

UDC 615.1:316.46]:378.046-021.66
DOI <https://doi.org/10.32782/eddiscourses/2024-4-1>

ANALYSIS OF LEADERSHIP COMPETENCIES AND DEVELOPMENT OPPORTUNITIES FOR PHARMACY STUDENTS AND PROFESSIONALS

Aliekperova Nataliia Valeriivna,

PhD, Associate Professor, Associate Professor at the Department of Organisation and Economics of Pharmacy, O.O. Bogomolets National Medical University, Lecturer, School of Leadership and Management, Arden University, London
ORCID: 0000-0001-9880-9542

Developing leadership competencies through training and continuous professional development of pharmacists is a learning outcome embedded in many countries' national educational and professional standards. This study aimed to examine leadership competencies according to the standards set by the International Pharmaceutical Federation (FIP) and explore leadership development opportunities for pharmacy students and professionals worldwide. For this purpose, a systematic literature review was conducted, analysing official FIP reports, academic publications, educational programmes, data from national healthcare agencies, and other relevant sources.

In 2016, FIP established thirteen workforce development goals (DGs), including DG 6, “*leadership development*”. In 2022, these DGs were expanded, detailing the mechanism for implementing DG 6 at three levels: the workforce element (integration of leadership within professional competencies), the practice element (leadership development to enhance professional autonomy), and the science element (integration of leadership into scientific endeavours). According to the FIP report (2022), “*leadership development*” is a priority in regions such as the Western Pacific (Japan, Singapore), the Eastern Mediterranean (Egypt), and Africa (South Africa). Concurrently, countries such as the United Kingdom, Canada, Australia, and Singapore offer the greatest variety of leadership development options.

In line with DG 6, young professionals in the pharmaceutical industry are encouraged to develop leadership competencies such as inspiring and empowering others, effective communication, conflict resolution, strategic thinking, proactivity, and other transferable skills. Following the *Global Advanced Development Framework (GADP)*, attention should be directed towards the ongoing professional development of pharmacy practitioners throughout their careers rather than solely in the early stages of career progression. According to the GADP, leadership competencies are grouped into three clusters: for pharmacy practitioners at the initial stages of advancement, for leaders in pharmacy at the local and regional levels, and for leaders in pharmacy at the national and international levels.

Opportunities for developing leadership competencies for pharmaceutical professionals are available in countries such as the United States, the United Kingdom, Australia, Canada, Singapore, Malaysia, Indonesia, Japan, the Philippines, and South Africa. In Ukraine, the Bogomolets National Medical University has developed an elective course, *Leadership in Pharmacy*, aligned with international standards.

Key words: leadership, leadership development, leadership competencies, International Pharmaceutical Federation (FIP), education, pharmacy.

Алекперова Наталія. Аналіз лідерських компетенцій та можливостей розвитку для студентів та фахівців фармації

Розвиток лідерських компетентностей у процесі підготовки та безперервного професійного розвитку фармацевтів є результатами навчання згідно національних освітніх та професійних стандартах у багатьох країнах. Метою роботи стало вивчення лідерських компетентностей відповідно до стандартів, розроблених Міжнародною фармацевтичною федерацією (МФФ), а також можливості розвитку лідерства для студентів та фахівців фармації. Для цього було проведено систематичний огляд літератури офіційних звітів МФФ, академічних публікацій, освітніх програм, даних національних агенцій у сфері охорони здоров'я, etc.

МФФ у 2016 році було сформульовано тринадцять цілей розвитку робочої сили, однією з яких стало така ціль як «лідерський розвиток». У 2022 році ці цілі були доповнені, також було описано механізм їх реалізації на трьох рівнях: елемент робочої сили (інтеграція лідерства з професійними компетентностями); практичний елемент (розвиток лідерства на формування професійної автономії); науковий елемент (інтеграція лідерства у науку). Відповідно до звіту МФФ (2022) «лідерський розвиток» є пріоритетним для таких регіонів як західна частина Тихого океану (Японія, Сінгапур), східне Середземномор'я (Єгипет) та Африка (Південна Африка). У той же час, найбільша кількість альтернатив розвитку лідерства характерна для таких країн як Великобританія, Канада, Австралія, Сінгапур. Відповідно до цілей розвитку, молодим фахівцям у фармацевтичній галузі рекомендується розвивати такі лідерські компетентності як натхнення та розширення можливостей інших, спілкування, вирішення конфліктів, стратегічне мислення, проактивність та інші навички.

