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RESEARCH ARTICLE

STRESS DURING CLINICAL POSTINGS IN ANAESTHESIA AND OPERATION THEATRE TECHNOLOGY EDUCATION: A NARRATIVE REVIEW

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Abstract

Background: Clinical posting is an essential part of Anaesthesia and Operation Theatre Technology training, allowing students to apply the knowledge gained in the classroom to real clinical practice. During their clinical postings in operation theatres, intensive care units (ICUs), emergency departments, labour rooms, and post-anaesthesia care units (PACUs), students develop the technical skills, clinical competence, and professional behaviour required for safe and effective perioperative patient care. Although clinical postings are important for professional development, they can also be challenging. Factors such as a heavy academic workload, unfamiliar clinical procedures, fear of making mistakes, communication difficulties, language barriers, and limited clinical experience can lead to significant stress among students.

Objective: This narrative review aims to summarize the available literature on stress among Anaesthesia and Operation Theatre Technolo gy students during clinical postings, focusing on the major sources of stress, its effects on students, assessment methods, coping strategies, and interventions to reduce stress.

Methods: A narrative review was conducted using published literature retrieved from electronic databases. Original research articles, systemat ic reviews, and review articles published in English were included. Owing to the limited literature specifically related to A&OTT students, evidence from operating room, anaesthesia, nursing, medical, and allied health students was also reviewed.

Results: The literature indicates that stress during clinical postings is influenced by academic, clinical, personal, and environmental factors. Common stressors include heavy

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academic demands, fear of clinical errors, inadequate knowledge and practical skills, communication and language barriers, workload, emotional exposure to critically ill patients, and insufficient supervision. These stressors may adversely affect students' confidence, psychological well-being, academic performance, and clinical competence. Supportive faculty mentorship, simulation-based learning, peer support, stress management programmes, and communication skills training were consistently reported as effective strategies for reducing stress.
Conclusion: Stress is a common challenge during clinical postings among A&OTT students. Strengthening clinical supervision, promoting supportive learning environments, and implementing evidence-based stress management interventions may enhance students' well-being, clinical competence, and overall educational experience.

Introduction:-

Clinical education is a fundamental component of healthcare professional training that bridges the gap between theoretical knowledge and practical application. Through supervised clinical experiences, students integrate classroom learning with direct patient care while developing clinical competence, critical thinking, communication skills, professional behaviour, and clinical decision-making. Clinical postings are structured, supervised, work-based learning experiences that provide opportunities for students to acquire practical skills and professional competence under the guidance of qualified healthcare professionals in real clinical settings (2,30).

Anaesthesia and Operation Theatre Technology (A&OTT) is a specialized allied health profession dedicated to perioperative patient care and the management of the surgical environment. Students enrolled in A&OTT are trained as allied health professionals who work collaboratively with anaesthesiologists, surgeons, nurses, and other members of the multidisciplinary healthcare team. A&OTT professionals assist in preparing and maintaining operation theatres, managing anaesthesia workstations and patient-monitoring equipment, ensuring infection prevention and control practices, and supporting patient care before, during, and after surgical procedures. Consequently, clinical postings constitute an essential component of the A&OTT curriculum, enabling students to integrate theoretical knowledge with practical skills while preparing for safe and effective perioperative practice (27,32).

During clinical postings, A&OTT students undergo structured training in various clinical settings, including operation theatres, intensive care units (ICUs), emergency departments, labour rooms, and post-anaesthesia care units (PACUs). Under the supervision of anaesthesiologists, surgeons, nurses, and clinical instructors, students gain practical experience in perioperative patient care, anaesthesia equipment handling, physiological monitoring, infection prevention, and multidisciplinary teamwork. These experiences are essential for developing technical competence, clinical reasoning, communication skills, and professional confidence required for contemporary perioperative healthcare practice (17,27,30).

Despite their educational importance, clinical postings are widely recognized as one of the most demanding phases of healthcare education. Students are expected to apply theoretical knowledge in real clinical situations while adapting to unfamiliar hospital environments, mastering complex technologies, maintaining patient safety, and simultaneously fulfilling academic responsibilities. Fear of making mistakes, inadequate clinical knowledge and practical skills, communication difficulties, language barriers, heavy academic workload, prolonged clinical hours, insufficient supervision, and the theory–practice gap have consistently been identified as major sources of stress among healthcare students (20,21,31,33).

