

The Role and Development of the Nurse Practitioner Profession in Israel: A Scoping Review

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Abstract

Background:

Nurse practitioner (NP) roles were formally introduced into the Israeli healthcare system in 2013 and have expanded rapidly since. The maturation of the profession, together with the growing body of scientific literature, provides an important opportunity to integrate existing knowledge, identify evidence gaps, and establish priorities for policy, practice, and future research. This scoping review mapped the existing evidence on the Israeli NP profession and identified key knowledge gaps and lessons for healthcare systems with emerging NP roles.

Methods:

Following Joanna Briggs Institute guidance and the PRISMA-ScR statement, bibliographic databases were searched for English- and Hebrew-language empirical studies of NPs in Israel published between January 2009 and March 2026. Two reviewers independently screened studies, and findings were synthesized narratively.

Results:

Twenty-six studies (2013–2026) met inclusion criteria, spanning geriatric, palliative, surgical, and diabetes NPs across six domains: stakeholder attitudes, education and workforce transition, implementation, scope of practice, professional well-being, and patient outcomes. Attitudes were generally favorable, though awareness of NP qualifications and scope remained limited among patients, nurses, and physicians. NPs reported high commitment and autonomy, yet enacted only part of their authorized scope of practice, reflecting organizational and regulatory rather than clinical constraints with recurring barriers of role ambiguity, physician resistance, limited organizational support, and too few designated positions. They also reported meaning and job satisfaction alongside substantial emotional burden, including elevated depressive symptoms in nearly half of those surveyed. NP involvement was linked to reduced patient anxiety, shorter stays, fewer readmissions, faster time to surgery, and lower in-hospital mortality after hip fracture.

Conclusions:

Research on Israeli NPs has expanded alongside workforce growth but remains dominated by descriptive implementation studies, suggesting that the principal challenges to NP integration lie in organizational structures, regulation, and interprofessional collaboration rather than professional competence. Future research should prioritize multicenter longitudinal evaluations of patient, workforce,

economic, and equity outcomes. Beyond Israel, the findings offer transferable lessons for healthcare systems establishing and integrating NP roles within evolving models of care.

1. Background

Nurse practitioners (NPs) are advanced practice registered nurses with graduate-level education, advanced clinical expertise, and the autonomy to assess, diagnose, treat, and, in many jurisdictions, prescribe medications, functions traditionally reserved for physicians [1]. Globally, the expansion of NP roles has become a central component of health workforce policy to improve access to care in the face of population aging, increasing chronic disease, and physician shortages. This policy direction is supported by extensive evidence showing that NP-led care provides outcomes at least equivalent to physician-led care [2–4].

Israel has progressively developed and expanded the NP role over the past decade and a half. The role was first introduced by the Ministry of Health in 2009 through the establishment of the initial NP training program and was subsequently anchored in law through the Public Health Regulations in 2013. Employment conditions were formalized in 2015, providing a regulatory foundation for continued workforce expansion. Initially introduced in a small number of specialties, including geriatrics, palliative and supportive care, neonatal intensive care, surgery, and diabetes, the NP role has expanded steadily to encompass pain management, rehabilitation, mental health, wound, stoma and continence care, and additional specialty areas [5–9]. By 2026, 1,139 NPs had been certified across 16 specialties (Appendix 1.1), representing a fourfold increase from 275 in 2019, with sustained growth through 453 in 2021 and 730 in 2023 [10]. NPs now compose approximately 1.92% of Israel's 88,000 registered nurses, placing Israel among more recent adopters of the NP role and exceeding the proportions reported in Australia (0.7%) and New Zealand (1.0%), while remaining below countries with more mature NP workforces, including the Netherlands (2.3%) and Canada (2.8%) [2, 11].

Israeli NPs operate in community (primary and specialty care clinics) and hospital settings (inpatient and ambulatory) within a universal healthcare system established under the National Health Insurance (NHI) Law of 1995, which guarantees all residents access to a comprehensive package of health services [12]. Healthcare is delivered through four competing, not-for-profit health plans that are publicly financed and required to provide a nationally defined basket of services in hospital and community settings. While service delivery is decentralized through the health plans and healthcare organizations, governance of the health system is highly centralized. The Ministry of Health is responsible for national health policy, workforce planning, regulation, and professional licensure, while its Nursing Division leads national nursing policy, oversees nursing education and specialization pathways, administers licensure and certification, and promotes workforce development [13]. This centralized governance structure has enabled the coordinated introduction and expansion of the NP role through nationally defined educational standards, certification requirements, and regulatory frameworks, making Israel an informative case for examining the implementation of advanced-practice-nursing roles.

