of $0.001 >> 0.05$. Postoperative stress levels significantly decreased in both groups of patients. During the postoperative period, the experimental group's felt level of distress was much lower than that of the control group. The patients in the group performing the experiment stated that the visit from the operating room nurse effectively reduced their levels of stress (Gürsoy et al. 2016). China's heart surgery patients find that pre-operative counseling effectively lowers their levels of fear and sadness. Incorporating pre-operative counseling into standard practice is recommended in China to enhance the preparation of cardiac patients for surgery, based on available data and worldwide practice (Gardner et al. 2005). Their overall perception of the hospital was largely favorable, although a significant number of individuals encountered feelings of anxiety,

uncertainty, and mood disruptions at several points during their recuperation. The majority of participants reported experiencing illness, undergoing a pivotal moment, and subsequently recovering. A significant number of individuals have experienced a shift in their perspective on life following their successful surgical procedure (Gardner et al. 2005). Following the intervention, participants expressed favorable results in both personal and professional domains, such as heightened self-assurance, self-consciousness, communication aptitude, and conflict resolution abilities. Additionally, they fostered stronger connections with their colleagues, thereby establishing a valuable support system within the workplace. Innovative strategies were employed in the counseling to engage the nurses and midwives, and the results demonstrated a good impact in addressing working challenges like burnout, tension, anxiety, and psychological strain (McDonald et al. 2012).

4. Conclusion

After conducting univariate and bivariate analyses, the study's findings support the notion that major surgery patients' pre-operative anxiety levels can be effectively decreased by receiving nursing counseling. Before receiving therapy, most patients had high levels of anxiety, primarily because they perceived the surgical procedure as intimidating. Nevertheless, after receiving counseling, a significant decrease in anxiety levels was found. The results of this study align with prior research that suggests counseling therapies help improve readiness and reduce psychological discomfort in patients undergoing surgery. This highlights the essential role of nurses in providing comprehensive care, encompassing not just the medical aspects but also the emotional well-being of patients. Thus, it can be concluded that implementing pre-operative nursing counseling is a successful way to enhance treatment results and patient satisfaction.

Reference

- Álvarez-García, Cristina, and Züleyha Şimşek Yaban. 2020. "The Effects of Preoperative Guided Imagery Interventions on Preoperative Anxiety and Postoperative Pain: A Meta-Analysis." *Complementary Therapies in Clinical Practice* 38:101077. doi: <https://doi.org/10.1016/j.ctcp.2019.101077>.
- Andersson, Viktor, Josefine Bergstrand, Åsa Engström, and Silje Gustafsson. 2020. "The Impact of Preoperative Patient Anxiety on Postoperative Anxiety and Quality of Recovery After Orthopaedic Surgery." *Journal of PeriAnesthesia Nursing* 35(3):260–64. doi: <https://doi.org/10.1016/j.jopan.2019.11.008>.
- Badner, Neal H., Warren R. Nielson, Shirley Munk, Caroline Kwiatkowska, and Adrian W. Gelb. 1990. "Preoperative Anxiety: Detection and Contributing Factors." *Canadian Journal of Anaesthesia* 37(4):444–47. doi: 10.1007/BF03005624.
- Beauchemin, Melissa, Meghan T. Murray, Lillian Sung, Dawn L. Hershman, Chunhua Weng, and Rebecca Schnall. 2019. "Clinical Decision Support for Therapeutic Decision-Making in Cancer: A Systematic Review." *International Journal of Medical Informatics* 130:103940. doi: <https://doi.org/10.1016/j.ijmedinf.2019.07.019>.
- Bodner, Stanley. 2008. "Stress Management in the Difficult Patient Encounter." *Dental Clinics of North America* 52(3):579–603. doi: <https://doi.org/10.1016/j.cden.2008.02.012>.
- Chrouser, Kristin L., Jie Xu, Susan Hallbeck, Matthew B. Weinger, and Melissa R. Partin. 2018. "The Influence of Stress Responses on Surgical Performance and Outcomes: Literature Review and the Development of the Surgical Stress Effects (SSE) Framework." *The American Journal of Surgery* 216(3):573–84. doi: <https://doi.org/10.1016/j.amjsurg.2018.02.017>.
- Cleary, Michelle, Glenn E. Hunt, Jan Horsfall, and Maureen Deacon. 2012. "Nurse-Patient Interaction in Acute Adult Inpatient Mental Health Units: A Review and Synthesis of Qualitative Studies." *Issues in Mental Health Nursing* 33(2):66–79. doi: 10.3109/01612840.2011.622428.
- Crosson, Jacque A. 2018. "Enhanced Recovery After Surgery—The Importance of the Perianesthesia Nurse on Program Success." *Journal of PeriAnesthesia Nursing* 33(4):366–74. doi: <https://doi.org/10.1016/j.jopan.2016.09.010>.
- DeFazio, Michael V, Kenneth L. Fan, Yash J. Avashia, Jun Tashiro, Steven Ovadia, Tarik Husain, Liliana Camison, Zubin J. Panthaki, Christopher J. Salgado, and Seth R. Thaller. 2012. "Inferior Pedicle Breast Reduction: A Retrospective Review of Technical Modifications Influencing Patient Safety, Operative Efficiency, and Postoperative Outcomes." *The American Journal of Surgery* 204(5):e7–14. doi: <https://doi.org/10.1016/j.amjsurg.2012.07.015>.
- Duggirala, Mayuri, Chandrasekharan Rajendran, and R. N. Anantharaman. 2008. "Patient-Perceived Dimensions of Total Quality Service in Healthcare." *Benchmarking* 15(5):560–83. doi: 10.1108/14635770810903150.
- Eberhart, Leopold, Hansjörg Aust, Maike Schuster, Theresa Sturm, Markus Gehling, Frank Euteneuer, and Dirk Rüschi. 2020. "Preoperative Anxiety in Adults - a Cross-Sectional Study on Specific Fears and Risk Factors." *BMC Psychiatry* 20(1):140. doi: 10.1186/s12888-020-02552-w.
- Ferlie, Ewan B., and Stephen M. Shortell. 2001. "Improving the Quality of Health Care in the United Kingdom and the United



