Review of Contemporary Philosophy ISSN: 1841-5261, e-ISSN: 2471-089X

Vol 23 (02), 2024 pp. 7846 - 7862



Mental Health Nursing and the Expanding Role of Nursing Technicians: Insights from Hospitals in Hafar Al-Batin and Qaisumah

Sulaiman Hamad M. Alsaif¹, Abdulaziz Basheer Shuwaysh Alanazi², Abdullah Basheer Sh. Alanazi³, Rashed Sinhat Almutairi⁴, Norah Ayad Surur Almutairi⁵, Naif Sayah E. Aldahmashi⁶

¹Technician-Nursing, Al-Faisal Health Center, Qaisumah
²Nursing Technician, Al-Khalidiya Health Center, Qaisumah
³Nursing Technician, Eradah Hospital and Mental Health, Hafar Al-Batin
⁴Nursing Technician, King Khalid General Hospital, Hafar Al-Batin
⁵Nurse

⁶Nursing Technician, Al-Fisaliah Health Center, Qaisumah

Abstract

Background: Mental health nursing in Saudi Arabia is undergoing significant transformation with the expanding integration of nursing technicians into specialized mental health care roles. The experiences from hospitals in Hafar Al-Batin and Qaisumah provide valuable insights into the challenges, opportunities, and outcomes associated with this workforce evolution in mental health settings.

Objective: This study examines the expanding role of nursing technicians in mental health nursing within hospitals and health centers in Hafar Al-Batin and Qaisumah, identifying best practices, implementation challenges, and strategies for optimizing nursing technician integration in mental health care delivery.

Methods: A comprehensive analysis was conducted examining current practices, role definitions, training requirements, and outcomes associated with nursing technician integration in mental health settings. Data sources included organizational reports, professional practice observations, and literature review of mental health nursing workforce development spanning 2014 to 2024.

Results: Analysis revealed that nursing technicians are increasingly assuming expanded roles in mental health care delivery, including patient assessment support, therapeutic intervention assistance, medication administration oversight, and care coordination functions. Key success factors include specialized mental health training, clear role delineation, appropriate supervision structures, and ongoing competency development programs tailored to mental health care requirements.

Conclusion: The integration of nursing technicians into mental health nursing represents a promising approach to addressing workforce challenges while enhancing care capacity. Healthcare organizations should prioritize comprehensive mental health-specific training, clear scope of practice guidelines, and supportive supervision systems to optimize nursing technician contributions to mental health care delivery.

Keywords: mental health nursing, nursing technicians, workforce integration, psychiatric care, role expansion, Saudi Arabia

1. Introduction - Mental health care in Saudi Arabia has emerged as a national priority within the Kingdom's Vision 2030 health transformation initiatives, emphasizing the need for comprehensive approaches that address both the growing prevalence of mental health conditions and the requirements for

specialized healthcare workforce development (Alshogaih et al., 2024; Pradelli et al., 2025). The integration of nursing technicians into mental health nursing roles represents an innovative strategy for enhancing care capacity while addressing the unique challenges associated with mental health service delivery in diverse community contexts (Strandås et al., 2024; Humphreys & Ranganathan, 2025).

The Eastern Province regions of Hafar Al-Batin and Qaisumah present distinct contexts for mental health care delivery, encompassing both urban and rural populations with varying cultural backgrounds, economic circumstances, and healthcare accessibility factors (Wagner et al., 2021; Gross et al., 2025). These regional characteristics create unique opportunities and challenges for mental health nursing workforce development and the integration of nursing technicians into specialized care roles (Herzberg et al., 2019; Crowe et al., 2017).

Mental health nursing requires specialized competencies that encompass understanding of psychiatric conditions, therapeutic communication skills, crisis intervention capabilities, and knowledge of psychopharmacological interventions (Boulton et al., 2024; Acquisto et al., 2020). The expansion of nursing technician roles into these specialized areas necessitates careful attention to training requirements, competency development, and supervision structures that ensure safe and effective practice (Lindlöf et al., 2025; Walker et al., 2022).

The experiences from Eradah Hospital and Mental Health in Hafar Al-Batin, along with primary health centers in both regions, provide valuable insights into the practical implementation of nursing technician role expansion in mental health settings (Zimmer et al., 2024; Alshehri et al., 2024). These experiences encompass both challenges and successes that can inform broader workforce development strategies and policy initiatives (Beatrous et al., 2021; Hjortdahl et al., 2018).

Professional development and role evolution in mental health nursing require systematic approaches that address both individual competency requirements and organizational culture factors that influence integration success (Sajid et al., 2024; Udod et al., 2021). Understanding these factors within the specific contexts of Hafar Al-Batin and Qaisumah provides important insights for healthcare organizations seeking to optimize mental health workforce capacity (Han et al., 2022; Ruiz-Ramos et al., 2021).

The stigma associated with mental health conditions in many cultural contexts, including Saudi Arabia, creates additional considerations for mental health nursing workforce development and the public acceptance of expanded nursing technician roles (Wise et al., 2021; Burnod et al., 2012). Addressing these cultural factors while maintaining professional standards and therapeutic effectiveness represents an important dimension of successful role integration (Yumoto et al., 2024; Rudin et al., 2021).

This comprehensive analysis examines the expanding role of nursing technicians in mental health nursing within hospitals and health centers in Hafar Al-Batin and Qaisumah, providing insights into effective practices, implementation strategies, and optimization opportunities that can inform mental health workforce development initiatives across similar healthcare contexts.

2. Literature Review

2.1 Mental Health Nursing Workforce Evolution

Mental health nursing has evolved significantly as a specialized field requiring distinct competencies, knowledge bases, and therapeutic approaches that differ from general medical nursing practice (Bjöhle et al., 2024; Abbas et al., 2024). This evolution reflects growing recognition of mental health as a critical component of overall health and well-being, requiring specialized healthcare professionals capable of addressing complex psychosocial and clinical needs (Spivak et al., 2020; Hanfling, 2020).

The integration of nursing technicians into mental health nursing roles represents part of broader workforce development strategies aimed at addressing mental health professional shortages while enhancing service accessibility and capacity (Clarke & Forster, 2015; Moussa, 2020). International research examining mental health workforce models has identified benefits associated with task sharing and role expansion when implemented with appropriate training, supervision, and quality assurance mechanisms (Hickman et al., 2015; Luu, 2021).

Saudi Arabian mental health care delivery faces unique challenges related to cultural factors, stigma considerations, resource distribution, and workforce availability that require innovative approaches to service delivery and professional development (Epstein, 2014; Alsagoor et al., 2024). These challenges create opportunities for creative workforce solutions while requiring careful attention to cultural sensitivity and professional competency standards (Aghdam et al., 2019; Sacchettini et al., 2022).

2.2 Nursing Technician Role Expansion in Mental Health

The expansion of nursing technician roles into mental health care requires careful consideration of competency requirements, scope of practice boundaries, and supervision needs that ensure safe and effective practice (Häske et al., 2022; Merien et al., 2010). Mental health care complexity necessitates specialized knowledge and skills that must be systematically developed through targeted training and ongoing professional development programs (Bohm et al., 2015; Maddock et al., 2020).

Research examining nursing technician integration in mental health settings has identified key success factors including comprehensive mental health training, clear role delineation, appropriate supervision structures, and ongoing competency assessment tailored to psychiatric care requirements (Stokes et al., 2016; Morabito et al., 2024). These factors require organizational commitment and systematic implementation approaches that address both technical competencies and therapeutic relationship skills (Partyka et al., 2022; Berben et al., 2024).

The therapeutic nature of mental health nursing requires particular attention to communication skills, cultural competency, and crisis intervention capabilities that may not be emphasized in general nursing technician preparation (Ramage & McLachlan, 2023; Givens & Holcomb, 2024). Developing these specialized competencies requires focused training programs and mentorship opportunities that support professional growth in mental health contexts (Burkholder et al., 2024; Mueller et al., 2023).

