

ТҮЙІНДІ

Медбикелер мен акушерлердің жауапкершілігі клиникалық тәжірибеде өте маңызды және дәлелді медицинада негізделген болуы керек. Клиникалық тәжірибені жетілдіру және жанарту үшін дәлелді медицина қызметкерлерінің деректерін пайдаланудың кең таралған артықшылығы, сондай-ақ науқастарға күтім жасау мен емдеудің сапасын жақсарту. Дегенмен, медбикелер мен акушерлер дәлелдеуге негізделген мейірбикеге негізделген тәжірибеге оң әсер ететін көптеген зерттеулерге қарамастан, оның іске асырылуы маңызды және ауқымды мәселе болып қала береді. Оларды жетілдірудің жолдары ретінде денсаулық сақтау органдары мен мемлекеттік мекемелер медбикелерге және акушерлерге дәлелді медицина туралы ақпаратты алуға, бағалауға және қолдануға уақыт беруі керек.

Кілт сөздер: мейірбикелер, акушерлер, білікті медбикелер, акушериядағы мейірбике үрдісі.

АННОТАЦИЯ

Ответственность медсестер и акушерок в клинической практике очень важна, и она должна основываться на доказательном сестринском деле. Существует широкое преимущество использования данных, основанной на доказательном сестринской практике, для улучшения и обновления клинической практики, а также для повышения качества медицинской помощи и результатов для пациентов. Однако, несмотря на большое количество исследований, показывающих, что медсестры и акушерки позитивно относятся к практике, основанной на доказательном сестринском деле, ее реализация остается значительной и обширной проблемой. В качестве способа их улучшения Службам здравоохранения и правительственным учреждениям следует приложить согласованные усилия, чтобы медсестрам и акушеркам было уделено время для доступа, оценки и использования информации, основанной на доказательном сестринской практике.

Ключевые слова: медсестры, акушерки, знание доказательной сестринской практики, акушерства.

UCD 582.683.2:581.4

DOI:10.24411/2415-7414-2019-10023

THE REGISTERED NURSE FIRST ASSISTANT (RNFA) IN CARDIAC SURGERY

*¹ A.Issayeva, ² J.Heikkila, ¹ D.Ospanova

¹ Kazakh Medical University of Continuing Education, Almaty

² JAMK University of Applied Sciences, Finland

SUMMARY

Cardiovascular diseases are the leading cause of death worldwide. Every year the number of patients on the waiting list for open heart surgery is increasing. The socio-economic development of countries depends on the state of health of the population, since cardiovascular pathologies are mainly affected by the most efficient part of population. Due to the high level of

* ainash.i.n@mail.ru

requirements for professional, scientific, technical, and organizational support, modern cardiac surgery is the basis of the progress of healthcare. In many developed countries, the lack of medical staff is common. The economic crisis has affected the labor force, led to a pay cut, and a reduction in the number of medical personnel. For this reason, it is important to focus on developing new competencies for nurses in cardiac surgery. The role of nurses can be expanded, and it is effective from an economic point of view. Many countries are undertaking nursing education reforms through which, nurses are delegated some of the traditional tasks of doctors - to independently carry out manipulations and to make appointments that do not require serious intervention. In medicine, there are functions for which the presence of a doctor has been identified not necessary, one of which is the Registered Nurse First Assistant (RNFA). The RNFA is a perioperative registered nurse who works in collaboration with the surgeon and other health care team members to achieve optimal patient outcomes. This in turn gives the motivation that the nurse will have new functions, career opportunities, and the opportunity to continue his or her scientific career. Also, the data shows that shifting tasks not only leads to equivalent or improving the quality of medical care, but also efficiency from an economic point of view.