The implementation of a new advanced practice role is a complex health-system intervention whose success depends on interactions between the role itself and the organizational, professional, educational, and policy contexts in which it is introduced [14]. Understanding not only whether NP roles are effective but also how they have been developed, adapted, and integrated within a specific healthcare system is therefore critical for informing future policy and implementation. Synthesizing the evidence on the Israeli experience is important both to guide the continued evolution of NP practice nationally and to generate transferable lessons for other healthcare systems facing similar implementation challenges. Accordingly, this scoping review systematically maps and synthesizes the scientific literature on the development, implementation, and impact of the NP profession in Israel. Following the Joanna Briggs Institute (JBI) framework, the *Population* was NPs in Israel and those who interact with them; the *Concept* was the development, implementation, scope, education, and outcomes of the role; and the *Context* was the Israeli health system across hospital and community settings.

This review addressed three questions: (1) What is the extent, range, and nature of empirical research on the nurse practitioner role in Israel? (2) Which aspects of the role has this research addressed, and where is the evidence concentrated? (3) What gaps in the evidence base should guide future research and policy?

2. Methods

A scoping review approach was selected to address the research questions, given its suitability for systematically mapping the breadth and nature of evidence on emerging topics in which the literature is heterogeneous in design, focus, and methodology [15]. The review was conducted in accordance with the methodological guidance of the JBI Manual for Evidence Synthesis [15] and is reported in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) [16].

The protocol for this scoping review was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY; registration number INPLASY202620039) on 10 February 2026 [17].

2.1. Eligibility criteria

Studies were eligible for inclusion if they (a) were original empirical research using quantitative, qualitative, or mixed-methods designs; (b) had a clear focus on NPs in Israel, or included the Israeli context as part of a broader comparative or multinational study; studies translating the Israeli-regulated role *Ahot Mumhit* as “clinical nurse specialist” rather than “nurse practitioner” were included when the role described corresponded to the Israeli NP profession; (c) were published in peer-reviewed sources between January 2009 and March 2026; and (d) were available in English or Hebrew. Studies were excluded if they (a) focused solely on general nursing roles without reference to advanced practice or the NP role; (b) addressed healthcare professions unrelated to nursing without reference to NPs; or (c) did

not separate NPs from other nurses in their analysis. Editorials, study protocols, opinion pieces, conference abstracts without accompanying full papers, and non-peer-reviewed sources were also excluded.

2.2. Information sources

A comprehensive search was conducted across five bibliographic databases: PubMed, CINAHL (Cumulative Index to Nursing and Allied Health Literature), Scopus, APA PsycINFO, and JSTOR. To supplement the database search, additional searches were conducted in the *Journal of the American Association of Nurse Practitioners* as a hand-searched professional journal, and through the AI-assisted literature discovery tool Elicit. Searches were conducted in both English and Hebrew to reflect the bilingual nature of academic publishing in the Israeli context. The initial search was performed in March 2026, with an updated search applying the same eligibility criteria and strategy conducted in August 2026 to confirm that no recent eligible studies had been missed.

2.3. Search strategy

The search strategy was developed in collaboration with two experienced research librarians and further refined through team discussion. Search terms were identified from the research question, from highly cited publications on advanced practice nursing, and from references identified within those publications. Two concepts were combined using the Boolean operator AND: (a) terms relating to Nurse Practitioners and advanced nursing practice (Nurse Practitioner, Advanced Practice Nurse, Advanced Nursing, Advanced Nursing Practice, Clinical Nurse Specialist, Advanced Clinical Nurse), and (b) terms relating to the Israeli context (Israel, Israel*). Database-specific syntax was applied, including title/abstract proximity operators in PubMed and the N2 proximity operator in CINAHL and APA PsycINFO. The full search strategies for each database are provided in the supplementary material (Appendix 1.2.).

2.4. Source screening

Covidence, a web-based collaboration software platform that streamlines the production of systematic and other literature reviews was used to manage the papers selection process [18]. Titles and abstracts were screened independently by two reviewers (KS and CK) against the eligibility criteria. Full texts of records considered potentially eligible were then retrieved and again reviewed independently by the same two reviewers. The reviewers met after each screening stage to discuss and resolve any conflicts or disagreements. An option to involve a third reviewer if agreement could not be reached was put in place but proved unnecessary, as following discussion the original two reviewers reached agreement on all papers for inclusion.

2.5. Data extraction process

A data extraction template was developed to capture the relevant information from each included study. The template was based on the guidance for scoping reviews provided by the JBI Manual for Evidence Synthesis [15] and the research questions of this review. The form was piloted on a small subset of five

studies and refined accordingly before full extraction was undertaken. For each study, the following information was extracted: study identification details (authors, year of publication, title, country, and language), study characteristics (aim of the study, thematic categorization of the aim, and study design), information specific to the NP role examined (NP specialization, hospital or community setting, and study setting), sample information (total sample size, eligibility criteria used in the original study, participant type, and a free-text description of sample demographics), and outcomes (quantitative outcomes reported and the measurement tools used, qualitative themes, and key findings). Each study was extracted by one reviewer (KS), and the information extracted was verified by a second reviewer (CK). The final extraction template is provided in Appendix 1.2.

