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Advancing patient outcomes with integrative medicine - pharmacy approaches: Current perspectives and future directions

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***Abstract*---**Given the changing roles of the pharmacist, we as a profession must consider what an ideal pharmacist should do on patient care teams; and are the capabilities being taught in the classroom, measured in the classroom and on licensure exams, and assessed in practice what is expected currently and in the future? But, more importantly, how can we better work with other healthcare professionals to make certain that all practitioners and providers are addressing all domains of their patients? For some healthcare providers, taking a complete and thorough patient history is typical; one as though the provider is interested in the patient's presenting concern as well as in the patient's general health and well-being. For some providers, a prescription is routine, whereas some may recommend that patients see another provider to discuss complementary and alternative treatment options.

***Keywords*---**future directions, medicine, patient outcomes, perspectives, pharmacy.

1. Introduction

The interest in and application of integrative medicine alone, and in the context of healthcare overall, continues to evolve. However, where do pharmacists fit in? Pharmacists are on healthcare teams that are positioned to make a difference in every patient's care. Indeed, the workload for pharmacists as providers and behind-the-scenes professionals continues to expand. In the UK, over half of pharmacists are employed in settings not even providing direct patient care.

Given the changing roles of the pharmacist, we as a profession must consider what an ideal pharmacist should do on patient care teams; and are the capabilities being taught in the classroom, measured in the classroom and on licensure exams, and assessed in practice what is expected currently and in the

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future? But, more importantly, how can we better work with other healthcare professionals to make certain that all practitioners and providers are addressing all domains of their patients? For some healthcare providers, taking a complete and thorough patient history is typical; one as though the provider is interested in the patient's presenting concern as well as in the patient's general health and well-being. For some providers, a prescription is routine, whereas some may recommend that patients see another provider to discuss complementary and alternative treatment options. Providing this integrated care may help change healthcare, including patient care and patient satisfaction, in the UK and globally. To address this, the practice of pharmacy, in association with the practice of medicine, as well as other healthcare fields, must confirm it is indeed worthwhile to provide this care.

2. Foundations of Integrative Medicine in Pharmacy

Integrative medicine is a healing-oriented practice that focuses on the collaboration of integrative approaches to optimize patient health and wellness. This approach is patient-centered, emphasizing therapies that address the holistic physical health, emotional wellness, mental state, and spiritual well-being of the patient. Historical foundations of integrative practice can be traced back through recent pharmacy origins in the movement in the mid-1900s, with modern roots being proposed in the pharmacists of multiple countries providing nutritional supplements in compounding services along with their traditional allopathic therapies. With the field's commitment to using evidence in therapeutic decision-making, evidence-based practice is foundational to integrative pharmacy. When evidence on a specific therapy is lacking or conflicting, practitioners of integrative medicine use ethical reasoning and theoretical models or paradigms to make decisions and apply the following principles. (Moss, 2)

Evidence-based practice is foundational for the field of pharmacy, and the evidence for a specific complementary and alternative medicine therapy for a specific indication is often either lacking, conflicting, or ambiguous. Integrative practice requires an education founded in understanding scientific inquiry, as well as rigorous evidence assessment and appropriate therapy selection based on all available evidence. Another core principle of integrative medicine is to provide patient-centered care to address the whole person. Throughout these topics, integrative medicine is built on philosophical foundations that prioritize patient wellness and an interdisciplinary stance to healing. At its best, integrative medicine combines therapies from various medical and health care traditions to optimize patient wellness. Integrative pharmacy considers the best of all therapeutic approaches, without preference for one over another. Integrative medicine also emphasizes the presence of pharmacists in traditional and nontraditional roles, both by being part of the healthcare team, as well as leading or providing therapy in retail or closed-door pharmacies.

3. Current Pharmacy Practices in Integrative Medicine

Pharmacy is a constantly evolving field that aims to optimize patient care by preventing and managing diseases, promoting good health, and allowing for a greater quality of life. The current environment increasingly incorporates some of

the previously mentioned integrative viewpoints. In fact, pharmacists often serve as patient care monitors, are frequently on the front line for patients, possess a large amount of patient contact, and are often the first to identify and correct medication-related problems. By integrating drug and dietary supplement interventions, pharmacists can play an important role in moving patient care closer to the outlined integrative ideal. Even better, in this integrative pharmacist's world, the patient becomes the focus, and it is understood that the aforementioned interventions may or may not offer direct benefit. Furthermore, as will be discussed, pharmacists may not necessarily "know it all." They are, however, armed with the following question, "What now?" when patients arrive to pick up their prescription medications.

