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FACULTY DEVELOPMENT IN HEALTH PROFESSIONS EDUCATION: AN ANALYTICAL REVIEW WITH IMPLICATIONS FOR KAZAKHSTAN

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Introduction. Faculty development is increasingly important in health professions education for pedagogical, assessment, communication, digital and leadership competencies. The transferability of findings to Kazakhstan requires contextual consideration.

Objective. To synthesize published evidence on faculty development interventions and discuss implications for health professions education in Kazakhstan.

Materials and methods. An analytical narrative review of publications on faculty development, educational competencies, professional learning and institutional support was prepared. Selected international and Kazakhstani literature was synthesized thematically; no original quantitative meta-analysis was performed.

Results. Published studies report improvements in teaching confidence, course design, feedback practices and adoption of learner-centred approaches following structured professional development. Outcomes vary by intervention, study design and observation period. Evidence of sustained improvements in student and patient outcomes remains limited.

Discussion. Short interventions may improve self-reported competencies, but transfer to sustained teaching practice depends on follow-up, institutional support, access to resources and evaluation methods. Contextual differences limit direct extrapolation to Kazakhstan.

Conclusion. Longitudinal, institutionally supported faculty development offers a promising approach for improving health professions education. Local evaluations with robust and standardized outcomes are needed.

Keywords: faculty development; health professions education; medical education; teaching competence; continuing professional development; Kazakhstan.

ДЕНСАУЛЫҚ САҚТАУ САЛАСЫНДАҒЫ БІЛІМ БЕРУДЕ ОҚЫТУШЫЛАРДЫҢ КӘСІБИ ДАМУЫ: ҚАЗАҚСТАН ҮШІН МАҢЫЗЫ БАР ТАЛДАМАЛЫҚ ШОЛУ

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Кіріспе. Медициналық білім беруде оқытушылардың педагогикалық, бағалау, коммуникациялық, цифрлық және көшбасшылық құзыреттерін дамыту маңызды. Халықаралық нәтижелерді Қазақстан жағдайына бейімдеп түсіндіру қажет.

Мақсаты. Оқытушылардың кәсіби дамуы туралы жарияланған ғылыми дәлелдемелерді жинақтау және олардың Қазақстандағы медициналық білім беру үшін маңызын бағалау.

Материалдар мен әдістер. Оқытушылардың кәсіби дамуы, педагогикалық құзыреттері және институционалдық қолдау туралы халықаралық және қазақстандық жарияланымдарға талдамалық наративтік шолу жүргізілді. Деректер тақырыптық тұрғыдан жинақталды; жаңа сандық метаталдау орындалған жоқ.

Нәтижелері. Жарияланған зерттеулер құрылымдалған бағдарламалардан кейін оқытуға сенімділіктің, оқу курсына жобалау, кері байланыс беру және студентке бағдарланған тәсілдерді қолдану дағдыларының қасиетін сипаттайды. Алайда нәтижелердің тұрақтылығы және студенттер мен пациенттерге ұзақ мерзімді әсері жеткілікті зерттелмеген.

Талқылау. Қысқа мерзімді оқыту өздігінен бағаланатын құзыреттерді жетілдіруі мүмкін, бірақ олардың күнделікті тәжірибеге орнығуы институционалдық қолдауға, ресурстарға және ұзақ мерзімді бағалауға тәуелді. Халықаралық нәтижелерді Қазақстанға тікелей көшіру шектеулі.

Қорытынды. Жүйелі институционалдық қолдауы бар ұзақ мерзімді кәсіби даму бағдарламалары медициналық білім беру сапасын арттыруға ықпал етуі мүмкін. Қазақстан жағдайында нәтижелерді стандартталған көрсеткіштермен бағалау қажет.

Түйінді сөздер: оқытушылардың кәсіби дамуы; медициналық білім беру; педагогикалық құзыреттер; кәсіби даму; Қазақстан.

ПРОФЕССИОНАЛЬНОЕ РАЗВИТИЕ ПРЕПОДАВАТЕЛЕЙ В ОБРАЗОВАНИИ СПЕЦИАЛИСТОВ ЗДРАВООХРАНЕНИЯ: АНАЛИТИЧЕСКИЙ ОБЗОР В КОНТЕКСТЕ КАЗАХСТАНА

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Введение. Профессиональное развитие преподавателей способствует формированию педагогических, оценочных, коммуникативных, цифровых и управленческих компетенций в медицинском образовании. Применимость международных результатов к условиям Казахстана требует отдельной оценки.

