RESEARCH PAPER

Transforming Nursing Education in Saudi Arabia for Vision 2030: Workforce Localization, Educational Quality, Digital Readiness, and Policy Priorities

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Abstract
Background: Saudi Arabia has expanded nursing education from early diploma preparation to university-based bachelor's, master's, and doctoral pathways. Nevertheless, the national nursing workforce continues to face pressures related to workforce localization, graduate supply, professional image, clinical readiness, evidence-based practice, digital competence, and fragmented governance. These issues are increasingly important as the health sector transforms under Saudi Vision 2030.
Objective: This review critically synthesizes evidence on the development and current challenges of nursing education in Saudi Arabia and identifies educational and policy priorities capable of strengthening a sustainable, competent, and nationally responsive nursing workforce.
Methods: A structured narrative review approach was used. The original review searched Google and Google Scholar for literature addressing nursing education in Saudi Arabia and retained 24 papers after duplicate and relevance screening. The evidence was organized around four domains: educational and workforce challenges; institutional and policy deficits; lessons from COVID-19 and digital learning; and reform priorities. Because the underlying search was not designed as a formal systematic review, findings are interpreted as a critical narrative synthesis rather than an exhaustive estimate of the literature.
Results: The evidence indicates persistent dependence on expatriate nurses, insufficient national graduate output, cultural and professional-image barriers, theory-practice gaps, variable educator preparation, and limited development of critical thinking, assertive communication, disaster preparedness, evidence-based practice, and technological literacy. Governance is complicated by overlapping responsibilities across educational, accreditation, and professional bodies. The COVID-19 period accelerated e-learning and demonstrated the importance of digital readiness, psychological support, vaccination literacy, and flexible educational delivery. Across the literature, isolated educational reforms appear insufficient unless they are linked to workforce planning, faculty development, clinical partnerships, and coherent regulatory accountability.
Conclusion: Saudi nursing education requires a coordinated transformation rather than incremental curriculum change. Priority actions include competency-based curricula, stronger academic-practice partnerships, faculty and preceptor development, systematic integration of evidence-based practice and digital health, improved professional socialization, and governance mechanisms that align educational capacity with national workforce needs. These reforms can strengthen Saudization while protecting educational quality and patient safety.
Keywords: nursing education; Saudi Arabia; Saudi Vision 2030; Saudization; nursing workforce; evidence-based practice; digital health; nursing policy
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1. Introduction

Nursing education in Saudi Arabia has undergone substantial development over more than seven decades. Early preparation began with diploma-level education for men, followed by progressive expansion through government and university initiatives. University nursing education subsequently developed across undergraduate and postgraduate levels, with master's preparation introduced earlier and doctoral education emerging more recently. This expansion reflects the growing recognition of nursing as a strategic component of the national health system and of higher education as the principal mechanism through which a sustainable Saudi nursing workforce can be developed (Aljohani, 2020; Alotaibi et al., 2023).

The expansion of educational capacity, however, should not be interpreted as evidence that workforce and quality challenges have been resolved. Saudi Arabia has historically relied heavily on expatriate nurses, while the output and retention of Saudi nurses have remained insufficient for projected service demand. Alluhidan et al. (2020) reported that Saudi nurses constituted a minority of the national nursing workforce and emphasized that low graduate production, turnover, uneven distribution, cultural barriers, and workforce policy limitations collectively constrain localization. These challenges have direct

educational implications because Saudization cannot be achieved by increasing enrolment alone; it requires graduates who are clinically prepared, professionally committed, appropriately distributed, and retained in practice.

Saudi Vision 2030 has intensified the strategic importance of these issues. Health-sector transformation emphasizes efficiency, quality, prevention, workforce development, and new models of care. Nurses are central to each of these priorities because they constitute the largest professional group in many health systems and provide continuous care across hospitals, primary care, community services, public health, and emerging digital environments. Nursing education must therefore anticipate changes in population health, chronic disease burden, ageing, technological adoption, patient expectations, and the organization of healthcare rather than simply reproduce traditional curricula (Alsufyani et al., 2020).

The literature also suggests that the challenge is multidimensional. Educational concerns include theory-practice gaps, clinical teaching quality, critical thinking, evidence-based practice, technological literacy, disaster preparedness, and communication. Professional and sociocultural concerns include the public image of nursing, gender-related expectations, family attitudes, working conditions, and professional authority. At the system level, overlapping regulatory responsibilities and inconsistent links between education and workforce planning can weaken accountability. The COVID-19 pandemic further exposed the need for resilient digital education, infection-prevention knowledge, psychological support, and rapid curricular adaptation (Alqahtani et al., 2021; Albaqawi et al., 2020).