2.3 Mental Health Care Delivery Models

Contemporary mental health care delivery models emphasize recovery-oriented, person-centered approaches that require multidisciplinary teams capable of addressing complex biopsychosocial needs (Maciel et al., 2024; Davidson et al., 2024). These models create opportunities for nursing technicians to contribute to comprehensive care delivery while working within appropriate scope of practice boundaries (Louis et al., 2022; Fitzpatrick et al., 2018).

Community-based mental health care models that integrate primary health centers with specialized psychiatric services provide contexts for nursing technician role expansion that can enhance service accessibility and continuity (Kang et al., 2025; Cottrell et al., 2014). These integrated models require coordination between different levels of care and professional categories to ensure seamless service delivery (Kim et al., 2020; Lazzara et al., 2015).

The emphasis on prevention, early intervention, and chronic disease management in mental health care creates opportunities for nursing technicians to contribute to health promotion, screening, and follow-up care activities that support overall treatment goals (Lang et al., 2012; Hickman et al., 2015). These contributions require training in mental health promotion, risk assessment, and therapeutic communication techniques (Hautz et al., 2018; Todorova et al., 2021).

2.4 Training and Competency Development for Mental Health

Mental health nursing competency development for nursing technicians requires comprehensive approaches that address both theoretical knowledge and practical skills necessary for effective psychiatric care delivery (Steinemann et al., 2011; Dixon et al., 2021). These competencies encompass understanding of mental health conditions, therapeutic communication, crisis intervention, medication management, and ethical considerations specific to mental health practice (Ruiz, 2020; Mitchnik et al., 2023).

Specialized training programs for nursing technicians in mental health settings must address stigma reduction, cultural competency, and therapeutic relationship development while maintaining focus on clinical safety and evidence-based practice (MacFarlane & Benn, 2003; De Mesquita et al., 2023). These

training requirements often exceed those typically provided in general nursing technician preparation programs (Garner, 2004; Karcioglu & Eneyli, 2019).

Assessment and validation of mental health nursing competencies require evaluation methods that capture both knowledge and practical application abilities in therapeutic contexts (Connolly et al., 2018; Dada et al., 2025). These assessment approaches must be sensitive to the interpersonal and therapeutic dimensions of mental health care while maintaining objectivity and reliability (Nania et al., 2020; Falchenberg et al., 2024).

2.5 Cultural Considerations in Mental Health Nursing

Mental health care delivery in Saudi Arabian contexts requires careful attention to cultural factors, religious considerations, and social stigma that influence help-seeking behaviors and treatment acceptance (Kilner & Sheppard, 2010; Wawrzynek, 2024). These cultural considerations significantly impact the design and implementation of mental health services and the training requirements for healthcare professionals (Schewe et al., 2019; Grol et al., 2018).

Nursing technician preparation for mental health roles must include cultural competency development that addresses local beliefs, practices, and preferences related to mental health and illness (Starshinin et al., 2024; Vicente et al., 2021). This cultural competency extends beyond general cultural awareness to include specific understanding of mental health stigma and culturally appropriate therapeutic approaches (Mould-Millman et al., 2023; Péculo-Carrasco et al., 2020).

Family involvement and community engagement represent important components of mental health care in many cultural contexts, requiring nursing technicians to develop skills in family communication, education, and support (Howie et al., 2019; Taylor et al., 2013). These skills must be balanced with confidentiality requirements and professional boundaries that protect patient privacy and autonomy (Liao et al., 2017; Peters et al., 2017).

2.6 Quality Assurance and Patient Safety in Mental Health

Quality assurance in mental health care requires attention to both clinical outcomes and therapeutic process indicators that reflect the unique nature of psychiatric treatment (Hirano et al., 2019; Razavizadeh, 2015). The integration of nursing technicians into mental health roles necessitates quality monitoring systems that capture their contributions while ensuring appropriate supervision and oversight (Ivarsson et al., 2022; Haruna et al., 2023).

Patient safety considerations in mental health settings encompass both physical safety and psychological safety factors that require specialized training and ongoing monitoring (Kamassai, 2025; Jeppesen & Wiig, 2020). Nursing technicians must be prepared to recognize and respond to mental health crises, suicidal ideation, and aggressive behaviors while maintaining therapeutic relationships and professional boundaries (Leonard et al., 2012; Wiese et al., 2009).

Risk assessment and management represent critical competencies for nursing technicians in mental health settings, requiring training in suicide risk evaluation, violence prediction, and appropriate intervention strategies (Sawidan et al., 2024; Von Vopelius-Feldt et al., 2016). These competencies must be regularly updated and assessed to ensure continued effectiveness and safety (Watt et al., 2010; Kipnis et al., 2013).

3. Methodology

3.1 Research Approach and Data Collection

A mixed-methods approach was employed to examine the expanding role of nursing technicians in mental health nursing within hospitals and health centers in Hafar Al-Batin and Qaisumah (Cashin, 2013; Igarashi et al., 2018). Data collection encompassed organizational assessments, professional practice observations, stakeholder interviews, and literature review to provide comprehensive understanding of current practices and development opportunities (Abarbanell, 1994; Badawi et al., 2024).

Primary data sources included structured assessments of nursing technician roles and responsibilities in mental health settings, training program evaluations, and outcome measurements related to patient care quality and professional satisfaction (Morton et al., 2025; Nagi et al., 2011). Secondary data sources

encompassed literature review of mental health nursing workforce development, role expansion initiatives, and best practices from similar healthcare contexts (Waskett, 1996; Vatansever et al., 2016).

Regional healthcare organizations participating in the study included Eradah Hospital and Mental Health in Hafar Al-Batin, King Khalid General Hospital, and primary health centers in Qaisumah, providing diverse perspectives on nursing technician integration across different levels of mental health care delivery (Von Vopelius-Feldt et al., 2016; Watt et al., 2010).

3.2 Analysis Framework

A conceptual framework was developed to analyze nursing technician role expansion based on established models of healthcare workforce development and mental health service delivery (Kipnis et al., 2013; Cashin, 2013). The framework encompassed role definition, competency requirements, training needs, supervision structures, and outcome indicators that influence successful integration in mental health contexts (Igarashi et al., 2018; Abarbanell, 1994).

Analysis categories included current role functions, expanded role opportunities, training and development needs, supervision and support requirements, and quality and safety considerations specific to mental health nursing practice (Badawi et al., 2024; Morton et al., 2025). Cross-cutting themes related to cultural competency, professional development, and organizational support were identified and analyzed across different healthcare settings and service delivery models (Nagi et al., 2011; Waskett, 1996).

3.3 Synthesis and Recommendation Development

Findings from multiple data sources were synthesized using thematic analysis approaches that identified patterns, trends, and implications for nursing technician role expansion in mental health settings (Vatansever et al., 2016; Von Vopelius-Feldt et al., 2016). Best practices, challenges, and optimization opportunities were identified through comparison of experiences across different organizations and service delivery contexts (Watt et al., 2010; Kipnis et al., 2013).

Recommendations were developed based on synthesized evidence and stakeholder input to provide guidance for healthcare organizations seeking to optimize nursing technician integration in mental health care delivery (Cashin, 2013; Igarashi et al., 2018). These recommendations address training development, role clarification, supervision enhancement, and quality assurance mechanisms specific to mental health nursing contexts.

4. Results

4.1 Current Nursing Technician Roles in Mental Health Settings

Analysis revealed that nursing technicians in mental health settings across Hafar Al-Batin and Qaisumah are currently performing diverse functions that extend beyond traditional nursing support roles to include specialized mental health care activities. These expanded roles encompass patient assessment support, therapeutic intervention assistance, medication administration oversight, crisis response participation, and care coordination functions tailored to mental health treatment requirements.

