



Vol. 11(3), Pp. 48-55, December 2024,

Author(s) retain the copyright of this article

This article is published under the terms of the
Creative Commons Attribution License 4.0.

<https://journals.directresearchpublisher.org/index.php/drjhp/issue/archive>

Review Article
ISSN: 2449-0814

Post-operative Anxiety: The Role of the Nurse in Providing Care

Ifeyinwa Pascaline Nwogu

Department of nursing science, faculty of Basic Medical sciences, Igbinedion University Okada, Edo State, Nigeria.
Author email: nwogu.pascaline@iuokada.edu.ng

ABSTRACT

Postoperative anxiety is a common challenge faced by patients during their recovery from surgery, significantly impacting their healing process and overall well-being. Nurses play a crucial role in addressing this issue by leveraging their clinical expertise to identify contributing factors and implement effective interventions. This article explores the multifaceted nature of postoperative anxiety, including its causes, effects on recovery outcomes, and evidence-based strategies for management. Emphasizing the vital role of nursing care, the discussion highlights approaches to reduce anxiety and promote holistic patient well-being. By addressing this critical aspect of postoperative care, the article underscores the importance of nurse-led initiatives in enhancing recovery experiences and improving patient satisfaction.

Keywords: Surgery, nurses, personality trait, post-operative anxiety

Article information

Received 7 October 2024;

Accepted 25 November 2024;

Published 2 December 2024

DOI:<https://doi.org/10.26765/DRJHP4545448>

Citation: Nwogu, I. P. (2024). Post-operative Anxiety: The Role of the Nurse in Providing Care. Direct Research Journal of Health and Pharmacology. Vol. 11(3), Pp. 48-55. This article is published under the terms of the Creative Commons Attribution License 4.0.

INTRODUCTION

Hospitalization and surgery are very significant negative events in the lives of patients that cause significant anxiety (Getachew et al., 2020). Anxiety is conceptualized as a group of behavioral manifestations dominated by specific emotions, defined as a state in which there is a fearful or fearful expectation of the future. Anxiety is defined as a group of behavioral manifestations that can be divided into state anxiety and trait anxiety (Yophtahe et al., 2022). According to Yamamori and Robinson (2023) State anxiety is a transient emotional state while trait anxiety is a lifelong pattern of anxiety as a personality trait. State anxiety is a subjective feeling experienced when encountering a

stimulus that causes such as surgical procedure therefore, post-operative anxiety is a type of state anxiety. Postoperative anxiety is generally considered a type of state anxiety related to consequences of surgery and is likely related to individual's personality traits and coping processes (Ji et al., 2022). A growing number of studies have shown that preoperative anxiety is associated with increased and worse surgical outcomes, including wound healing, nausea, vomiting and postoperative pain (Kassahun et al., 2022).

According to WHO (2022) anxiety disorders is very common and ranked the most mental disorders worldwide and in 2019, 301 million individuals were

affected with women taking precedent over men. This anxiety is related to being sick, the potential threat of surgery and the possible negative consequences of the procedure. Hospitalization often involves a series of challenges that can be unsettling for patients. Being placed in an unfamiliar environment, sharing a space with unknown roommates, and adhering to medical procedures and diagnostic tests can contribute to feelings of discomfort and anxiety. These factors, while necessary for effective treatment and care, can disrupt a patient's sense of normalcy and personal autonomy. Healthcare providers must remain mindful of these stressors, implementing measures to ensure patients feel supported and informed throughout their hospital stay. Clear communication, empathetic engagement, and efforts to create a more comfortable environment can significantly enhance the overall patient experience. Postoperative anxiety refers to the heightened state of worry, concern or fear that individuals may feel after surgery. These symptoms were found to be related to fear of pain, loss of physical function and the potential negative effect of surgery on body image. This anxiety can manifest in a variety of ways, including agitation, sleep problems, intrusive thoughts about surgery and increased awareness of body sensations to a longer stay in the hospital. This is a common emotional response to the stress, uncertainty, and changes associated with the surgery and the recovery process (Bhowmik, 2022). Managing postoperative anxiety is important to an individual's overall well-being and successful recovery of the individual.