Відповідно до *Global Advanced Development Framework (GADP)* слід звертати увагу на безперервний професійний розвиток фармацевтичних працівників протягом усієї кар'єри. Відповідно до GADP лідерські компетентності поділені на три кластери: для фармацевтичних працівників на початкових етапах професійного розвитку,

для лідера в фармації на локальному та регіональному рівнях, а також лідерів у фармації на національному та міжнародному рівнях.

Можливості для розвитку лідерських компетентностей для професіоналів у галузі фармації доступні в таких країнах як США, Великобританія, Австралія, Канада, Сінгапур, Малайзія, Індонезія, Японія, Філіппіни, Південна Африка та інше. В Україні у Національному медичному університеті імені О.О. Богомольця розроблено елективний курс Лідерство у фармації відповідно до міжнародних стандартів.

Ключові слова: лідерство, лідерський розвиток, лідерські компетентності, Міжнародна фармацевтична федерація (МФФ), освіта, фармація.

Introduction. Leadership in the pharmaceutical field has garnered significant attention, particularly within national educational and professional standards for pharmacists in numerous countries. In the United States, leadership competencies for pharmacists are outlined in the *Educational Outcomes 2013* (CAPE, 2013) [7] as well as in the *Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree* ("Standards-2016"), developed by the Accreditation Council for Pharmacy Education (ACPE, 2015) [4]. These competencies aim to foster an understanding of leadership principles, distinguishing leadership from management, and cultivating the ability of leaders to interact effectively with their teams and engage in productive collaboration.

In the United Kingdom, the importance of developing leadership competencies is addressed in the *Standards for Pharmacy Professionals*, established by the General Pharmaceutical Council (GPhC, 2017) [16]. Additionally, the Royal Pharmaceutical Society (RPS), as a professional membership body for pharmacists, has published the *Professional Standards for Public Health Practice for Pharmacy* (RPS, 2014) [23] and the *Leadership Development Framework* (RPS, 2015) [24]. These documents underscore the necessity of fostering leadership skills among pharmacists, promoting effective interaction between pharmacy leaders, teams, and practitioners, as well as collaboration with other healthcare professionals.

In Australia, pharmacists' leadership competencies are detailed in the *National Competency Standards Framework for Pharmacists* (Pharmaceutical Society of Australia, 2016) [20]. According to this framework, pharmacists are expected to demonstrate self-leadership and leadership within a practice, including self-motivation, an innovative mindset, and the ability to inspire a shared vision and common purpose. Pharmacists are also encouraged to influence, motivate others, and facilitate change.

Given the integration of leadership development in both undergraduate and postgraduate pharmaceutical education systems [3], further investigation is warranted. Such research should examine leadership competencies at a supranational level as well as the availability of development opportunities across various countries.

The research aimed to analyse leadership issues as presented in official documents of the International Pharmaceutical Federation (FIP) and to explore leadership development opportunities for pharmacy students and professionals globally.

Research methodology. This study employed a systematic literature review of secondary sources, specifically analysing official FIP documents, academic publications, educational programmes for pharmacist training within undergraduate and postgraduate education systems, and data from national healthcare agencies, among other sources.

Research results. The World Health Organization (WHO) has developed the concept of the "seven-star pharmacist," in which one of the roles of a pharmacist is as a leader [25]. This concept was subsequently adapted by the FIP, one of the most authoritative pharmaceutical organisations worldwide. This global body in pharmacy, pharmaceutical sciences, and education unites over 150 national organisations and academic institutions and encompasses more than four million pharmacists, scientists, and pharmacy educators worldwide (FIP, 2021) [14]. At the FIP Global Conference on Pharmacy and Pharmaceutical Sciences Education, held in November 2016 in Nanjing, China, a vision for pharmaceutical education and workforce development was established, highlighting the importance of building "adaptable pharmaceutical workforces" and fostering "collaboration with other stakeholders in health care" through "transformative and continuous education" to advance health care (see Fig. 1) (FIP, 2016a) [9].

