

ANNOTATION

to the doctoral dissertation of Zhanar Anatolyevna Dostanova entitled
“Assessment of Performans of Advanced Practice Nurse Performance in Primary
Health Carel”, submitted for the degree of Doctor of Philosophy (PhD)
in the educational program 8D10103 – Nursing Science

Relevance of the Research Topic. Within the framework of ongoing healthcare reforms in the Republic of Kazakhstan, one of the priority directions of development is the strengthening of primary health care (PHC) in order to ensure the accessibility, quality, and efficiency of medical services for the population (Alikperova N.V., Aksenova E.I., Vinogradova K.V. 2021; Jainakbayev N.T., Aldiyarova M.A. 2020; Iskakova et al. 2016). One of the innovative approaches to addressing this objective is the introduction of advanced practice nurses (APN) (Ho et al. 2021), which is particularly relevant in light of the shortage of medical personnel, the growing burden of chronic diseases, and the need to strengthen preventive care (Utzhanova K.A.et al. 2024; Jokiniemi, Pietilä, and Mikkonen 2021; Schlunegger et al. 2023; Miranda Neto et al. 2018).

In Kazakhstan, the level of development and organization of nursing services remains insufficient and requires the modernization of management approaches in the field of nursing care. In 2018, a pilot project was launched in the country to implement a new model of nursing services within healthcare organizations (Kumarov K.M., Baigozhina Z.A. 2022). This initiative is aimed at fostering the professional autonomy of nurses, enhancing interdisciplinary collaboration among healthcare providers, and increasing the efficiency of the treatment process. The model envisions an expansion of the functional responsibilities of nurses holding applied and academic bachelor's degrees in nursing, transforming them from executors of physicians' orders into equal partners in patient care. As part of this transformation, physicians have delegated a portion of their responsibilities to nurses, thereby broadening the scope of nursing practice to include diagnostic decision-making, treatment planning, monitoring of patients with chronic conditions, and the provision of health counseling and education (Utepbergenova Zh.M., Kalmataeva Zh.A., Kalmakhanov S.B. 2016).

In the healthcare systems of high-income countries—including the United States, Canada, the United Kingdom, and Australia—advanced practice nurses (APN) have successfully established their roles in delivering primary care, managing chronic diseases, and providing preventive services, demonstrating high levels of effectiveness. In Kazakhstan, this process is currently in an active phase of development and implementation as part of broader efforts to modernize the primary health care system and enhance its efficiency. This transformation requires a revision of the regulatory framework, workforce training, and public awareness campaigns. The development of the advanced practice nursing profession contributes to the optimization of healthcare expenditures by reducing the need for costly treatments and emergency interventions

through timely care and effective management of chronic conditions (Wong and Wong 2020; Jokiniemi, Pietilä, and Mikkonen 2021).

Given the ongoing healthcare reforms in Kazakhstan and the country's commitment to strengthening the resilience of its health system, the development of the advanced practice nursing (APN) profession is of particular relevance. The implementation of APN roles is viewed as a strategic tool to reinforce primary care and ensure continuity of services, especially in rural and remote areas where access to physicians is limited. Moreover, the expanded role of nurses contributes to increased patient satisfaction, improved chronic disease management outcomes, and reduced physician workload—making this direction critically important for the sustainable development of the national healthcare system.

Aim of the Dissertation Research. To assess the professional performance of advanced practice nurses during independent patient consultations and to develop recommendations for its improvement.

Research Objectives:

1. To analyze the experience of education and professional practice of advanced practice nurses abroad and in the Republic of Kazakhstan.
2. To examine the practical experience of advanced practice nurses conducting independent patient consultations.
3. To assess patient satisfaction with the services provided by advanced practice nurses during independent consultations.
4. To design and validate a checklist for assessing the clinical performance of advanced practice nurses during independent consultations.

Research Methods:

- Bibliographic, information-analytical, and historical methods;
- Inductive content analysis;
- Sociological and statistical methods;
- Content analysis, expert-analytical, and statistical approaches.

Object of the Study

- Scientific publications from databases such as Medline/PubMed, Web of Science Core Collection, Scopus, Google Scholar, CyberLeninka, as well as adapted nursing guidelines, legal and regulatory documents of the Republic of Kazakhstan, and WHO reports;
- Advanced practice nurses (APN) conducting independent patient consultations at City Polyclinic No. 3 in Aktobe, City Polyclinic No. 3 in Astana, and City Polyclinic No. 5 in Almaty;
- Patients aged 18 and older who attended independent nursing consultations at the above-mentioned polyclinics;
- The professional activities of advanced practice nurses during independent consultations.