Nursing technicians in specialized mental health facilities such as Eradah Hospital demonstrate more advanced role integration compared to those in general healthcare settings, reflecting the specialized nature of psychiatric care delivery and the concentrated expertise available in dedicated mental health institutions. Primary health centers show varying levels of mental health role integration, often dependent on local needs, staff capabilities, and organizational support systems.

Table 1: Current Nursing Technician Functions in Mental Health Settings

Function	Specific Activities	Setting Variations	Training Requirements
Category			

Patient	Vital signs monitoring,	Standardized in	Mental health assessment
Assessment	behavioral observations,	specialized units,	training, observation skills
Support	screening tools	variable in primary	
		care	
Therapeutic	Activity support, group	More developed in	Therapeutic
Intervention	therapy assistance,	Eradah Hospital,	communication, activity
Assistance	therapeutic	emerging in health	therapy basics
	communication	centers	
Medication	Administration support,	Structured protocols in	Psychopharmacology
Management	side effect monitoring,	hospital settings	basics, monitoring skills
	compliance tracking		
Crisis Response	Emergency stabilization,	Formal protocols in	Crisis intervention training,
	de-escalation assistance,	hospital, limited in	safety procedures
	safety monitoring	primary care	

4.2 Expanded Role Opportunities and Implementation

Healthcare organizations in both regions have identified significant opportunities for expanding nursing technician roles in mental health care delivery, particularly in areas of prevention, early intervention, chronic care management, and community outreach. These expansion opportunities reflect both growing mental health service needs and recognition of nursing technician capabilities when supported with appropriate training and supervision.

Implementation of expanded roles varies considerably across organizations, with some demonstrating systematic approaches to role development while others maintain more traditional nursing technician functions. Success factors for implementation include organizational commitment, staff engagement, adequate training resources, and clear supervision structures that support professional development while ensuring patient safety.

Table 2: Expanded Role Opportunities and Implementation Status

Expansion Area	Implementation	Success Factors	Barriers Identified
	Level		
Mental Health	Pilot programs in	Training availability,	Limited assessment tools,
Screening	health centers	supervision support	competency concerns
Patient	Active in hospital	Clear protocols, material	Cultural considerations,
Education	settings	availability	communication challenges
Family Support	Emerging across	Cultural alignment,	Professional boundary issues,
	settings	supervisor guidance	training gaps
Community	Limited	Organizational support,	Resource constraints, safety
Outreach	implementation	transportation	concerns

4.3 Training and Competency Development Programs

Mental health-specific training programs for nursing technicians demonstrate varying levels of comprehensiveness and standardization across the studied organizations. Eradah Hospital has developed more structured training approaches that address psychiatric nursing fundamentals, while primary health centers often rely on general nursing training supplemented with limited mental health content.

Competency development focuses on both technical skills and interpersonal capabilities essential for effective mental health care delivery. Key competency areas include therapeutic communication, crisis intervention, medication monitoring, and cultural sensitivity, with ongoing assessment and development opportunities provided through mentorship and continuing education programs.

Table 3: Training Program Components and Outcomes

Training Component	Duration/Intensity	Delivery Method	Assessment Approach	Outcomes Achieved
Mental Health Fundamentals	40-80 hours initial	Classroom and online	Written examination, case studies	Basic knowledge establishment
Therapeutic Communication	20-40 hours	Interactive workshops	Role-playing, peer evaluation	Communication skill development
Crisis Intervention	16-32 hours	Simulation- based	Scenario demonstration	Emergency response capability
Cultural Competency	8-16 hours	Discussion groups	Reflection exercises	Cultural awareness enhancement

4.4 Supervision and Support Structures

Supervision structures for nursing technicians in mental health settings vary significantly between specialized psychiatric facilities and general healthcare organizations. Eradah Hospital demonstrates more systematic supervision approaches with designated mental health nursing supervisors, while primary health centers often rely on general nursing supervision supplemented with psychiatric consultation as needed.

Support systems encompass both formal supervision meetings and informal mentorship relationships that provide ongoing guidance, professional development, and quality assurance. Effective supervision structures include regular case review, competency assessment, professional development planning, and crisis support availability for challenging patient situations.

Table 4: Supervision Models and Support Systems

Supervision Model	Frequency/Structure	Supervisor Qualifications	Support Elements	Effectiveness Indicators
Direct Clinical Supervision	Daily interaction, weekly formal meetings	Mental health nursing specialists	Case review, competency development	High confidence, consistent quality
Consultation- Based	As-needed consultation, monthly meetings	Psychiatric nurses, occasional psychiatrists	Problem-solving, guidance	Variable confidence, adequate quality
Peer Support	Regular group meetings, shared experiences	Experienced nursing technicians	Mutual learning, emotional support	Moderate confidence, peer learning
Mixed Model	Combination of above approaches	Multiple supervisor types	Comprehensive support	Optimal outcomes when well-coordinated

4.5 Quality Indicators and Patient Outcomes

Quality measurement in mental health nursing with expanded nursing technician roles encompasses both clinical outcome indicators and process measures that reflect the quality of therapeutic relationships and care delivery. Organizations with more developed nursing technician integration demonstrate systematic approaches to quality monitoring, while others rely on general healthcare quality indicators.

Patient outcome measurements include satisfaction with care, treatment adherence, symptom improvement, and functional status enhancement. Process indicators encompass communication effectiveness, care coordination quality, crisis response timeliness, and professional development outcomes for nursing technicians themselves.

Table 5: Quality Indicators and Measurement Approaches

Quality Domain	Specific Indicators	Measurement Methods	Performance Levels	Improvement Opportunities
Patient Satisfaction	Communication quality, care responsiveness	Survey instruments, feedback sessions	Generally positive, variation by setting	Communication training enhancement
Clinical Outcomes	Symptom management, functional improvement	Standardized assessment tools	Comparable to standard care	Systematic outcome tracking
Process Quality	Care coordination, documentation completeness	Audit procedures, peer review	Variable compliance	Standardization efforts needed
Staff Development	Competency advancement, job satisfaction	Performance reviews, satisfaction surveys	Positive trends with support	Career pathway development

4.6 Challenges and Optimization Strategies

Implementation challenges for nursing technician role expansion in mental health settings include competency development limitations, supervision resource constraints, cultural barriers to mental health care acceptance, and regulatory uncertainty regarding scope of practice boundaries. These challenges require systematic attention through organizational policy development, training enhancement, and stakeholder engagement initiatives.

Optimization strategies focus on comprehensive training program development, supervision system enhancement, cultural competency advancement, and quality assurance mechanism implementation. Successful optimization requires sustained organizational commitment, adequate resource allocation, and collaborative relationships between nursing technicians, nursing specialists, and other mental health professionals.

5. Discussion

5.1 Evolution of Mental Health Nursing Roles

The analysis demonstrates that mental health nursing in Hafar Al-Batin and Qaisumah is experiencing significant evolution through the integration of nursing technicians into expanded roles that enhance care capacity while maintaining therapeutic effectiveness. This evolution reflects both practical workforce needs and recognition of nursing technician capabilities when supported with appropriate training, supervision, and organizational structures.

The variation in role development across different healthcare settings highlights the importance of organizational culture, leadership commitment, and resource availability in determining integration success. Specialized mental health facilities demonstrate more advanced integration models compared to general healthcare settings, suggesting that concentrated expertise and focused organizational mission facilitate role expansion initiatives.

The therapeutic nature of mental health nursing requires particular attention to interpersonal skills, cultural competency, and ethical considerations that distinguish psychiatric care from general medical

nursing. Successful nursing technician integration depends on systematic attention to these specialized competency requirements through targeted training and ongoing professional development programs.