To implement this vision, FIP established thirteen workforce development goals (DGs) in 2016, one of which, DG 6, "leadership development", focuses on building leadership skills at all stages of career progression, including within education and research (FIP, 2016b) [10]. Additionally, the workforce development goal of "competency development" underscores the importance of a "clear policy that links leadership development (from early years) with competence attainment for the advancement of practice activities." In 2022, the DGs were expanded to twenty-one, with a mechanism for implementation outlined across three levels (see Fig. 2) (FIP, 2022)

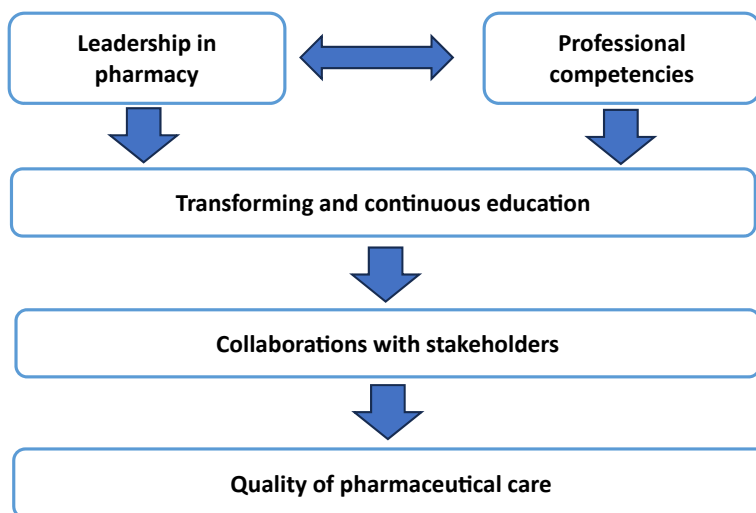


Fig. 1. The role of leadership in shaping the vision of pharmaceutical education and workforce development FIP

[15]. The FIP report (2022) also provides an in-depth analysis of DGs at global, regional, and national levels. Consequently, the “*leadership development*” goal is a priority for WHO regions and countries such as the Western Pacific (Japan, Singapore), Eastern Mediterranean (Egypt), and Africa (South Africa).

Notably, the prioritisation of DG 6, “*leadership development*”, is influenced less by the presence of various strategies and programmes in pharmaceutical leadership and more by the feasibility of integrating these goals into national educational programmes for pharmacists.

Bates et al. (2023) [5] noted that in 50% of the countries studied, various national alternatives for

leadership development aligned with FIP DG 6, “*leadership development*,” are in place. Primarily, these are high-income countries, including the United Kingdom, Canada, Australia, and Singapore. However, attention is also drawn to the presence of programmes for developing leadership competencies according to the FIP framework in countries such as Malaysia, Ghana, and South Africa. The study further reveals that in all the low-income countries examined (Uganda, Sierra Leone, and Kenya), as well as in smaller states such as Namibia, Dominica, Fiji, and St Lucia, no current strategies or programmes for implementing FIP DG 6, “*leadership development*,” were in place.



Fig. 2. The mechanism for implementing DG “*leadership development*” at three levels in accordance with the FIP report (2022) [15]

FIP also significantly emphasises developing leadership competencies among young pharmacists and early-career scientists. The document *Career Development Toolkit for Early Career Pharmacists and Pharmaceutical Scientists* examines FIP DG 6, “leadership development,” within the context of career development for young professionals in the pharmaceutical field (FIP, 2020a) [12]. Given that leadership competencies for early-career pharmaceutical professionals are primarily focused on personal development and self-reflection, the emphasis is placed on these aspects of leadership. In line with FIP DG 6, young professionals in the pharmaceutical industry are encouraged to cultivate the following leadership competencies:

- Be proactive, not reactive.
- Practice discipline.
- Expand your capacity.
- Look ahead.
- Inspire and empower others.
- Communicate.
- Resolve conflicts.
- Strategic thinking and execution.