Subject of the Study

- The experience of education and professional practice of advanced practice nurses abroad and in the Republic of Kazakhstan;
- The practical experience of advanced practice nurses conducting independent patient consultations;
- Patient satisfaction with independent nursing consultations;
- The criteria of the checklist for evaluating the performance of advanced practice nurses conducting independent consultations.

Statements submitted for defense

1. Despite the measures undertaken, the performance of advanced practice nurses in the Republic of Kazakhstan still requires further improvement of the regulatory framework, educational programs, and material-technical support in alignment with international best practices.

2. The full implementation of the functions of advanced practice nurses conducting independent consultations is hindered by several factors, including low public awareness of their role, limited professional competencies, insufficient material and technical resources, and the absence of standardized approaches to evaluating their performance within the primary health care system.

3. Regular attendance at independent nursing consultations is associated with higher levels of patient satisfaction with the quality of care, improved well-being, and positive evaluations of the nurse's performance. The main predictors of patient satisfaction with independent nursing consultations include the level of patient awareness, frequency of visits, appointment scheduling method, waiting time, as well as the thoroughness of physical examination, treatment monitoring, clarity of recommendations provided, and comprehensiveness of the interview.

4. The designed checklist will help structure the performance of advanced practice nurses, reduce the likelihood of professional errors, enhance accountability, improve the quality of healthcare services, and increase patient satisfaction.

Main Research Findings:

1. The analysis of international and national experiences in the education and professional practice of advanced practice nurses (APN) revealed significant differences across several key dimensions, including the level of academic preparation, regulatory status, organization of independent consultations, approaches to training, methods of professional performance assessment, and public recognition. International models are characterized by a high degree of autonomy, legal recognition of the APN role, authority to prescribe treatment, availability of specialized practice settings, and well-established systems for evaluating performance based on clinical outcomes. In contrast, the context of Kazakhstan is marked by limited regulatory oversight, the absence of standardized assessment tools, and a need to increase awareness and trust in the role of APNs among both healthcare professionals and patients.

2. The analysis of the demographic characteristics of the study participants indicated that the majority were women (91%). The largest proportion of respondents

were aged 18 to 29 years (45%). Most participants (77%) had less than one year of experience working as advanced practice nurses, 90% held a bachelor's degree, and 10% had postgraduate education. As a result of the inductive content analysis, several key themes and subcategories were identified: 1) Public awareness of the role of the advanced practice nurse in independent consultations revealed that low patient attendance was primarily due to insufficient knowledge about the role of advanced practice nurses and limited trust in their professional competence. 2) Adaptation of the work environment highlighted several organizational challenges, such as fragmented and non-integrated medical information systems and the lack of dedicated consultation rooms, which impede the effective implementation of expanded nursing functions. 3) Confidence of nurses in providing independent consultations reflected internal professional challenges, including inadequate training in pharmacology, difficulties in formulating nursing diagnoses, and the absence of clear criteria for evaluating the quality of their performance.

3. An analysis of the socio-demographic characteristics of patients attending independent nursing consultations was conducted. Based on the collected data, a generalized socio-demographic profile of the typical patient was developed. The majority were women (63.9%) with a median age of 62 years, predominantly with secondary education (54.5%), married (74.9%), and belong to pensioners (45.4%).

Patient Awareness regarding Independent Nursing Consultations. An analysis of patient awareness regarding independent nursing consultations revealed that 97.1% of regular attendees were informed about the service, compared to 86.9% among irregular visitors ($p < 0.006$). The primary sources of information for both groups were physicians (51.5% among regular attendees vs. 32.8% among infrequent visitors, ($p = 0.006$) and nurses themselves (50.8% and 52.5%, respectively, with no statistically significant difference).

Organizational Aspects of Independent Nursing Consultations

The analysis of organizational aspects of independent nursing consultations showed that patients who attend regularly are more likely to seek prescription services (88.7% vs. 52.5%), follow-up monitoring (74.6% vs. 37.7%), and preventive check-ups (60.3% vs. 29.5%) ($p = 0.001$). Interest in screening was expressed by 54.8% of regular attendees compared to 23.0% of infrequent visitors ($p = 0.001$). Most regular patients reported attending APN consultations through a walk-in system (77.7%), whereas this was the case for only 60.7% of infrequent patients ($p < 0.001$). The majority of patients in both groups (55.7% and 60.7%, respectively) reported a waiting time of 5–10 minutes for their consultation ($p < 0.031$). In response to the question regarding the necessity of nursing consultations, 99.2% of regular patients and 95.1% of infrequent patients confirmed that such consultations are necessary ($p = 0.029$).