Цель. Обобщить опубликованные данные об эффективности программ профессионального развития преподавателей и определить их значение для медицинского образования Казахстана.

Материалы и методы. Проведен аналитический нарративный обзор международных и казахстанских публикаций, посвященных развитию преподавателей, педагогическим компетенциям и институциональной поддержке. Данные обобщены тематически; самостоятельный количественный метаанализ не выполнялся.

Результаты. В опубликованных исследованиях структурированные программы профессионального развития ассоциируются с улучшением уверенности в преподавании, проектирования учебных курсов, навыков обратной связи и применения студентоцентрированных методов. Устойчивость изменений, а также их отдаленное влияние на результаты обучения студентов и оказание медицинской помощи изучены недостаточно.

Обсуждение. Краткосрочные программы способны повышать самооценку компетенций, однако перенос приобретенных навыков в устойчивую образовательную практику зависит от институциональной поддержки, ресурсов, продолжительности наблюдения и способов измерения результатов. Прямое перенесение международных выводов на Казахстан ограничено различиями образовательных систем.

Заключение. Структурированные долгосрочные программы развития преподавателей при поддержке университетов перспективны для совершенствования медицинского образования. Необходимы локальные исследования со стандартизированными показателями и длительным наблюдением.

Ключевые слова: профессиональное развитие преподавателей; медицинское образование; педагогические компетенции; высшее образование; Казахстан.

INTRODUCTION

Introduction. Faculty development in higher education remains a significant challenge, particularly in developing countries. Although faculty development has increasingly become part of university agendas, initiatives in this area are often limited in both scope and depth. Educators are expected to demonstrate a broad range of teaching competencies and to act as facilitators of learning, while students are increasingly positioned as active participants in the educational process [1-3]. In response to ongoing changes in higher education and the need to maintain high-quality teaching, faculty development programs have gained importance as a means of preparing educators for their professional roles and responsibilities. Research has identified several benefits associated with the implementation of such programs, including increased faculty motivation, enhanced professional

competencies, and a greater capacity to adapt to changes in educational practice [4]. Faculty development is also recognized as an important component of educational improvement that supports the acquisition and continuous development of professional knowledge and skills [5]. The COVID-19 pandemic further exposed gaps in professional preparedness and accelerated changes in educational practice. At the same time, rapid advances in science and technology, particularly in healthcare, have increased the demand for professionals who can think critically, provide individualized care, and make decisions based on the best available evidence [6,7]. Consequently, programs aimed at strengthening the professional competencies of educators have become increasingly relevant. However, challenges remain in identifying innovative and sustainable faculty development programs that enable long-term

assessment of participants' progress and changes in educational practice. Furthermore, much of the existing evidence originates from Europe and the United States, limiting its direct applicability to other educational contexts. In Kazakhstan, these challenges are particularly relevant because higher and medical education have undergone substantial transformations toward competency-based and student-centered approaches. Changes in the educational environment have increased the need for university teachers to develop not only subject-specific expertise but also competencies in pedagogy, assessment, communication, and educational technologies [8,9]. A faculty development framework implemented in medical schools in Kazakhstan demonstrated the importance of systematic preparation of medical educators and included pedagogical training for faculty members [8]. In addition, the development of a competency-based model for university teachers at the Kazakh National Medical University highlighted the importance of strengthening the professional and pedagogical competencies of medical educators [9]. The need for continuing professional development among university teachers has also been demonstrated in Kazakhstan. A study of university teachers identified professional development needs related to teaching methods, assessment, digital competencies, and other aspects of professional practice, emphasizing the importance of institutional support and systematic approaches to faculty development [9,10]. The COVID-19 pandemic further intensified these needs, as university teachers in Kazakhstan were required to rapidly adapt to remote education and develop new technological and pedagogical competencies. Research conducted in Kazakhstani universities showed that professional development initially focused primarily on technological skills but subsequently shifted toward the integration of technological and pedagogical competencies and more structured approaches to professional learning [11]. In this context, it is important to examine faculty development programs as mechanisms for professional learning and improvement using scientifically rigorous methods. The