The remaining transferable skills – such as communication, negotiation, analytical, interpersonal, and conflict resolution skills, as well as resilience and personal branding – alongside mentorship, training, and networking for success, as described in the *Career Development Toolkit for Early Career Pharmacists and Pharmaceutical Scientists*, may also be considered from a leadership perspective.

For the continuous professional development of pharmacy practitioners, the *Global Advanced Development Framework (GADF) Version 1* (FIP, 2020b) [13] serves as a vital resource. It extends beyond the early career stages to support practitioners throughout their professional lives.

The GADF consists of six clusters of developmental competencies, including leadership, each articulated at three levels:

- **Advanced Stage 1** – recommended for pharmacy practitioners at the initial stages of professional advancement.
- **Advanced Stage 2** – recommended for experts and leaders in pharmacy who address complex management issues at both local and regional levels.
- **Advanced Stage 3** – recommended for leaders in pharmacy at the national and international levels.

The description of the cluster dedicated to leadership is provided in Fig. 3.

It is noteworthy that the cluster “*working with others*”, also presented in the FIP GADF, significantly complements leadership competencies by fostering communication, empowerment, influence, teamwork, and related skills. FIP President Dominique Jordan highlights the importance of developing leadership qualities through both personal examples and examples set by one’s team (FIP, 2019) [11]. Jordan emphasised that a leader should assume full responsibility for decision-making, prepare for various challenges, develop the organisation’s strategic direction, motivate and inspire the team, and create an environment that encourages leadership development among FIP members (FIP, 2019) [11].

Opportunities for developing leadership competencies for pharmaceutical professionals are available globally, both at the national level and within various educational institutions, in countries including the United States, United Kingdom, Australia, Canada, Singapore, Malaysia, Indonesia, Japan, the Philippines, and South Africa [5, 19].

According to Feller et al. (2016) [8], approximately 70% of schools of pharmacy in the United States offer a range of leadership development opportunities

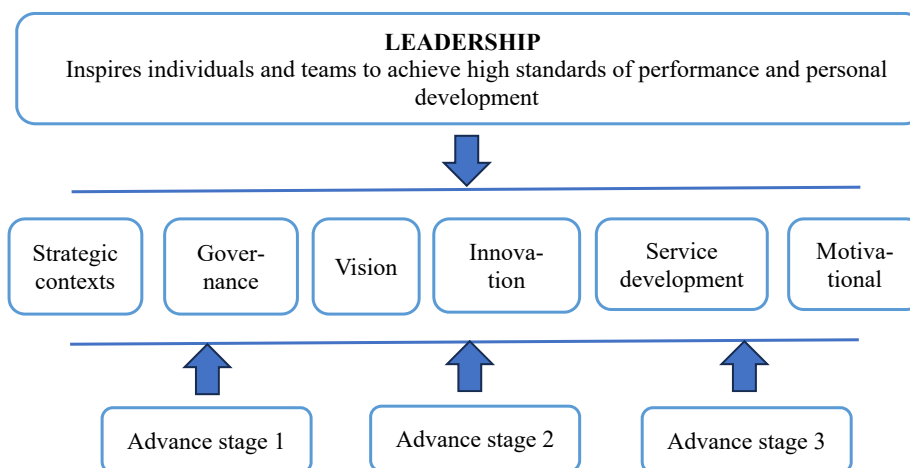


Fig. 3. Cluster and competencies dedicated to leadership in FIP GADF [13]

for students. These opportunities, which include courses, projects and programmes, and event series, are largely elective, reflecting students' voluntary commitment to professional growth.

The Centre for Pharmacy Postgraduate Education (CPPE) in the United Kingdom offers various leadership training programmes for pharmacists and pharmacy technicians. The NHS Leadership Academy (2024) provides a range of initiatives aimed at continuously improving standards in health and care. These leadership development opportunities are designed to build leadership competencies in managers, practitioners, and educators within the pharmaceutical sector [18]. Additionally, NHS Education for Scotland (2024) offers a variety of programmes and training opportunities to enhance leadership skills among pharmacy professionals [17].