These pharmacist-based services that may become a catalyst for a branch of integrative education include complementary therapies, complementary-allopathic case discussions, and cultural competency. Informally and formally, healthcare professionals often use and suggest these approaches. In a clinical setting, pharmacist-managed herbal consultations, protocols, and monitoring have proved beneficial to organ transplant recipients and are currently being implemented as a proposal. Funding has been acquired for trials to assess the impact of pharmacist-led herbal protocols on morbidity and mortality. From clinical interventions and a case report on lowering lithium levels with electrolytes and yogurt, success stories are emerging. These case reports are especially encouraging and illustrate some of the barriers to acceptance of these integrative methods discussed earlier as they pertain to regulatory restrictions. Furthermore, the physician assistants are overseeing a case series assessing Lyme-induced type 2 diabetes and depression. Pharmacists who complete the Integrative Medicine Elective are advised to communicate with their supervising physicians regarding a drug-herb protocol for prevention of post-angioplasty restenosis prior to a trial and eventually publish a case report documenting their process in its creation, request for funding through a pharmaceutical supplement company, and patient adherence to the protocol when finalized. Pharmacists, upon publishing secondary prevention case reports, are to recommend adherence to their protocols be monitored for impact on primary prevention of cervical cancer. (Maldonado et al., 2016)(Mohiuddin, 2016)

4. Challenges and Opportunities in Integrative Pharmacy

Integrative pharmacy remains a practice focus for few pharmacists due to several key challenges. First, the federal and state regulations that govern pharmacy often are unaligned with healthcare services that lie outside of conventional scientific evidence, potentially stymying clinical trials and providing services to many underserved, at-risk patients. Second, integrative medicine is still met with varying acceptance from fellow healthcare providers and the lay public, the latter of whom may hold misconceptions about treatment safety and efficacy. A third challenge is that, because of restrictions in federal funding, the exact benefits of many complementary therapies remain, in some cases, indeterminate, complicating the formulation of evidence-based protocols. Fourth and finally, there is a limited research base in integrative and non-pharmacological content in general and among pharmacists in particular; identified barriers to use must be addressed before successful interventions can be developed. Regardless of these

challenges, however, there are several reasons that it is important to advance this work. Among these are the outcomes achievable in both direct patient care and in the demonstration of outcomes. Here we further outline challenges and the potential opportunities for pharmacists in integrative pharmacy and discuss directions for future work in the area. (Yao et al. 2016)(Shawahna2016)

Opportunities and Innovations Although these and other barriers to the professionalization of integrative pharmacy are formidable, pharmacists have undertaken a variety of efforts to navigate them. Specific efforts mentioned by participants at each of the workshops we convened include materials for advocacy to raise funds for the delivery of integrative services, education of various stakeholders, collaborative decision-making among partners in delivery, documentation of patient outcomes relevant to the practice of integrative nursing, development of whole systems research programs to explore potential links between therapies and improved health for patients, and leadership through payment reform, so that cost-center care may be evaluated and patient-centered care may emerge. Pharmacists throughout the country have put in place efforts to demonstrate improved patient care through a variety of innovative models. Each of these efforts on the part of pharmacists has required training, time, or effort on behalf of pharmacists seeking to learn integrative therapies or to pursue systems changes that facilitate interprofessional collaboration. Furthermore, the development of competencies and standards in integrative pharmacy care requires the engagement of an array of stakeholders to develop.

5. Innovations and Future Directions

351. Innovations
Pharmacy has seen beneficial growth within integrative practice, and a number of new technologies and therapeutic approaches are set to revolutionize patient care even further. (Ferreri et al. 2016)(Dang et al. 2016)

5.1. Technologies
Advances in digital health tools, including telemedicine and mobile health applications, can be enabling technologies for the incorporation of integrative practices. Patients who would have previously been limited by geography or availability to receive specialized services, such as natural medicine consultations, have new avenues to explore when these services are offered via telehealth technologies.

5.2. Pharmacogenomics
The integration of personalized medicine strategies into pharmacy is representative of efforts to treat patients based on biological evidence. Pharmacogenomic testing is currently part of some personalized, integrative pharmacy models and is poised to grow in its impact.