A high-impact review of Saudi nursing education therefore requires more than a historical description or a list of problems. It should connect educational structures with workforce outcomes, distinguish curriculum-level issues from policy-level constraints, identify tensions in the available evidence, and specify priorities for research and implementation. Accordingly, this review critically synthesizes the literature around four questions: (1) What educational and workforce challenges currently shape Saudi nursing education? (2) Which institutional and policy conditions enable or constrain reform? (3) What did the COVID-19 period reveal about educational resilience and digital readiness? and (4) Which reforms are most likely to align nursing education with Vision 2030 and future healthcare needs?

2. Review Approach

The source paper used Google and Google Scholar to identify literature relevant to nursing education in Saudi Arabia. It reported 106 initially identified papers, removal of 40 duplicates, exclusion of 42 papers judged insufficiently relevant, and inclusion of 24 papers for discussion. The present manuscript retains that evidence base but restructures it as a critical narrative review. This classification is important because the original search did not report the database architecture, reproducible Boolean strategy, date limits, independent screening, formal quality appraisal, or risk-of-bias procedures expected of a systematic review.

The synthesis was organized thematically rather than study-by-study. Evidence was grouped into: (a) workforce localization and educational capacity; (b) educational quality and clinical readiness; (c) professional identity and sociocultural influences; (d) governance and policy; (e) evidence-based practice and research utilization; (f) digital, disaster, and pandemic readiness; and (g) strategic reform priorities. This approach allows convergent findings to be compared while also identifying areas in which the literature remains descriptive, indirect, or insufficient for causal conclusions.

No claim is made that the included literature represents all research published on Saudi nursing education. The value of the review lies instead in integrating the major issues identified in the source evidence into a policy-relevant framework and clarifying where stronger empirical research is required.

3. Evolution of Nursing Education and the Workforce Context

The development of nursing education in Saudi Arabia reflects a shift from limited vocational preparation toward a university-based professional model. Nursing programs now include bachelor's preparation, bridging pathways, postgraduate study, internships, and continuing professional development. Accreditation and professional classification structures have also expanded. These developments represent substantial institutional progress and create a platform for advanced practice, research, leadership, and specialty preparation (Aljohani, 2020).

Yet educational expansion has occurred alongside a persistent workforce paradox: the country has increased training capacity while continuing to depend substantially on expatriate nurses. Alluhidan et al. (2020) described this dependence as a strategic vulnerability because international recruitment is affected by global labor-market competition, turnover, and changing economic conditions. Localization is therefore not simply an employment policy; it is an educational capacity and retention challenge. The number of students entering programs, the proportion completing them, readiness for practice, transition into employment, specialty distribution, and long-term retention all influence whether educational investment translates into workforce sustainability.

The source paper also compared nurses and nursing graduates per population across countries. Although such cross-national comparisons can illustrate the scale of the challenge, they should be interpreted cautiously because health systems differ in occupational roles,

skill mix, population needs, and reporting practices. The more important policy question is whether Saudi educational output is aligned with national demand by region, specialty, and level of care. A national planning model that links projected service needs with university capacity and graduate trajectories would provide a stronger basis for decision-making than simple international benchmarking.

4. Major Challenges in Saudi Nursing Education

4.1 Educational capacity, recruitment, and retention

Recent work represented in the supplied author-profile bibliography broadens this workforce perspective by linking nursing and healthcare sustainability with job satisfaction, burnout, organizational culture, and professional retention. Studies addressing perceived nepotism, Magnet-oriented work environments, multidisciplinary burnout, and professional exhaustion collectively reinforce the need to treat retention and workplace quality as part of the education-to-employment pathway (Almutairi et al., 2021; Alotaibi et al., n.d.; Alqarni et al., 2023; Shubayra et al., 2022).

Increasing the supply of Saudi nurses requires more than expanding admission quotas. Alsufyani et al. (2020) argued that projected demand associated with Vision 2030 would require substantial growth in the national workforce. However, rapid expansion can create quality risks if faculty numbers, simulation resources, clinical placements, preceptors, and student support do not increase at the same pace. Policies that prioritize numerical enrolment without protecting entry standards and educational resources may shift the shortage from workforce quantity to graduate competence.