According to Lazarus and Folkman, stress occurs when individuals perceive that environmental or academic demands exceed their available coping resources (12). Although moderate levels of stress may enhance motivation and facilitate learning, excessive or prolonged stress can adversely affect psychological well-being, academic achievement, clinical competence, and professional development. High stress levels have been associated with anxiety, depression, emotional exhaustion, burnout, sleep disturbances, impaired concentration, reduced self-confidence, and poor clinical performance, which may ultimately influence patient safety and the quality of healthcare delivery (15,16,20,22,31).

The operating theatre represents a particularly complex and high-risk clinical learning environment that demands technical precision, strict adherence to aseptic principles, rapid decision-making, effective communication, and close collaboration within multidisciplinary teams. Exposure to critically ill patients, emergency surgeries, unfamiliar equipment, time-sensitive procedures, and high expectations from faculty members and clinical staff may further increase stress during clinical training (17,20,21).

Although stress during clinical education has been extensively investigated among nursing, medical, physiotherapy, and operating room students, evidence specifically addressing Anaesthesia and Operation Theatre Technology students remains limited. Most published studies have focused on broader healthcare student populations, making it difficult to generalize their findings to A&OTT students, whose educational experiences and perioperative responsibilities differ considerably. Furthermore, limited evidence is available regarding the specific stressors encountered by A&OTT students, the impact of stress on their clinical learning, and the effectiveness of interventions designed specifically for this group. Therefore, synthesizing evidence from related healthcare disciplines is essential to better understand stress during A&OTT clinical education and to identify evidence-based strategies that can improve students' learning experiences, psychological well-being, and clinical competence (20,21,31).

This narrative review aims to synthesize the current evidence on stress among Anaesthesia and Operation Theatre Technology students during clinical postings. It examines the major sources and consequences of stress, reviews commonly used stress assessment tools, summarizes coping strategies and evidence-based interventions, and identifies existing research gaps. By consolidating the available evidence, this review seeks to support educators, clinical instructors, and educational institutions in developing effective strategies to promote student well-being, enhance clinical competence, and improve the overall quality of clinical education.

Methodology:-

This narrative review was conducted to summarize the available literature on stress experienced by Anaesthesia and Operation Theatre Technology (A&OTT) students during clinical postings. A comprehensive literature search was performed using electronic databases. Search terms included "stress," "clinical stress," "clinical posting," "clinical education," "Anaesthesia Technology students," "Operation Theatre Technology students," "Operating Room students," "Surgical Technology students," "Allied Health students," "Nursing students," "Medical students," "burnout," "anxiety," "communication barriers," and "coping strategies."

Original research articles, systematic reviews, review articles, and qualitative studies published in English were considered for inclusion. As the literature specifically related to A&OTT students is limited, studies involving operating room, anaesthesia, nursing, medical, midwifery, paramedic, physiotherapy, and other allied health students were also included to provide a broader understanding of stress during clinical education. Editorials, conference abstracts, letters to the editor, case reports, and studies unrelated to clinical training were excluded.

The selected articles were critically reviewed and the findings were synthesized narratively. The evidence was organized into major themes, including sources of stress, effects of stress, assessment tools, coping strategies, interventions to reduce stress, and research gaps, to provide a comprehensive overview of the current evidence relevant to A&OTT students. Narrative reviews synthesize evidence thematically rather than using the structured selection process of systematic reviews.

Clinical Education in Anaesthesia and Operation Theatre Technology:-

Clinical education is a core component of the Anaesthesia and Operation Theatre Technology (A&OTT) curriculum, enabling students to integrate theoretical knowledge with practical skills in real healthcare settings. Clinical postings expose students to operation theatres, intensive care units (ICUs), emergency departments, labour rooms, post-anaesthesia care units (PACUs), and other perioperative areas, where they actively participate in patient care under the supervision of healthcare professionals. These experiences help students develop technical competence, clinical decision-making, communication skills, professionalism, and teamwork, all of which are essential for safe perioperative practice (2,17,27,30).