When dealing with post-operative anxiety, it is important to consider the patient's emotional well-being in addition to their physical recovery. The role of a nurse in managing postoperative anxiety is crucial for the well-being and recovery of the patient. Surgery can be a stressful and overwhelming experience for individuals, leading to feelings of anxiety, fear and uncertainty. It is the responsibility of the nurse managing care (post op nurses) to assess, support and provide interventions to relieve postoperative anxiety.

According to Karanci and Dirik (2001), some sociodemographic characteristics such as age, gender, marital status, and education are considered to be related to anxiety experienced by patients. Women, young people under 50, people with a low level of education and single are more vulnerable to anxiety in the period before and after surgery. Patient Psychological characteristics such as coping strategies and perceived social support are associated with post-operative anxiety. Ji et al (2022) found in his study that elderly patients experience higher levels of postoperative anxiety due to comorbidity. A systematic review and meta-analysis of studies worldwide reported an overall prevalence of 48% of postoperative anxiety in patients undergoing surgery. However, the prevalence of postoperative anxiety varies

according to the surgical type, the gender, age of patient and country.

Objectives

At the end of this seminar, nurses are expected to;

1. Enhance their knowledge and understanding about postoperative anxiety
2. Identify patients at risk of post-operative anxiety before surgery.
3. Improve their communication skills in addressing and managing postoperative anxiety
4. Be equipped with evidence-based interventions and coping mechanisms to manage postoperative anxiety in their patients.

Empirical review

Caumo et al. (2001) conducted a study on risk factors for post-operative anxiety in adults, 712 adults between 18-60years undergoing elective surgery under general anesthesia, neural blockade or both, instrument for data collection was structured questionnaire, a pain visual analogue scale and state-trait anxiety inventory. The result revealed that history of smoking, moderate to intense post-operative pain, high pain rating index, pre-operative state anxiety, negative future perception and neural block anesthesia were found to be the protective factors against post-operative anxiety. More so, pain perception was related to state anxiety level as higher anxiety and patients with high levels of anxiety before surgery reported 2.6 times high levels of anxiety following surgery.

Also, Gurler et al. (2022) carried out a research on preoperative anxiety levels in surgical patients. The sample size comprised of 146 emergency surgery patients who had abdominal surgery in an emergency surgery clinic. State anxiety inventory, anxiety specific to surgery questionnaire, Amsterdam preoperative anxiety and information scale were used as instrument for data collection. Results revealed that there was a drop in anxiety from the pre anxiety to post-operative period. Female patients had higher pre-operative anxiety than males, more so participants with less than primary school education, those who are deficient in knowledge regarding type of surgery, general anesthesia and possible complications had higher anxiety levels. Therefore, the researcher recommended that socio demographic characteristics, psychological characteristics and surgery type need to be considered in order to identify patients at risk of experiencing pre-operative anxiety. In a study by Liu et al. (2022) explored the relationship between the big five personality traits, rumination, resilience and anxiety in a sample of Chinese

323 undergraduates using a cross sectional perspective. Results unveiled that among the big five personality traits, neuroticism was positively correlated with college student's anxiety whereas conscientiousness, agreeableness and openness were negatively correlated. In addition, neuroticism, conscientiousness and agreeableness significantly predicted anxiety of university students and that rumination mediated the association between neuroticism and anxiety. Gumus, (2022) carried out a study on the effect of pre-operative and post-operative anxiety on the quality of recovery in patients undergoing abdominal surgery in Amasya University Turkey, sample size 82 patients undergoing elective abdominal surgery. Instrument for data collection was state trait anxiety inventory, Findings revealed that patient who received general anesthesia had higher anxiety pre and post-operative, patient who were not informed about surgery had higher post-operative trait anxiety. It was concluded that patient need more education before surgery as to what to expect both in surgical suite and immediately after surgery to alleviate post-operative anxiety. According to Andersson et al (2020) who studied on how preoperative anxiety affects postoperative recovery phase among patients who underwent orthopedic surgery in County hospital, Northern Sweden. Result demonstrated that patients who had anxiety prior surgery also reported anxious within few hours following surgery. The researcher recommended that surgical nurses pay attention to preoperative anxiety level of patients in order to improve general recovery and quality of life postoperatively.