In Australia, the University of Sydney (2019) has developed a programme specifically for leaders in pharmacy aimed at offering “*motivated students the opportunity to further develop these graduate attributes*” [25]. The Pharmaceutical Society of Australia (2019) provides a leadership programme for early-career pharmacists designed to inspire others, drive change and innovation, and foster networks of influential pharmacy leaders [20].

It is noteworthy that various universal leadership development opportunities for pharmacists are emerging with increasing frequency across different countries. The AAHCI Student Leadership Initiative (ASLI) in Latin America and the Caribbean provides students with opportunities to enhance their leadership knowledge and skills through participation in programmes aimed at improving the healthcare system (AAMC, 2024) [1]. The Pharmaceutical Society of Singapore (PSS, 2020) [22], a professional organisation representing pharmacists in Singapore, is crucial in promoting leadership among pharmacy professionals. Its mission is to maximise the contribution of pharmacists to the healthcare of Singaporeans. PSS offers continuing education courses and training for pharmacy leaders, organises congresses, and fosters cooperation and professional networking. Additionally, the Pharmaceutical Leadership Development Program (PLDP), launched in South

Africa, aims to develop managerial and leadership competencies among pharmacists and pharmacy managers [6].

In Ukraine, significant attention is given to cultivating leadership competencies among students pursuing pharmaceutical education. An elective course, *Leadership in Pharmacy*, has been developed at Bogomolets National Medical University. This course, informed by both international and national professional standards, comprises three modules: *Personal Leadership*, *Leadership and Collaboration*, and *Leadership and Organisational Change* [2]. Additionally, many online educational platforms, such as Coursera and FutureLearn, offer courses to enhance leadership competencies for healthcare professionals. However, these leadership development opportunities typically require self-motivation and discipline and are generally regarded as components of continuous professional development (CPD) for practising pharmacists.

Conclusions. According to FIP standards, one of the developmental goals for pharmacists is the cultivation of leadership competencies alongside other essential skills, such as professionalism and the ability to collaborate effectively within teams and with other healthcare professionals. Leadership is viewed as an integrative element that enables pharmacy professionals – whether in education, practice, or research – to establish conditions for delivering high-quality pharmaceutical care to patients. Higher education institutions in many countries offer leadership development opportunities for pharmacists through courses, training, and CPD initiatives. Additionally, non-governmental and public organisations, particularly in less developed or developing countries, often provide various leadership development programmes for pharmacists. In Ukraine, an elective course, *Leadership in Pharmacy*, has been established at Bogomolets National Medical University. However, it is important to recognise that developing knowledge and skills related to leadership is insufficient on its own; effective implementation of leadership competencies primarily requires practical application, underscoring the need for hands-on experience in leadership development.

Bibliography:

1. AAMC. *AAHCI Student Leadership Initiative (ASLI)*. Association of American Medical Colleges. 2024. URL: <https://www.aamc.org/career-development/affinity-groups/alliance-and-aahci/aahci-student-leadership-initiative-asli> (дата звернення: 15.11.2017).
2. Aliekperova N. V. The development of elective discipline «Leadership in pharmacy» for training master of pharmacy, industrial pharmacy in Ukraine. *Farmatsevychnyi Zhurnal*. 2020. (6), 46–55. <https://doi.org/10.32352/0367-3057.6.20.05>
3. Aliekperova N. The Research of International and National Educational Standards on Leadership Development for Pharmacy Students. *BIO Web of Conferences*. 2021. 30, 03001 <https://doi.org/10.1051/bioconf/20213003001>

