



## NURSE EDUCATION LEVEL AND HOSPITAL READMISSIONS; REVIEW

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### Abstract:

Hospital readmissions are a major concern worldwide, with varying rates observed in different healthcare systems. In Poland, the readmission rate within 30 days for patients revisiting the same hospital and ward is notably high at 19.2%. One of the key factors contributing to readmissions is the lack of continuity of care between inpatient and outpatient settings, leading to patients not following discharge recommendations due to insufficient communication between care providers. Preventing readmissions has become a focal point in healthcare policy, with some countries imposing financial penalties on hospitals to encourage lower readmission rates. This study aims to explore the correlation between nurse education levels and hospital readmission rates. It seeks to evaluate how nurse education influences patient outcomes and care quality, identify potential differences in readmission rates based on nurse education, examine the role of nurse education in reducing healthcare costs related to readmissions, and propose strategies to enhance nurse education for improved patient care. In conclusion, nurse education significantly impacts reducing hospital readmission rates and enhancing patient outcomes. Nurses with higher education levels are better prepared to deliver quality care, engage in evidence-based practices, foster effective communication and collaboration within healthcare teams, and empower patients through education and self-management skills. The relationship between nurse education levels and readmission rates underscores the importance of investing in nurse education to elevate overall patient care quality. Strategies like continuous professional development, promoting academic excellence, and collaborating with academic institutions can help raise nurse education levels and bring about positive changes in healthcare delivery, benefiting both nurses and patients. Prioritizing nurse education can lead to enhanced healthcare outcomes and reduced readmission rates.

**Keywords:** education level, nurse staffing, readmissions, missed care.

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**Introduction:**

Hospital readmissions, a significant concern impacting 20% of hospitalized patients, have posed a substantial challenge for healthcare systems globally [1]. In Poland, the readmission rate within 30 days for patients returning to the same hospital and ward type is reported to be 19.2%, with an overall 90-day readmission ratio exceeding 30% [1]. These unplanned returns to the hospital are often attributed to a lack of continuity in care between in-hospital and post-hospital settings, presenting a considerable risk to patient well-being [2].

The period following discharge from the hospital to home is particularly critical, as patients may encounter changes in medication, treatment plans, and limited guidance, potentially leading to readmission [3]. High readmission rates may indicate deficiencies in in-hospital care quality or insufficient post-discharge coordination [3]. Efforts to address readmissions have become a central focus of healthcare policies globally, with initiatives such as those implemented by the USA, including financial penalties imposed by Medicare, aimed at reducing readmission rates [4].

Research conducted by Feigenbaum et al. suggests that nearly half of 30-day readmissions and 11% of total readmissions could be preventable, indicating the potential for substantial cost savings and improved patient outcomes [5, 6]. Hospitals are actively implementing strategies to reduce readmissions, prioritizing enhanced care coordination, effective communication with patients and caregivers, and patient education [7]. The role of advanced nursing practices and education has garnered attention in recent literature, with studies demonstrating that clinical nurse specialist (CNS) care can positively impact caregiver well-being, reduce readmission rates, and lower healthcare costs for elderly patients [8, 9].

Furthermore, studies have emphasized the link between higher nurse education levels and improved patient outcomes, highlighting the need for longitudinal research to establish optimal thresholds for minimizing risks and enhancing care quality [10]. These findings underscore the importance of collaborative efforts among healthcare providers, policymakers, and educators to address the multifaceted challenges associated with hospital readmissions and enhance the overall quality of care delivery.

**Objectives:**

The main objectives of this review are:

1. To determine if there is a correlation between nurse education level and hospital readmission rates.
2. To assess the impact of nurse education level on patient outcomes and quality of care.
3. To identify any potential disparities in readmission rates based on nurse education level.
4. To investigate the role of nurse education level in reducing healthcare costs related to hospital readmissions.
5. To identify the strategies for increasing nurse education levels to improve patient care.