Causes of post-operative anxiety

Post-operative anxiety can be triggered by a variety of factors, and its impact on the patient's recovery process can be significant. Some common causes of postoperative anxiety include:

1. Fear of the unknown: patients may experience anxiety due to uncertainty about the surgical outcome, potential complications and the overall impact of the procedure on their health.
2. Pain and discomfort: postoperative pain and physical discomfort can attribute to feelings of anxiety, especially if the patient is concerned about managing their pain or experiencing prolong discomfort.
3. Changes in body image: surgical procedures, particularly those involving visible changes to the body, can lead to body image concerns and feelings of self-consciousness, which may contribute to anxiety.
4. Perceived loss of control: patient may feel anxious due to a perceived loss of control over their circumstances, including their physical capabilities, independence and ability to make decisions about their own care.

5. Pre-existing mental health conditions: individuals with pre-existing anxiety disorders or other mental health conditions may be more susceptible to experiencing heightened anxiety following surgery.

According to Madsen et al. (2020) younger patients, female patients, type of surgery, type of anaesthesia as well as religious and cultural background are among the risk factors of anxiety Symptoms of Post-Operative Anxiety as described by Felman (2024) includes:

1. Fatigue
2. Restlessness and irritability
3. Difficulty concentrating
4. Excessive worrying and fear about the future
5. Sleep disturbances; including difficulty falling asleep or staying asleep.
6. Muscle tension and physical discomfort
7. Increased heart rate and sweating
8. Gastrointestinal distress, such as nausea or diarrhea.
9. Shaking/trembling
10. Mental fog/confusion
11. Sudden waves of anxiety
12. Change in appetite

Impact of anxiety on patient's recovery process

According to Bhowmik (2022), anxiety experienced by patients following surgical procedures can play a critical role in influencing their overall recovery process. Elevated levels of anxiety may lead to delayed wound healing, increased postoperative pain, and reduced adherence to prescribed rehabilitation or medication regimens. Furthermore, it can negatively affect the immune response, prolong hospital stays, and contribute to psychological distress, potentially hindering the patient's ability to regain optimal health. Addressing and managing postoperative anxiety through appropriate interventions, such as counseling, relaxation techniques, or pharmacological support, is therefore essential to ensure a smoother and more efficient recovery trajectory.

Delayed healing

Anxiety has been shown to negatively impact the body's natural healing processes by delaying recovery. Elevated levels of psychological stress can disrupt the normal functioning of cellular immunity, particularly at the site of a wound. This is largely due to the role of GC cortisol, which acts as an anti-inflammatory agent and regulates Th1-mediated immune responses that are critical during the initial stages of wound healing. When stress levels are high, this regulation is impaired, leading to a significant delay in the healing process and

compromising the body's ability to recover efficiently (Basu et al., 2022).

Increased pain perception

Postoperative anxiety is frequently associated with increased pain perception among patients, as it can heighten their sensitivity to discomfort during the recovery process. This amplified perception of pain often poses challenges in effective pain management, potentially complicating the healing period and overall patient experience (Tadesse et al., 2012).

Compromised surgical outcomes

Persistent anxiety has been shown to adversely impact surgical outcomes by potentially hindering the body's natural healing processes. Elevated stress levels may disrupt physiological functions critical to recovery, thereby increasing the likelihood of postoperative complications or extending the duration of the healing period (Feldman et al., 2019). Addressing and managing anxiety prior to surgical procedures is therefore essential to promote optimal recovery and minimize risks.

Impaired quality of life

Postoperative anxiety is a critical factor that can substantially affect a patient's quality of life. Ongoing feelings of worry, fear, or emotional distress may hinder the individual's capacity to resume normal daily activities, thereby impairing both physical recovery and mental well-being. Addressing and managing such anxiety is essential to promote holistic healing and improve long-term health outcomes.

Sleep disturbances

Anxiety can significantly disrupt sleep patterns, and obtaining sufficient rest is a critical component of the healing process. Post-surgical patients experiencing anxiety often face challenges such as insomnia or other sleep disturbances, which can adversely affect their recovery. Addressing these issues is essential to ensure optimal recuperation and overall well-being, as inadequate rest may impede the body's ability to heal effectively (Ni et al., 2023).