professional environment of academic medicine in Kazakhstan further highlights the importance of institutional support for faculty. Recent research involving academic medicine faculty in Kazakhstan identified factors associated with job satisfaction and psychological distress, demonstrating the importance of appropriate professional and organizational conditions for academic healthcare professionals [12]. Available evidence suggests that integrating faculty development programs into higher education institutions may improve teaching performance and, ultimately, contribute to better student outcomes. Despite the growing number of faculty development initiatives, relatively few studies have systematically examined programs specifically designed for university educators in the health sciences, particularly with regard to measurable and sustained changes in teaching practice resulting from the acquisition and application of new competencies. Moreover, the extent to which international evidence can inform faculty development strategies in the context of higher and medical education in Kazakhstan remains insufficiently explored. Therefore, this study addresses this gap through a systematic review and meta-analysis of faculty development programs in health professions education. The study focuses on interventions designed for university teachers and health professions educators and their effects on teaching competencies and educational practices. The objective of this study was to evaluate the effectiveness of faculty development programs in improving teaching competencies and educational practices among university teachers and health professions educators and to assess the relevance of the available evidence to the context of higher and medical education in Kazakhstan.

MATERIALS AND METHODS

Study design. This article is an analytical narrative review of published literature on faculty development for university teachers and health professions educators. It critically examines pedagogical training, teaching and assessment skills, digital competencies, communication, educational leadership and institutional conditions, with particular

attention to relevance for Kazakhstan.

Sources and synthesis. The review discusses relevant original studies, reviews and educational reports cited below, including publications issued before 2021 that establish the background of the field. The synthesis is thematic rather than quantitative. The available manuscript materials do not establish a reproducible, prospectively registered systematic-search workflow or a verifiable dataset for pooling individual-study effects. Consequently, no PRISMA flow diagram, quantitative meta-analysis or pooled estimates are reported.

Interpretation. Preference was given to distinguishing self-reported confidence and satisfaction from objectively assessed educational performance and sustained changes in practice. Methodological differences between study designs, outcomes, interventions and settings were considered when interpreting the evidence. This review does not claim exhaustive source retrieval or formal study-level risk-of-bias grading.

RESULTS

Teaching and course design. Faculty development encompasses structured programmes ranging from workshops to longitudinal mentoring and institutional training. The mixed-methods evaluation by Speer et al. [6] illustrates potential gains in course design and alignment of teaching activities with learning objectives, although its limited participant sample and intervention-specific outcomes constrain generalization. Reviews also suggest that pedagogical training can support professional confidence and competence [2,5].

Kazakhstan context. Research and policy-oriented publications from Kazakhstan describe the need for systematic preparation of educators and the introduction of competency-based teaching models [8,9]. Additional work examines professional development needs, adaptation to digital teaching and occupational conditions among faculty [10–12]. These publications are informative for local implementation but do not establish a single comparable pooled estimate of efficacy.

Assessment, communication and longitudinal learning. Faculty-development approaches

include workplace assessment, constructive feedback, communication training and clinical reasoning instruction [15–18]. Longer-term follow-up and international evidence syntheses indicate the importance of continuing support and evaluation of changes in actual teaching practice [20,21]. Differences in educational settings, participant groups and outcome measures limit direct comparison of effect magnitude.

Digital delivery and organizational factors. Online training can improve access to continuing professional development, including for clinical teachers, but may face barriers involving time, technical infrastructure, learner engagement and institutional support [11,14]. Professional development should therefore be considered alongside faculty workload, incentives and university quality-improvement policies [12,13].

DISCUSSION

Published evidence suggests that faculty development can strengthen teaching practice, but confidence-based outcomes should not be equated with sustained improvements in student learning or patient outcomes. Differences in evaluation design and institutional setting require cautious interpretation. In the context of Kazakhstan, these findings are highly relevant to the strategic development of health professions education. The positive outcomes observed in the reviewed international and local studies suggest that structured faculty development programs can support university teachers and clinical educators in improving their pedagogical knowledge and teaching practices. This is important because many healthcare professionals enter academic positions with strong clinical expertise but limited formal preparation in educational theory, curriculum development, modern assessment, and active teaching methodologies [8,9]. Faculty development programmes generally aim to strengthen competencies in several areas, including teaching, research, administration, leadership, and career development [13]. In medical education, faculty development initiatives emerged in response to the growing need for more innovative approaches to