2.6. Synthesis of results

Given the heterogeneity of designs, populations, settings, and outcomes across the included studies, a narrative synthesis approach was deemed most appropriate [19]. Following the guidance of Popay et al. [19], synthesis proceeded in iterative steps: studies were first organized into logical thematic categories based on the aspect of the NP role addressed (attitudes toward NPs, NP education, implementation barriers and facilitators, and scope of practice and outcomes); findings within each category were then compared, contrasted, and synthesized to identify cross-cutting themes; and the resulting synthesis was finally linked to the original review question and to the broader literature on advanced nursing practice.

3. Results

3.1. Study selection

The search yielded 428 records, of which 107 were duplicates. After title and abstract screening of 321 records, 81 records were sought for full-text retrieval and 26 studies were included. Figure 1 shows the PRISMA flow diagram, which summarizes the selection process and reasons for full-text exclusion of this review.

3.2. Characteristics of included studies

The 26 included studies are summarized in Table 1, with full study-level detail provided in the Appendix 2 (Tables 2.1–2.2). All studies were conducted in Israel, 25 published in English and one in Hebrew, between 2013 and 2026, with a clear acceleration in publications from 2023 onward (17 of 26 studies, 65%). Study designs were predominantly cross-sectional ($n = 8$), followed by qualitative ($n = 7$), mixed-methods ($n = 4$) and retrospective cohort analysis ($n = 4$), prospective ($n = 2$), and observational ($n = 1$); no randomized controlled trials or longitudinal studies were identified. The Geriatric NP was the most frequently studied specialization (11 studies), followed by Palliative Care ($n = 7$), Surgical ($n = 3$), and Diabetes NPs ($n = 2$); four studies addressed the NP role generically rather than a specific specialty.

Most studies collected primary data from human participants through surveys, interviews, or focus groups, with sample sizes ranging from a single NP documenting her own practice to 315 surveyed

surgical patients (median 58). NPs were the most commonly represented stakeholder group, included in over half the studies, either as the sole participants or alongside physicians, managers, policymakers, and other nurses; patients were surveyed in three studies, while other studies focused on registered nurses, NP students, other health professionals, or the general public. Four retrospective studies included three institutional cohorts of hospitalized patients (N = 1,297; 2,065; and 6,933) and one analysis of 89 NP student records. Full participant and outcome details for each study are available in Appendix 2.

Table 1
Study characteristics (N = 26)

Characteristic	Category	Studies, n (%)
Publication period	2013–2022	9 (35)
	2023–2026	17 (65)
Study design	Cross-sectional	8 (31)
	Qualitative	7 (27)
	Mixed methods	4 (15)
	Retrospective	4 (15)
	Prospective	2 (8)
	Observational	1 (4)
NP specialization*	Geriatric	11 (42)
	Palliative care	7 (27)
	Surgical	3 (11)
	Diabetes	2 (8)
	Primary/family care	1 (4)
	Oncology	1 (4)
	Neonatal	1 (4)
	Not Specialized	4 (16)

*Categories are not mutually exclusive. Some studies addressed multiple specializations.

3.3. Attitudes toward and understanding of the NP role

Nine studies addressed stakeholder attitudes toward, understanding of, or changing perceptions of the NP role [20–28], using cross-sectional surveys (n = 5) and qualitative approaches (n = 3); one study used a mixed-methods design. Although public attitudes toward expanding nursing authority were generally favorable, awareness of the qualifications and scope of the Israeli-regulated NP role remained limited

[21, 23]. Patients reported moderate-to-high (about 5 from 6) willingness to be treated by an orthopedic NP, linked to their broader image of the nursing profession [22]. Physicians generally supported introducing the role but expressed greater reservations than nurses about transferring selected clinical authorities to NPs [25, 26]. Physician preceptors also reported uncertainty regarding the legal scope of family NP practice and described opposition from the Israel Medical Association [20]. Registered Nurses (RNs) held generally favorable views despite gaps in their knowledge of NP training requirements [24, 26]. The factors impacting RNs' perspectives toward NPs were age, exposure to NPs, years of experience, and level of education [27]. NPs described a shift to telemedicine during COVID-19 as an unexpected driver of greater role clarity and professional confidence for diabetes NPs [28]. Full findings and study-level detail are reported in the Appendix, Table 2.2.