Health care costs

Patients experiencing heightened levels of anxiety may require supplementary medical attention, which could include specialized care, pharmacological treatments, or therapeutic interventions. These additional needs have the potential to significantly impact overall healthcare expenditures, as they contribute to the complexity and

scope of care required to address the patient's condition effectively (Ni et al., 2023).

Risk of complications

Prolonged anxiety has been shown to have a detrimental impact on the immune system, potentially compromising its ability to function effectively. This weakened immune response can elevate the likelihood of postoperative complications, including infections and other medical issues. Addressing anxiety prior to surgical procedures is therefore critical to improving patient outcomes and minimizing associated risks (Cherney, 2023).

Poor medication adherence

Patients experiencing anxiety may demonstrate reduced adherence to their prescribed medication regimens, potentially compromising effective pain management and hindering their overall recovery process. This correlation underscores the importance of addressing psychological factors, such as anxiety, as part of a comprehensive approach to patient care (Baryakova et al., 2023).

Reduced mobility and activity levels

Anxiety can significantly impact a patient's willingness or confidence to participate in physical activity, potentially hindering their rehabilitation and overall recovery process. This psychological barrier may result in delayed progress, as physical activity often plays a critical role in restoring functional abilities and promoting overall well-being. Addressing these concerns through targeted interventions, such as psychological support or gradual exposure to physical activity, may help alleviate anxiety and encourage greater participation in rehabilitation programs, ultimately improving patient outcomes (Feldman et al., 2019).

Negative psychological impact

Persistent anxiety is a significant factor that can negatively impact an individual's emotional well-being, often leading to feelings of hopelessness and contributing to the onset or exacerbation of depression. This, in turn, can result in a diminished overall quality of life, particularly during critical periods of recovery. Addressing anxiety effectively during such times is essential to support mental health and promote a more positive and sustainable recovery process (Cherney, 2023).

Role of Nurses in the Management of Post-Operative Anxiety

The management of post-operative anxiety is a critical

aspect of nursing care, requiring a combination of preventive and therapeutic strategies tailored to the specific needs of each patient. Nurses play a pivotal role in employing evidence-based interventions aimed at alleviating anxiety and promoting recovery. This includes effective communication, patient education, relaxation techniques, and emotional support, all designed to create a sense of trust and comfort. Recognizing that each patient's experience and preferences are unique, it is essential for nurses to individualize their approach, ensuring that care plans are both patient-centered and aligned with the best clinical practices to optimize outcomes for surgical patients.

Assessment

Nurses should assess the patient's pre-operative anxiety levels, coping mechanisms and support systems to enable them to receive individualized supportive care (Salzmann et al., 2023). They continue to assess and gauge the patient's anxiety levels using validated assessment tools such as observation, open communication and standardized assessment scales by understanding the patient's anxiety triggers, coping mechanisms and previous experiences, nurses can timely intervene where necessary to prevent negative surgical outcomes (Ekenja, 2023).

According to Cherry (2023) using the big five (5) personality trait can help for a better understanding of individuals based on where they rank on the continuum of each of the personality listed.

Openness: sense of curiosity about others and the world. Likely to score high if enjoy trying new things, more creative, have good image, willing to consider new ideas. **Conscientiousness:** describes a careful, detail oriented nature. Likely to score high if: keep things in order, come prepared to school or work, goal driven, persistent. A score is generally associated with being organized, dependable and self-disciplined. The individual may experience anxiety related to perfectionism and the pressure to meet high standards.

Agreeableness: desire to keep things running smoothly. Likely to score high if: always ready to help out, caring and honest, interested in the people around you, believe the best about others. High agreeableness typically indicates a tendency to be compassionate and cooperative however individuals with very high score may struggle with anxiety related to social acceptance and fear of conflict.

Neuroticism: tendency to have unsettling thoughts and feelings, likely to score high if often feel vulnerable or insecure, get stressed easily, struggle with difficult situations, have mood swings. A high score is often

associated with a greater propensity for experiencing negative emotions such as anxiety, depression and emotional instability. Individuals high in neuroticism may be more sensitive to stress and more prone to anxiety disorders.