Recruitment into nursing is also influenced by the perceived status and attractiveness of the profession. Family expectations, social perceptions, gender norms, working hours, and the acceptability of caring for patients of the opposite sex have been reported as barriers, particularly for women (Alghamdi et al., 2019; Al-Khunizi et al., 2021). These factors cannot be solved within universities alone. Public communication, career counselling, safe and supportive workplaces, visible nursing leadership, and competitive employment conditions are necessary complements to educational reform.

4.2 Theory-practice integration and clinical readiness

The supplied profile also includes applied health-education research showing that structured education can improve knowledge and self-efficacy in clinical populations, supporting the wider argument that nursing education should be evaluated through demonstrable learning and practice outcomes rather than exposure to content alone (Yakout et al., 2023). Educational leadership scholarship in the profile further emphasizes reflection, assessment, and learning-focused leadership as mechanisms for improving educational quality (Huda Al-Kubaisi, 2021).

A recurrent concern is the gap between classroom knowledge and clinical performance. Alghamdi et al. (2019) identified inadequate practical readiness and weak theory-practice relationships, while Hamdi et al. (2021) highlighted limitations in clinical teaching and the need to strengthen faculty-learner interaction. Clinical competence develops through repeated supervised practice, feedback, reflection, and progressive responsibility. Consequently, the quality of clinical placements and preceptorship should be treated as core educational outcomes rather than logistical components of a program.

A stronger academic-practice partnership model is needed in which universities and healthcare organizations jointly define competencies, prepare clinical preceptors, evaluate placement quality, and monitor graduate transition. Such partnerships can also reduce the mismatch between what students are taught and the realities of contemporary Saudi practice. Graduate-readiness indicators, preceptor evaluations, structured simulation assessments, and employer feedback should be used to close the curriculum-practice loop.

4.3 Critical thinking, communication, and professional agency

Modern nursing requires clinical judgment rather than procedural compliance alone. Falcó-Pegueroles et al. (2021) emphasized critical thinking as integral to nursing practice and education, with case analysis, complex questioning, dialogue, and problem-based learning among the approaches that can support its development. In the Saudi context, these pedagogies are particularly relevant to Vision 2030 because increasingly complex care environments require nurses who can recognize deterioration, interpret evidence, prioritize competing needs, and participate in multidisciplinary decisions.

Communication competence is equally important. Mansour et al. (2020) showed that knowledge of assertive communication does not automatically translate into speaking-up behavior when organizational or pedagogical environments discourage challenge. This distinction is critical: teaching communication as a classroom skill is insufficient if learners encounter hierarchical settings in which questioning decisions is implicitly sanctioned. Nursing programs and clinical partners should therefore assess psychological safety, escalation behavior, teamwork, and advocacy in authentic or simulated clinical scenarios.

4.4 Evidence-based practice and research utilization

Evidence-based practice (EBP) is a central marker of professional nursing education, yet barriers to research utilization remain prominent. Jabonete and Roxas (2022) identified educational and organizational barriers to the use of research, while Alblooshi et al. (2022) reported gaps in EBP knowledge, attitudes, and implementation among nurses. These findings imply

that EBP should not be confined to a stand-alone research course. Students need longitudinal experience in formulating clinical questions, searching databases, appraising evidence, integrating patient preferences, and evaluating outcomes.

Faculty capability is a prerequisite for this shift. Educators who are expected to teach EBP need access to databases, methodological training, mentorship, and protected scholarly time. Clinical partners must also create opportunities for students and nurses to participate in audit, quality improvement, guideline implementation, and evidence translation. Without this ecosystem, EBP risks becoming an assessed academic concept rather than a routine professional behavior.

4.5 Technological literacy and digital health

More recent records in the supplied profile extend this discussion from technological literacy to digital-health leadership, cybersecurity, chronic-care technologies, and digitally delivered psychological support. Together, these publications suggest that contemporary nursing preparation should include not only use of digital tools but also governance, privacy and security awareness, leadership for digital transformation, and critical appraisal of remote-care models (Alghamdi et al., n.d.; Hamdi et al., 2025; Qahtani et al., 2025; Shahbal et al., 2026).

Technological literacy has become inseparable from nursing competence. Nes et al. (2021) highlighted the importance of technological literacy in nursing education, while the rapid shift to online learning during COVID-19 demonstrated both the feasibility and limitations of digital education. Future curricula should move beyond basic computer use to include electronic health records, data literacy, telehealth, clinical decision support, digital professionalism, cybersecurity awareness, and critical appraisal of technology-mediated care.