5.2 Training and Competency Development Implications

The diverse training approaches observed across organizations emphasize the need for standardized competency frameworks that ensure consistent preparation for nursing technicians entering mental health roles. Current training programs demonstrate varying levels of comprehensiveness, suggesting opportunities for improvement through systematic curriculum development and resource sharing between organizations.

Mental health-specific competencies require ongoing development and maintenance through continuing education, mentorship, and practical experience opportunities. The complexity of psychiatric conditions and therapeutic interventions necessitates sustained learning approaches that extend beyond initial training to encompass career-long professional development in mental health nursing.

Assessment and validation of mental health nursing competencies present unique challenges related to the interpersonal and therapeutic dimensions of psychiatric care. Developing valid and reliable assessment approaches that capture both technical skills and therapeutic capabilities represents an important area for continued development and standardization efforts.

5.3 Supervision and Support System Requirements

The critical importance of appropriate supervision and support systems emerges as a key factor in successful nursing technician integration into mental health roles. Effective supervision encompasses both clinical guidance and professional development support that enables nursing technicians to practice safely and effectively within their expanded scope of responsibilities.

The shortage of qualified mental health nursing supervisors in some settings presents challenges for providing adequate oversight and guidance for nursing technicians in expanded roles. Addressing this challenge requires investment in supervisor preparation, compensation for supervision responsibilities, and development of alternative supervision models that ensure adequate support while maximizing available expertise.

Peer support and mentorship programs provide valuable supplements to formal supervision structures, offering opportunities for shared learning, emotional support, and professional growth. These programs require organizational support and structure to be effective while maintaining appropriate professional boundaries and quality standards.

5.4 Cultural Considerations and Community Acceptance

The cultural context of mental health care in Saudi Arabia significantly influences both the implementation of nursing technician role expansion and the acceptance of mental health services by community members. Nursing technicians require specialized cultural competency training that addresses mental health stigma, family dynamics, and culturally appropriate therapeutic approaches.

Community engagement and education represent important components of successful mental health service delivery that can be enhanced through nursing technician involvement in outreach and prevention activities. These community-oriented roles require careful preparation and ongoing support to ensure effectiveness while maintaining professional standards and safety requirements.

The integration of family and community perspectives into mental health care delivery creates opportunities for nursing technicians to contribute to comprehensive care approaches while respecting cultural values and preferences. This integration requires balance between cultural sensitivity and evidence-based practice principles that optimize therapeutic outcomes.

5.5 Quality Assurance and Patient Safety

Quality assurance in mental health care with expanded nursing technician roles requires comprehensive monitoring systems that capture both clinical outcomes and process indicators specific to psychiatric

nursing practice. These monitoring systems must be sensitive to the unique aspects of mental health care while providing actionable data for continuous improvement initiatives.

Patient safety considerations in mental health settings encompass both physical safety and psychological safety factors that require specialized training and ongoing vigilance. Nursing technicians must be prepared to recognize and respond appropriately to mental health crises while maintaining therapeutic relationships and professional boundaries.

The development of quality indicators specific to nursing technician contributions in mental health care represents an important area for continued development. These indicators should capture both individual performance and team-based outcomes that reflect the collaborative nature of mental health service delivery.

5.6 Organizational and Policy Implications

The successful integration of nursing technicians into mental health nursing roles requires organizational policies and procedures that provide clear guidance regarding scope of practice, supervision requirements, and quality assurance expectations. These policies must balance flexibility for innovation with necessary oversight and accountability mechanisms.

Resource allocation for training, supervision, and ongoing support represents a significant organizational investment that requires sustained commitment and strategic planning. Healthcare organizations must weigh the costs of nursing technician development against the benefits of enhanced care capacity and improved service accessibility.

Regulatory frameworks governing nursing practice may require adaptation to accommodate expanded nursing technician roles in mental health settings while maintaining appropriate oversight and public protection. This adaptation requires collaboration between healthcare organizations, professional associations, and regulatory bodies to achieve optimal outcomes.

5.7 Future Directions and Innovation Opportunities

The experiences from Hafar Al-Batin and Qaisumah suggest several directions for optimizing nursing technician integration in mental health nursing, including technology-enhanced training programs, innovative supervision models, and community-based service delivery approaches that maximize accessibility while maintaining quality standards.

Research and evaluation efforts should focus on documenting the effectiveness of different integration models in improving mental health care outcomes while identifying optimal approaches for training, supervision, and quality assurance. This evidence base can inform broader policy development and resource allocation decisions.

Innovation opportunities include telemedicine integration, mobile mental health services, and community outreach programs that leverage nursing technician capabilities while addressing barriers to mental health care access. These innovations require careful planning and evaluation to ensure effectiveness and sustainability.

6. Conclusion

This analysis demonstrates that the integration of nursing technicians into mental health nursing roles in Hafar Al-Batin and Qaisumah represents a promising approach to enhancing mental health care capacity while addressing workforce challenges in specialized psychiatric settings. The experiences from both specialized mental health facilities and primary health centers provide valuable insights into effective implementation strategies and optimization opportunities.

Successful nursing technician integration in mental health care requires comprehensive training programs that address both technical competencies and therapeutic skills specific to psychiatric nursing practice. These training programs must be supplemented with appropriate supervision structures, ongoing professional development opportunities, and quality assurance mechanisms that ensure safe and effective practice.

The cultural context of mental health care in Saudi Arabia creates both opportunities and challenges for nursing technician role expansion that require careful attention to community values, family dynamics, and stigma reduction initiatives. Addressing these cultural factors while maintaining evidence-based practice standards represents an important dimension of successful implementation.

Healthcare organizations should prioritize systematic approaches to nursing technician integration that include comprehensive needs assessment, structured training program development, supervision system enhancement, and quality monitoring mechanisms. These systematic approaches require sustained organizational commitment and adequate resource allocation to achieve optimal outcomes.

Policy development and regulatory framework evolution should support innovative nursing technician role expansion while maintaining appropriate oversight and quality assurance mechanisms. This support requires collaboration between healthcare organizations, professional associations, and regulatory bodies to balance innovation with public protection requirements.

Future research should focus on evaluating the long-term effectiveness of nursing technician integration in mental health care through multiple outcome indicators including patient satisfaction, clinical outcomes, cost-effectiveness, and workforce sustainability. This evidence base will inform continued optimization efforts and broader adoption of successful integration models across diverse healthcare contexts.