The operating theatre provides a unique learning environment that requires students to understand aseptic techniques, infection prevention measures, anaesthesia equipment, patient monitoring, surgical instruments, and multidisciplinary collaboration. During clinical postings, students are expected to observe and assist in various perioperative procedures while maintaining patient safety and professional ethics. Such exposure enhances confidence and prepares students for future clinical responsibilities; however, it also presents several academic and clinical challenges that may contribute to stress (17,18,20,21,28).

Previous studies have reported that a supportive clinical learning environment, effective supervision, and opportunities for hands-on practice positively influence students' learning experiences and professional development. In contrast, inadequate supervision, unfamiliar clinical settings, limited practical exposure, and ineffective communication with healthcare professionals may reduce students' confidence and negatively affect their

clinical performance (2,17,18,21,28,31). Therefore, creating a positive and supportive clinical learning environment is essential to facilitate skill development while minimizing stress during clinical education (2,11,18,31).

Sources of Stress During Clinical Postings:-

The literature indicates that stress during clinical postings is multifactorial and arises from several academic, clinical, interpersonal, and organizational factors. Although the nature and intensity of these stressors may differ among students, they collectively influence clinical learning, confidence, and psychological well-being. The following sections discuss the major factors contributing to stress during clinical education based on the available evidence.

Academic Responsibilities:-

Academic responsibilities are consistently identified as one of the major sources of stress during clinical education. In addition to attending clinical postings, students are required to complete assignments, maintain logbooks, prepare case presentations, and perform well in practical and theoretical examinations. Balancing these academic responsibilities with demanding clinical schedules often creates time constraints and increases psychological pressure. Evidence from studies involving nursing, operating room, and allied health students indicates that continuous assessments, practical examinations, and academic expectations may negatively affect students' confidence, concentration, and learning outcomes. The simultaneous demands of classroom learning and clinical responsibilities have been associated with increased stress and reduced academic satisfaction, highlighting academic workload as a significant contributor to stress during clinical training (20,21,26,29,31).

Clinical Learning Environment:-

The clinical learning environment plays a central role in shaping students' experiences during clinical postings. The operating theatre is a highly specialized setting that requires technical precision, strict adherence to aseptic techniques, effective communication, rapid decision-making, and multidisciplinary teamwork. Students entering this environment for the first time frequently experience anxiety because of unfamiliar equipment, complex surgical procedures, and uncertainty regarding their clinical responsibilities. Studies consistently demonstrate that unfamiliar clinical settings, limited practical experience, and inadequate orientation increase stress among healthcare students during clinical training. Conversely, supportive supervision, constructive feedback, and opportunities for supervised hands-on practice improve students' confidence, encourage active participation, and enhance the overall learning experience. These findings emphasize that the quality of the clinical learning environment has a direct influence on students' stress levels and professional development (17,18,20,21,28).

Knowledge and Practical Skills:-

Limited theoretical knowledge and insufficient practical experience are common sources of stress during clinical postings. Students often feel anxious when performing unfamiliar procedures, handling anaesthesia equipment, or assisting during surgical interventions because they fear making mistakes that could compromise patient safety. Inadequate preparation before clinical exposure and limited opportunities for supervised practice may further reduce confidence and increase stress. Studies among operating room, nursing, and allied health students have consistently identified inadequate knowledge and practical skills as significant contributors to stress during clinical education (17,18,20,21,33).

Communication and Interpersonal Challenges:-

Effective communication is fundamental to successful clinical learning and safe patient care. During clinical postings, students are expected to communicate confidently with anaesthesiologists, surgeons, nurses, patients, and other healthcare professionals while functioning as members of multidisciplinary teams. However, language barriers, fear of asking questions, uncertainty regarding professional roles, and limited confidence in communicating with senior staff frequently contribute to stress. The literature suggests that positive interpersonal relationships and supportive mentorship significantly improve students' confidence and clinical participation. In contrast, ineffective communication, inadequate supervision, and limited constructive feedback may reduce students' motivation, hinder learning opportunities, and increase psychological stress during clinical education (17,20,21,24,28).

Emotional and Psychological Factors:-

Clinical education exposes students to emotionally demanding situations that may affect their psychological well-being. Caring for critically ill patients, participating in emergency procedures, witnessing unexpected intraoperative complications, and occasionally encountering patient death can be emotionally challenging, particularly for students with limited clinical experience. Fear of making mistakes and concerns regarding patient safety further contribute to

anxiety and emotional distress. Several studies have reported that prolonged exposure to these stressors may lead to emotional exhaustion, reduced self-confidence, anxiety, and burnout if adequate emotional support is not available. Early identification of psychological stress and the provision of appropriate support are therefore important for maintaining students' well-being throughout clinical training (15,16,19,20).