3.4. Education and transition into the NP workforce

Three studies addressed NP education and transition into practice using mixed-methods, qualitative, and cross-sectional (retrospective) designs, respectively [29–31]. Two examined the content and adequacy of educational programs [29, 30]. A multi-perspective interview study with geriatric NPs, physicians, managers, and education regulators identified 18 program components across six categories, highlighting mentorship and prior nursing experience as strengths alongside diverging views between physicians and geriatric NPs on graduates' readiness to assume the full scope of their roles [30]. Porat-Dahlerbruch et al. identified physical examination skills as a weakness affecting perceived readiness for geriatric NP practice, recommended longer preparation with greater emphasis on physical assessment, and also explicitly identified the need for further development of critical thinking [30]. Both the Porat-Dahlerbruch [30] and Nissanholtz-Gannot [29] studies point to a gap after initial qualification indicating post-licensure education as a weakness and perceived insufficient opportunities for continued practical and theoretical learning over time. Although many NPs identified opportunities to strengthen the educational program and expand ongoing professional development, most expressed confidence in the future of the profession: 76% anticipated substantial expansion of the NP role over the next five years, and 88% would recommend the career to other nurses [29].

The third study retrospectively examined 89 NP student records to identify predictors of academic success [31]. Although all students completed the program, prior educational and clinical experiences, including a BSN degree, university education, hospital practice, and post-basic intensive care training, were associated with stronger academic performance, while older age was associated with lower licensing examination pass rates. Although program completion was universal, the study identified workforce integration as an ongoing implementation challenge, with one year after graduation 58.1% of geriatric and 38.2% of palliative care graduates employed in NP positions [31]. Full statistics and effect sizes are reported in Table 2.2. in Appendix 2.

3.5. Implementation of NPs in Israel: Barriers and facilitators

Barriers and facilitators of NP role implementation emerged as a central, cross-cutting theme, reported in 19 of the 26 included studies across cross-sectional (n = 8), qualitative (n = 7), mixed-methods (n = 4) designs, and spanning geriatric, palliative care, diabetes, surgical, oncological, and general NP roles. Seven of these studies focused primarily on implementation factors [29, 32–37], while the remainder reported barriers and facilitators alongside their primary focus on attitudes, education, scope of practice or wellbeing. Synthesized together (Table 2), these factors span every level of the health system, from national policy and financing to organizational culture, interprofessional dynamics, education, and public awareness.

At the policy and financing level, NP integration was constrained by centrally limited positions, restricted prescriptive authority, and inconsistent recognition of NP prescriptions and certifications [32–34]. A proposed taxonomy of 14 policy interventions offers a structured framework for addressing role clarity, financial incentives, and workforce retention [35]. At the organizational and interprofessional level, hierarchical cultures, physician resistance, unestablished formal status, and workload-related emotional burden were recurring barriers [20, 25–27, 29, 34, 36, 37], whereas leadership engagement, mentorship, advance planning, and direct clinical exposure to NPs were consistently identified as facilitators [14, 20, 30, 33, 35, 36]. At the education level, gaps in post-licensure clinical training and confidence in the expanded role were set against the strengths of prior nursing experience and strong mentorship [29, 30]. At the public and patient level, low awareness of NP qualifications and authority, together with digital and language barriers in some populations, coexisted with generally favorable attitudes and positive patient experiences of NP care [21–24, 28, 38]. Full study-level results are reported in Appendix 2 (Table 2.2), and a synthesis by health-system level is presented in Table 2.

Table 2

Barriers and facilitators of nurse practitioner role implementation in Israel, by health-system level

Health-system level	Barriers	Facilitators
Policy and regulation	– Unclear or constrained legal authority and scope of practice [20, 25, 32, 35] – Restricted prescriptive authority [32, 33] – Inconsistent recognition of NP prescriptions and certifications [34] – Centrally limited number of NP positions and attrition of trained graduates from the NP workforce [29, 31, 34] – Inadequate remuneration and weak incentives [35, 36]	– Formal recognition of clinical need as a driver of integration [34]
Organizational	– Hierarchical organizational culture [34] – Insufficient a priori planning; only partial role implementation [29, 34] – Workload overload, multitasking, and emotional burden [29, 36, 37] – Dissatisfaction with the working environment [33]	– Leadership engagement and organizational champions [34, 36] – Advance planning and clear organizational messaging [34, 35] – Supportive working environment as the strongest predictor of scope of practice [33]
Interprofessional team	– Physician resistance and reluctance to transfer authority [20, 25, 26, 36] – Limited interprofessional support and communication gaps [34] – Unestablished formal status vis-à-vis medical staff [29]	– Direct collaboration with and exposure to NPs; multidisciplinary respect and physician engagement [20, 27, 35] – Mentorship [20, 30, 35]
Note. Items are drawn from the included studies (Appendix 2, Table 2.2); a study may appear at more than one level. NP = nurse practitioner.		

Health-system level	Barriers	Facilitators
Education and professional development	– Gaps in post-licensure clinical training, physical-assessment and critical-thinking skills, and confidence in the expanded role [30] – Training perceived as incomplete [29] – Barriers to program entry [32] – Divergent views on graduates' readiness [30]	– Relevant prior nursing experience [30] – Strong clinical mentorship [30] – Autonomy, recognition and opportunities for teaching and development [36]
Public and patient	– Low awareness of NP qualifications and authority [21, 23, 24, 27, 35] – Digital-literacy and language barriers in some populations [28]	– Generally favorable public, patient, nurse, and physician attitudes [21, 22, 24, 26] – Positive patient experience with NP care [22, 38] – Anticipation of role expansion [29]
Note. Items are drawn from the included studies (Appendix 2, Table 2.2); a study may appear at more than one level. NP = nurse practitioner.		

