Pharmacy-Based Public Health Initiatives

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ABSTRACT

Both the general population's and pharmacists' behavior will need to change in order for pharmacists to become more involved in public health. Numerous studies have demonstrated the significance of attitudes and beliefs as drivers of behavior. In order to determine the most effective ways to support and enhance this service, this review attempts to investigate the attitudes and beliefs that consumers and pharmacists have toward pharmaceutical public health. A major element of many public health programs (PHPs) is the use of medications. The ability of medicines to cure and prevent illness is not the sole reason they are significant. The public's trust in the availability of safe and effective medications as well as the policies assuring their responsible use is inextricably related to their faith in the healthcare system. Nonetheless, the majority of public health initiatives in underdeveloped nations pay little to no attention to the pharmacy services component. The last fifteen years have seen a transformation in pharmacy practice that has increased public health access. A variety of public health services are increasingly offered by community pharmacists, showing potential gains in health outcomes and access. The observed changes in practice draw our attention to systemic problems that still require our collective attention. In order to maximize the impact on public health from this system shift, we must prioritize the pharmacy-public health collaboration and develop cooperative policy and research agendas as we fortify our intersectoral public health system.

1. Introduction

According to the Royal Pharmaceutical Society of Great Britain (RPSGB) [1], one of a pharmacist's five primary responsibilities is to promote healthy lifestyles. Although pharmacists have always played a role in promoting health, attention to this issue has grown significantly in the last several years. The adoption of the new pharmacy contract in Scotland in 2006 and in England and Wales in 2005 formalized this evolving role by outlining the public health services that pharmacists would have to deliver. Apart from taking part in health promotion initiatives in Wales, England, and Scotland, these services also involve providing guidance on self-care and healthy living. In Scotland, it is also mandatory to offer services related to sexual health and quitting smoking. There are several advantages to using community pharmacies as venues for public health initiatives [11]. A community pharmacy can be more accessible than other locations because of its expanded hours and the fact that guidance is available without an appointment. In Scotland, there are an estimated 600,000 visits to community pharmacists each day, and 94% of the population makes at least one visit each year. This makes it possible for community pharmacists to connect with a wide range of individuals, both healthy and ill, as well as those who might not often seek medical advice. Evidence reviews evaluating community pharmacy public health efforts have validated the pharmacy's potential in this domain and indicate that pharmacists may, in fact, contribute positively to public health [5]. While there is undoubtedly room for pharmacy to make a distinctive contribution to public health, the service is probably going to need to adapt in the way that both clients and pharmacists behave [7]. In order to perform their function in public health, pharmacists must acknowledge it and alter their behavior accordingly [13]. In a similar vein, the public has to embrace pharmacists as public health professionals and be open to consulting them rather than other sources when it comes to certain health-related matters [15].

2. Literature review

Five studies examined the safe supply and distribution of pharmaceuticals, with particular attention to the role that pharmacists play in writing prescriptions for steroids and antibiotics as well as the practice of generic replacement in pharmacies. Three research on the use of generic substitution carried out in Malaysia (Chong et al. 2011; Babar & Awaisu 2008; Ping et al. 2008) [6] came to the same conclusions: most pharmacies used generic substitution, but less than half of the pharmacists talked to prescribers about it. It's interesting to note that these research showed patients had a greater influence over generic replacement than did pharmacists [3]. But only a small portion of the total number of prescriptions were actually filled in pharmacies because doctors in Malaysia have the ability to prescribe medication [9]. Throughout the two previous trials, which were carried

out in Thailand and Vietnam (Chalker et al. 2005) [12] and Indonesia (Puspitasari et al. 2011), the dispensing of antibiotics and steroids without a prescription was quite common. [8] Insufficient patient screening and counseling in Indonesia exacerbated incorrect dispensing. Chalker et al. (2005)[16] discovered that dispensing practices could be considerably improved in Hanoi but only somewhat in Bangkok using a multifaceted intervention that included peer review, education, and regulatory enforcement. Reviewing the body of research pertaining to pharmacy services' ability to improve health care and policy actions in these nations is the goal of this article.