Institutional and Organizational Factors:-

Institutional support plays an important role in determining the quality of students' clinical learning experiences. Factors such as inadequate orientation, insufficient supervision, limited opportunities for supervised practice, lack of timely feedback, long clinical hours, and heavy workloads have been identified as important contributors to stress during clinical postings. These organizational challenges may reduce students' confidence and negatively influence both learning and clinical performance. Evidence suggests that educational institutions can minimize stress by providing structured orientation programmes, supportive faculty mentorship, regular feedback, and adequate learning opportunities throughout clinical training. A positive educational environment not only improves students' confidence but also promotes professional development and successful adaptation to clinical practice (2,11,17,18,21).

Overall, the available evidence indicates that stress during clinical postings is influenced by multiple interacting factors rather than a single cause. Academic demands, challenging clinical environments, communication difficulties, emotional experiences, and institutional support collectively shape students' learning experiences and psychological well-being. Recognizing these stressors is essential for developing effective interventions that promote resilience, improve clinical competence, and enhance the quality of clinical education (11,18,20).

Table 1. Major Sources of Stress During Clinical Postings Reported in the Literature

Source of Stress	Examples Reported in the Literature
Academic factors	Examinations, assignments, logbooks, case presentations, academic workload
Clinical learning environment	Unfamiliar operating theatre, ICU, emergency department, complex procedures, advanced equipment
Knowledge and skills	Limited practical experience, inadequate preparation, fear of making mistakes
Communication and interpersonal factors	Language barriers, interaction with faculty, surgeons, nurses, and patients, lack of constructive feedback
Emotional and psychological factors	Caring for critically ill patients, emergency surgeries, patient death, anxiety, emotional exhaustion
Institutional and organizational factors	Inadequate supervision, lack of orientation, insufficient feedback, limited learning opportunities
Workload	Long clinical hours, physical fatigue, balancing academic and clinical responsibilities

Effects of Stress During Clinical Postings:-

Stress experienced during clinical postings can influence multiple aspects of students' academic and professional development. The available literature indicates that prolonged or poorly managed stress affects not only learning outcomes but also clinical competence, psychological well-being, professional behaviour, and patient safety. Although moderate levels of stress may improve motivation and learning, excessive or persistent stress has consistently been associated with adverse educational and psychological outcomes among healthcare students (20,29,31).

Academic Performance:-

Clinical stress can negatively affect students' academic performance by impairing concentration, memory, critical thinking, and decision-making abilities. Balancing academic responsibilities with clinical duties often creates psychological pressure that reduces learning efficiency and academic satisfaction. Evidence from systematic reviews and observational studies indicates that high levels of clinical stress are associated with poorer academic performance, reduced confidence, and lower learning satisfaction among healthcare students (26,29,31).

Clinical Competence:-

Clinical competence develops through repeated exposure to patient care, supervised practice, and active participation in clinical activities. However, excessive stress may reduce students' confidence, impair psychomotor

performance, and discourage participation because of fear of making mistakes. Studies have shown that reducing stress through simulation-based learning and structured clinical preparation improves students' technical performance, confidence, and readiness for clinical practice (7,9,18,23).

Psychological Health:-
Persistent clinical stress has significant consequences for students' psychological well-being. Anxiety, emotional distress, sleep disturbances, reduced self-esteem, and depressive symptoms are commonly reported among healthcare students during clinical education. The literature indicates that psychological support programmes and educational interventions can effectively reduce stress and improve students' emotional well-being and resilience during clinical training (3,6,15,19).

Burnout:-
Burnout is characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment resulting from prolonged exposure to academic and clinical stress. Students experiencing persistent stress are more likely to develop burnout, which may reduce motivation, learning satisfaction, and professional commitment. Early recognition of stress and timely psychological support are therefore essential to promote resilience and prevent burnout among healthcare students (15,16,20).