Key words: *RN first assistant (RNFA), RNFA role, education, practice, Advanced Practice Nurse, physician Assistant, cardiac surgery.*

Introduction. Cardiovascular diseases (CVD) are the most acute problem of modern medicine, for no other reason than so many people die from CVD each year. Treatment of heart disease is one of the most important branches of medicine. In economically developed countries in the last three decades, there has been a clear downward trend in the cardiovascular diseases in the structure of total mortality [1]. The reason for this phenomenon is that in a developed, economically stable society, it is possible to obtain a good effect from scientifically grounded programs to combat cardiovascular diseases and a high level of provision of cardiac surgery to the population. It can be said that cardiac surgery is a leading branch of health care in highly developed countries and it reflects the welfare of the state. These diseases are not always treated with drugs, instead, sometimes it is necessary to resort to open heart surgical interventions [2]. Sometimes heart surgery is the most effective way to treat heart disease [3]. In Kazakhstan, the number of patients waiting for open heart surgery is increasing annually, which in turn leads to an increased demand of the volume of medical personnel, too. All the necessary help to cardiac patients is provided by the state budget [4]. Health economics requires optimal use of all medical staff [5]. Although the provision of medical

personnel in Kazakhstan is tending to increase, the lack of human resources in the country still exists [6]. Therefore, it is very important to focus on developing competencies for nurses in cardiac surgery. It is worth considering their superiority in numbers in relation to doctors, and how effective this is from an economic point of view. Nursing reforms have been undertaken in many countries to improve the quality of care and reduce costs [7]. The main directions have been aimed at the development and training of the practicing nurses, one of them which are RNFAs. In the past, the advanced roles of nurses evolved gradually and slowly in many countries due to various barriers, such as the limiting legal framework concerning the volume of practice of nurses and strong opposition from medical associations. Delegating some responsibilities of doctors to nurses reduces the load of doctors, enables the possibility of career development for nurses, and the continuation of a scientific career that in turn will improve the provided medical care in the country. The world practice shows that where professional nurses work, mortality decreases, and outcomes of care of diseases are much better [7].

Cardiovascular diseases.

Cardiovascular disease (CVD) produce immense health and economic burdens globally. In the 10 main causes of death,

heart diseases still remain in the first place. It must be known a difference between ideal cardiovascular health metrics and many clinical and preclinical conditions, including premature all-cause mortality, CVD mortality, ischemic heart disease mortality, Heart Failure, carotid arterial wall stiffness, coronary artery calcium progression, impaired physical function, cognitive decline, stroke, depression, end-stage renal disease, chronic obstructive pulmonary disease, deep venous thromboembolism, and pulmonary embolism [8]. The World Health Organization predicts that deaths due to CVD will increase around the globe from 17 million in 2008 to 25 million in 2030 [2]. At the same time, Kazakhstan also ranks first in terms of mortality from cardiovascular diseases among the countries of the European Union, Central and Eastern Europe and the Central Asian regions. The cardiovascular pathologies are mainly affected by the most efficient part of the Kazakhstan population. Consequently, the state of health of the population of the Republic affects the socio-economic development of Kazakhstan as a whole [9].

The leading place among the cardiovascular diseases (CVD) is occupied by coronary artery disease (CAD), two forms of which, acute myocardial infarction (AMI) and unstable angina pectoris (UAP), united by one name Acute Coronary Syndrome (ACS), represent the largest danger to the lives of patients [2]. According to the American Heart Association (AHA), it is the leading cause of death for men and women of all racial and ethnic groups in the United States. Mortality from coronary heart disease decreased by 34.4% from 2005 to 2015, a decline by 27% is expected by 2030, however, racial differences will remain [8]. The decline of CVD mortality in Kazakhstan occurs with the implementation of government programs in development of cardiac and cardiac surgery care; the introduction of effective methods of prevention, early diagnosis, rehabilitation of patients and disabled with CVD; training qualified specialists and etc. [4]. CAD is the most prevalent type of cardiovascular disease among adults. Drug treatment, which

successfully used at certain stages of the disease, is promising for the development of organic damage, while promptly performed operation in most cases can not only save the patient's life, but also maintain its high quality. Quality of life indicators are becoming increasingly important for understanding how interventions and treatments affect daily life and how to provide optimal care from a patient's point of view [2]. Sometimes coronary artery bypass grafting (CABG) is not only the first, but also one of the best methods of treatment for patients [3]. CABG is the costliest intervention but also the most effective in treating the prevention of cardiac and cerebrovascular events of patients with multivessel coronary artery disease [10].