4. ACPE. *Accreditation Standards and Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree*. Accreditation Council for Pharmacy Education. 2015. URL: <https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf> (дата звернення: 30.09.2024).
5. Bates I., Patel D., Chan A.H.Y., Rutter V., Bader L., Meilanti S. and Udoh A. A comparative analysis of pharmaceutical workforce development needs across the commonwealth. *Research in Social and Administrative Pharmacy*. 2023. 19(1), pp.167–179. DOI: 10.1016/j.sapharm.2022.07.010
6. Chevaux T. *Pharmaceutical Leadership Development Program Piloted in South African Provinces*. USAID. 2012. URL: <https://siapsprogram.org/2012/06/11/pharmaceutical-leadership-development-program-piloted-in-south-african-provinces/> (дата звернення: 22.09.2024).
7. CAPE. *Educational Outcomes 2013*. Center for the Advancement of Pharmacy Education. 2013. URL: <https://www.aacp.org/sites/default/files/2017-10/CAPEoutcomes2013%20%281%29.pdf> (дата звернення: 25.09.2024).
8. Feller T. T., Doucette W. R., Witry M. J. Assessing Opportunities for Student Pharmacist Leadership Development at Schools of Pharmacy in the United States. *American journal of pharmaceutical education*. 2016. 80(5), 79. <https://doi.org/10.5688/ajpe80579>
9. FIP. *Global Vision for Education and Workforce*. International Pharmaceutical Federation. 2016a. URL: https://www.fip.org/files/fip/PharmacyEducation/2016_report/2016-11-Education-workforce-global-vision.pdf (дата звернення: 10.10.2024).
10. FIP. *Pharmaceutical Workforce Development Goals*. International Pharmaceutical Federation. 2016b. URL: https://www.fip.org/files/fip/PharmacyEducation/2016_report/2016-11-Education-workforce-development-goals.pdf (дата звернення: 10.10.2024).
11. FIP. *Dominique Jordan: Modernising through trust, pragmatism and action*. International Pharmaceutical Federation. 2019. URL: <https://www.fip.org/Dominique-Jordan-Modernising-through-trust-pragmatism-and-action> (дата звернення: 14.10.2024).
12. FIP. *Career development toolkit for early career pharmacists and pharmaceutical scientists*. FIP Young Pharmacist Group. International Pharmaceutical Federation. 2020a. URL: <https://www.fip.org/file/4879> (дата звернення: 16.10.2024).
13. FIP. *Global Advanced Development Framework (GADF) Version 1*. International Pharmaceutical Federation. 2020b. URL: <https://www.fip.org/file/4795> (дата звернення: 16.10.2024).
14. FIP. *Representing pharmacists, pharmaceutical scientists and pharmaceutical educators*. International Pharmaceutical Federation. 2021. URL: <https://www.fip.org/about> (дата звернення: 20.10.2024).
15. FIP. *The FIP Development Goals report 2021. Setting goals for the decade ahead*. International Pharmaceutical Federation. 2022. URL: <https://www.fip.org/file/5095> (дата звернення: 21.10.2024).
16. GPhC. *Standards and guidance for pharmacy professionals*. General Pharmaceutical Council. 2017. URL: <https://www.pharmacyregulation.org/pharmacists/standards-and-guidance-pharmacy-professionals> (дата звернення: 21.10.2024).
17. NHS Education for Scotland. *Pharmacy leadership*. NHS Education for Scotland. 2024. URL: <https://www.nes.scot.nhs.uk/our-work/pharmacy-leadership/> (дата звернення: 23.10.2024).
18. NHS Leadership Academy. *Programmes to help you grow as a leader*. NHS Leadership Academy. 2024. URL: <https://www.leadershipacademy.nhs.uk/programmes/> (дата звернення: 20.10.2024).
19. Oyenu G., Law M., Parbat M., Tofade T. Implementing an Online Longitudinal Leadership Development Program Using a Leadership-Specific Continuing Professional Development (CPD) Tool. *Pharmacy (Basel, Switzerland)*. 2020. 8(2), 79. doi: 10.3390/pharmacy8020079
20. Pharmaceutical Society of Australia. *National Competency Standards Framework for Pharmacists in Australia*. Pharmaceutical Society of Australia. 2016. URL: <https://www.shpa.org.au/resources/national-competency-framework-for-pharmacist-in-australia-2016> (дата звернення: 01.10.2024).
21. Pharmaceutical Society of Australia. *ignite: Pharmacist Leadership Program*. Pharmaceutical Society of Australia. 2019. URL: https://www.psnz.org.nz/Folder?Action=View%20File&Folder_id=174&File=PSA%205486%20Ignite%20information%20booklet%202019%20v2.pdf (дата звернення: 04.10.2024).
22. PSS. *About us*. Pharmaceutical Society of Singapore 2020. URL: <https://www.pss.org.sg/about-pss> (дата звернення: 20.10.2024).
23. RPS. *Professional Standards for Public Health Practice for Pharmacy*. Royal Pharmaceutical Society. 2014. URL: <https://www.patientlibrary.net/cgi-bin/download/file/824> (дата звернення: 18.09.2024).
24. RPS. *Leadership Development Framework. Developing leadership, wherever you are*. Royal Pharmaceutical Society. 2015. URL: <https://www.rpharms.com/Portals/0/RPS%20document%20library/Open%20access/Development/rps--leadership-development-framework-january-2015.pdf> (дата звернення: 18.09.2024).
25. Thamby S. A., Subramani P. Seven-star pharmacist concept of WHO. *J Young Pharm*. 2014; 6:1. doi: 10.5530/jyp.2014.2.1
26. University of Sydney. *New program to foster next generation of pharmacy leaders*. The University of Sydney. 2019. URL: <https://www.sydney.edu.au/medicine-health/news-and-events/2019/01/30/new-program-to-foster-next-generation-of-pharmacy-leaders.html> (дата звернення: 12.10.2024).