5.3. Future Directions
Advancements in eHealth, data mining, and wearables have led us down new paths in healthcare, indicating that in the future our model of care might pivot from chasing down the "whys" of interventions to identifying and steering treatment based on the "what." In pharmacy integration, the orchestration of

wellness data we collect as part of usual care may be our next "gold rush." More rigorous work is also needed to explore how we can provide additional bridges between conventional and the range of complementary modalities. Advocacy is also critical in moving the pharmacist forward in integrative models of care. The potential for change associated with the transformation of a healthcare model is only scalable relative to the ability of that model to communicate and its stakeholders to advocate, to expand and engage new beneficiaries. Strategic partnerships in the spaces of industry research consortia and political lobbying can thus ensure that the future of pharmacy is front of mind within integrative medicine.

351.1. Research and Development

From a development perspective, research activity in areas including the mode of action of integrative interventions, the evidence around potential interactions between integrative and conventional prescribing, and public health policy interventions designed to take pressure off our overburdened healthcare system will be very important.

351.2. Open-Mindedness

Future focus in pharmacy practice will be built not on the opportunity to remove integrated health interventions from practice, but through an open-minded investigation of the outcomes that result from the integration of these similar therapies. The idea is that each of these options represents contextual and individualized treatment approaches through the delivery of the pharmacy core functions of the safe and effective facilitation of patient care. Shifts in practice from the level of policy to clinic leadership should be bold and forward-facing.

351.3. Conclusion

Pharmacy offers some of the biggest opportunities in integrative medicine. High-contact, front-line health professionals deeply entrenched in public health, being there front and center, day in, day out, to lead and influence the practice and policy of integrative medicine and its delivery. The greatest opportunities lie in a commitment to rigorous clinical research, investment in practice innovation, and leader development. Leadership in implementation and in demonstrating exploration and novel care will offer whole levels of rigor relevant to our patient population. Patient care quality is the 21st-century coin—real currency that can be applied and fostered towards better outcomes for pharmacists, patients, and policy. Integrative medicine in pharmacy is the sleeping giant.

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تعزيز نتائج المرضى من خلال الطب التكاملي - مناهج الصيدلة: وجهات النظر الحالية والتوجهات المستقبلية

1. مقدمة

يستمر الاهتمام بالطب التكاملي وتطبيقه في التطور، سواء بشكل منفرد أو في سياق الرعاية الصحية بشكل عام. ولكن، أين موقع الصيادلة في هذا المشهد؟ يُعد الصيادلة جزءًا لا يتجزأ من فرق الرعاية الصحية التي تتمتع بمكانة تؤهلها لإحداث فرق في رعاية كل مريض. في الواقع، تستمر أعباء العمل على الصيادلة في التوسع، سواء كمقدمي رعاية أو كمحترفين يعملون خلف الكواليس. ففي المملكة المتحدة، يعمل أكثر من نصف الصيادلة في أماكن لا تقدم رعاية مباشرة للمرضى.

ونظرًا لتغير أدوار الصيدلي، يجب علينا كمهنة أن نحدد ما ينبغي على الصيدلي المثالي القيام به ضمن فرق رعاية المرضى؛ وهل تتناسب القدرات التي يتم تدريسها في قاعات الدراسة، وقياسها في الامتحانات، وتقييمها في الممارسة العملية مع ما هو متوقع حاليًا وفي المستقبل؟ والأهم من ذلك، كيف يمكننا العمل بشكل أفضل مع غيرنا من متخصصي الرعاية الصحية للتأكد من أن جميع الممارسين ومقدمي الرعاية يعالجون جميع جوانب مرضاهم؟ بالنسبة لبعض مقدمي الرعاية الصحية، يُعد الحصول على تاريخ طبي كامل وشامل للمريض أمرًا معتادًا؛ كما لو أن مقدم الرعاية مهتم بالشكوى التي يعاني منها المريض بالإضافة إلى صحته العامة ورفاهيته. بالنسبة لبعض مقدمي الرعاية، تُعد الوصفة الطبية أمرًا روتينيًا، بينما قد يوصي البعض الآخر بأن يراجع المرضى مقدم رعاية آخر لمناقشة خيارات العلاج التكميلية والبديلة. قد يساعد توفير هذه الرعاية المتكاملة في تغيير مشهد الرعاية الصحية، بما في ذلك رعاية المرضى ورضاهم، في المملكة المتحدة وعلى مستوى العالم. ولمعالجة ذلك، يجب على ممارسة مهنة الصيدلة، بالتعاون مع ممارسة مهنة الطب، بالإضافة إلى مجالات الرعاية الصحية الأخرى، أن تؤكد على جدوى توفير هذه الرعاية.