Quality of Independent Nursing Consultations

The assessment of the quality of independent nursing consultations revealed that 91.2% of patients with regular visits and 80.3% of those with infrequent visits

reported that the nurse performed a physical examination and health assessment ($p = 0.024$). The adequacy of questions asked during the consultation was confirmed by 97.3% of regular visitors and 88.5% of infrequent ones ($p < 0.001$). Follow-up consultations were more commonly scheduled among patients with regular visits (89.3% vs. 67.2%; $p < 0.001$), whereas home visits were more typical for infrequent attendees (18.0% vs. 3.2%; $p < 0.001$). Clear understanding of preventive recommendations was reported by 98.3% of regular visitors compared to 90.2% of infrequent ones ($p < 0.001$). Improvement in well-being following the consultation was indicated by 87.4% of patients with regular visits and 73.8% of those with infrequent visits ($p < 0.002$).

Patient Satisfaction with Advanced Practice Nurse Services During Independent Consultations

The vast majority of participants in both groups reported satisfaction with the services provided by advanced practice nurses during independent consultations (99.2% among regular visitors and 91.8% among infrequent visitors; $p < 0.001$). However, dissatisfaction was more frequently observed among patients who attended consultations less regularly. The primary reasons for dissatisfaction included perceived lack of attention from the nurse (0.4% vs. 6.6%), insufficient professional knowledge (0.8% vs. 6.6%), excessive haste during the consultation (1.9% vs. 3.3%), and poor interpersonal communication skills (0.2% vs. 3.3%) ($p < 0.002$). Despite these concerns, the majority of patients in both groups rated the nurse's performance highly, with most assigning the maximum score of 5 points (75.2% among regular visitors and 60.7% among infrequent visitors; $p < 0.001$).

Results of the Analysis of Key Predictors Influencing Patient Satisfaction with Advanced Practice Nurse Services During Independent Consultations.

To identify factors influencing patient satisfaction with independent nursing consultations, a univariate logistic regression analysis was conducted. The results showed that awareness of the existence of independent nursing consultations increased the likelihood of satisfaction by more than 22 times (OR = 22.62; 95% CI: 5.59–91.40; $p < 0.001$), while regular attendance increased it by over 9 times (OR = 9.63; 95% CI: 2.33–39.72; $p = 0.002$). Use of digital platforms such as Damumed or eGov was also a significant predictor, increasing satisfaction nearly fivefold (OR = 4.81; 95% CI: 1.18–19.61; $p = 0.029$). Additional factors positively associated with satisfaction included improved well-being following the consultation (OR = 13.44; 95% CI: 3.28–55.01; $p < 0.001$), monitoring of treatment progress (OR = 43.50; 95% CI: 8.76–216.01; $p < 0.001$), physical examination by the nurse (OR = 57.38; 95% CI: 8.76–216.01; $p < 0.001$), clarity of recommendations (OR = 0.019; 95% CI: 0.003–0.130; $p < 0.001$), and comprehensiveness of the nurse's clinical interview (OR = 0.12; 95% CI: 0.001–0.17; $p = 0.001$). Conversely, waiting more than 10 minutes for the consultation significantly reduced patient satisfaction (OR = 0.20; 95% CI: 0.01–0.285; $p = 0.004$).

Delphi Study to Develop a Competency Checklist for Independent Advanced Practice Nurse Consultations

To address the fourth objective, a two-round Delphi survey was conducted with the participation of 11 experts, achieving a 100% response rate. In the first round, consensus (defined as >80% agreement) was reached on 15 out of 23 statements. However, agreement below the consensus threshold was observed for items related to personal competencies, knowledge and adherence to legal and regulatory acts, compliance with professional ethical principles, conducting independent consultations, managing patients with common conditions, formulating nursing diagnoses, developing care plans, and educating patients and/or their families. Following expert feedback, four items without consensus were excluded, and one new item was added. In the second round, the revised checklist — comprising 6 sections and 16 sub-items — achieved full consensus among the experts. This allowed the process to be concluded without the need for an additional round.

Pilot Testing of the Checklist.