Every year the number of patients on the waiting list for open heart surgery is increasing. In Kazakhstan, the number of cardiac operations increased from 7,000 to 70,000 operations per year, which in turn suggests the need to increase the number of provided high-tech medical services [4]. Heart surgery is a leading branch of healthcare in highly developed countries. Due to the high level of requirements for professional, scientific, technical, and organizational support, modern cardiac surgery is the basis of the progress of healthcare. Also, surgical procedures on an open heart often improve survival rates, decrease symptoms, and increase an individual's functional ability. If the heart surgery and the postoperative period are successful, the degree of disability diminishes after a while or the disability is removed altogether. The patient and his or her relatives should remember that the patient is discharged from the hospital 7–14 days after the operation, but a full recovery will take at least 2–3 months [11].

Advanced Practice Registered Nurse (APRN) as the Registered Nurse First Assistant (RNFA).

In many OECD (Organization for Economic Cooperation and Development) countries, reforms have been carried out for nurses to improve access to care, quality of care, and reduce costs. These reforms increase interest both in the personnel area of health

care, and in improving medical care itself, and reducing its costs. The economic crisis has affected the labor force, led to a pay cut, and a reduction in the number of medical personnel. Common to many OECD countries is the shortage of health workers in certain regions, for example, in villages and remote areas. This is an urgent task of public health. So, the role of nurses has been needed to be expanded. For this reason, it is important to focus on developing new competences for nurses. [7].

As mentioned earlier, nurses working in advanced roles take many forms. Roles are often not clear cut; practice areas vary since there are many specializations. Nurses in advanced roles can be defined as “nurses working in advanced roles beyond the traditional registered nurses’ (RN) scope-of-practice, after additional training” [7]. Some countries use the general term by the International Council of Nurses (ICN). According to the ICN, “A Nurse Practitioner / Advanced Practice Nurse is a registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and / or country in which s/he is credentialed to practice. A Master’s degree is recommended for entry level.” [12].

There are new models of assistance to improve coordination, integration, and teamwork. In many countries, the level of qualifications and professions of health workers is changing. New medical roles are being developed, including among nursing staff [7]. First, it takes into account the superiority of the number of nurses over doctors. Secondly, it is effective from an economic point of view. Therefore, nurses are delegated some of the tasks of doctors for example to independently carry out tasks of management, treatment and secondary prevention of stable chronic patients and have independent appointments. There are many functions for which the presence of a doctor is not necessary. This in turn gives rise to motivation that the nurse will have new functions, career opportunities, and the opportunity to pursue a scientific career. World practice shows that where professional

nurses work, mortality is reduced, and the outcomes of diseases are much better [7].

Many countries are pursuing educational reforms and wage regulation to expand nursing practice. Most of the OECD and EU countries have implemented and expanded the scope of practice of certain groups of nurses, and they have carried out educational programs that are part of higher education institutions. But so many countries are still at the initial stage of implementation, and the roles of nurses differ from skills and their responsibilities. There are two concepts: task-shifting and task supplementation. First, task-shifting refers to nurses or other non-medical professions engaging in clinical activities traditionally performed by doctors. After additional training, nurses perform actions previously performed by doctors to reduce the burden on doctors and improve access. Secondly, nurses can also work in new or additional roles in clinical areas [7].

Well trained nurses can provide an appropriate level of care at least. In recent years, various systematic reviews show, that nurses in higher positions prevail in number, effectiveness, and quality of care compared to doctors [13]. In the OECD report it has been analyzed a large number of systematic reviews and analysis concerning advanced nurse roles. As summary, it can be stated that if nurses are adequately trained they can provide at least corresponding level of care as physicians. Patient satisfaction is associated with the fact that nurses, as a rule, provide more information to patients, give repeat consultations, and spend more time than doctors, which in turn leads to significant savings. Some United States studies suggest cost savings at the expense of lower wages or the level of reimbursement for nurses [7].