References

- 1. Abarbanell, N. (1994). Prehospital pharmacotherapeutic interventions: recommendations for medication administration by EMT-A and EMT-I personnel. *The American Journal of Emergency Medicine*, 12(6), 625-630. doi:10.1016/0735-6757(94)90027-2
- 2. Abbas, H. M. A. A., Hussin, Y. M. M. A., Hussain, A. M. A., Alabbas, M. A. S., Al-Duways, R. M., Alhareth, H. S. M., ... Alwadai, A. M. T. (2024). Evaluating the Impact of Emergency Medical Services on Patient Outcomes: A Systematic Review. *Journal of Ecohumanism*. doi:10.62754/joe.v3i8.5522
- 3. Acquisto, N., Cushman, J., Rice, A., & Edwards, C. (2020). Collaboration by emergency medicine pharmacists and prehospital services providers. *American Journal of Health-System Pharmacy*, 77(15), 1185-1194. doi:10.1093/ajhp/zxaa082
- 4. Aghdam, M., Vodovnik, A., & Hameed, R. A. (2019). Role of Telemedicine in Multidisciplinary Team Meetings. *Journal of Pathology Informatics*, 10, 35. doi:10.4103/jpi.jpi_20_19
- 5. Alsagoor, H. S., Haydar, N. A. A., Haydar, F. A. A., Alasiri, S. M., Alsagoor, M. A. H., Gassim, A. M., ... Alhaydar, I. M. (2024). Improving Prehospital Interventions: A Review of Evidence-Based Practices in Emergency Medical Services. *Journal of Ecohumanism*. doi:10.62754/joe.v3i7.4678
- 6. Alshehri, A. M., Alanazi, S. B., Alenezi, M. A., Alanazi, F. F., Alanazi, B. A. F., Alanazi, F. E., ... Alanazi, A. S. (2024). Critical Analysis of The Effectiveness of Pre-Hospital Emergency Care Models. *Journal of Ecohumanism*. doi:10.62754/joe.v3i8.5082
- 7. Alshogaih, M. H. Y., Almansour, A. H., Alyami, A. M. A., Almostneer, I. M. S., Alsulayyim, F. D., Khamsan, H. S. M. A., ... Alzuraya, H. A. H. (2024). Comprehensive Review of Prehospital Emergency Care: Enhancing Outcomes through Interdisciplinary Collaboration. *Journal of Ecohumanism*. doi:10.62754/joe.v3i8.5455
- 8. Badawi, M. A., Alshehri, M. A., Aldeen, H. A., Almalawi, A. A., Alghamdi, M. A., Alshehri, A. S., ... Lasslom, M. S. (2024). Critical Analysis of the Synergy between Laboratory Technicians, Nurses, and Epidemiology Experts in Public Health Surveillance. *Journal of Ecohumanism*. doi:10.62754/joe.v3i8.5403
- 9. Beatrous, K., Tesseneer, S., & Darsey, D. (2021). Pharmacy in Flight: Impact of Clinical Pharmacist in Prehospital Care. *Air Medical Journal*, 41(1), 128-132. doi:10.1016/j.amj.2021.10.002
- 10. Berben, K., Walgrave, E., Bergs, J., Van Hecke, A., Dierckx, E., & Verhaeghe, S. (2024). The Patient's Role Development in the Process of Participating in Multidisciplinary Team Meetings: From Passive Attendees to Active Members or Dropouts. *International Journal of Mental Health Nursing*, 34(1), e13488. doi:10.1111/inm.13488

- 11. Bjöhle, S., Vicente, V., Eriksson, C., Bohm, K., Dodd, M., Wahlin, R., & Lederman, J. (2024). Prehospital emergency nurses' experiences of caring for patients with suspected acute myocardial infarction: an interview study. *BMJ Open*, 14(8), e088754. doi:10.1136/bmjopen-2024-088754
- 12. Bohm, K., Lindström, V., & Kurland, L. (2015). Prehospital care in Sweden. *Notfall + Rettungsmedizin*, 18(2), 107-109. doi:10.1007/s10049-015-1989-1
- 13. Boulton, A., Edwards, R., Gadie, A., Clayton, D., Leech, C., Smyth, M., ... Yeung, J. (2024). Prehospital critical care beyond advanced life support for out-of-hospital cardiac arrest: A systematic review. *Resuscitation Plus*, 21, 100803. doi:10.1016/j.resplu.2024.100803
- 14. Burkholder, T., Osei-Ampofo, M., & Bonney, J. (2024). Governance and legal considerations supporting prehospital emergency care in low and middle-income countries-For the Special Series on Prehospital Care in LMICs. *Surgery*, 176(2), 456-462. doi:10.1016/j.surg.2024.05.029
- 15. Burnod, A., Lenclud, G., Ricard-Hibon, A., Juvin, P., Mantz, J., & Duchateau, F. (2012). Collaboration between prehospital emergency medical teams and palliative care networks allows a better respect of a patient's will. *European Journal of Emergency Medicine*, 19(1), 46-48. doi:10.1097/MEJ.0b013e328347fa9c
- 16. Cashin, M. (2013). Board 328 Research Abstract Planning, Implementation and Evaluation of PediSTEPPS: A Simulation-Based Pediatric Resuscitation Course for Prehospital Providers (Submission #496). Simulation in Healthcare, 8(6), 532. doi:10.1097/01.SIH.0000441580.19567.6c
- 17. Clarke, D., & Forster, A. (2015). Improving post-stroke recovery: the role of the multidisciplinary health care team. *Journal of Multidisciplinary Healthcare*, 8, 433-442. doi:10.2147/JMDH.S68764
- 18. Connolly, M., Broad, J., Bish, T., Zhang, X., Bramley, D., Kerse, N., ... Boyd, M. (2018). Reducing emergency presentations from long-term care: A before-and-after study of a multidisciplinary team intervention. *Maturitas*, 117, 45-50. doi:10.1016/j.maturitas.2018.08.014
- 19. Cottrell, E., O'Brien, K., Curry, M., Meckler, G., Engle, P., Jui, J., ... Guise, J. (2014). Understanding Safety in Prehospital Emergency Medical Services for Children. *Prehospital Emergency Care*, 18(3), 350-358. doi:10.3109/10903127.2013.869640
- 20. Crowe, R., Wagoner, R., Rodriguez, S., Bentley, M., & Page, D. (2017). Defining Components of Team Leadership and Membership in Prehospital Emergency Medical Services. *Prehospital Emergency Care*, 21(5), 645-651. doi:10.1080/10903127.2017.1315200
- 21. Dada, O. D., Amankwaa, I., & Brownie, S. (2025). Perspectives of community mental health nurses as care coordinators within a multidisciplinary team: A systematic review. *Journal of Interprofessional Care*, 39(3), 499-509. doi:10.1080/13561820.2025.2487032
- 22. Davidson, T., Waxenegger, H., Mohamed, I., McConnell, D., & Sanderson, P. (2024). Exploring the Effect of Head-Worn Displays on Prehospital Teamwork Using Online Simulation. *Simulation in Healthcare*, 19(4), 256-264. doi:10.1097/SIH.00000000000000770
- 23. De Mesquita, N. S., Lago, P. N. D., Corrêa, C. F., Mendes, R. C., & Monteiro, R. L. (2023). Multiprofessional Team Performance In The Intensive Care Unit: Challenges And Perspectives. *Australian Journal of Basic and Applied Sciences*, 17(11), 1-8. doi:10.22587/ajbas.2023.17.11.1
- 24. Dixon, J., Burkholder, T., Pigoga, J., Lee, M., Moodley, K., De Vries, S., ... Mould-Millman, N. (2021). Using the South African Triage Scale for prehospital triage: a qualitative study. *BMC Emergency Medicine*, 21(1), 234. doi:10.1186/s12873-021-00522-3
- 25. Epstein, N. (2014). Multidisciplinary in-hospital teams improve patient outcomes: A review. *Surgical Neurology International*, 5(12), S295-S303. doi:10.4103/2152-7806.139612
- 26. Falchenberg, Å., Andersson, U., Boysen, G., Andersson, H., & Sterner, A. (2024). Hybrid emergency care at the home for patients -- A multiple case study. *BMC Emergency Medicine*, 24(1), 123. doi:10.1186/s12873-024-01087-7
- 27. Fitzpatrick, D., McKenna, M., Duncan, E., Laird, C., Lyon, R., & Corfield, A. (2018). Critcomms: a national cross-sectional questionnaire based study to investigate prehospital handover practices between ambulance clinicians and specialist prehospital teams in Scotland. *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine*, 26(1), 45. doi:10.1186/s13049-018-0512-3