3.6. Scope of practice and role enactment

Nine studies described the scope and content of the NP role in Israel across four specializations: surgical [38, 39], geriatric [29, 40, 41], diabetes [28, 36], and palliative care [29, 33, 42] using cross-sectional, mixed-methods, prospective observational, descriptive, and qualitative designs. Across specialties, participants consistently reported only partial implementation of their authorized scope of practice despite high levels of perceived professional autonomy. Surgical NPs were characterized as centering on medication management and care coordination across the perioperative trajectory, with intervention intensity varying by phase of care and type of surgical unit and healthcare setting [38, 39]. Geriatric NPs reported a moderate-to-high scope of practice overall, with hospital-based NPs achieving greater role fulfillment than those in community settings, alongside a sense of professional authority that coexisted with insufficiently established formal status [29, 41], as exemplified in orthogeriatric care by the NP's independent assessment, medication management, and perioperative team coordination [40]. Diabetes NPs described a pandemic-driven shift toward telemedicine that sharpened role definition and efficiency but constrained physical assessment and patient education for those with limited digital literacy, or those with limited digital literacy, tempered by persistent role ambiguity [28, 36]. Palliative care NPs were most active in physical assessment, symptom management, and care planning, least involved in medication prescribing, and reported expectations of role expansion in the coming years [29, 33, 42]. Full activity-level data and scale scores are reported in Table 2.2 in Appendix 2.

3.7. Professional well-being and job satisfaction

Five studies addressed the psychological well-being, emotional burden, or job satisfaction of Israeli NPs, spanning cross-sectional (n = 3) and mixed-methods (n = 2) designs and covering palliative care, geriatric, and diabetes NPs [33, 36, 37, 41, 43].

Two studies measured psychological well-being directly using validated instruments: one among geriatric, palliative, and neonatal NPs working in COVID-19 or allied units during the delta wave [37], and one among palliative care NPs [43]. Both reported relatively positive happiness and mental well-being, yet almost half of participants (48.9% and 44.4%, respectively) scored at or above the depression screening cut-off [37, 43]. Longer time worked specifically as an NP was associated with higher depression and lower happiness [37], and the qualitative component of the second study linked this burden to repeated exposure to death, existential reflection, and blurred professional–personal boundaries [43].

Three studies reported high levels of job satisfaction, among geriatric [41], palliative care [33], and diabetes NPs [36]. Satisfaction was associated with fulfilment of the authorised scope of practice [41], years in the NP role [36], relationships with other team members and the ability to minimise patient complications [33], and professional autonomy [33, 36]. Full study-level results are reported in Appendix 2 (Table 2.2).

3.8. Patient and health-system outcomes

Five studies empirically evaluated the impact of NPs on patient and health-system outcomes in Israel, across surgical and geriatric orthopedic settings [38, 39, 40, 44, 45]. Two prospective studies conducted in surgical settings by the same research group converged in indicating a positive contribution of NPs to patient experience [38, 39]. The comparative study showed lower in-hospital anxiety among patients treated by an NP than among those in a similar surgical unit without NP care [38], while the observational study linked greater NP involvement in pre-surgery preparation to shorter length of stay, and greater involvement in discharge and post-discharge activities to fewer emergency department visits and readmissions within 30 days [39]. Three retrospective cohort studies examined geriatric NP integration in hip-fracture care, each comparing outcomes before and after the NP was introduced [40, 44, 45]. The earliest showed an increase in the rate of surgery within 48 hours from 60% to 83% [40]. In a larger cohort, the NP-intervention period was associated with a fall in in-hospital mortality from 5.6% to 2.4%, an increase in mean survival from 1.3 to 2.3 years sustained across the full post-fracture year, a shorter length of stay (9.3 to 8.4 days), and roughly one-third fewer transfers to internal medicine [45]. A third cohort showed a rise in documented osteoporosis diagnoses (reaching 59.8%), which was in turn associated with lower mortality in an exploratory analysis [44]. However, all three cohort studies used observational or before-and-after designs without randomization, single-center, and could not fully separate the NP intervention from co-occurring changes in perioperative care over the same period. Detailed results are reported in Table 2.2 in Appendix 2. Detailed results are reported in Table 2.2 in Appendix 2.