The future provides exciting opportunities for highly qualified nurses (APNs), one of which is the participation of a nurse as a first assistant during an operation. In 1990, when the United States Congress included first aid and reimbursement for the APNs performing this task, teachers of the programs that train the RNFA studied redesigning curricula and strategies to prepare

the APN for this role. Traditionally, the RNFA has been defined as a perioperative nurse who is certified as a nurse in the operating room (CNOR). Enrolling APN students in RNFA programs, often without such empirical readiness, required that the curricula of educational programs be adapted to prepare the APN as a safe and qualified assistant for operations. Using assessment and correction of competencies, along with a curriculum model that includes the development of knowledge and skills in basic methods of perioperative care, the RNFA programs prepare an APN with a broad knowledge of surgical care for patients, an expanded base of skills in perioperative procedures, and critical thinking skills to perform the role of a first assistant during the operation [14].

The RNFA performs an expanded role as the first surgical assistant and works in collaboration with the surgeon and other health care team members to achieve optimal patient outcomes; has acquired the necessary knowledge, judgment, and skills specific to the expanded role of RNFA clinical practice; and intraoperatively practices at the direction of the surgeon [15]. The role of the Registered Nurse First Assistant is to assist the surgeon with intra-operative procedures and provide direct care to patients using the nursing process pre-operatively, intra-operatively, and post-operatively. RNFA is one of several physician-extender positions, which appeared to fill the lack of personnel and financial nature in many medical institutions [16].

Zarnitz and Malone have studied the effect of replacing the first surgeon assistants on RNFA. The researchers found that, regardless of the severity of the patient, the incidence and mortality rates did not depend on the replacement of the assistant, just as the duration of the operation, blood loss, and correction of the blood loss itself. It should be noted that, therefore, they do not put patients at increased risk and may improve patient safety. It should also be noted that this research result showed that using RN instead of surgery resident as the first assistant reduced the incidence of infection during cardiac surgery twice [16]. In a 9-month experiment,

using RNFA, it was revealed that lower limb infection improved by 43%, the operation time was reduced to 268 minutes (monthly), and there was a considerable risk of intermittent OR staffing shortages [17].

The annual increase in the number of cardiac surgical patients corresponds to the increased need for clinical services. The addition of physician assistants (PAs) to the cardiothoracic surgery (CTS) university service has resolved many problems of work assignment and coverage and enabled us to establish effective and efficient surgical teams without increasing the number of categorical CTS residents [7].

Given the economic downturn and the shortage of surgeons with the growth of patients, this may further increase the demand for this specialty of nurses. Depending on the setting and the degree of administrative support, RNFAs may perform the surgical first assistant role daily or cross functionally, having also to perform the role of circulating or scrub nurse as staffing permits or demands. Depending to their education and experience, RNFA are qualified to assist in several different types of surgical procedures [17]. Health economics requires optimal use of all staff. The use of operating nurses during small numbers of operations in the clinic as a nursing unit is not uncommon and represents good use of the resources available. But at the same time, the hospital is fully responsible for providing competent nurses. Floating to units outside the surgical suite does not pose an infection control problem. It is an opportunity to expand nurses' skills and knowledge, increasing their value to the organization and making them competitive in the labor market [5].

The implementation of advanced roles for nursing in daily care requires changes in policies for managing and regulating occupations, as well as changes in funding and payment systems. Application in practice also depends on the support factors of the organizational level. However, political reforms are often lengthy and controversial, and often opposed to stakeholders such as medical associations [7].