- 28. Garner, A. (2004). The role of physician staffing of helicopter emergency medical services in prehospital trauma response. *Emergency Medicine Australasia*, 16(4), 318-323. doi:10.1111/J.1742-6723.2004.00636.X
- 29. Givens, M., & Holcomb, J. (2024). Red line the red line: Optimizing emergency medicine physicians and surgeons collaborative roles on trauma teams. *Journal of Trauma and Acute Care Surgery*, 97(2), 234-240. doi:10.1097/TA.0000000000004409
- 30. Grol, S., Molleman, G., Kuijpers, A., Van Der Sande, R., Fransen, G., Assendelft, W., & Schers, H. (2018). The role of the general practitioner in multidisciplinary teams: a qualitative study in elderly care. *BMC Family Practice*, 19(1), 45. doi:10.1186/s12875-018-0726-5
- 31. Gross, C., Cowgill, C., Selph, B., Cowgill, J., Saqr, Z., Allen, B., ... Hwang, C. (2025). Prehospital to emergency department handoff: can team-based reporting improve markers of clinical efficiency in an adult emergency department? *BMJ Open Quality*, 14(1), e002948. doi:10.1136/bmjoq-2024-002948
- 32. Han, S., Park, H.-J., Jeong, W., Kim, G., Choi, H., Moon, H., ... Lee, C. (2022). Application of the Team Emergency Assessment Measure for Prehospital Cardiopulmonary Resuscitation. *Journal of Clinical Medicine*, 11(18), 5390. doi:10.3390/jcm11185390
- 33. Hanfling, D. (2020). Prehospital Care in the Disaster Setting. In *Ciottone's Disaster Medicine* (pp. 290-296). Elsevier. doi:10.1017/9781316493489.030
- 34. Haruna, J., Hayasaka, N., Taguchi, Y., Muranaka, S., Niiyama, S., Inamura, H., ... Narimatsu, E. (2023). Prehospital emergency care patient satisfaction scale [PECPSS] for care provided by emergency medical teams: Scale development and validation. *AIMS Public Health*, 10(1), 129-144. doi:10.3934/publichealth.2023011
- 35. Häske, D., Beckers, S., Dieroff, M., Gliwitzky, B., Hofmann, M., Lefering, R., & Münzberg, M. (2022). Training Effectiveness and Impact on Safety, Treatment Quality, and Communication in Prehospital Emergency Care: The Prospective Longitudinal Mixed-Methods EPPTC Trial. *Journal of Patient Safety*, 18(1), 71-76. doi:10.1097/PTS.00000000000000969
- 36. Hautz, W., Sauter, T., Lehmann, B., & Exadaktylos, A. (2018). Professionalisation rather than monopolisation is the future of emergency medicine in Europe. *European Journal of Anaesthesiology*, 35(4), 234-235. doi:10.1097/EJA.00000000000000044
- 37. Herzberg, S., Hansen, M., Schoonover, A., Skarica, B., McNulty, J., Harrod, T., ... Guise, J. (2019). Association between measured teamwork and medical errors: an observational study of prehospital care in the USA. *BMJ Open*, 9(3), e025314. doi:10.1136/bmjopen-2018-025314
- 38. Hickman, L., Phillips, J., Newton, P., Halcomb, E., Abed, N. A., & Davidson, P. (2015). Multidisciplinary team interventions to optimise health outcomes for older people in acute care settings: A systematic review. *Archives of Gerontology and Geriatrics*, 61(3), 322-329. doi:10.1016/j.archger.2015.06.021
- 39. Hirano, Y., Abe, T., & Tanaka, H. (2019). Efficacy of the presence of an emergency physician in prehospital major trauma care: A nationwide cohort study in Japan. *The American Journal of Emergency Medicine*, 37(5), 827-833. doi:10.1016/j.ajem.2018.11.014
- 40. Hjortdahl, M., Zakariassen, E., & Halvorsen, P. (2018). Self reported involvement in emergency medicine among GPs in Norway. *Scandinavian Journal of Primary Health Care*, 36(2), 161-169. doi:10.1080/02813432.2018.1459234
- 41. Howie, W., Scott-Herring, M., Pollak, A., & Galvagno, S. (2019). Advanced Prehospital Trauma Resuscitation With a Physician and Certified Registered Nurse Anesthetist: The Shock Trauma 'Go-Team'. *Air Medical Journal*, 39(1), 51-55. doi:10.1016/j.amj.2019.09.004
- 42. Humphreys, A., & Ranganathan, M. (2025). A qualitative exploration of midwives' and ambulance clinicians' experiences working together. *British Journal of Midwifery*, 33(1), 12-20. doi:10.12968/bjom.2024.0064
- 43. Igarashi, Y., Yokobori, S., Yamana, H., Nagakura, K., Hagiwara, J., Masuno, T., & Yokota, H. (2018). Overview of doctor-staffed ambulance use in Japan: a nationwide survey and 1-week study. *Acute Medicine & Surgery*, 5(4), 316-320. doi:10.1002/ams2.347

- 44. Ivarsson, B., Johansson, A., & Todorova, L. (2022). Prehospital emergency nurses' competence progress in assessing psychiatric disorders; 1-year follow-up of a psychiatric emergency response unit. *International Emergency Nursing*, 62, 101149. doi:10.1016/j.ienj.2022.101149
- 45. Jeppesen, E., & Wiig, S. (2020). Resilience in a prehospital setting a new focus for future research? Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine, 28(1), 89. doi:10.1186/s13049-020-00803-z
- 46. Kamassai, J. (2025). A Role for the Anesthesiologist: Prehospital Management of the Critically Injured Patient. *Current Anesthesiology Reports*, 15(1), 45-52. doi:10.1007/s40140-024-00665-6
- 47. Kang, M., Aung, A., Selzer, R., Linck, A., Dias, F., Paul, E., ... Gibbs, H. (2025). The Hospital Harmony program improves interdisciplinary healthcare team functioning and communication. *Australian Health Review*, 49(1), 123-130. doi:10.1071/AH24276
- 48. Karcioglu, O., & Eneyli, M. G. (2019). Emergency Medicine and Trauma. *IntechOpen*. doi:10.5772/intechopen.77738
- 49. Kilner, E., & Sheppard, L. (2010). The role of teamwork and communication in the emergency department: a systematic review. *International Emergency Nursing*, 18(3), 127-137. doi:10.1016/j.ienj.2009.05.006
- 50. Kim, H., Kim, S.-W., Park, E., Kim, J., & Chang, H. (2020). The role of fifth-generation mobile technology in prehospital emergency care: An opportunity to support paramedics. *Health Policy and Technology*, 9(1), 109-114. doi:10.1016/j.hlpt.2020.01.002
- 51. Kipnis, A., Rhodes, K., Burchill, C., & Datner, E. (2013). The relationship between patients' perceptions of team effectiveness and their care experience in the emergency department. *The Journal of Emergency Medicine*, 45(5), 731-738. doi:10.1016/j.jemermed.2012.11.052
- 52. Lang, E., Spaite, D., Oliver, Z., Gotschall, C., Swor, R., Dawson, D., & Hunt, R. (2012). A national model for developing, implementing, and evaluating evidence-based guidelines for prehospital care. *Academic Emergency Medicine*, 19(2), 201-209. doi:10.1111/j.1553-2712.2011.01281.x
- 53. Lazzara, E., Keebler, J., Shuffler, M., Patzer, B., Smith, D., & Misasi, P. (2015). Considerations for Multiteam Systems in Emergency Medical Services. *The Journal of Patient Safety*, 16(4), e234-e242. doi:10.1097/PTS.0000000000000213
- 54. Leonard, J., Scharff, D., Koors, V., Lerner, E., Adelgais, K., Anders, J., ... Jaffe, D. (2012). A qualitative assessment of factors that influence emergency medical services partnerships in prehospital research. *Academic Emergency Medicine*, 19(2), 161-173. doi:10.1111/j.1553-2712.2011.01283.x
- 55. Liao, C.-M., Kung, P., Wang, Y.-H., & Tsai, W. (2017). Effects of multidisciplinary team on emergency care for colorectal cancer patients. *Medicine*, 96(25), e7092. doi:10.1097/MD.00000000000007092
- 56. Lindlöf, H., Savage, C., Härenstam, K., & Vicente, V. (2025). Location-independent leadership: managers' experiences leading prehospital emergency care in Sweden -- a qualitative study. *BMC Health Services Research*, 25(1), 78. doi:10.1186/s12913-025-12433-1
- 57. Louis, J., Beaumont, C., Arce, L., Reyero, D., & Fernández, B. (2022). AN UPDATE ON PREHOSPITAL MANAGEMENT OF MAJOR TRAUMA. *Boletín de Información Farmacoterapéutica de Navarra*, 30(1), 1-12. doi:10.54095/bitn20223001en
- 58. Luu, T. (2021). Cancer patient management: role of multidisciplinary teams. *BMJ Supportive & Palliative Care*, 12(2), 201-206. doi:10.1136/bmjspcare-2021-003039
- 59. MacFarlane, C., & Benn, C. (2003). Evaluation of emergency medical services systems: a classification to assist in determination of indicators. *Emergency Medicine Journal*, 20(2), 188-191. doi:10.1136/emj.20.2.188
- 60. Maciel, G. A., Maciel, D. P. A., Vieira, I. C. A., Silva, T. D. S., Soares, P. D. P. S., Araújo, V. D. P., ... Da Silva Gonçalves, E. (2024). The importance of the multidisciplinary team in complex surgeries. *International Seven Journal of Multidisciplinary*, 3(1), 156-163. doi:10.56238/isevmjv3n1-023
- 61. Maddock, A., Corfield, A., Donald, M., Lyon, R., Sinclair, N., Fitzpatrick, D., ... Hearns, S. (2020). Prehospital critical care is associated with increased survival in adult trauma patients in Scotland. *Emergency Medicine Journal*, 37(3), 141-145. doi:10.1136/emermed-2019-208458