Patient Safety:-
Clinical stress may indirectly compromise patient safety by affecting students' concentration, communication, clinical judgment, and procedural performance. Increased stress may result in hesitation during clinical procedures, reduced situational awareness, and a greater likelihood of errors. The literature suggests that supportive supervision, effective communication, and simulation-based education improve students' confidence while promoting safer clinical practice and better patient care (9,17,18,23). Overall, the available evidence demonstrates that unmanaged stress can adversely affect students' academic achievement, clinical competence, psychological well-being, professional development, and patient safety. Early identification of stress and implementation of supportive educational strategies are therefore essential for optimizing students' learning experiences and preparing competent healthcare professionals (11,20,31).

Table 2. Major Effects of Stress During Clinical Postings Reported in the Literature

Effect	Impact Reported in the Literature
Academic performance	Reduced concentration, memory, learning efficiency, examination performance, and academic satisfaction
Clinical competence	Reduced confidence, hesitation during procedures, impaired psychomotor performance, and limited clinical participation
Psychological health	Anxiety, emotional distress, depression, sleep disturbances, reduced self-esteem, and psychological distress
Burnout	Emotional exhaustion, depersonalization, reduced motivation, and decreased professional commitment
Patient safety	Increased risk of procedural errors, impaired clinical decision-making, reduced situational awareness, and communication difficulties

Stress Assessment Tools:-
Accurate assessment of stress is essential for identifying students who may be at risk of psychological distress during clinical postings and for evaluating the effectiveness of stress-reduction interventions. Various validated instruments have been used to measure perceived stress, anxiety, burnout, and general psychological well-being among healthcare students. The selection of an assessment tool depends on the study objectives and the specific psychological outcomes being investigated. The Perceived Stress Scale (PSS) is one of the most frequently used instruments for measuring perceived stress. It evaluates the extent to which individuals perceive situations in their lives as stressful over the previous month. Owing to its simplicity, good reliability, and ease of administration, the PSS has been widely applied in studies involving nursing, medical, and allied health students during clinical education (1,13).

Another commonly used instrument is the Depression, Anxiety and Stress Scale-21 (DASS-21), which simultaneously assesses symptoms of depression, anxiety, and stress. Compared with the PSS, DASS-21 provides a

broader evaluation of psychological health and has been extensively used to assess emotional distress among healthcare students during clinical training (14,22). Burnout associated with prolonged academic and clinical stress is frequently assessed using the Maslach Burnout Inventory (MBI). This instrument evaluates three dimensions of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. It has been widely used to investigate the relationship between stress, emotional well-being, and professional development among healthcare students (16).

General psychological well-being is commonly assessed using the General Health Questionnaire (GHQ), particularly the GHQ-12 and GHQ-28 versions. The GHQ is a validated screening instrument designed to identify symptoms of psychological distress and has been used extensively to evaluate the impact of clinical education on students' mental health (4). Overall, the literature demonstrates that the PSS, DASS-21, MBI, and GHQ are reliable and validated instruments for assessing stress and related psychological outcomes among healthcare students. Their application enables early identification of students requiring academic or psychological support and facilitates the evaluation of interventions aimed at reducing stress during clinical education (1,4,13,14,16,22).

Table 3. Commonly Used Instruments for Assessing Stress Among Healthcare Students

Assessment Tool	Measures	Common Application
Perceived Stress Scale (PSS)	Perceived stress	Measures overall stress levels during clinical postings
Depression, Anxiety and Stress Scale-21 (DASS-21)	Depression, anxiety, and stress	Assesses psychological distress during clinical education
Maslach Burnout Inventory (MBI)	Emotional exhaustion, depersonalization, and personal accomplishment	Evaluates burnout associated with prolonged academic and clinical stress
General Health Questionnaire (GHQ-12/GHQ-28)	General psychological well-being	Screens for psychological distress and mental health problems

Coping Strategies:-

Coping strategies are the conscious cognitive and behavioural efforts used by individuals to manage internal and external demands that are perceived as stressful or overwhelming. Their primary purpose is to reduce psychological distress, enhance emotional well-being, and promote effective adaptation to challenging situations. Coping strategies are broadly classified into problem-focused coping, which aims to address or modify the source of stress through actions such as seeking guidance, improving knowledge and skills, effective time management, and planning, and emotion-focused coping, which helps regulate emotional responses through relaxation techniques, mindfulness, physical activity, positive reframing, and seeking emotional support when stressful situations cannot be immediately changed (12).