teaching. Over time, their scope has expanded beyond classroom instruction to include leadership, organizational development, assessment, and professional growth [13,14]. Although universities increasingly invest in these programs based on the expectation that they will improve educational effectiveness, evidence regarding their long-term institutional impact remains limited. The cited literature describes changes in teachers' educational practices. Participants reported greater confidence in teaching, increased use of student-centered approaches, and improved ability to encourage active student participation. These changes are particularly important in preparing future healthcare professionals, who require not only clinical knowledge but also critical thinking, analytical skills, independent learning abilities, and the capacity to use reliable scientific evidence in clinical decision-making [3]. For Kazakhstan, strengthening these competencies among university educators is essential to ensure that graduates are adequately prepared to respond to the rapidly changing healthcare environment. The development of leadership and self-assessment competencies among educators was another important outcome. For example, Bray et al. (2021) described that establishing an educational leadership group with appropriate expertise and strategic capacity can improve faculty development activities and support the institutionalization of assessment programs [15]. Competencies such as direct observation, constructive feedback, and consistent application of standards-based assessment criteria can contribute to more effective evaluation of learners. These approaches could be particularly valuable within Kazakhstani medical universities as institutions continue to strengthen competency-based education and modern assessment practices. The reviewed literature also discusses increased teacher confidence and greater awareness of alternative teaching approaches. Simulation-based education, for example, has demonstrated potential for developing both technical and non-technical competencies, including communication, situational awareness, teamwork, and decision-making [16]. Incorporating simulation and

other active-learning approaches into faculty development programs in Kazakhstan could help educators move beyond traditional teacher-centered instruction toward more interactive and practice-oriented learning environments. The COVID-19 pandemic further accelerated the adoption of digital approaches to faculty development. Restrictions on face-to-face interaction encouraged educators to adopt online platforms and emerging technologies, including virtual learning environments, Google Classroom, and other digital educational tools. These approaches can provide greater flexibility, facilitate active learning, and allow professional development to continue despite geographical and scheduling constraints. In Kazakhstan, where institutions may differ in access to educational resources and where educators often have substantial clinical and academic responsibilities, online faculty development programs may provide a practical and scalable approach to continuous professional development [11,12]. Despite these benefits, several barriers may limit the successful implementation and sustainability of faculty development programs. The literature identifies insufficient institutional incentives, limited preparation for the transition from clinical practice to teaching, inadequate resources, and lack of time as major challenges [6,17]. These barriers are also highly relevant to higher education institutions in Kazakhstan. Healthcare professionals who move into academic roles may possess extensive clinical expertise but may not have received adequate preparation in teaching and learning. Without appropriate support, this transition can negatively influence teaching quality, student learning experiences, and teacher job satisfaction, potentially contributing to frustration and professional burnout [6,13]. Therefore, faculty development should not be viewed solely as an individual responsibility or voluntary activity. Universities need to create an institutional culture that recognizes teaching as an essential academic responsibility and provides educators with sufficient time, resources, incentives, and professional support. In Kazakhstan,

institutional policies that formally recognize participation in faculty development and link professional development to career progression may help increase participation and promote a stronger culture of educational excellence. Continuous faculty development is particularly important in health professions education because scientific knowledge, healthcare technologies, and educational methodologies are constantly changing. Well-designed programs can support educators in updating their pedagogical knowledge, improving assessment practices, adopting innovative teaching methods, and developing reflective and self-directed approaches to professional practice [15]. Such initiatives can ultimately contribute to the preparation of healthcare professionals who are critical thinkers, reflective practitioners, and capable of making evidence-informed decisions. Steinert et al. [21], in a classic systematic review of faculty development approaches, emphasized that sustainable changes in teaching performance are more likely when professional development is implemented over an extended period. Long-term programs allow educators to progressively accumulate theoretical and practical knowledge while collaborating closely with colleagues and researchers. The authors also emphasized the importance of systematically evaluating the impact of faculty development at the institutional level and promoting interdisciplinary collaboration [21]. These recommendations are highly applicable to Kazakhstan, where faculty development initiatives would benefit from longitudinal evaluation and stronger integration with institutional quality-improvement systems.