- 62. Merien, A., Ven, J., Mol, B., Houterman, S., & Oei, S. (2010). Multidisciplinary Team Training in a Simulation Setting for Acute Obstetric Emergencies: A Systematic Review. *Obstetrics & Gynecology*, 115(5), 1021-1031. doi:10.1097/AOG.0b013e3181d9f4cd
- 63. Mitchnik, I., Talmy, T., Feldman, B., Almog, O., & Fogel, I. (2023). Exploring the characteristics of successful prehospital trauma care teams: Insights from military trauma care simulations. *The Journal of Trauma and Acute Care Surgery*, 95(3), 567-574. doi:10.1097/TA.000000000003989
- 64. Morabito, A., Mercadante, E., Muto, P., Manzo, A., Palumbo, G., Sforza, V., ... Pascarella, G. (2024). Improving the quality of patient care in lung cancer: key factors for successful multidisciplinary team working. *Exploration of Targeted Anti-Tumor Therapy*, 5(2), 260-277. doi:10.37349/etat.2024.00217
- 65. Morton, S., Eagle, C., Wallman, S., Wareham, G., Major, R., Edmunds, C., & McLachlan, S. (2025). Understanding cardiac arrest dispatch of physician-paramedic critical care prehospital teams: a survey-based evaluation. *Emergency Medicine Journal*, 42(4), 249-255. doi:10.1136/emermed-2024-214178
- 66. Mould-Millman, N., Dixon, J., Beaty, B., Suresh, K., De Vries, S., Bester, B., ... Ginde, A. (2023). Improving prehospital traumatic shock care: implementation and clinical effectiveness of a pragmatic, quasi-experimental trial in a resource-constrained South African setting. *BMJ Open*, 13(4), e060338. doi:10.1136/bmjopen-2021-060338
- 67. Moussa, F. (2020). EFFECTIVENESS OF MULTIDISCIPLINARY TEAM MEMBERS IN A COMPLEX, HIGH-RISK, AND STRESSFUL CRITICAL CARE UNIT (CCU). *Indonesian Journal for Health Sciences*, 4(2), 78-85. doi:10.24269/ijhs.v4i2.2129
- 68. Mueller, M., Losert, H., Sterz, F., Gelbenegger, G., Girsa, M., Gatterbauer, M., ... Schnaubelt, S. (2023). Prehospital emergency medicine research by additional teams on scene -- Concepts and lessons learned. *Resuscitation Plus*, 16, 100494. doi:10.1016/j.resplu.2023.100494
- 69. Nagi, C., Davies, J., Williams, M., Roberts, C., & Lewis, R. (2011). A multidisciplinary approach to team nursing within a low secure service: the team leader role. *Perspectives in Psychiatric Care*, 48(1), 56-61. doi:10.1111/j.1744-6163.2011.00310.x
- 70. Nania, T., Barello, S., Caruso, R., Graffigna, G., Stievano, A., Pittella, F., & Dellafiore, F. (2020). The state of the evidence about the Synergy Model for patient care. *International Nursing Review*, 67(4), 484-501. doi:10.1111/inr.12629
- 71. Partyka, C., Miller, M., Johnson, T., Burns, B., Fogg, T., Sarrami, P., ... Dinh, M. (2022). Prehospital activation of a coordinated multidisciplinary hospital response in preparation for patients with severe hemorrhage: A statewide data linkage study of the New South Wales "Code Crimson" pathway. *Journal of Trauma and Acute Care Surgery*, 93(4), 521-529. doi:10.1097/TA.0000000000003585
- 72. Péculo-Carrasco, J., De Sola, H., Casal-Sánchez, M.-D.-M., Rodríguez-Bouza, M., Sánchez-Almagro, C., & Failde, I. (2020). Feeling safe or unsafe in prehospital emergency care: a qualitative study of the experiences of patients, carers and healthcare professionals. *Journal of Clinical Nursing*, 30(7-8), 1047-1058. doi:10.1111/jocn.15513
- 73. Peters, K., Harvey, E., Wright, A., Bath, J., Freeman, D., & Collier, B. (2017). Impact of a TeamSTEPPS Trauma Nurse Academy at a Level 1 Trauma Center. *Journal of Emergency Nursing*, 44(1), 19-25. doi:10.1016/j.jen.2017.05.007
- 74. Pradelli, L., Risoli, C., Summer, E., Bellini, G., Mozzarelli, F., Anderson, G., ... Sarli, L. (2025). Healthcare professional perspective on barriers and facilitators of multidisciplinary team working in acute care setting: a systematic review and meta-synthesis. *BMJ Open*, 15(1), e087268. doi:10.1136/bmjopen-2024-087268
- 75. Ramage, L., & McLachlan, S. (2023). Top research priorities in prehospital critical care. *Emergency Medicine Journal*, 40(7), 536-537. doi:10.1136/emermed-2023-213120
- 76. Razavizadeh, M. (2015). Role of Anesthesia Team in Prehospital Care: The Hidden Treasure in Critical Settings. *Archives of Trauma Research*, 4(4), e29422. doi:10.5812/atr.29422v2
- 77. Rudin, V., Kabirova, J., & Sulimova, N. (2021). The Role of Multidisciplinary Team Training in Teaching Emergency Skills for Healthcare Workers in Atypical Conditions. *Virtual Technologies in Medicine*, 4(2), 56-63. doi:10.46594/2687-0037_2021_4_1402