**Relationship between Nurse Education and Hospital Readmissions:**

The relationship between the educational qualifications of nurses and the frequency of hospital readmissions is a multifaceted and critical aspect of healthcare provision that has garnered increasing attention in recent years. Nurses play a pivotal role in patient care, serving as the primary point of contact for individuals seeking medical assistance in a hospital setting [11]. As a result, the quality of education and training that nurses receive significantly impacts patient outcomes, including the likelihood of hospital readmissions. Numerous studies have shown that nurses with higher educational achievements, such as those with bachelor's or master's degrees, are better equipped to provide high-quality care that can help reduce the risk of readmission. These nurses possess a deeper understanding of complex medical conditions, advanced clinical skills, and critical thinking abilities that enable them to make well-informed decisions and interventions [12]. Moreover, nurses with advanced education are more likely to engage in evidence-based practice and utilize the latest research findings to inform their care decisions, leading to enhanced patient outcomes and reduced readmission rates. Additionally, nurse education plays a crucial role in fostering effective communication and collaboration among healthcare team members, which are essential components in preventing hospital readmissions [13].

Nurses with higher educational backgrounds are more prepared to communicate effectively with physicians, specialists, pharmacists, and other healthcare professionals involved in a patient's care, ensuring that all team members are on the same page regarding treatment plans, medication management, and follow-up care instructions. This interdisciplinary teamwork is vital for addressing the complex needs of patients with chronic conditions or multiple comorbidities, who are at a

heightened risk of readmission due to the fragmented nature of healthcare delivery. By cultivating strong communication and teamwork skills, nurse education helps streamline care coordination efforts and reduce the likelihood of gaps or errors in the transition of care, which can contribute to readmissions [14]. Furthermore, nurse education plays a pivotal role in promoting patient education and self-management skills, which are crucial factors in preventing hospital readmissions.

Nurses with advanced education are better equipped to educate patients about their health conditions, medications, lifestyle modifications, and self-care strategies, empowering them to actively engage in managing their health and preventing complications that could result in readmission [15]. By providing patients with the knowledge and skills needed to make informed decisions about their health, nurses can help decrease preventable readmissions associated with medication errors, missed follow-up appointments, non-adherence to treatment plans, or inadequate symptom management. Additionally, nurses with higher educational backgrounds are more adept at assessing patients' health literacy levels, cultural beliefs, and socioeconomic circumstances that may impact their ability to understand and adhere to healthcare recommendations, allowing them to tailor their education and support efforts to meet each patient's individual needs and preferences [16].

#### **Importance of Nurse Education in Reducing Readmission Rates:**

Nurse education plays a crucial role in the healthcare field, significantly impacting the reduction of readmission rates in medical facilities. Highly educated nurses are essential in frontline patient care, contributing to favorable health outcomes for individuals by utilizing their comprehensive education and training to evaluate, monitor, and oversee patients' health conditions effectively. This equips them to minimize the occurrence of readmissions [17].

One way in which nurse education helps lower readmission rates is through the promotion of evidence-based practice. Educated nurses are well-informed about the latest research findings and optimal healthcare practices, enabling them to deliver top-quality care based on scientific evidence. This results in improved patient outcomes and a reduced risk of complications that could lead to readmission. Additionally, educated nurses can identify potential issues early on and intervene promptly to prevent readmission [18].

Furthermore, nurse education emphasizes the importance of effective communication and collaboration among healthcare teams. Educated nurses understand the value of interdisciplinary teamwork in providing holistic care to patients. By working closely with other healthcare professionals, such as physicians, pharmacists, and social workers, nurses ensure that all aspects of a patient's care are coordinated and optimized, reducing the likelihood of care gaps that could result in readmission [19].

In addition to clinical skills, nurse education focuses on developing critical thinking and problem-solving abilities in nurses. These skills are essential in the fast-paced and unpredictable healthcare environment, where nurses must make quick decisions and adapt to changing circumstances. Educated nurses are better equipped to assess complex situations, prioritize care effectively, and implement appropriate interventions to meet patient needs, ultimately leading to a decreased risk of readmission [20].

Moreover, nurse education advocates for patient education and self-management. Educated nurses can educate patients about their conditions, medications, and treatment plans, empowering them to take an active role in their own care. By promoting patient understanding and involvement, nurses help individuals better manage their health outside the hospital setting, thereby reducing the likelihood of complications that may require readmission [21].