Healthcare students adopt a variety of coping strategies to manage stress during clinical postings. The literature suggests that effective coping not only reduces psychological distress but also improves confidence, resilience, and overall clinical performance. Problem-focused coping strategies commonly include seeking guidance from faculty members and clinical instructors, improving clinical knowledge and practical skills, planning daily activities, and developing effective time-management skills. Emotion-focused coping strategies include practising relaxation techniques, mindfulness, engaging in regular physical activity, and seeking emotional support from peers, family members, and friends (19,20,24).

Several studies have reported that peer support and positive interactions with clinical instructors play an important role in reducing stress during clinical education. Students who receive constructive feedback, mentorship, and encouragement from supervisors are more likely to participate actively in clinical learning, develop greater self-confidence, and adapt more effectively to the clinical environment (11,17,20,24,28). Similarly, maintaining healthy lifestyle habits, engaging in regular physical exercise, and practising mindfulness or relaxation techniques have been associated with lower stress levels, improved resilience, and better psychological well-being among healthcare students (3,15,19).

Simulation-based learning has also emerged as an effective strategy for helping students cope with the challenges of clinical postings by providing opportunities to practise clinical skills in a safe, controlled, and supportive learning environment before entering real clinical settings. Evidence indicates that simulation-based education improves

clinical confidence, enhances preparedness for practice, reduces anxiety, and ultimately minimizes stress during clinical postings (5,7,9,18,23).

Interventions to Reduce Stress:-

Educational institutions play a crucial role in reducing stress by creating supportive clinical learning environments. The literature highlights that structured orientation programmes, effective mentorship, and regular supervision contribute significantly to students' confidence and adaptation during clinical postings. Early orientation to operation theatre protocols, anaesthesia equipment, and clinical expectations can reduce uncertainty and improve students' readiness for clinical practice (2,17,21,28).

Simulation-based education has consistently demonstrated positive outcomes in reducing clinical stress. Randomized controlled trials have shown that virtual reality-based orientation, scenario-based simulation, and high-fidelity simulation improve students' confidence while decreasing anxiety before clinical exposure (5,7,9,18,23). In addition, stress management programmes incorporating relaxation techniques, mindfulness training, and cognitive behavioural approaches have been found to reduce perceived stress and enhance emotional well-being among healthcare students (3,6,11,19).

Institutional support through accessible counselling services, regular feedback, peer mentoring, and faculty development programmes further contributes to a positive clinical learning environment. Such interventions not only improve students' psychological well-being but also promote professional growth and clinical competence (2,11,17,20,31).

Table 4. Interventions to Reduce Stress During Clinical Postings

Intervention	Description	Reported Outcomes
Structured orientation programmes	Orientation to the operating theatre, anaesthesia equipment, clinical protocols, and student responsibilities before clinical postings	Reduced uncertainty, improved preparedness, and facilitated adaptation to the clinical environment
Simulation-based education	High-fidelity simulation, scenario-based learning, and virtual reality training before clinical exposure	Reduced stress and anxiety, improved clinical confidence, technical skills, and decision-making ability
Stress management programmes	Programmes incorporating relaxation techniques, mindfulness, and cognitive behavioural strategies	Decreased perceived stress, enhanced emotional well-being, and improved coping abilities
Faculty mentorship and clinical supervision	Regular supervision, constructive feedback, and guidance from faculty and clinical instructors	Improved confidence, clinical competence, and learning experience
Peer mentoring and support	Peer-assisted learning, emotional support, and collaborative learning activities	Reduced feelings of isolation, promoted resilience, and improved adaptation to clinical training
Counselling and psychological support	Access to counselling services and mental health resources	Improved psychological well-being and reduced symptoms of stress and anxiety

Research Gaps:-

Although stress among healthcare students has been widely investigated, research specifically focusing on Anaesthesia and Operation Theatre Technology (A&OTT) students remains limited. Most published studies have been conducted among nursing, medical, or operating room students, and their findings are often extrapolated to A&OTT education. Consequently, evidence specific to the unique clinical responsibilities and learning experiences of A&OTT students is lacking.