4. Discussion

This scoping review provides the first comprehensive synthesis of research on Israeli nurse practitioner (NP) roles, encompassing studies on attitudes toward the role, educational preparation and workforce transition, implementation processes, scope of practice, professional well-being and satisfaction, and patient outcomes. Although the Israeli literature has expanded rapidly over the past decade, it remains concentrated on workforce development, implementation, and professional integration, whereas evidence on patient and health-system outcomes though now emerging, remains modest and methodologically limited [38, 39, 40, 44, 45]. This gap, however, reflects a profession still in the implementation phase of its development rather than genuine uncertainty about the value of the role. Internationally, the evidence is substantial: a review of 117 systematic reviews across 38 countries found NP care to be equal or superior to comparative care across most indicator categories, with no category favoring the comparator group [3]. Taken together, these findings suggest a profession in transition: education, regulation, and implementation have advanced considerably, and emerging evidence is in line with international evidence on the effectiveness of NP roles, yet evaluation of the profession's impact has not kept pace.

Three main findings emerge from this synthesis. First, *attitudes toward the NP role* were broadly favorable but rested on a thin base of knowledge, a pattern that was among the most consistent in this review. Public support for expanding nursing authority was broadly positive, yet familiarity with the regulated role was low: only about a quarter of surveyed adults recognized the NP role [21, 23], and patients' willingness to be treated by an NP reflected their general image of the nursing profession more than any knowledge of the role itself [22]. The same gap appeared among clinicians: staff nurses endorsed NP integration while misjudging the preparation the role requires [24], and physicians supported the geriatric NP role yet remained more reluctant than nurses to cede specific authorities such as prescribing [26]. This goodwill also proved uneven across the population, differing by ethnicity, income, and religiosity [21], while NP care delivered through telemedicine was least accessible to patients with limited digital literacy or language barriers [28], raising the possibility that uneven awareness of the role could reproduce existing disparities rather than reduce them.

This combination of endorsement and unfamiliarity is not unique to Israel. Among senior nurses in China, most considered NPs necessary and were willing to become one, yet a third had poor knowledge of the role, and patients' lack of understanding and trust was the most frequently cited barrier to implementation [46]. An international scoping review of general practitioners' attitudes reached a similar conclusion, finding that reservations about the community NP role stemmed less from outright opposition than from an absent definition of the role, limited knowledge of NPs' skill level, and concerns about service duplication and the effect on patient relationships [47]. That the same pattern of goodwill constrained by unfamiliarity recurs across health systems as different as Israel, China, and elsewhere suggests that low role awareness is a general feature of the early integration of the NP role, and that deliberate investment in role definition and in public and professional education is a recurring precondition for its success [46, 47].

Another important finding emerging from this review is the *coexistence of strong professional commitment with incomplete role implementation*. Across multiple studies, Israeli NPs described high levels of professional identity, autonomy, and optimism regarding the future of the profession [29, 33, 36, 41]. This professional fulfilment, however, coexisted with a measurable emotional cost: NPs reported job satisfaction and meaning alongside substantial emotional burden, with elevated depressive symptoms in nearly half of those surveyed and distress rising with time in the role [37, 43]. Positive perceptions coexisted with repeated reports of authority not fully enacted: geriatric NPs rated their actual scope of practice well below the level their role formally permits [41], a substantial share of NPs felt their training had left gaps and only a minority were satisfied with their remuneration [29, 36], and centrally limited positions and inconsistent recognition constrained opportunities to practice to the full extent of the role [29]. Importantly, these gaps appeared organizational and regulatory rather than clinical: NPs were prepared and willing to practice, but the surrounding structures did not consistently permit or support it. Implementation of some roles (e.g., medication prescribing) was contingent on regulatory clearance (NPs' prescribing authorities were regulated only in 2023 [48]), reflective of the evolving scope of NP roles.

These implementation gaps are also not specific to Israel. A scoping review of NP practice in rural Australia reached similar conclusions: uptake and the anticipated benefits of the role had yet to be realized, with barriers spanning the day-to-day practice, organizational, and national policy levels, and with low awareness of the role at both service and community level identified as a systematic impediment to implementation [49]. A structural parallel comes from Japan, another centrally financed system in which NPs perceived the absence of national licensure and of a reimbursement mechanism recognizing their contribution as the principal barriers to implementation, while recognition from institutional superiors and organizations was the most frequently cited facilitator [50].

These parallels show that the pattern is not unique to Israel; the form it takes, however, is shaped by Israel's particular structure. Compared with the decentralized, free-market model of the United States, the Israeli NP role is defined by central licensing and scope determination, a specialty-based (rather than population-based) training model, more limited prescribing authority, and collective public-sector employment in which NPs fall outside the standard nurse-to-patient staffing ratios and therefore require dedicated financing to employ [51]. These features shape how far, and how quickly, authorized competencies translate into everyday practice, and they reinforce the conclusion that expanding educational programs alone is unlikely to maximize the contribution of NPs unless workforce planning, organizational structures, and health policy evolve in parallel.