Digital transformation also changes pedagogy. Simulation, virtual patients, learning analytics, hybrid delivery, and online collaborative learning can extend educational capacity, but technology should not be treated as inherently beneficial. Programs should evaluate accessibility, faculty readiness, student engagement, assessment integrity, and whether digital tools improve competence rather than merely content delivery.

4.6 Disaster, public health, and population-health preparedness

The profile literature also situates nursing education within global and community-health preparedness. Work on pandemic-era global health and community health nursing, hospital-acquired infection prevention after SARS, Ebola, and MERS, and evaluation of public-health education in Saudi Arabia supports stronger integration of outbreak preparedness, infection prevention, community health, and public-health competencies into nursing curricula (Alruwili et al., 2023; Jradi et al., 2023; Noshili et al., 2022).

Brinjee et al. (2021) identified deficiencies in disaster nursing education, including limited simulation and formal disaster-management preparation. The relevance of these gaps extends beyond rare emergencies. Saudi nurses must be prepared for mass-casualty incidents, infectious disease outbreaks, extreme events, and system disruptions. Disaster competencies should therefore be integrated across undergraduate and continuing education using simulation, interprofessional exercises, triage scenarios, communication protocols, and ethical decision-making.

Population-health preparation is similarly important. The source literature links Saudi healthcare needs with chronic disease, ageing, road-traffic injuries, and emerging infectious threats. A nursing curriculum aligned with Vision 2030 should strengthen prevention, health promotion, community assessment, chronic disease self-management, and culturally responsive public health nursing. This would position nursing education more clearly within the national shift from episodic treatment toward prevention and value-based care.

5. Institutional and Policy Challenges

The broader profile evidence highlights that nursing policy intersects with access, mental-health services, leadership, and the organization of care. Reviews addressing vulnerable populations in Saudi Arabia and psychiatric nursing policy illustrate why educational planning should remain responsive to equity, specialty-care needs, and national policy environments (Alanazi et al., 2023; Hazzazi et al., 2023). Leadership research from the Gulf context similarly points to the importance of educational leadership when systems are undergoing structural change (Al-Kubaisi & Shahbal, 2026).

Educational reform is constrained when responsibility is distributed across multiple organizations without clear mechanisms for coordination. The source paper described roles for higher-education institutions, accreditation structures, the Saudi Commission for Health Specialties, and other bodies, while also noting concerns about overlapping authority. Multiple organizations are not inherently problematic; specialization can improve oversight. The policy risk arises when standards, workforce planning, accreditation, professional classification, and continuing development are insufficiently aligned.

A more effective governance model would establish explicit interfaces among education, professional regulation, employers, and workforce planners. National graduate competencies should be mapped to program accreditation and professional registration requirements. Workforce projections should inform program capacity. Employer and patient-safety data should feed back into curriculum review. Such coordination is more realistic and potentially more effective than assuming that one regulatory body can

independently control all dimensions of nursing education.

Saudization and Nitaqat policies also require educational interpretation. Localization targets can create employment opportunities and stimulate demand for nursing education, but numerical localization should not compromise competence or create inequitable deployment. Al-Hanawi et al. (2019) emphasized human-resource policy challenges within the broader health transformation. A sustainable approach should connect localization targets to funded educational capacity, transition-to-practice programs, specialty development, retention incentives, and leadership pathways.

The expansion of private education introduces another policy tension. Private institutions can increase capacity and innovation, but expansion requires strong and consistent quality assurance. The central question is not whether provision is public or private, but whether graduates meet common competency standards and whether clinical training resources are adequate. Transparent outcome indicators—licensure performance, completion, employment, retention, and clinical-readiness measures—would support accountability across sectors.

6. Lessons From COVID-19 for Nursing Education

The pandemic literature in the supplied profile additionally emphasizes the role of community health nursing and infection-prevention technologies in health-system preparedness (Alruwili et al., 2023; Noshili et al., 2022). Related research on healthcare-worker mental well-being suggests that preparedness strategies should also account for emotional and psychological resources among the workforce (Noshili et al., 2022).

COVID-19 acted as a stress test for nursing education. Alqahtani et al. (2021) found that previous online learning experience and readiness were associated with satisfaction among Saudi nursing students. This finding suggests that digital education depends on preparedness rather than platform availability alone. Institutions need faculty development, student orientation, reliable technical support, inclusive access, and assessment designs appropriate to online and hybrid learning.