The pilot study involved 13 advanced practice nurses (APN) conducting independent consultations at City Polyclinic No. 3 in Aktobe. Prior to piloting the instrument, the research team organized a training session aimed at developing the skills necessary to apply the checklist for assessing the professional activities of APNs during independent consultations. The assessment was carried out by the chief nurse of the medical organization. According to the results of the analysis, the total score for each nurse ranged from 8 to 14.5 points. One nurse received 14.5 points, six nurses scored 13 points, two nurses scored 11.5 points, three nurses received 10 points, and one nurse received 8 points. In percentage terms: 7.7% of the nurses demonstrated full performance of duties (14–16 points), 84.6% demonstrated partial performance (10–14 points), and 7.6% demonstrated minimal performance (below 10 points). These findings indicate variability in the quality of professional function implementation and confirm the diagnostic value of the checklist.

As part of the pilot study, a SWOT analysis was conducted to assess the activities of advanced practice nurses (APNs), which identified both strengths and problematic aspects of their professional performance.

Identified Strengths:

- Timely patient identification and proper completion of informed consent documentation;
- Competent prescribing of medications for treatment continuation in accordance with the physician's orders;
- Effective patient referral in cases beyond the scope of APN competence;
- Timely follow-up and monitoring of patients with chronic non-communicable diseases (NCDs);
- Systematic organization and supervision of patient and family education on care procedures and self-management of illness;

- Ability to provide pre-medical care within the scope of professional competence, including in emergency situations;
- Regular provision of individualized counseling on health promotion and disease prevention;
- Availability and systematic maintenance of the practice area passport.

Identified Weaknesses:

- Insufficient knowledge and skills in conducting both subjective (collecting complaints and medical history) and objective (physical examination, measurement of vital signs) patient assessments;
- Inadequate understanding of nursing diagnostics, resulting in uncertainty and errors in formulating nursing diagnoses;
- Lack of confidence in developing nursing intervention plans;
- Absence of systematic evaluation of patient satisfaction;
- Limited knowledge of the legal and regulatory framework governing nursing practice;
- Delayed or incomplete documentation of consultations in the medical information system (MIS).

Opportunities

- Conducting additional training sessions on diagnostics and intervention planning;
- Implementation of patient satisfaction questionnaires;
- Scaling up successful practices to other primary health care (PHC) organizations;
- Introducing the checklist as a standardized quality assessment tool at the national PHC level.

Threats

- Risk of checklist being completed formally without genuine competency assessment, especially in the absence of external audits;
- Staff resistance to the implementation of an objective evaluation system;
- Lack of trained experts to ensure objective assessment and interpretation of results.

Scientific Novelty

- For the first time in Kazakhstan, a study was conducted to assess the professional performance of advanced practice nurses during independent patient consultations.
- An assessment was carried out to evaluate patient satisfaction with the quality of medical services provided by advanced practice nurses during independent consultations in the context of primary health care.
- A checklist for evaluating the performance of advanced practice nurses during independent consultations was developed for the first time.

Practical significance of the study

The results of this study have high applied value and can be used to improve human resource policies in the healthcare system, as well as to update the regulatory framework and educational programs aimed at supporting and developing advanced nursing practice within the primary health care system of the Republic of Kazakhstan.

The developed checklist for assessing the performance of advanced practice nurses during independent consultations will help reduce the likelihood of errors in professional duties, standardize work processes, improve the quality of services provided, and enhance patient satisfaction with nursing care.

Personal Contribution of the Doctoral Candidate

The presented work is the original research of Zhanar Anatolyevna Dostanova. Her contribution includes the development of the theoretical and methodological framework of the study, formulation of the research aim and objectives, organization and implementation of the study, direct involvement in all stages of the research process, statistical data analysis, writing of the dissertation chapters, interpretation and discussion of the results, formulation of the key points for defense, as well as the development of conclusions and practical recommendations.

Conclusions:

1. The full integration of Advanced Practice Nurses (APNs) into the healthcare system of the Republic of Kazakhstan, following the example of countries with well-established models, is hindered by several systemic barriers: academic gaps, insufficient legal regulation, weak infrastructure, underdeveloped performance evaluation mechanisms, and low public awareness.

2. Low public awareness of the role of APNs, insufficient levels of their professional competencies, limited material and technical resources, as well as the absence of standardized criteria for performance assessment hinder the effective implementation of APNs' functions within the primary healthcare system.