- States: A Framework for Change." *Milbank Quarterly* 79(2):281–315. doi: 10.1111/1468-0009.00206.
- Gab Allah, Amal Refaat, Hayam Ahmed Elshrief, and Marwa Hassan Ageiz. 2020. "Developing Strategy: A Guide For Nurse Managers to Manage Nursing Staff's Work-Related Problems." *Asian Nursing Research* 14(3):178–87. doi: <https://doi.org/10.1016/j.anr.2020.07.004>.
- Gardner, Genevieve, Doug Elliott, Jaswin Gill, Melanie Griffin, and Matthew Crawford. 2005. "Patient Experiences Following Cardiothoracic Surgery: An Interview Study." *European Journal of Cardiovascular Nursing* 4(3):242–50. doi: 10.1016/j.ejcnurse.2005.04.006.
- Gayani, H. M. A., and K. Nandasiri. 2019. "A Study of Use of Mini-Bladders in Active Compression as a Treatment for Venous Disease and Lymphoedema." (July).
- Guo, Ping, Linda East, and Antony Arthur. 2012. "A Preoperative Education Intervention to Reduce Anxiety and Improve Recovery among Chinese Cardiac Patients: A Randomized Controlled Trial." *International Journal of Nursing Studies* 49(2):129–37. doi: <https://doi.org/10.1016/j.ijnurstu.2011.08.008>.
- Guo, Pingping, Ping Li, Xuehui Zhang, Na Liu, Jie Wang, Shu Yang, Lin Yu, and Wei Zhang. 2020. "The Effectiveness of Aromatherapy on Preoperative Anxiety in Adults: A Systematic Review and Meta-Analysis of Randomized Controlled Trials." *International Journal of Nursing Studies* 111:103747. doi: <https://doi.org/10.1016/j.ijnurstu.2020.103747>.
- Gürsoy, Ayla, Bahar Candaş, Şirin Güner, and Serpil Yılmaz. 2016. "Preoperative Stress: An Operating Room Nurse Intervention Assessment." *Journal of PeriAnesthesia Nursing* 31(6):495–503. doi: <https://doi.org/10.1016/j.jopan.2015.08.011>.
- Iyendo, Timothy Onosahwo, Patrick Chukwuemeke Uwajeh, and Ezennia Stephen Ikenna. 2016. "The Therapeutic Impacts of Environmental Design Interventions on Wellness in Clinical Settings: A Narrative Review." *Complementary Therapies in Clinical Practice* 24:174–88. doi: <https://doi.org/10.1016/j.ctcp.2016.06.008>.
- King, Amy, Jim Bartley, Deborah L. Johanson, and Elizabeth Broadbent. 2017. "Components of Preoperative Anxiety: A Qualitative Study." *Journal of Health Psychology* 24(13):1897–1908. doi: 10.1177/1359105317709512.
- Kotkamp-Mothes, Nicole, Dana Slawinsky, Sybill Hindermann, and Bernhard Strauss. 2005. "Coping and Psychological Well Being in Families of Elderly Cancer Patients." *Critical Reviews in Oncology/Hematology* 55(3):213–29. doi: <https://doi.org/10.1016/j.critrevonc.2005.03.006>.
- Krass, Ines. 2016. "Quasi Experimental Designs in Pharmacist Intervention Research." *International Journal of Clinical Pharmacy* 38(3):647–54. doi: 10.1007/s11096-016-0256-y.
- Lauck, Sandra B., Krystina B. Lewis, Britt Borregaard, and Ismalia de Sousa. 2021. "'What Is the Right Decision for Me?' Integrating Patient Perspectives Through Shared Decision-Making for Valvular Heart Disease Therapy." *Canadian Journal of Cardiology* 37(7):1054–63. doi: <https://doi.org/10.1016/j.cjca.2021.02.022>.
- Leutner, Susanne, and Olivier Piedfort-Marin. 2021. "The Concept of Ego State: From Historical Background to Future Perspectives." *European Journal of Trauma & Dissociation* 5(4):100184. doi: <https://doi.org/10.1016/j.ejtd.2020.100184>.