The pandemic also highlighted the relationship between education and psychological safety. Studies reported uncertainty, anxiety, and concerns among nursing students and interns, while Grande et al. (2021) documented quality-of-life challenges during clinical internship. Educational continuity plans should therefore include psychological support, risk communication, infection-prevention training, and clear clinical-placement protocols. Resilience should be understood as a system property supported by institutions, not merely as an individual student characteristic.

Vaccination literacy emerged as another educational priority. Alshehry et al. (2021) reported varying intentions among nursing students to receive COVID-19 vaccination, with concerns about safety and effectiveness. Because nurses are trusted sources of health information, uncertainty among students has implications for both occupational health and public communication. Curricula should strengthen risk communication, interpretation of rapidly evolving evidence, vaccine science, misinformation management, and shared decision-making.

Albaqawi et al. (2020) and Elgzar et al. (2020) further demonstrated the value of targeted education in improving knowledge and health beliefs related to COVID-19. The broader lesson is that nursing curricula require mechanisms for rapid updating when new public-health threats emerge. Flexible modules, digital resources, simulation, and faculty networks can enable faster translation of emerging evidence into teaching.

7. A Strategic Framework for Reform

The reform agenda should also recognize the increasing breadth of nursing roles across chronic illness, palliative care, mental health, public health, and digitally mediated care. Profile publications addressing nursing-led palliative interventions, mental-health policy, and vulnerable-population access illustrate the need for curricula that prepare graduates for diverse and evolving care pathways (Alanazi et al., 2023; Alghamdi et al., 2025; Hazzazi et al., 2023).

The evidence supports an integrated reform framework in which nursing education is treated as part of the national health workforce system. Seven priorities are proposed.

Priority	Required action	Expected contribution
1. Competency-based curriculum	Map national graduate outcomes to clinical judgment, EBP, digital health, communication, public health, disaster readiness, ethics, and patient safety.	Greater consistency in graduate readiness and clearer alignment with practice.
2. Academic-practice partnership	Jointly govern clinical placements, preceptor preparation, simulation, graduate transition, and feedback from employers.	Reduced theory-practice gap and stronger transition to employment.

3. Faculty and preceptor development	Invest in pedagogy, simulation, EBP, digital teaching, assessment, and clinical currency.	Improved teaching quality and assessment validity.
4. Workforce-linked educational planning	Link university capacity to national projections by region, specialty, and level of care.	More efficient Saudization and reduced maldistribution.
5. Professional identity and retention	Strengthen career counselling, public image, leadership pathways, supportive workplaces, and professional agency.	Improved recruitment, retention, and social legitimacy.
6. Digital and resilient education	Build hybrid-learning capacity, informatics competence, rapid curriculum updating, and continuity planning.	Greater preparedness for digital transformation and future disruptions.
7. Coordinated governance and outcomes	Align accreditation, professional standards, workforce policy, and transparent graduate outcomes.	Stronger accountability and continuous quality improvement.

8. Research Gaps and Future Directions

The supplied profile contains work beyond conventional nursing-education outcomes, including studies of social stigma, psychological problems, personality, locus of control, happiness, and adolescent conflict. Although these topics are not direct evidence about Saudi nursing curricula, they illustrate the range of psychosocial phenomena that nurses and health professionals encounter and support future interdisciplinary research on how educational preparation equips nurses to respond to behavioral and mental-health needs (Ahmad et al., 2023; Batool et al., n.d.; Imran et al., 2023).

The literature reviewed in the source paper is valuable but remains dominated by descriptive, cross-sectional, qualitative, and review-based evidence. Stronger longitudinal research is needed to determine how educational experiences influence licensure outcomes, transition to practice, retention, specialty choice, leadership progression, and patient outcomes. National graduate tracking would allow educational policy to move from assumptions about workforce contribution to measurable trajectories.

Second, there is a need for intervention research. Curriculum innovations in simulation, EBP, digital health, communication, disaster preparedness, and clinical reasoning should be evaluated using validated outcomes and comparison designs where feasible. Studies should report not only student satisfaction or self-perceived competence but also objective performance, transfer to clinical practice, and sustainability.

Third, future research should examine variation across regions, public and private institutions, male and female students, and different clinical settings. National averages can conceal important inequalities in access to faculty, simulation resources, clinical placements, and employment opportunities. Understanding these differences is essential for equitable workforce planning.

Fourth, the relationship between Saudization and educational quality requires careful empirical evaluation. Localization is a legitimate strategic objective, but research should test which combinations of recruitment, scholarship support, bridging programs, transition-to-practice support, working conditions, and career pathways produce durable retention without lowering educational standards.