#### **Factors Influencing Nurse Education Level and Readmission Rates:**

In the realm of healthcare, the correlation between the educational level of nurses and the rates of patient readmissions is a critical factor with profound implications for patient well-being and the overall quality of healthcare services. The educational background of nurses plays a pivotal role in ensuring that they possess the necessary knowledge, skills, and competencies to provide exceptional care to patients. Studies have shown that higher levels of education, such as obtaining a Bachelor of Science in Nursing (BSN) or a Master of Science in Nursing (MSN), are associated with improved patient outcomes, lower mortality rates, and reduced instances of hospital readmissions [22]. Nurses with advanced degrees are better equipped to engage in critical thinking, make evidence-based decisions, and communicate effectively with patients, their families, and other healthcare professionals. Additionally, advanced

education enables nurses to stay updated on the latest advancements in healthcare technologies, treatments, and patient care practices, which are essential for delivering safe and efficient care.

Furthermore, the educational achievements of nurses can have a significant impact on their job satisfaction, professional advancement, and opportunities for career growth. Nurses who pursue further education often report higher levels of job satisfaction, feeling more confident in their ability to provide high-quality care and positively influence patient outcomes. Advanced education can open up diverse career paths for nurses, including positions in nurse leadership, nurse education, or specialized fields of advanced practice nursing. These avenues not only benefit individual nurses but also contribute to the enhancement of healthcare delivery and the quality of patient care [23].

In addition to the educational level of nurses, the rates of readmission in healthcare facilities are influenced by a variety of factors, such as the quality of care provided, patient education and engagement, care coordination, and post-discharge support services. High rates of readmission can have negative repercussions for both patients and healthcare institutions, leading to increased healthcare costs, decreased patient satisfaction, and potential penalties from regulatory bodies. Nurses play a crucial role in reducing readmission rates by ensuring that patients receive comprehensive education about their conditions, medications, and self-care practices during their hospital stay [24].

Moreover, nurses are instrumental in facilitating transitions in care and collaborating with interdisciplinary healthcare teams to develop personalized care plans that address the physical, emotional, and social needs of patients. By equipping patients with the necessary tools and resources to manage their health after discharge, nurses can help prevent complications, reduce the likelihood of readmission, and promote better long-term health outcomes. Effective communication among nurses, patients, their families, and other healthcare providers is essential for ensuring seamless transitions in care and continuity of care, which are crucial for preventing unnecessary hospital readmissions [25].

In conclusion, the educational level of nurses and the rates of patient readmissions are interconnected factors that significantly influence the quality of patient care and healthcare outcomes. Investing in the education and professional development of

nurses not only benefits individual healthcare professionals but also enhances the overall quality of care provided to patients. By addressing the multifaceted factors that impact readmission rates, healthcare organizations can improve patient outcomes, reduce costs, and enhance the overall patient experience. Nurses play a central role in achieving these goals through their expertise, skills, and dedication to providing patient-centered care that promotes health, well-being, and recovery.

### **Strategies for Increasing Nurse Education Levels to Improve Patient Care:**

Nurse education plays a crucial role in determining the quality of patient care delivery within the healthcare system. As healthcare systems evolve and become more intricate, the importance of well-educated and highly skilled nurses becomes increasingly apparent. Strategies aimed at enhancing the educational levels of nurses have the potential to improve patient outcomes, enhance safety measures, and elevate the overall quality of healthcare services [26].

One key approach involves promoting continuous professional development among nurses through ongoing education and training initiatives. These programs are designed to keep nurses abreast of the latest advancements in healthcare practices, technologies, and evidence-based interventions, enabling them to provide more efficient and effective care to patients.

Encouraging nursing students to achieve higher levels of academic attainment is another effective strategy for elevating nurse education levels. This can be achieved by incentivizing nurses to pursue advanced degrees, such as Master's or Doctoral programs. Advanced degrees not only deepen nurses' understanding of complex healthcare concepts but also equip them with critical thinking and leadership skills crucial for driving positive changes within healthcare organizations. Additionally, fostering a culture of continuous learning within healthcare institutions can instill a sense of professional development and growth among nurses, motivating them to actively seek educational opportunities that enhance their clinical practice [27].