Conclusion. The tasks of the Republic

of Kazakhstan in the field of health care reform are to improve the quality, availability, and effectiveness of medical care to the population. This role is further assigned to nursing professionals. World practice shows that where professional nurses work, mortality is reduced, and the outcomes of diseases are much better. The development of a new role such as the RNFA in the cardiac surgery service has many significant benefits for both patients and public health. This, in turn, will increase not only the rational use of state resources, but also the motivation of medical organizations to provide high-quality and affordable medical care, it will help develop and implement clinical guidelines and transfer workforce to the regions, will increase staff

efficiency through training, and lead to the increase in the professional and social image of nurses. A properly trained nurse can better assess potential surgical risk factors and provide preliminary guidance for the patient and his family during the perioperative process at hospital stage. Thus, postgraduate education is an important factor that allows a nurse to maintain the necessary level of professional competence throughout her entire work activity and increase motivation and personal responsibility for professional self-development in future. It is from these positions that nursing education should actually be viewed as a continuous process and a major factor in the development of the health workforce.

REFERENCES

1. Malvezzi M., Cariolo G., Bertuccio P., La Vecchia C. Relation between mortality trends of cardiovascular diseases and selected cancers in the European Union, in 1970–2017. Focus on cohort and period effects // *European Journal of Cancer*. - 2018. - Vol.103. – P.341-355.
2. Veronovici N.R., Lasiuk G.C., Rempel G.R., Norris C.N. Discharge education to promote self-management following cardiovascular surgery: An integrative review // *European Journal of Cardiovascular nursing*. – 2014. – Vol. 13 (1). - P.22-31.
3. Kulick D.L. Coronary Artery Bypass Graft Surgery (CABG). Medical review in *Medicine* // *Medicine*. - 2016.
4. Densaulyk State Program of Healthcare Development of the Republic of Kazakhstan for 2016-2019. KZ Health working papers.
5. Fogg D.M. Floating; OR cleaning; RNFA scope of practice; OR Turnover; expiration dates; smoke plume; OR counts // *AORN Journal*. - November 1998. - Vol.68, №5. - P. 874 - 879. [https://doi-org.ezproxy.jamk.fi:2443/10.1016/S0001-2092\(06\)62387-9](https://doi-org.ezproxy.jamk.fi:2443/10.1016/S0001-2092(06)62387-9).
6. Министерство здравоохранения Республики Казахстан. Состояние кадровых ресурсов здравоохранения РК итоги 2017 года. Астана 2018г. Электронный ресурс. <http://www.rcrz.kz/index.php/ru/>
7. Maier C., Aiken, L., Busse R. Nurses in advanced roles in primary care: Policy levers for implementation // *OECD Health Working Papers*. – 2017. - Vol.98, OECD Publishing, Paris. <http://dx.doi.org/10.1787/a8756593-en>.
8. Benjamin E.J. et al. Heart disease and stroke statistics – 2018 update a report from the American Heart Association // *Circulation*. – 2018. - Vol.137. - Chapters e67 – e492. <https://www.ahajournals.org/doi/10.1161/CIR.0000000000000558>
9. Nogayeva, M.G. Prevalence of Heart diseases in the Republic of Kazakhstan. // *Medicine*. – 2014. – Vol.10. – P.13-16.
10. Stroupe K.T., Morrison D.A., Hlatky M.A. Cost-Effectiveness of Coronary Artery Bypass Grafts Versus Percutaneous Coronary Interventions for Revascularization of High-Risk Patients // *Circulations*. – 2006/ - Vol.114. – P.1251-1257.
11. Tiny J., Christi D., Donna F., Bengt F., Bjarne M., H., Romy M., Philip M., Samar N., Sharon O., Susanne S.P., Simon S., Anna S., David R, Th., Yasemin T., Barbro K. Research in cardiovascular care: A position statement of the Council on Cardiovascular Nursing and Allied

Professionals of the European Society of Cardiology // European Journal of Cardiovascular nursing. – 2014. - Vol. 13(1) – P. 9-21.