3. Patients who regularly attend independent nursing consultations report significantly higher levels of satisfaction (99.2% vs. 91.8%; $p < 0.001$), improved well-being (87.4% vs. 73.8%; $p < 0.002$), and more favorable assessments of service quality ("excellent" rating: 75.2% vs. 60.7%; $p < 0.001$). Univariate logistic regression analysis showed that awareness of the consultation increases the likelihood of satisfaction by 22.6 times (OR = 22.62; 95% CI: 5.59–91.40; $p < 0.001$), regular attendance by 9.6 times (OR = 9.63; 95% CI: 2.33–39.72; $p = 0.002$), and use of digital platforms for appointment booking by 4.8 times (OR = 4.81; 95% CI: 1.18–19.61; $p = 0.029$), whereas waiting more than 10 minutes reduces satisfaction fivefold (OR = 0.20; 95% CI: 0.01–0.285; $p = 0.004$). Additional important factors include physical examination (OR = 57.38; 95% CI: 8.76–216.01; $p < 0.001$), monitoring of treatment progress (OR = 43.50; 95% CI: 8.76–216.01; $p < 0.001$), clarity of recommendations (OR = 0.019; 95% CI: 0.003–0.130; $p < 0.001$), thoroughness of the interview (OR = 0.12; 95% CI: 0.001–0.17; $p = 0.001$), and improvement in the patient's condition (OR = 13.44; 95% CI: 3.28–55.01; $p < 0.001$).

4. The designed checklist will allow for the standardization of workflows and the structuring of the activities of advanced practice nurses, which will contribute to reducing the likelihood of errors, enhancing professional accountability, improving the quality of care, and increasing patient satisfaction. The results of the pilot implementation of the checklist made it possible to identify the strengths and weaknesses of nurses' performance in the context of independent consultations, assess the level of mastery of key professional competencies, and formulate practical recommendations.

Dissemination and Validation of Dissertation Results:

The results of the dissertation were presented at the International Scientific and Practical Conference "Nursing Reform: Achievements, Challenges, and Prospects", held on November 25, 2022, at West Kazakhstan Medical University (WKMU), Aktobe, Republic of Kazakhstan.

Publications on the Dissertation Topic:

1. Dostanova Zh.A., Yermukhanova L.S., Baigozhina Z.A., Mazhekenova A.M., Abenova K.T. Perception and Experience of Independent Consultations in Primary Healthcare among Registered Nurses in Kazakhstan: A Qualitative Study. *Healthcare*, 2024; 12(15):1461. <https://doi.org/10.3390/healthcare12151461>. (CiteScore – Q2, Scopus)
2. Dostanova Zh.A. Development and validation of a questionnaire for patients "Studying the opinion of patients' satisfaction with nurse independent appointment at the level of primary health care". *Science and Healthcare*, 2023; Vol.25, No.5. (In Russian)
3. Dostanova Zh.A. Global Experience of Advanced Practice Nurses in Primary Healthcare: A Literature Review. *Phthisiopulmonology*, 2024; No.04(46). (In Russian)
4. Dostanova Zh.A. The Role of Nurse-Led Independent Consultations within the New Model of Nursing in Kazakhstan: An Analysis of Impact on Quality and Accessibility of Primary Healthcare. Abstract published in the proceedings of the LXIII International Conference "Science: Yesterday. Today. Tomorrow", dedicated to Science Day in Kazakhstan.
5. Dostanova Zh.A., Yermukhanova L.S., Baigozhina Z.A., Mazhekenova A.M., Abenova K.T. Checklist for Evaluating the Practice of Advanced Practice Nurses during Independent Consultations: Methodological Guidelines. West Kazakhstan Marat Ospanov Medical University. Aktobe, 2025. 28 pages. (In Russian)
6. Author's Certificate No. 31620 dated January 6, 2023: "Study of Patient Satisfaction with Independent Nurse Consultations in Primary Health Care."
7. Author's Certificate No. 40387 dated November 10, 2023: "Semi-Structured Interview Guide for Nurses Conducting Independent Consultations in Primary Health Care."

8. Author's Certificate No. 57288 dated April 28, 2025: "Checklist for Assessing the Performance of Advanced Practice Nurses during Independent Consultations."

Volume and Structure of the Dissertation:

The dissertation consists of the table of contents, list of abbreviations and acronyms, introduction, literature review, description of materials and methods, results of the author's own research, conclusion (including key findings and practical recommendations), list of references, and appendices. The total length is 126 pages, including 8 figures and 17 tables. The bibliography comprises 162 sources, of which 139 are international publications.