Role of Hospital Pharmacists

Case study: The easiest healthcare providers to get in touch with for many diabetic patients who are chronically unwell are community pharmacists. It is concerning that diabetic individuals do not receive the proper patient education regarding the treatment of their diabetes. Diabetic individuals lack knowledge, attitude, and practice regarding managing their diabetes because of a lack of public awareness. Better progress in managing diabetes and reducing complications has been demonstrated by pharmacists' interventions to improve patients' understanding and glycemic control. In order to counsel a patient with diabetes mellitus, a pharmacist needs to possess the necessary information, abilities, and practices. We can create suitable, targeted education and training for the benefit of diabetic patients by evaluating the knowledge and practice of community pharmacists. Data or evidence-based research evaluating the degree of expertise and practical impact of community pharmacists in India are quite rare. Furthermore, there are no organized, ongoing professional training programs available to upgrade the knowledge and abilities of community pharmacists in practice.

Out of the 184 healthcare institutions sponsored by GHAIN, 60 hospital pharmacies were chosen at random to participate in a cross-sectional survey. Using an instrument designed specifically for the study, the assessment was performed once at baseline and once more at least a year following the intervention. The interventions encompassed several measures such as involving stakeholders, establishing guidelines for infrastructure enhancement, creating training modules and curricula for pharmacy staff, and supplying job aids and tools, among other things. Based on the gaps found, a follow-up hands-on skill augmentation was carried out. We employed chi-square to perform inferential statistics. P-values were 2-tailed with a 95% confidence interval for all reported values.

More conventional, product-focused activities such compounding, supplying and dispensing pharmaceuticals, caring for and handling drugs, acquiring and tendering for drugs, maintaining records, accounting, and administrative duties are all included in the scope of pharmacy practice. It now includes more contemporary pharmaceutical care that is outcome- and patient-focused.[2] Pharmaceutical care is the cautious application of medication-related treatment with the aim of obtaining particular outcomes that improve a patient's quality of life. Pharmaceutical care methods include problem-solving, prevention, and identification of real or possible drug-related issues. In many industrialized nations, pharmacists actively advocate pharmaceutical treatment as a standard of patient care and as a philosophy. Despite the fact that pharmaceutical care is now the preferred style of practice and that pharmacists generally have positive opinions regarding it, regardless of the practice context (Swift 1993). However, as a standard of care for patients, it hasn't been fully adopted into professional pharmacy practice in Nigeria. In spite of having all the trained and experienced staff members they need, tertiary healthcare centers nevertheless only provide basic pharmaceutical therapy. Most hospitals only allow their pharmacists to examine the daily prescription sheet; they do not have access to any additional clinical information about the patient. All prescriptions are filled via a window system that does not support audiovisual privacy, does not keep track of the patient's medication profile, does not screen or monitor for drug reactions, treatment failure early warning signs, or drug resistance, nor does it offer medication adherence counseling.