The first two findings describe a role that is welcomed but underrecognized and prepared but underutilized, and the third points toward what would be required to close that gap. The barriers documented across our included studies range from limited public awareness to physician reluctance and constrained funding, and they share a common root in the absence of a clearly defined and acknowledged role. The facilitators that recurred alongside them were essentially the means of building that clarity and trust: leadership engagement, mentorship, and advance planning [20, 34, 36].

Israel's experience demonstrates that establishing NP education, regulation, and legal authority is necessary, but insufficient, to achieving full integration and realizing the contribution of the role. Sustainable implementation requires alignment across national policy, organizational structures, and day-to-day clinical practice, including workforce planning, clearly defined and adequately supported positions, interprofessional acceptance, continuing professional development, and attention to NP well-being. Academic institutions are uniquely positioned to help bridge several of the gaps identified in this review by continuously refining curricula to reflect evolving practice demands, strengthening preparation for autonomous clinical practice and leadership, supporting lifelong learning through continuing professional and interprofessional development, and generating evidence to inform policy and implementation. Beyond educating the future workforce, academia can serve as a catalyst for role integration by fostering partnerships among policymakers, healthcare organizations, professional bodies, and clinicians to ensure that educational capacity evolves in tandem with health-system readiness [52]. As the Israeli NP workforce continues to expand, the next phase should therefore focus not only on increasing numbers but on strengthening the connections between levels of influence so that educational growth is matched by organizational readiness and meaningful opportunities for NPs to practice to their full capabilities.

4.1. Limitations of the evidence base

Several methodological limitations characterize the current Israeli evidence base. Most studies were conducted in single institutions, frequently with relatively small samples and cross-sectional designs. Only two prospective studies evaluated patient or health-system outcomes, both examining NPs in surgical settings, limiting generalizability. These limitations should not be viewed as unique to Israel. Similar concerns regarding methodological heterogeneity, limited follow-up, and challenges in generalizing findings have been discussed within the broader international NP literature [53, 54], highlighting the continuing need for robust implementation and effectiveness research internationally.

4.2. Limitations of this review

Consistent with JBI guidance, this scoping review aimed to map rather than critically appraise the available evidence. Consequently, methodological quality was not used to exclude studies. The review focused primarily on peer-reviewed English-language publications and may therefore have missed relevant Hebrew-language gray literature and policy documents. Finally, because of substantial heterogeneity in study designs, NP specialties, and reported outcomes, narrative synthesis was considered more appropriate than quantitative meta-analysis.

4.3. Implications for research and policy

The next stage of Israeli NP research should move beyond descriptive workforce and implementation studies toward rigorous evaluation of patient, provider, and health-system outcomes across multiple specialties and care settings. Longitudinal studies examining workforce retention, transition into NP employment, organizational integration, cost-effectiveness, and health equity are particularly needed.

Comparative research exploring how different regulatory and implementation models influence NP effectiveness across healthcare systems would further strengthen the international evidence base while informing policy development in centralized health systems such as Israel. These priorities align closely with the gaps identified in the global advanced-practice-nursing literature, where interprofessional team functioning, workload and working conditions, cost, equity-related issues, and the engagement of patients and families as partners in care remain among the least-studied dimensions of the role [3]. Framing the Israeli research agenda around these same dimensions would ensure that national workforce expansion is evaluated against questions the international field has itself identified as unresolved, rather than in isolation. Such work will be essential for ensuring that continued expansion of the NP workforce is accompanied by evidence demonstrating its contribution to patient care, healthcare delivery, and system sustainability.

5. Conclusion

This scoping review offers the first consolidated map of research on the NP role in Israel. Across 26 studies published over little more than a decade, three findings recur. Attitudes toward the role are broadly favorable but rest on limited awareness of what NPs are qualified and authorized to do; NPs themselves report strong professional identity and autonomy alongside only partial enactment of their formal scope; and the barriers to fuller integration are organizational and regulatory rather than clinical, rooted in role ambiguity and limited interprofessional trust. The research base has grown in step with the workforce but remains largely descriptive, single-site, and cross-sectional, with prospective outcome evidence confined to two studies from one specialty and no economic evaluation to date.

These patterns are not unique to Israel; they recur wherever the NP role is still being integrated, and the international literature has already established that NP care is at least equivalent to physician-led care. The task ahead is therefore less to demonstrate the value of the model anew than to build the role clarity, interprofessional trust, and supporting structures that allow an already-prepared workforce to practice to its full extent, and to generate the multi-site, longitudinal, cost- and equity-oriented evidence needed to guide its continued expansion. For a centralized health system such as Israel's, aligning workforce planning, regulation, and organizational design will determine whether the growth of the NP workforce translates into measurable gains for patients and the health system. As the Israeli NP workforce continues to expand rapidly, generating robust evidence on its clinical, economic, and system-level impact will become increasingly important for ensuring that workforce growth translates into measurable improvements in health care quality and sustainability.