Collaborating with academic institutions is another vital strategy for enhancing nurse education levels. By establishing partnerships with universities and colleges, healthcare organizations can create pathways for nurses to advance their education while remaining engaged in clinical practice. This may involve providing tuition reimbursement



programs, flexible scheduling options, and on-site educational resources to support nurses in their academic pursuits. Furthermore, fostering strong connections between academia and clinical practice can facilitate the integration of cutting-edge research findings into nursing education curricula, ensuring that nurses are equipped with the most up-to-date knowledge and skills needed to deliver excellent patient care [28].

In addition to formal education programs, mentorship and preceptorship initiatives can significantly contribute to enhancing nurse education levels. Pairing novice nurses with experienced mentors can offer invaluable guidance, support, and practical knowledge that complement formal education experiences. Mentorship programs help new nurses navigate the complexities of clinical practice, develop critical thinking skills, and build confidence in their ability to deliver safe and effective patient care. By promoting a culture of mentorship within healthcare organizations, nurses can benefit from ongoing learning opportunities that enhance their professional development and lead to improved patient outcomes [29].

Furthermore, harnessing technology and innovation in nurse education can serve as a powerful strategy for increasing education levels and improving patient care. Online learning platforms, simulation technologies, virtual reality tools, and other digital resources provide nurses with interactive and engaging educational experiences that refine their clinical skills and decision-making abilities. By integrating these technological advancements into nurse education programs, healthcare organizations can create dynamic learning environments that cater to diverse learning styles and preferences, ultimately producing more competent and confident nurses who are better equipped to address the complex needs of patients in today's healthcare landscape [30].

### Conclusion:

In summary, the level of education attained by nurses has a significant impact on reducing the rate of hospital readmissions and improving the outcomes of patients. Nurses who have obtained higher education, such as a bachelor's or master's degree, are better equipped to deliver high-quality care, promote evidence-based practices, improve communication and collaboration within healthcare teams, and empower patients through education and self-management skills. The relationship between nurse education level and readmission

rates underscores the importance of investing in nurse education to enhance the overall quality of patient care. Strategies to increase nurse education levels include promoting ongoing professional development, encouraging academic achievement, and fostering partnerships with academic institutions. By prioritizing nurse education, healthcare organizations can drive positive changes that benefit both nurses and patients, ultimately leading to improved healthcare outcomes and reduced readmission rates.

### References:

1. Agency for Healthcare Research and Quality Readmissions and Adverse Events After Discharge. 7 September 2019. [(accessed on 28 January 2022)]; Available online: <https://psnet.ahrq.gov/primer/readmissions-and-adverse-events-after-discharge#>
2. Hasan M. Readmission of patients to hospital: Still ill defined and poorly understood. *Int. J. Qual. Health Care.* 2001;13:177–179. doi: 10.1093/intqhc/13.3.177. [PubMed] [CrossRef] [Google Scholar]
3. A Map of Healthcare Needs for Poland—Inpatient Healthcare. [(accessed on 28 January 2022)];2018 Available online: [https://mpz.mz.gov.pl/wp-content/uploads/2019/09/2018\\_MHN\\_Poland\\_Inpatient\\_healthcare.pdf](https://mpz.mz.gov.pl/wp-content/uploads/2019/09/2018_MHN_Poland_Inpatient_healthcare.pdf)
4. Agency for Healthcare Research and Quality CMJ Standardy Akredytacyjnej. [(accessed on 28 January 2022)]. Available online: <https://www.cmj.org.pl/dodatki.php?plik=b40204daa95caf4c6c16ee038279dee4>
5. Feigenbaum P., Neuwirth E., Trowbridge L. Factors contributing to all-cause 30-day readmissions: A structured case series across 18 hospitals. *Med. Care.* 2012;50:599–605. doi: 10.1097/MLR.0b013e318249ce72. [PubMed] [CrossRef] [Google Scholar]
6. Załuska R., Milewska A., Moutzoglou A., Grabowski M., Drygas W. Long-Term Outpatient Care and Rehospitalizations in Patients after Cardiac Electrotherapy Device Implantation. *Medicina.* 2022;58:151. doi: 10.3390/medicina58020151. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
7. Jack B.W., Chetty V.K., Anthony D., Greenwald J.L., Sanchez G.M., Johnson A.E., Forsythe S.R., O'Donnell J.K., Paasche-Orlow M.K., Manasseh C., et al. A Reengineered Hospital Discharge Program to Decrease Rehospitalization: A randomized trial. *Ann. Intern. Med.* 2009;150:178–187. doi: 10.7326/0003-4819-150-3-200902030-00007.