- McCarthy, Bridie, Moira O'Donovan, and Anna Trace. 2021. "A New Therapeutic Communication Model 'TAGEET' to Help Nurses Engage Therapeutically with Patients Suspected of or Confirmed with COVID-19." *Journal of Clinical Nursing* 30(7–8):1184–91. doi: <https://doi.org/10.1111/jocn.15609>.
- McDonald, Glenda, Debra Jackson, Lesley Wilkes, and Margaret H. Vickers. 2012. "A Work-Based Educational Intervention to Support the Development of Personal Resilience in Nurses and Midwives." *Nurse Education Today* 32(4):378–84. doi: <https://doi.org/10.1016/j.nedt.2011.04.012>.
- Miller, Christopher J., Shawna N. Smith, and Marianne Pugatch. 2020. "Experimental and Quasi-Experimental Designs in Implementation Research." *Psychiatry Research* 283:112452. doi: <https://doi.org/10.1016/j.psychres.2019.06.027>.
- Pereira, Lígia, Margarida Figueiredo-Braga, and Irene P. Carvalho. 2016. "Preoperative Anxiety in Ambulatory Surgery: The Impact of an Empathic Patient-Centered Approach on Psychological and Clinical Outcomes." *Patient Education and Counseling* 99(5):733–38. doi: <https://doi.org/10.1016/j.pec.2015.11.016>.
- Philip Burnard, Paul Morrison, Heather Gluyas. 2011. *Nursing Research in Action: Exploring, Understanding and Developing Skills*.
- Plauntz, Leslie M. 2007. "Preoperative Assessment of the Surgical Patient." *Nursing Clinics of North America* 42(3):361–77. doi: <https://doi.org/10.1016/j.cnur.2007.05.003>.
- Poirier, Patricia. 2013. "Nursing-Led Management of Side Effects of Radiation: Evidence-Based Recommendations for Practice." *Nursing: Research and Reviews* 3(null):47–57. doi: 10.2147/NRR.S34112.
- Thomas, Christopher L., Jerrell C. Cassady, and Monica L. Heller. 2017. "The Influence of Emotional Intelligence, Cognitive Test Anxiety, and Coping Strategies on Undergraduate Academic Performance." *Learning and Individual Differences* 55:40–48. doi: <https://doi.org/10.1016/j.lindif.2017.03.001>.
- Wang, Rulin, Xin Huang, Yuan Wang, and Masod Akbari. 2022. "Non-Pharmacologic Approaches in Preoperative Anxiety, a Comprehensive Review." *Frontiers in Public Health* 10(April). doi: 10.3389/fpubh.2022.854673.
- Whitlock, Evelyn P., C. Trac. Orleans, Nola Pender, and Janet Allan. 2002. "Evaluating Primary Care Behavioral Counseling Interventions: An Evidence-Based Approach 1 1The Full Text of This Article Is Available via AJPM Online at

- Www.Ajpm-Online.Net." *American Journal of Preventive Medicine* 22(4):267-84. doi:
[https://doi.org/10.1016/S0749-3797\(02\)00415-4](https://doi.org/10.1016/S0749-3797(02)00415-4).
- Williams, Chris, and Graeme Whitfield. 2001. "Written and Computer-Based Self-Help Treatments for Depression." *British Medical Bulletin* 57(1):133-44. doi: 10.1093/bmb/57.1.133.
- Wilson, Craig J., Andrew J. Mitchelson, Tony H. Tzeng, Mouhanad M. El-Othmani, Jasmine Saleh, Sonia Vasdev, Hillary J. LaMontagne, and Khaled J. Saleh. 2016. "Caring for the Surgically Anxious Patient: A Review of the Interventions and a Guide to Optimizing Surgical Outcomes." *The American Journal of Surgery* 212(1):151-59. doi:
<https://doi.org/10.1016/j.amjsurg.2015.03.023>.