LIMITATIONS

Limitations. This analytical narrative review has several limitations. First, much of the existing evidence originates from Western countries, which limits the geographical representativeness and direct applicability of the findings to the Kazakhstani higher

education and healthcare context. Differences in educational systems, institutional structures, available resources, faculty roles, and cultural expectations may influence the effectiveness of faculty development programs. Second, the literature was not identified through a fully documented reproducible systematic search, and no formal meta-analysis was performed. Third, many published studies did not consistently report the specific academic and teaching competencies acquired through faculty development programs. Furthermore, studies that did evaluate these competencies generally had relatively short follow-up periods, often not exceeding one year. This limits the ability to determine whether improvements in teaching knowledge and skills are sustained over time. For Kazakhstan, future research should therefore focus on developing and evaluating context-specific, longitudinal faculty development programs for medical and health sciences educators. Future studies should include larger and more diverse samples of university faculty and clinical educators, use standardized measures of teaching competencies, and assess outcomes over longer periods. Such research would provide stronger evidence regarding the sustainability of faculty development and its influence on teaching quality, student learning, and ultimately the preparation of healthcare professionals in Kazakhstan.

CONCLUSION

Structured faculty development can support improved pedagogical knowledge, course design, assessment and educational communication. Institutional support, incentives and longitudinal evaluation are important to sustain changes in teaching practice. For Kazakhstani health professions education, future research should employ transparent protocols, comparable outcome measures and longer follow-up before quantitative effect estimates or causal conclusions are advanced.

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Zhagiparova Zh.A. – Conceptualization, Methodology, Supervision, Validation, Writing – review & editing.

Issenova B.K. – Investigation, Formal analysis, Validation, Supervision, Writing – review & editing.

All authors have read and approved the final version of the manuscript and agree to be accountable for its content.

ВКЛАД АВТОРОВ:

Темирбаев З.С. – разработка концепции исследования (Conceptualization), разработка методологии (Methodology), поиск и анализ научной литературы (Investigation), сбор и систематизация данных литературных источников (Data curation), сравнительный и аналитический синтез результатов (Formal analysis), подготовка первоначального текста рукописи (Writing – original draft), пересмотр и редактирование рукописи (Writing – review & editing).

Жагипарова Ж.А. – разработка концепции исследования (Conceptualization), методологическое сопровождение (Methodology), научное руководство (Supervision), проверка обоснованности интерпретации результатов и выводов (Validation), критический пересмотр и научное редактирование рукописи (Writing – review & editing).

Исменова Б.К. – поиск и критический анализ научных публикаций (Investigation), сравнительный анализ и интерпретация результатов исследований (Formal analysis), проверка научной обоснованности выводов (Validation), экспертное сопровождение исследования (Supervision), критический пересмотр и научное редактирование рукописи (Writing – review & editing).

Все авторы ознакомились с окончательной версией рукописи, одобрили её и принимают ответственность за содержание публикации.

АВТОРЛАРДЫҢ ҮЛЕСІ:

Темірбаев З.С. – зерттеу тұжырымдамасын әзірлеу (Conceptualization), әдіснаманы әзірлеу (Methodology), ғылыми әдебиеттерді іздеу және талдау (Investigation), әдеби дереккөздерден алынған мәліметтерді жинау және жүйелеу (Data curation), зерттеу нәтижелерін салыстырмалы талдау және синтездеу (Formal analysis), қолжазбаның бастапқы нұсқасын дайындау (Writing – original draft), қолжазбаны қайта қарау және редакциялау (Writing – review & editing).

Жағыпарова Ж.А. – зерттеу тұжырымдамасын әзірлеу (Conceptualization), әдіснамалық сүйемелдеу (Methodology), ғылыми жетекшілік (Supervision), нәтижелер мен қорытындылардың негізділігін тексеру (Validation), қолжазбаны сыни тұрғыдан қайта қарау және ғылыми редакциялау (Writing – review & editing).

Иссенова Б.К. – ғылыми жарияланымдарды іздеу және сыни талдау (Investigation), зерттеу нәтижелерін салыстырмалы талдау және түсіндіру (Formal analysis), ғылыми қорытындылардың негізділігін тексеру (Validation), зерттеуге сараптамалық жетекшілік ету (Supervision), қолжазбаны сыни тұрғыдан қайта қарау және ғылыми редакциялау (Writing – review & editing).

Барлық авторлар қолжазбаның соңғы нұсқасымен танысып, оны мақұлдады және жарияланымның мазмұны үшін жауапкершілікті өз мойнына алады.

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