- [PMC free article] [PubMed] [CrossRef] [Google Scholar]
8. Rau J. 10 Years of Hospital Readmissions Penalties. 2021. [(accessed on 28 January 2022)]. Available online: <https://www.kff.org/health-reform/slide/10-years-of-hospital-readmissions-penalties/>
  9. Upadhyay S., Stephenson A., Smith D.G. Readmission Rates and Their Impact on Hospital Financial Performance: A Study of Washington Hospitals. *J. Health Care Organ. Provis. Financ.* 2019;56 doi: 10.1177/0046958019860386. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
  10. Yakusheva O., Wholey D., Frick K. What can we learn from the existing evidence of the business case for investments in nursing care: Importance of content, context, and policy environment. *Med. Care.* 2013;51:S47–S52. doi: 10.1097/MLR.0b013e3182849fb4. [PubMed] [CrossRef] [Google Scholar]
  11. Roy C.L., Poon E., Karson A.S., Ladak-Merchant Z., Johnson R.E., Maviglia S.M., Gandhi T.K. Patient Safety Concerns Arising from Test Results That Return after Hospital Discharge. *Ann. Intern. Med.* 2005;143:121–128. doi: 10.7326/0003-4819-143-2-200507190-00011. [PubMed] [CrossRef] [Google Scholar]
  12. Forster A.J., Murff H.J., Peterson J.F., Gandhi T.K., Bates D.W. The Incidence and Severity of Adverse Events Affecting Patients after Discharge from the Hospital. *Ann. Intern. Med.* 2003;138:161–167. doi: 10.7326/0003-4819-138-3-200302040-00007. [PubMed] [CrossRef] [Google Scholar]
  13. Moore C., McGinn T., Halm E. Tying up loose ends: Discharging patients with unresolved medical issues. *Int. Med.* 2007;167:1305–1311. doi: 10.1001/archinte.167.12.1305. [PubMed] [CrossRef] [Google Scholar]
  14. Were M.C., Li X., Kesterson J., Cadwallader J., Asirwa C., Khan B., Rosenman M.B. Adequacy of Hospital Discharge Summaries in Documenting Tests with Pending Results and Outpatient Follow-up Providers. *J. Gen. Intern. Med.* 2009;24:1002–1006. doi: 10.1007/s11606-009-1057-y. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
  15. Medicare's Hospital Readmission Reduction Program FAQ, 2021, American College of Emergency Physicians. [(accessed on 28 January 2022)]. Available online: <http://www.acep.org/Physician-Resources/Practice-Resources/Administration/Financial-Issues/-/Reimbursement/Medicare-s-Hospital-Readmission-Reduction-Program-FAQ/>
  16. Ashton C.M., Kuykendall D.H., Johnson M.L., Wray N.P., Wu L. The Association between the Quality of Inpatient Care and Early Readmission. *Ann. Intern. Med.* 1995;122:415–421. doi: 10.7326/0003-4819-122-6-199503150-00003. [PubMed] [CrossRef] [Google Scholar]
  17. Aiken L.H. Baccalaureate Nurses and Hospital Outcomes: More evidence. *Med. Care.* 2014;52:861–863. doi: 10.1097/MLR.0000000000000222. [PubMed] [CrossRef] [Google Scholar]
  18. Donald F., Kilpatrick K., Reid K., Carter N., Bryant-Lukosius D., Martin-Misener R., Kaasalainen S., Harbman P., Marshall D., DiCenso A. Hospital to community transitional care by nurse practitioners: A systematic review of cost-effectiveness. *Int. J. Nurs. Stud.* 2015;52:436–451. doi: 10.1016/j.ijnurstu.2014.07.011. [PubMed] [CrossRef] [Google Scholar]
  19. Kilpatrick K., Reid K., Carter N., Donald F., Bryant-Lukosius D., Martin-Misener R., Kaasalainen S., Harbman P., Marshall D., Charbonneau-Smith R., et al. A Systematic Review of the Cost-Effectiveness of Clinical Nurse Specialists and Nurse Practitioners in Inpatient Roles. *Nurs. Leadersh.* 2015;28:56–76. [PubMed] [Google Scholar]
  20. Wieczorek-Wojcik B., Gaworska-Krzemińska A., Owczarek A., Kilańska D. In-hospital mortality as the side effect of missed care. *J. Nurs. Manag.* 2020;28:2240–2246. doi: 10.1111/jonm.12965. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
  21. Butler M., Schultz T.J., Halligan P., Sheridan A., Kinsman L., Rotter T., Beaumier J., Kelly R.G., Drennan J. Hospital nurse-staffing models and patient- and staff-related outcomes. *Cochrane Database Syst. Rev.* 2019;4:CD007019. doi: 10.1002/14651858.CD007019.pub3. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
  22. Blum M., Øien H., Carmichael H.L., Heidenreich P., Owens D.K., Goldhaber-Fiebert J.D. Cost-Effectiveness of Transitional Care Services After Hospitalization With Heart Failure. *Ann. Intern. Med.* 2020;172:248. doi: 10.7326/M19-1980. [PubMed] [CrossRef] [Google Scholar]
  23. Wieczorek-Wójcik B., Gaworska-Krzemińska A., Szykiewicz P., Wójcik M., Orzechowska M., Kilańska D. Cost-Effectiveness Analysis of Improving Nurses' Education Level in the Context of In-Hospital Mortality. *Int. J.*