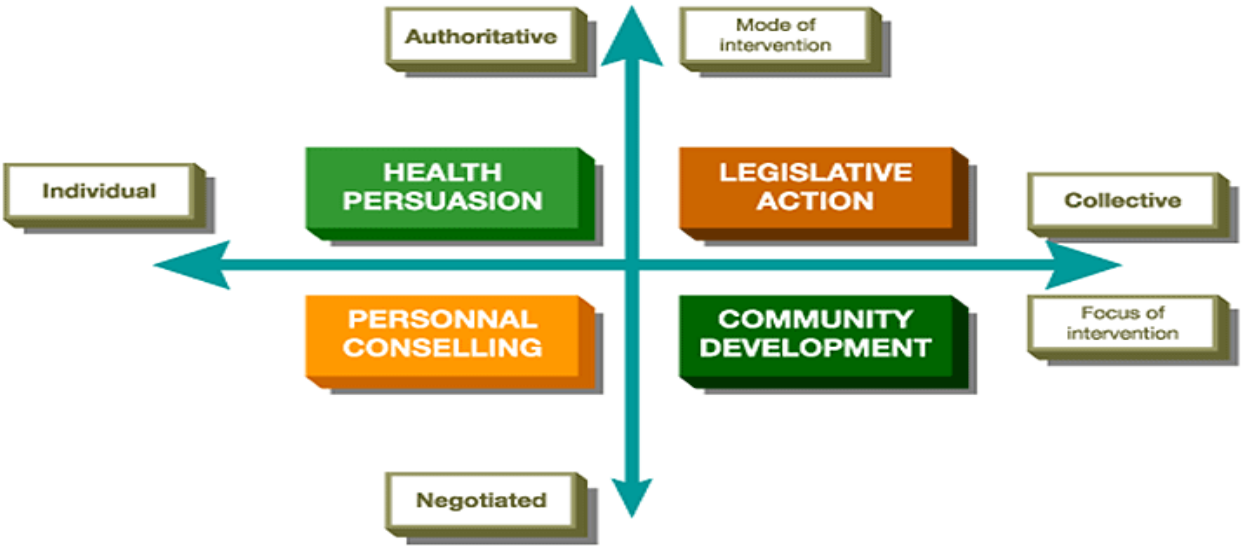

Figure 1: Beattie's Model of Health Promotion

Physician resistance to patient-oriented pharmaceutical services, especially in hospital wards, poor activity coordination, inadequate infrastructure, inadequate training for pharmacists, and a lack of confidence are the main barriers to patient-oriented pharmacy practice in Nigerian hospitals. More barriers to the use of pharmaceutical care include inadequate staffing, pharmacists' perceptions that patients won't pay for this high caliber of treatment, and a shortage of time for patient consultations.In [10] There is one pharmacist for every 10,000 inhabitants in Nigeria, according to the 2010 World Health Organization (WHO) Health Statistics report. Due to the growing need for pharmacists in public health, there are only 10 pharmacists available for every 100,000 people, as opposed to the minimum of 50:100,000 that is advised. To evaluate whether the health workforce is sufficient to meet the healthcare needs of a particular population, there are no universally accepted benchmarks. A low number of medical professionals typically indicates insufficient ability to provide the bare minimum of vital services.

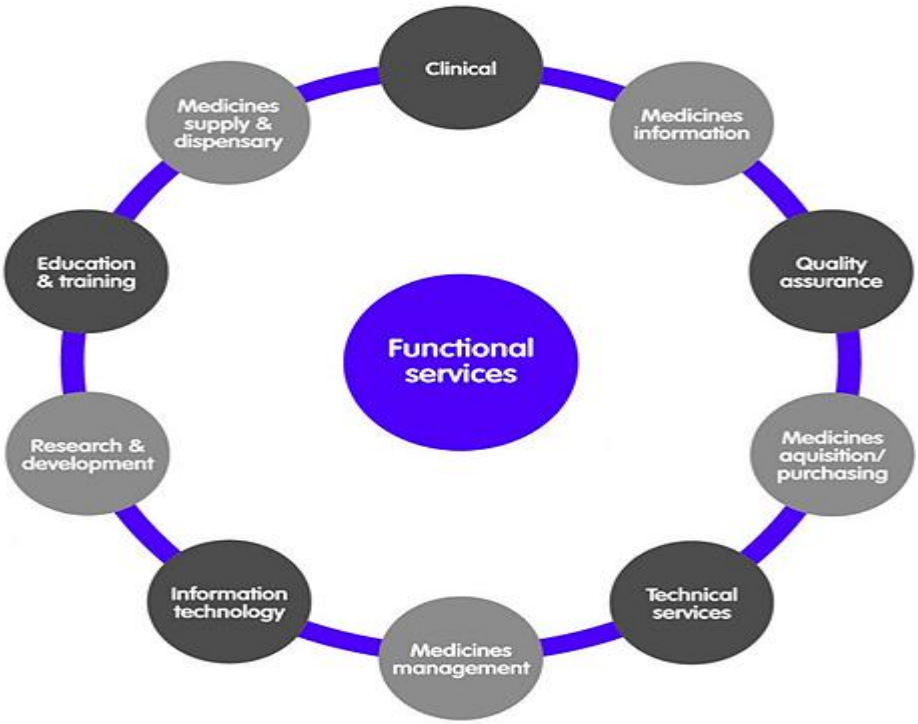

Figure 2: Role of Hospital Pharmacists

The improvement of people's health on an individual, community, and population level is the main objective of public health. Research, policy, education, and prevention strategies—which are typically classified as primary,