Abbreviations

If abbreviations are used in the text they should be defined in the text at first use, and a list of abbreviations should be provided.

CNS = Clinical Nurse Specialist

INPLASY = International Platform of Registered Systematic Review and Meta-Analysis Protocols

CINAHL = Cumulative Index to Nursing and Allied Health Literature

JBI = Joanna Briggs Institute

NHI = National Health Insurance

NP = Nurse Practitioner

PA = Physician Assistant

PRISMA-ScR = Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews

RN = Registered Nurses

WHO = World Health Organization

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 - KS participated in conceptualizing, protocol development and publishing, searching; source screening; data extraction; synthesis of results; preparation of the first draft of manuscript
 - CH participated in protocol development and publishing, searching; source screening; data extraction; synthesis of results; preparation of the first draft of manuscript
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 - HF participated in supervision, manuscript editing and finalizing
 - ES participated in conceptualizing, supervision, manuscript editing and finalizing

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Figures

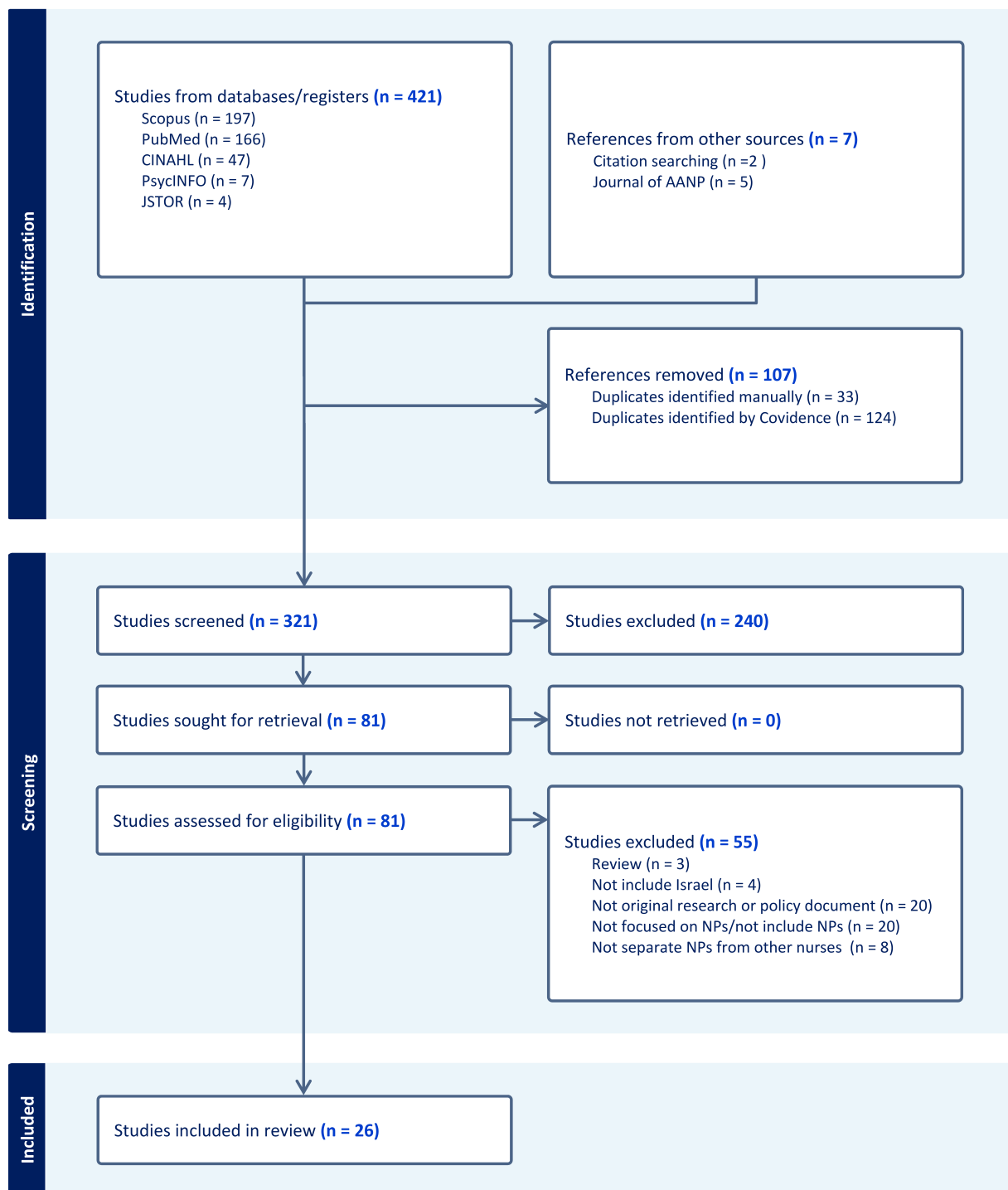


Figure 1

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