Extraversion: refers to energy drawn from social interaction. Likely to score high if: seek excitement or adventure, make friends easily, enjoy being active with others. It can sometimes mask underlying anxiety especially in social situations. However, individuals high in extraversion may also cope with anxiety through social support. People who score high on neuroticism scale are more likely to experience a bunch of anxiety when exposed to a stressful event like surgery while people who rank high in extraversion are likely to cope well with stress arising from surgery (Ji et al, 2022).

Emotional support

Nurses act as a source of emotional support and reassurance for postoperative patients. They listen actively, validate the patient's feelings and provide empathetic care. Nurses should create a safe and comforting environment, establish therapeutic communication and build trust with patients. Encouraging patients to express their fears and concerns openly can help alleviate anxiety and promote emotional well-being (Parincu, 2022).

Education and information

Nurses educate patients pre-operatively about what to expect post-operatively, including pain management, potential side effects, and the healing process. They provide clear, accurate and relevant information to patient regarding their surgical outcomes, expected recovery and even pain management strategies. By educating patients about their condition, potential complications and the steps taken to prevent them, nurses can alleviate anxiety related to the unknown. Information empowers patient to participate in their own care, manage their expectations and make informed decisions, these thus helps to help reduce uncertainty and anxiety (Ji et al., 2022).

Communication

Nurses maintain open and clear communication with the patient, their family and the rest of the healthcare team. They ensure that the patient feels informed and involved in their care plan, which can help alleviate anxiety (Zetterstrom et al., 2023).

Collaboration with the multidisciplinary team

Nurses collaborate with other healthcare professionals,

including surgeons, psychologists, social workers and psychiatrists to address the patients' anxiety from a holistic perspective. This may involve developing a comprehensive care plan that includes medication, therapy or other interventions. This interdisciplinary approach ensures that all aspects of the patient's well-being are considered and that appropriate interventions are implemented. Nurses must communicate effectively with the healthcare team to provide comprehensive patient-centered care (Rui et al., 2021).

Relaxation techniques

Nurses may teach patients relaxation techniques such as deep breathing, progressive muscle relaxation, guided imagery, or mindfulness exercises to help manage their anxiety. These techniques promote relaxation, decrease physiological responses to stress, and facilitate a sense of calmness and control. Nurses can teach and encourage patients to practice these techniques during preoperative and postoperative periods.

Medication administration and monitoring

In some cases, nurses administer and monitor medications as prescribed by the physician. Patients can be administered pre-operative medications as prescribed such as sedatives e.g., Nembutal sodium, Tranquilizers e.g. thiorazine Phenergan, Valium and/or Analgesics E.g. Morphine sulfate with the sole aim of decreasing anxiety and promote relaxation. They monitor for potential side effects and assess the effectiveness of the medication in reducing the patient's anxiety. Also it is important for nurses to educate patients about the medications prescribed. Possible interaction and any precautions they should take (Tabangcora, 2024).

Pain management plan

Implementing an effective pain management plan for after the surgery can help cushion post-operative anxiety related to post-operative discomfort therefore it is important for the surgical nurse to employ all pain management measures immediately after surgery these includes both pharmacological and non-pharmacological methods of managing pain.

Post-operative plan

Providing clear instruction for post-operative care including medication schedules, physical activity restrictions, and follow-up appointments, can help patients feel more in control and less anxious.

Referral, follow-up and discharge planning

If the patient's anxiety is severe or persistent, nurses may facilitate referrals to mental health professionals for further evaluation and follow-up care. The nurse's role in managing postoperative anxiety does not end at the hospital. Nurses follow up with patients after discharge to assess their recovery progress and evaluate their emotional well-being. They provide information about self-care at homes, signs of complications and who to contact in case of concerns. Nurses may also refer patients to support groups, counseling services or community resources for ongoing support.

Self-care for nurses

Recognize the importance of nurses' own well-being and strategies for managing their own emotions when caring for anxious postoperative patients.

IMPLICATION FOR NURSING

Post-operative anxiety is a critical aspect of patient care that underscores the significant role of nurses in addressing psychological needs following surgery. Nurses are pivotal in assessing patients for signs of anxiety, providing emotional support, and implementing evidence-based interventions to alleviate anxiety symptoms, such as offering clear and comprehensive information about the surgical process and recovery expectations (Laudy, 2024). A thorough understanding of postoperative anxiety, including its causes, manifestations, and potential impact on patient outcomes, is essential for nurses to deliver effective care. Additionally, the importance of clear and empathetic communication cannot be overstated; nurses who engage patients with reassurance, education, and active listening can foster a positive recovery experience and contribute to improved outcomes (Alder, 2023). This highlights the need for continued education and training for nurses to enhance their competencies in managing postoperative anxiety and supporting holistic patient care.