secondary, or tertiary—are some of the ways used to achieve this. Primary prevention is preventing illness from developing, secondary prevention is identifying illness early on, and tertiary prevention is postponing the progression of illness. In addition to extending and improving community members' quality of life, public health efforts frequently save money for communities and healthcare systems [4].

Figure 3: The Pharmacists' Patient Care Process

Experts in medications, pharmacists have a direct impact on public health. Globally renowned organizations have endorsed pharmacists' contributions to enhancing and safeguarding public health as the field develops and polishes essential skills. Due to the nature of their work, pharmacists have an influence on patient and population health outcomes, ranging from "micro" to "macro" in terms of public health. The Million Hearts Campaign, the National Diabetes Prevention Program, and the Healthy People objectives are just a few of the public health initiatives in the United States (U.S.) to which pharmacists have made substantial contributions. Additionally, the clinical services provided by pharmacists as members of interprofessional teams have improved the health outcomes for patients and the public [14]. Pharmacists have also taken a more active role in conducting social determinants of health screenings for patients and making the appropriate recommendations or interventions as part of clinical-community connections.

Research

Research on the effects of pharmacy-based public health service delivery in American settings ought to go on. It will be critical to comprehend public health services' accessibility and efficacy in community pharmacies as they grow more prevalent in these settings. It is important to investigate how pharmacists and pharmacy users feel about the availability and quality of these services in relation to system change, especially when the ACA is put into effect. Options for accessing healthcare will become more and more necessary as the need for preventative health services rises. Understanding how people view the pharmacy as a point of entry for preventative services is crucial to the spread of innovation. The role of pharmacists needs to be evaluated as they take on more responsibility in the delivery of health services. The evaluation of pharmacist liability, training, documentation, upkeep of medical data, and role value is necessary as the function of pharmacists transitions from that of drug dispensers to those of public health providers.

3. Results and discussion

The average duration of services at the post-intervention assessment was 24.39 (95% CI, 21.70–27.08) months. Approximately 16.7% of pharmacists pre-intervention reported receiving HIV care training; whereas, 83.3% reported receiving it post-intervention. After the intervention, the percentage of pharmacies offering patient counseling through audio-visual privacy rose from 30.9% to 81.4%. In comparison to pharmacists (93.1%) and pharmacy technicians (6.9%) at the post-intervention, filled prescriptions were cross-checked by 61.9 percent of pharmacists and 23.8 percent of pharmacy technicians prior to dispensing. Pre-intervention drug consumption was tracked by 40.0% of pharmacies compared to post-intervention drug consumption of 98.3%; post-intervention periodic stock reconciliation was performed by 81.7% of pharmacies compared to post-intervention stock reconciliation of 100.0%. 36.5% of pharmacies were seen providing patients with one-on-one medication counseling at pre-intervention compared to 73.2% at post-intervention, and 11.7% of pharmacies demonstrated evidence of monitoring and reporting of suspected adverse drug reactions. A paradigm change occurred when pharmacists were granted access to patients' clinical information at all pharmacies following the intervention.

4. Conclusion and future scope

The intersection of evolving diagnostics, rising health care expenditures, and changes in pharmacy practices has opened up a new, demanding, but potential realm for public health service access. Pharmacists have policy and practice issues as a result of the observed practice changes, and resolving these challenges calls for widespread public health engagement and support. The dynamic field of pharmacy practice is a vital tool for the public health community to accomplish its purpose, and we must fully embrace the intersectoral aspect of public health. Future studies should look into the efficacy of methods for boosting pharmacists' self-esteem and altering their public health practices. The public's attitudes and health are likely to improve as a result of greater exposure to public health services, if pharmacists are encouraged to provide these services more proactively.