Future Directions:-

Future studies should focus on identifying stressors unique to Anaesthesia and Operation Theatre Technology students and evaluating interventions that improve both psychological well-being and clinical competence. Multicentre studies involving larger and more diverse student populations are needed to enhance the generalizability of findings. Longitudinal research would provide valuable insights into changes in stress levels throughout different stages of clinical education.

Educational institutions should also explore innovative teaching methods, including simulation-based learning, virtual reality, structured mentorship programmes, and digital mental health interventions. Integrating stress management training into the A&OTT curriculum may help students develop resilience, improve coping skills, and enhance preparedness for clinical practice.Emerging technologies such as artificial intelligence (AI) may also contribute to improving student well-being during clinical education. Artificial intelligence-based monitoring systems could help identify students at high risk of stress by analysing academic performance, attendance patterns, self-reported stress assessments, and other educational indicators. Early identification of students experiencing significant stress may enable timely psychological support, personalized interventions, and targeted mentoring to improve both well-being and clinical learning outcomes. Further research evaluating the effectiveness of these strategies will support the development of evidence-based educational policies.

Limitations:-

This review has some limitations. Because of the limited number of studies specifically investigating stress among Anaesthesia and Operation Theatre Technology (A&OTT) students, evidence from operating room, nursing, medical, midwifery, paramedic, physiotherapy, and other allied health students was included to provide a broader understanding of the topic. Therefore, some findings may not fully represent the unique clinical experiences and stressors of A&OTT students. In addition, the included studies varied in their study designs, sample characteristics, clinical settings, and stress assessment instruments, making direct comparison of findings challenging. As this is a narrative review, a formal assessment of the methodological quality and risk of bias of the included studies was not performed. Consequently, the findings should be interpreted in the context of the available evidence.

Summary Points:-

- Clinical postings are an essential component of Anaesthesia and Operation Theatre Technology (A&OTT) education but are frequently associated with moderate to high levels of stress.
- Stress during clinical training is multifactorial, arising from academic demands, unfamiliar clinical environments, communication challenges, emotional experiences, and institutional factors.
- Excessive stress can negatively affect academic performance, clinical competence, psychological well-being, increase the risk of burnout, and potentially influence patient safety.
- Validated instruments such as the Perceived Stress Scale (PSS), Depression Anxiety Stress Scale-21 (DASS-21), Maslach Burnout Inventory (MBI), and General Health Questionnaire (GHQ) are commonly used to assess stress and related psychological outcomes.
- Individual coping strategies, including time management, self-directed learning, physical activity, mindfulness, and seeking social support, help students manage clinical stress effectively.
- Faculty mentorship, peer support, constructive feedback, and a positive clinical learning environment play a significant role in improving students' confidence and reducing stress.
- Educational interventions such as simulation-based learning, structured orientation programmes, stress management training, and counselling services have demonstrated positive outcomes in reducing stress and enhancing clinical preparedness.
- Current evidence specific to A&OTT students remains limited, with most available studies conducted among nursing and medical students.
- Future research should focus on multicentre, longitudinal studies evaluating stress, coping strategies, and targeted interventions specifically for A&OTT students.
- Developing supportive, student-centred clinical learning environments is essential for improving students' well-being, professional competence, and quality of patient care.

Conclusion:-

Clinical posting is an indispensable component of Anaesthesia and Operation Theatre Technology education, providing students with essential opportunities to develop clinical knowledge, technical skills, and professional competence. However, the available evidence indicates that clinical training is frequently associated with stress arising from academic demands, challenging clinical environments, communication difficulties, emotional experiences, and limited institutional support.

If left unaddressed, excessive stress may adversely affect students' academic performance, clinical competence, psychological well-being, and ultimately patient care. The literature consistently demonstrates that supportive clinical supervision, simulation-based education, effective communication, stress management programmes, and faculty mentorship can reduce stress and improve students' confidence and learning experiences.Emerging

technologies, including artificial intelligence-based monitoring systems, may further support the early identification of students at risk of stress and facilitate timely educational and psychological interventions.

Although evidence from nursing, medical, and operating room education provides valuable insights, research specifically involving Anaesthesia and Operation Theatre Technology students remains limited. Future well-designed studies are needed to better understand the unique challenges faced by this group and to develop targeted interventions. Creating a supportive and student-centred clinical learning environment will be essential for promoting resilience, improving educational outcomes, and preparing competent healthcare professionals.

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