- Environ. Res. Public Health. 2022;19:996. doi: 10.3390/ijerph19020996. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
24. Bryant-Lukosius D., Carter N., Reid K., Donald F., Martin-Misener R., Kilpatrick K., Harbman P., Kaasalainen S., Marshall D., Charbonneau-Smith R., et al. The clinical effectiveness and cost-effectiveness of clinical nurse specialist-led hospital to home transitional care: A systematic review. *J. Eval. Clin. Pract.* 2015;21:763–781. doi: 10.1111/jep.12401. [PubMed] [CrossRef] [Google Scholar]
25. Audet L.-A., Bourgault P., Rochefort C.M. Associations between nurse education and experience and the risk of mortality and adverse events in acute care hospitals: A systematic review of observational studies. *Int. J. Nurs. Stud.* 2018;80:128–146. doi: 10.1016/j.ijnurstu.2018.01.007. [PubMed] [CrossRef] [Google Scholar]
26. Lasater K.B., Sloane D.M., McHugh M.D., Porat-Dahlerbruch J., Aiken L.H. Changes in proportion of bachelor's nurses associated with improvements in patient outcomes. *Res. Nurs. Health.* 2021;44:787–795. doi: 10.1002/nur.22163. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
27. Institute of Medicine . *The Future of Nursing: Leading Change, Advancing Health*. National Academies Press; Washington, DC, USA: 2011. [PubMed] [Google Scholar]
28. Yakusheva O., Lindrooth R., Weiss M. Economic Evaluation of the 80% Baccalaureate Nurse Workforce Recommendation: A Patient-level Analysis. *Med. Care.* 2014;52:864–869. doi: 10.1097/MLR.000000000000189. [PubMed] [CrossRef] [Google Scholar]
29. O'Brien D., Knowlton M., Whichello R. Attention Health Care Leaders: Literature Review Deems Baccalaureate Nurses Improve Patient Outcomes. *Nurs. Educ. Perspect.* 2018;39:E2–E6. doi: 10.1097/01.NEP.0000000000000303. [PubMed] [CrossRef] [Google Scholar]
30. Nursing Education Standard in the Poland. Rozp. MNiSZWz Dnia 26 Lipca 2019 r. w Sprawie Standardów Kształcenia Przygotowującego Do Wykonywania Zawodu Lekarza, Lekarza Dentysty, Farmaceuty, Pielęgniarki, Położnej, Diagnosty Laboratoryjnego, Fizjoterapeuty I Ratownika Medycznego. [(accessed on 28 January 2022)]; Available online: <https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190001573>