Reference

[1] American Public Health Association What is Public Health? [(accessed on 15 February 2023)]. Available online: https://www.apha.org/what-is-public-health

[2] CDC Foundation What is Public Health? [(accessed on 15 February 2023)]. Available online: https://www.cdcfoundation.org/what-public-health. Information Sources and Services, 13(2), 1–6.

[3] Yashir Ahamed, M., Lalthlamuanpuii, R., Chetia, B., Lallawmawmi, & Lalngaizuali. (2023). Usage of Medical Library Resources: A Study in the Regional Institute of Medical Sciences, Imphal. Indian Journal of Information Sources and Services, 13(2), 1–6.

[4]

[5] International Pharmaceutical Federation (FIP) Strategic Plan 2019 to 2024. [(accessed on 15 February 2023)]; Available online: https://www.fip.org/file/4369

[6]

[7] Kodric, Z., Vrhovec, S., & Jelovcan, L. (2021). Securing edge-enabled smart healthcare systems with blockchain: A systematic literature review. *Journal of Internet Services and Information Security*, *11*(4), 19-32.

[8] Cameron G., Chandra R.N., Ivey M.F., Khatri C.S., Nemire E.R., Quinn C.J., Subramaniam V. ASHP Statement on the pharmacist's role in public health. *Am. J. Health Pharm.* 2021;79:388–399. doi: 10.1093/ajhp/zxab338.

[9] Malathi, K., Shruthi, S.N., Madhumitha, N., Sreelakshmi, S., Sathya, U., & Sangeetha, P.M. (2024). Medical Data Integration and Interoperability through Remote Monitoring of Healthcare Devices. Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications (JoWUA), 15(2), 60-72. https://doi.org/10.58346/JOWUA.2024.I2.005

[10] Puspitasari, H. P., A. Faturrohmah, and Andi Hermansyah. "Do Indonesian community pharmacy workers respond to antibiotics requests appropriately?." *Tropical Medicine & International Health* 16, no. 7 (2011): 840-846.

[11] Arora, G. (2024). Desing of VLSI Architecture for a flexible testbed of Artificial Neural Network for training and testing on FPGA. Journal of VLSI Circuits and Systems, 6(1), 30-35.

[12] Centers for Disease Control and Prevention Picture of America: Prevention. [(accessed on 15 February 2023)]; Available online: https://www.cdc.gov/pictureofamerica/pdfs/picture_of_america_prevention.pdf

[13] Jelena, T., & Srđan, K. (2023). Smart Mining: Joint Model for Parametrization of Coal Excavation Process Based on Artificial Neural Networks. Archives for Technical Sciences, 2(29), 11-22.

[14] Chong, Chee Ping, Mohamed Azmi Hassali, Mohd Baidi Bahari, and Asrul Akmal Shafie. "Generic medicine substitution practices among community pharmacists: a nationwide study from Malaysia." *Journal of Public Health* 19 (2011): 81-90.

[15] Saritha G., et.al Modelling and simulation of electromechanical systems working with nonlinear frictional loads and controlled by subordinated control system of coordinates, Middle - East Journal of Scientific Research, V-20, I-12, PP:1918-1923, 2014.

[16] Kutlu, Y., & Camgözlü, Y. (2021). Detection of coronavirus disease (COVID-19) from X-ray images using deep convolutional neural networks. Natural and Engineering Sciences, 6(1), 60-74.

[17] American Public Health Association . *Policy Statement Database: The Role of the Pharmacist in Public Health.* American Public Health Association; Washington, DC, USA: 2006. Policy Number 200614. [Google Scholar]

[18] Chalker, Douglas L. "Dynamic nuclear reorganization during genome remodeling of Tetrahymena." *Biochimica et Biophysica Acta (BBA)-Molecular Cell Research* 1783, no. 11 (2008): 2130-2136.