Finally, governance itself should become an object of research. Policy implementation studies could examine how accreditation standards, professional registration, employer requirements, and Vision 2030 workforce targets interact in practice. Such evidence would help distinguish regulatory duplication from necessary institutional specialization and identify where coordination mechanisms have the greatest impact.

9. Discussion

This interpretation is consistent with profile scholarship describing professional trends and the role of continuing and technical education in the emerging Saudi health context (Oraibi et al., 2022). Taken together with work on public-health education, workforce well-being, digital transformation, and specialty nursing, the profile literature supports a model in which nursing education is continuous, system-linked, and responsive to changing population

and service needs (Alghamdi et al., 2025; Alqarni et al., 2023; Jradi et al., 2023; Qahtani et al., 2025).

This review shows that the central challenge facing Saudi nursing education is not the absence of reform, but fragmentation across reform domains. The country has expanded educational pathways and introduced quality and professional structures, yet workforce dependence, graduate supply, clinical readiness, professional image, and curriculum modernization remain interconnected concerns. Treating any one of these issues in isolation is unlikely to produce the scale of change required by Vision 2030.

The strongest recurring message across the evidence is that educational quantity and educational quality must advance together. Increasing enrolment is necessary for workforce localization, but rapid expansion without adequate faculty, preceptors, clinical placements, and assessment systems can undermine readiness for practice. Conversely, highly selective programs with excellent outcomes will not solve workforce shortages if capacity remains too small. National planning must therefore balance access, standards, resources, and labor-market absorption.

A second major finding is that the theory-practice gap is partly an organizational problem. Universities can teach critical thinking, assertive communication, EBP, and patient advocacy, but these competencies are reinforced or suppressed by clinical environments. Academic-practice partnerships are therefore a central mechanism for reform. Shared governance of clinical education can align expectations, improve preceptor quality, and create a feedback pathway from patient care to curriculum design.

Third, the pandemic demonstrated that resilience and digital readiness are now core educational capabilities. E-learning should not be viewed as an emergency substitute for classroom teaching. Instead, digital pedagogy and digital clinical competence should be embedded in long-term educational strategy. At the same time, the psychological and social consequences experienced by students during disruption show that technological continuity alone is not educational resilience.

Fourth, professional identity and sociocultural context remain important. The literature describes persistent misconceptions about nursing, family concerns, gender-related barriers, and limited professional authority. These factors influence who enters nursing, whether graduates remain in practice, and whether nurses exercise the professional voice expected in high-quality systems. Reform must therefore include public engagement, leadership development, supportive employment conditions, and organizational cultures that value nursing expertise.

The proposed framework advances the source paper by replacing a list of discrete solutions with a coordinated model. Curriculum modernization, workforce localization, faculty development, clinical partnerships, digital transformation, professional identity, and governance should be implemented as mutually reinforcing components. This approach is more consistent with the complexity of national health-system transformation and provides clearer targets for evaluation.

10. Limitations

This review has important limitations. The underlying literature search was conducted through Google and Google Scholar and did not report a fully reproducible systematic-review strategy. Formal risk-of-bias appraisal was not undertaken, and the included literature spans different study designs and levels of evidence. The review should therefore be interpreted as a structured narrative synthesis rather than a systematic review or meta-analysis.

Some numerical workforce estimates in the source literature reflect the period in which the cited studies were conducted and may change as Vision 2030 reforms progress. The present review consequently emphasizes structural relationships and policy implications rather than treating historical workforce figures as current surveillance estimates. Future updates should use a preregistered protocol, multiple bibliographic databases, transparent screening, and formal appraisal procedures.

11. Conclusion

Saudi Arabia has created a substantial foundation for professional nursing education, but the next phase of development requires deeper integration between education, workforce policy, clinical practice, and regulation. The principal priorities are to expand national nursing capacity without compromising standards; strengthen clinical readiness and professional agency; embed evidence-based practice, critical thinking, digital health, public health, and disaster preparedness throughout curricula; develop faculty and clinical preceptors; and create coordinated governance mechanisms that connect educational outcomes with workforce needs. The experience of COVID-19 reinforced the need for adaptable, digitally capable, and psychologically supportive learning systems. If these reforms are implemented as an integrated strategy and evaluated through transparent national outcomes, nursing education can make a stronger contribution to Saudization, patient safety, and the broader health transformation envisioned in Saudi Vision 2030.

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