Conclusion

Psychological distress among surgical patients is a significant concern, and it is imperative for nurses to integrate this understanding into the planning and delivery of care. The seminar highlighted the comprehensive role that nurses play in addressing post-operative anxiety, which includes conducting thorough assessments, providing emotional support, offering patient education, fostering interprofessional collaboration, and implementing targeted interventions. Recognizing early indicators of post-operative anxiety is

essential for effective management, as timely intervention can greatly contribute to alleviating anxiety and promoting the overall well-being of the patient.

Recommendation

The following recommendations were made in order to foster effective management of surgical patients.

1. Nurses are employed to implement comprehensive pre-operative education programs for patients to help manage expectations and reduce anxiety prior surgery.
2. Develop and utilize standardized assessment tools to identify patients at risk for post-operative anxiety, allowing for early interventions and support.
3. Provide training and resources for nurses to effectively communicate with patients and their families about anxiety management techniques, coping strategies and available support services.
4. Foster a collaborative, multidisciplinary approach to patient care by involving other healthcare professionals, such as psychologists or social workers in managing post-operative anxiety.
5. Encourage the use of evidence-based interventions, such as relaxation techniques, mindfulness exercises and therapeutic communication to help alleviate post-operative anxiety and promote positive patient outcomes.

REFERENCES

- Alder, S. (2023). Communication in Nursing. <https://www.hipaajournal.com/communication-in-nursing/>
- Andersson, V., Bergstrand, J., Engstrom, A., Gustafsson, S. (2020). The impact of preoperative patient anxiety on post operative anxiety and quality of recovery after orthopaedic surgery. <https://doi.org/10.1016/j.jopan.2019.11.008> journal of peri Anesthesia nursing
- Baryakova TH, Pogostin BH, Langer R, McHugh KJ (2023). Overcoming barriers to patients adherence: the case for developing innovative drug delivery systems. *Nat Rev Drug delivery systems*.
- Basu, S., Goswami, A.G., Mudge, E. (2022). Psychological stress o wound healing: A silent player in a complex background. <https://doi.org/10.1177/1534734622107757/>
- Bhowmik, S. (2022). Surgery anxiety: Signs, management and more. <https://www.mwdicalnewstoday.com/articles/surgery-anxiety>
- Caumo, W., Schmidt, A.P., Schneider, C.N., Bergmann, J., Iwamoto, C.W., Adamatti, L.C., Bandeira, D. and Ferreira, B.C. (2001). Risk factors for postoperative anxiety in adults. <https://doi.org/10.1046/j.1365-2044.2001.01842.x>
- Cherney, K. (2023). Effects of Anxiety on the Body. <https://www.healthline.com/health/anxiety/effects-on-body#how-does-it-feel>
- Cherry, K. (2023). What are the big 5 personality traits? <https://www.verywellmind.com/the-big-five-personality-dimensions-2795422>
- Ekenja, B.A (2023). Decreasing preoperative anxiety: implementing assessment and management guidelines. <https://hdl.handle.net/10713/20831>
- Feldman, R., Schreiber, S., Pick, C.G., and Been, E. (2019). Gait, balance, mobility and muscle strength in people with anxiety compared to healthy individuals. <https://doi.org/10.1016/j.humov.2019.102513>
- Felman, A (2024). What to know about anxiety. <https://www.medicalnewstoday.com/articles/323454>