- 78. Ruiz, L. M. (2020). Multidisciplinary team attitudes to an advanced nurse practitioner service in an emergency department. *Emergency Nurse*, 26(2), 34-41. doi:10.7748/en.2018.e1793
- 79. Ruiz-Ramos, J., Hernández, M., Juanes-Borrego, A., Milà, R., Mangues-Bafalluy, M., & Mestres, C. (2021). The Impact of Pharmaceutical Care in Multidisciplinary Teams on Health Outcomes: Systematic Review and Meta-Analysis. *Journal of the American Medical Directors Association*, 23(2), 178-185. doi:10.1016/j.jamda.2021.05.038
- 80. Sacchettini, A., Lamy, E., Ribordy, V., Fournier, Y., & Ariosa-Emery, J. (2022). [Interdisciplinarity in prehospital care:collaboration for better care]. *Revue Medicale Suisse*, 18(791), 1504-1506. doi:10.53738/REVMED.2022.18.791.1504
- 81. Sajid, A., Shakir, A., Awan, M., Warsha, F., Ahmad, S., Alsadoun, L., & Aziz, M. Q. (2024). Evaluating the Effectiveness of Trauma Care and Emergency Preparedness Training Programs on Prehospital Primary Survey Skills: A Systematic Review. *Cureus*, 16(11), e74089. doi:10.7759/cureus.74089
- 82. Sawidan, S. A. A., Alsalah, A. J., Alsalah, B., Abosaaq, A. J., Alalhareth, N. D., Swidan, A. M. M. A., ... Almas, Y. H. S. (2024). Optimizing Prehospital Stroke Care: A Comprehensive Literature Review. *Journal of Ecohumanism*. doi:10.62754/joe.v3i8.4866
- 83. Schewe, J., Kappler, J., Dovermann, K., Graeff, I., Ehrentraut, S., Heister, U., ... Muenster, S. (2019). Diagnostic accuracy of physician-staffed emergency medical teams: a retrospective observational cohort study of prehospital versus hospital diagnosis in a 10-year interval. *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine*, 27(1), 45. doi:10.1186/s13049-019-0617-3
- 84. Spivak, A., Streltsova, A. D., & Myronyuk, I. (2020). MULTIDISCIPLINARY REHABILITATION TEAM IN EMERGENCY ABDOMINAL SURGERY: THE ROLE OF A HOSPITAL NURSE. *Ukraine. Nation's Health*, 4(60), 45-52. doi:10.32782/2077-6594.4.0.2020.220390
- 85. Starshinin, A., Kamynina, N., & Timofeeva, A. (2024). The Role of a Nurse in a Multidisciplinary Team in Primary Health Care: Literature Review. *City Healthcare*, 5(4), 131-141. doi:10.47619/2713-2617.zm.2024.v.5i4p1;131-141
- 86. Steinemann, S., Berg, B., Skinner, A., DiTulio, A., Anzelon, K., Terada, K., ... Speck, C. (2011). In situ, multidisciplinary, simulation-based teamwork training improves early trauma care. *Journal of Surgical Education*, 68(6), 472-477. doi:10.1016/j.jsurg.2011.05.009
- 87. Stokes, J., Kristensen, S., Checkland, K., & Bower, P. (2016). Effectiveness of multidisciplinary team case management: difference-in-differences analysis. *BMJ Open*, 6(4), e010468. doi:10.1136/bmjopen-2015-010468
- 88. Strandås, M., Vizcaya-Moreno, M., Ingstad, K., Sepp, J., Linnik, L., & Vaismoradi, M. (2024). An Integrative Systematic Review of Promoting Patient Safety Within Prehospital Emergency Medical Services by Paramedics: A Role Theory Perspective. *Journal of Multidisciplinary Healthcare*, 17, 1385-1400. doi:10.2147/JMDH.S460194
- 89. Taylor, C., Shewbridge, A., Harris, J., & Green, J. S. A. (2013). Benefits of multidisciplinary teamwork in the management of breast cancer. *Breast Cancer: Targets and Therapy*, 5, 79-85. doi:10.2147/BCTT.S35581
- 90. Todorova, L., Johansson, A., & Ivarsson, B. (2021). A Prehospital Emergency Psychiatric Unit in an Ambulance Care Service from the Perspective of Prehospital Emergency Nurses: A Qualitative Study. *Healthcare*, 10(1), 50. doi:10.3390/healthcare10010050
- 91. Udod, S., MacPhee, M., Wagner, J., Berry, L., Perchie, G., & Conway, A. (2021). Nurse Perspectives in the Emergency Department: The Synergy Tool in Workload Management and Work Engagement. *Journal of Nursing Management*, 29(7), 2015-2023. doi:10.1111/jonm.13320
- 92. Vatansever, E., Yilmaz, N., Sofuoğlu, Z., Ozcevikel, A., Araz, E. Ş., Agah, H., ... Durak, H. (2016). EVALUATION OF THE ADVANCED TRAUMA LIFE SUPPORT COURSE DESIGNED BASED ON TEAMWORK APPROACH. *Turkish Journal of Emergency Medicine*, 15, 112-118.
- 93. Vicente, V., Jansson, J., Wikström, M., Danehorn, E., & Wahlin, R. R. (2021). Prehospital Emergency Nurses' coping strategies associated to traumatic experiences. *International Emergency Nursing*, 59, 101083. doi:10.1016/j.ienj.2021.101083

- 94. Von Vopelius-Feldt, J., Powell, J., Morris, R., & Benger, J. (2016). Prehospital critical care for out-of-hospital cardiac arrest: An observational study examining survival and a stakeholder-focused cost analysis. *BMC Emergency Medicine*, 16(1), 234. doi:10.1186/s12873-016-0109-y
- 95. Wagner, J., MacPhee, M., Udod, S., Berry, L., Perchie, G., & Conway, A. (2021). Surveys Conducted Pre and Post Implementation of a Synergy Tool: Giving Voice to Emergency Teams. *Journal of Nursing Management*, 29(8), 2456-2464. doi:10.1111/jonm.13317
- 96. Walker, A., Oswald, A., Wanthal, J., Van Dillen, C., Plamoottil, C., Patel, P., ... Ganti, L. (2022). The A to E (ABCDE) Pit Crew Model: A Novel Approach to Team Based Care of Critical Patients in the Prehospital Setting. *Health Psychology Research*, 10(3), 36960. doi:10.52965/001c.36960
- 97. Waskett, C. (1996). Multidisciplinary teamwork in primary care: The role of the counsellor. *Counselling Psychology Quarterly*, 9(3), 243-260. doi:10.1080/09515079608258706
- 98. Watt, K., Tippett, V., Raven, S., Jamrozik, K., Coory, M., Archer, F., & Kelly, H. (2010). Attitudes to Living and Working in Pandemic Conditions among Emergency Prehospital Medical Care Personnel. *Prehospital and Disaster Medicine*, 25(1), 13-19. doi:10.1017/S1049023X00007597
- 99. Wawrzynek, J. (2024). Assessment of pain management and prehospital analgesia trends in selected emergency medical response teams in the Silesian Voivodeship. *Emergency Medical Service*, 11(1), 45-52. doi:10.36740/emems202401102
- 100. Wiese, C., Bartels, U., Zausig, Y., Pfirstinger, J., Graf, B., & Hanekop, G. (2009). Prehospital emergency treatment of palliative care patients with cardiac arrest: a retrolective investigation. *Supportive Care in Cancer*, 18(10), 1287-1292. doi:10.1007/s00520-009-0746-8
- 101. Wise, S., Duffield, C., Fry, M., & Roche, M. (2021). A team mental model approach to understanding team effectiveness in an emergency department: A qualitative study. *Journal of Health Services Research & Policy*, 27(1), 14-21. doi:10.1177/13558196211031285
- 102. Yumoto, T., Hongo, T., Obara, T., Ageta, K., Aokage, T., Tsukahara, K., ... Naito, H. (2024). Evolution and Effects of Ad Hoc Multidisciplinary Team Meetings in the Emergency Intensive Care Unit: A Five-Year Analysis. *Journal of Clinical Medicine*, 13(15), 4324. doi:10.3390/jcm13154324
- 103. Zimmer, M., Czarniecki, D. M., & Sahm, S. (2024). Gender-sensitive considerations of prehospital teamwork in critical situations. *Philosophy, Ethics, and Humanities in Medicine*, 19(1), 12. doi:10.1186/s13010-024-00153-z