References:

1. AAMC, (2024). *AACCI Student Leadership Initiative (ASLI)*. Association of American Medical Colleges. Retrieved from: <https://www.aamc.org/career-development/affinity-groups/alliance-and-aahci/aahci-student-leadership-initiative-asli> (Accessed 15 September 2024) [in English].
2. Aliekperova, N. V., (2020). The development of elective discipline «Leadership in pharmacy» for training master of pharmacy, industrial pharmacy in Ukraine. *Farmatsevtichnyi Zhurnal*, (6), 46–55. <https://doi.org/10.32352/0367-3057.6.20.05> [in Ukrainian].

3. Aliekperova, N., (2021). The Research of International and National Educational Standards on Leadership Development for Pharmacy Students. *BIO Web of Conferences* 30, 03001 <https://doi.org/10.1051/bioconf/20213003001> [in English].
4. ACPE, (2015). Accreditation Standards and Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree [online]. Chicago, Illinois: Accreditation Council for Pharmacy Education. Retrieved from: <https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf> (Accessed 20 September 2024) [in English].
5. Bates, I., Patel, D., Chan, A.H.Y., Rutter, V., Bader, L., Meilianti, S. & Udoh, A., (2023). A comparative analysis of pharmaceutical workforce development needs across the commonwealth. *Research in Social and Administrative Pharmacy*, 19(1), pp.167–179. DOI: 10.1016/j.sapharm.2022.07.010 [in English].
6. Chevaux, T., (2012). Pharmaceutical Leadership Development Program Piloted in South African Provinces. USAID, 11 June 2012. Retrieved from: <https://siapsprogram.org/2012/06/11/pharmaceutical-leadership-development-program-piloted-in-south-african-provinces/> (Accessed 22 September 2024) [in English].
7. CAPE, (2013). *Educational Outcomes 2013*. Center for the Advancement of Pharmacy Education. Retrieved from: <https://www.aacp.org/sites/default/files/2017-10/CAPEoutcomes2013%20%281%29.pdf> (Accessed 25 September 2024) [in English].
8. Feller, T. T., Doucette, W. R., & Witry, M. J. (2016). Assessing Opportunities for Student Pharmacist Leadership Development at Schools of Pharmacy in the United States. *American journal of pharmaceutical education*, 80(5), 79. <https://doi.org/10.5688/ajpe80579> [in English].
9. FIP, (2016a). *Global Vision for Education and Workforce*. International Pharmaceutical Federation. Retrieved from: https://www.fip.org/files/fip/PharmacyEducation/2016_report/2016-11-Education-workforce-global-vision.pdf [Accessed 10 October 2024] [in English].
10. FIP, (2016b). *Pharmaceutical Workforce Development Goals*. International Pharmaceutical Federation. Retrieved from: https://www.fip.org/files/fip/PharmacyEducation/2016_report/2016-11-Education-workforce-development-goals.pdf (Accessed 10 October 2024) [in English].
11. FIP, (2019). *Dominique Jordan: Modernising through trust, pragmatism and action*. International Pharmaceutical Federation. Retrieved from: <https://www.fip.org/Dominique-Jordan-Modernising-through-trust-pragmatism-and-action> (Accessed 14 October 2024) [in English].
12. FIP, (2020a). *Career development toolkit for early career pharmacists and pharmaceutical scientists. FIP Young Pharmacist Group*. International Pharmaceutical Federation. Retrieved from: <https://www.fip.org/file/4879> (Accessed 16 October 2024) [in English].