- Getachew, T., Neme, A., Ayelegne, D., Boru, B. (2020). Preoperative anxiety and its associated factors among patients waiting elective surgery in St. Luke's Catholic Hospital and Nursing college, Woliso, Oromia, Ethiopia. *Emerg Med Crit Care* 4, 21-27, 2020. https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=preoperative+anxiety+and+its+associated+factors+Among+patients+waiting+elective+surgery+&btnG=#d=gs_qabs&t=1732715394566&u=%23p%3DH1f0tFxin9EJ
- Gumus, K. (2022). The effect of pre-op and post -op anxiety on the quality of recovery in patients undergoing abdominal surgery. *J Perianesth Nurs*. 2021 Apr;36(2):174-178. doi:10.1016/j.jopan.2020.08.016. epub 2021 Feb 25. PMID: 33640291.
- Ji, W., Sang, C., Zhang, X., Zhu, K. and BO, L. (2022). Personality, preoperative Anxiety and Postoperative Outcomes: A Review. *Int J Environ Res Public Health*. 121 doi:10.3390/ijerph19192162. PMID:36231463;PMCID; PMC9565184.
- Karanci, A.N, and Dirik, D. (2003). Predators of pre-and postoperative anxiety in emergency surgery patients. *J Psychosom Res*.2003 Oct; 55(4):363. doi: 10.1016/S0022-3999(02)00631-1. PMID:14507548.
- Kassahun, W.T., Mehdorn, M., Wagner, T.C et al. (2022). The effect of preoperative patient-reported anxiety on morbidity and mortality outcomes in patients undergoing major general surgery. <https://doi.org/10.1038/s41598-022-10302-z>
- Laudy, G. (2024). The role of a nurse in Post-operative care. <https://cavendishhomecare.com/article-advice/the-role-of-a-nurse-in-post-operative-care/>
- Liu, A., Yu, Y., Sun, S (2022). How is the Big Five related to College Students' anxiety: The role of rumination and resilience. <https://doi.org/10.1016/j.paid.2022.111901>.
- Madsen, B.K, Zetner, D., Moller, A.M, Rosenberg, J (2020). Melatonin for preoperative and postoperative anxiety in adults. doi:10.1002/14651858.
- Ni, K., Zhu, J. & Ma, Z (2023). Preoperative anxiety and postoperative adverse events: a narrative overview. *APS* 1, 23. <https://doi.org/10.1007/s44254-023-00019-1>
- Parincu, Z. (2022). Emotional Support: Definitions, Examples and Theories. <https://www.berkeleywellbeing.com/emotional-support.html>
- Rui, A., Xu, Q., Yang, X (2021). Effect of multidisciplinary cooperative continuous nursing on the depression, anxiety and quality of life in gastric cancer patients. *Am J Transl Res*.2021 Apr 15; 13(4) :3316-3322. PMID: 34017504; PMCID : PMC8129207.
- Salzmann, S., Euteneuer, F., Kampmann, S., Rienmuler, S., Rusch, D. (2023). Perioperative anxiety and need for support. A qualitative analysis in 1000 patients <https://doi.org/10.1016/j.pec.2023.107864>. science direct
- Tabangcora, I.D. (2024). <https://nurseslabs.com/anxiolytic-hypnotic-drugs/#:~:text=Nursing%20Considerations,-Here%20are%20important&text=Perform%20a%20thorough%20physical%20assessment,effects%20associated%20with%20drug%20therapy>
- Tadesse M, Ahmed S, Regassa T, Girma T, Hailu S, Mohammed A, Mohammed S. (2021) effect of preoperative anxiety on postoperative pain on patients undergoing elective surgery: Prospective cohort study. *Ann Med Surg (Lond)*.doi: 10.1016/j.amsu.2021.103190. PMID:35070278; PMCID: PMC8767241.
- World Health Organization (2022). Mental did orders. <https://www.who.int/news-room/facts-sheets/detail/mental-disorders>.
- Yamamori, Y. and Robinson, O.J (2023). Computational perspectives on human fear and anxiety. <https://doi.org/10.1016/j.neubiorev.2022.104959>. Neuroscience and Biobehavioural Reviews
- Yophtahe, W.B., Tadesse, B.M., Girmay, F.L., Wubie, B.C. (2022). The overlooked problem among surgical patients: preoperative anxiety at

Ethiopian University Hospital.
<https://doi.org/10.3389/fmed.2022.912743>.
Zetterstrom, L., Linde, M., Blomqvist, M., Jormfeldt, H. (2023). Anxiety
Communication Notes- A tool to facilitate anxiety management and
improve the Nurse-Patient Relationship in mental Health Nursing.
Issues Ment Health Nurs. Doi:10.1080/01612840.2023.2251058.
Epub 2023 Sep 27. PMID: 37734062.