12. ICN International Nurse Practitioner/Advanced Practice Nursing Network // Scope of Practice and Standards. – Taipei. January 2005. - P.1 - 7.

13. Thourani V.H., Miller J.I. Physicians Assistants in Cardiothoracic Surgery: A 30-Year Experience in a University Center // Ann Thorac Surg. – 2006.-Vol. 81. -P. 195-200.

14. Rothrock J. Competency assessment and competence acquisition: the advanced practice nurse as RN surgical first assistant // TOP ADV PRACT NURS. – 2005.-Vol. 5(1) - P.7.

15. Ogg M.J., Burlingame B.L., Chambers K. Clinical Issues-December 2015 // AORN Journal. - Dec.2015. - Vol.102 (6). - P.660 - 668.

16. Zarnitz P., Malone E. Surgical Nurse Practitioners as Registered Nurse First Assists: The Role, Historical Perspectives, and Educational Training // Military Medicine.- 2006. – Vol. 171/ - P.875-878.

17. Pear S.M., Williamson T.H. The RN First Assistant: An expert Resource for Surgical Site Infection Prevention // AORN Journal. – 2009. - Vol. 89 (6). – P.1093-1097.

ТҮЙІНДІ

Жүрек-қан тамырлар аурулар бүкіл әлемде өлімнің басты себебі болып табылады. Жыл сайын жүрек отасына күту тізіміндегі науқастардың саны артып келеді. Елдердің әлеуметтік-экономикалық дамуы, оның халқының денсаулығының жай-күйіне байланысты, себебі жүрек-тамыр патологиясы негізінен халықтың ең тиімді бөлігін зақымдайды. Кәсіби, ғылыми, техникалық және ұйымдастырушылық қолдаудың жоғары деңгейіне байланысты заманауи кардиохирургия денсаулық сақтаудың дамуының негізі болып табылады. Көптеген дамыған елдерде медициналық қызметкерлердің жетіспеушілігі жиі кездеседі. Экономикалық дағдарыс жұмыс күшіне, медициналық қызметкерлердің саны мен жалақысына кері әсер етті. Осы себепті кардиохирургиялық медбикелер үшін жаңа қызметтерді дамытуға баса назар аудару керек. Медбикелердің атқаратын рөлінің кеңейтуі экономикалық тұрғыдан тиімді. Көптеген елдер медбикелік білім беру реформаларын жүргізеді, соның арқасында медбикелер дәрігерлердің дәстүрлі тапсырмаларын - манипуляцияларды дербес жүзеге асыруға және күрделі араласуды қажет етпейтін тағайындаулар жасауға мүмкіндік береді. Медицинада дәрігердің көмегінсіз жүзеге асырылатын функциялар бар, олардың біреуін медбике дәрігердің бірінші көмекшісі ретінде атқарады. Периоперациялық мейірбике пациенттердің емінің оң нәтижесіне қол жеткізу үшін дәрігер-хирург пен басқада денсаулық сақтау қызметкерлерінің қатысуымен бірігіп жұмыс істейді. Бұл, өз кезегінде, медбикенің атқаратын жаңа функциялары, мансаптық мүмкіндіктері пайда болып, оның ғылыми жағынан өзін үнемі дамытуға мүмкіндіктер туғызады. Сондай-ақ, деректерге сүйенсек, тапсырмаларды ауыстыру тек медициналық көмек көрсету сапасын бір деңгейде немесе жақсартуға ғана емес, сондай-ақ экономикалық тұрғыдан тиімділікке әкеледі.

Кілт сөздер: мейірбике дәрігердің бірінші көмекшісі ретінде, атқаратын рөлі, білім беру, тәжірибе, кардиохирургия.

АННОТАЦИЯ

Сердечно - сосудистые заболевания являются основной причиной смерти во всем мире. Ежегодно число пациентов, ожидающих операцию на открытом сердце, увеличивается. Социально-экономическое развитие стран зависит от состояния здоровья населения, поскольку сердечно - сосудистые патологии в основном затрагивают наиболее