13. FIP, (2020b). *Global Advanced Development Framework (GADF) Version 1*. International Pharmaceutical Federation. Retrieved from: <https://www.fip.org/file/4795> (Accessed 16 October 2024) [in English].
14. FIP, (2021). *Representing pharmacists, pharmaceutical scientists and pharmaceutical educators*. International Pharmaceutical Federation. Retrieved from: <https://www.fip.org/about> (Accessed 20 October 2024) [in English].
15. FIP, (2022). *The FIP Development Goals report 2021. Setting goals for the decade ahead*. International Pharmaceutical Federation. Retrieved from: <https://www.fip.org/file/5095> (Accessed 21 October 2024) [in English].
16. GPhC, (2017). *Standards and guidance for pharmacy professionals*. General Pharmaceutical Council. Retrieved from: <https://www.pharmacyregulation.org/pharmacists/standards-and-guidance-pharmacy-professionals> (Accessed 21 October 2024) [in English].
17. NHS Education for Scotland, (2024). *Pharmacy leadership*. NHS Leadership Academy. Retrieved from: <https://www.nes.scot.nhs.uk/our-work/pharmacy-leadership/> (Accessed 23 October 2024) [in English].
18. NHS Leadership Academy, (2024). *Programmes to help you grow as a leader*. NHS Leadership Academy. Retrieved from: <https://www.leadershipacademy.nhs.uk/programmes/> (Accessed 20 October 2024) [in English].
19. Oyenuga, G., Law, M., Parbat, M., & Tofade, T. (2020). Implementing an Online Longitudinal Leadership Development Program Using a Leadership-Specific Continuing Professional Development (CPD) Tool. *Pharmacy (Basel, Switzerland)*, 8(2), 79. doi: 10.3390/pharmacy8020079 [in English].
20. Pharmaceutical Society of Australia, (2016). *National Competency Standards Framework for Pharmacists in Australia*. Pharmaceutical Society of Australia. Retrieved from: <https://www.shpa.org.au/resources/national-competency-framework-for-pharmacist-in-australia-2016> (Accessed 01 October 2024) [in English].
21. Pharmaceutical Society of Australia, (2019). *ignite: Pharmacist Leadership Program*. Pharmaceutical Society of Australia. Retrieved from: https://www.psnz.org.nz/Folder?Action=View%20File&Folder_id=174&File=PSA%205486%20Ignite%20information%20booklet%202019%20v2.pdf (Accessed 04 October 2024) [in English].
22. PSS, (2020). *About us*. Pharmaceutical Society of Singapore. Retrieved from: <https://www.pss.org.sg/about-pss> (Accessed 20 October 2024) [in English].
23. RPS, (2014). *Professional Standards for Public Health Practice for Pharmacy*. Royal Pharmaceutical Society. Retrieved from: <https://www.patientlibrary.net/cgi-bin/download/file/824> (Accessed 18 September 2024) [in English].
24. RPS, (2015). *Leadership Development Framework. Developing leadership, wherever you are*. Royal Pharmaceutical Society. Retrieved from: <https://www.rpharms.com/Portals/0/RPS%20document%20library/Open%20access/Development/rps---leadership-development-framework-january-2015.pdf> (Accessed 18 September 2024) [in English].
25. Thamby, S. A., Subramani, P. (2014). Seven-star pharmacist concept of WHO. *J Young Pharm.* 6:1. doi: 10.5530/jyp.2014.2.1 [in English].
26. University of Sydney, (2019). *New program to foster next generation of pharmacy leaders*. The University of Sydney. Retrieved from: <https://www.sydney.edu.au/medicine-health/news-and-events/2019/01/30/new-program-to-foster-next-generation-of-pharmacy-leaders.html> (Accessed 12 October 2024) [in English].