



Should “Medicinal Herbs” be a Mandatory Course for Pharmacy Students?



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Abstract

We suggest that since there is widespread use of herbal products by patients, the pharmacy community cannot truly claim expertise in all medications if we continue to ignore this important area of patient's self-therapy. This commentary is based on our experience of offering elective “Medicinal Herbs” course at the University for past eight years. Every year, about twenty percent of the pharmacy students in their third professional year enroll in this elective; invariably, at the end of the course, more students report being more comfortable in recommending and counseling over herbal therapies for many more ailments than they were at the beginning of the course. Therefore, we suggest that a stand-alone foundational level course in medicinal herbs should be a part of Pharm D curriculum for all pharmacy students. Multiple patient surveys have indicated that patients rarely inform their healthcare professionals, including pharmacists, on their herbal use. Most likely reason for such patient's behavior is the clear perception by the patient that most healthcare professionals trained in Western medicine have no expertise in this area and are most likely to “laugh” at the patient for his ignorance and engaging in such superstitious behavior.

Keywords: Medicinal herbs; Alternative medicine; Pharmacy curriculum; Mandatory; Elective

Introduction

Currently, 73%-86% of pharmacy schools in United States offer a course in medicinal herbs or complementary alternative medicine [1], mostly in the form of an elective course. Should the course “medicinal herbs” be mandatory for all pharmacy students? At first glance, some medical professionals may say no without hesitation, as the clinical evidence available with herbs is much less than that for active molecules used in western medicine [1].

We suggest there are three reasons that a medicinal herbs course should be universally taught. First, there is reason to believe many medicinal herbs might be at least partially effective at addressing ailments, as many of the modern medicines [2,3] used have herbal origins, examples include - quinine, digoxin, aspirin, taxol among others. The promise of traditional medicines is also evidenced by the widespread interest of pharmaceutical companies in patenting drugs like those derived from neem (a traditional Indian medicine) [4] and Hoodia (a cactus used by San peoples to stave off hunger) [5], as well as the frequently stated concern that the loss of global biodiversity poses a threat to potential new pharmaceuticals [6].

A second reason that all pharmacists should be taught a medicinal herb course is that such traditional remedies may lack the high risks and costs associated with modern prescription medicines. For example, prescription pain relievers have led to a newly declared epidemic and national emergency [7]. These medications (Norco, Percocet, Fentanyl, OxyContin, etc) are highly addictive substances and are linked to abuse, misuse, and the rising heroin use among the nation's population [7]. That is in part due to our current treatment and practice approach to diseases

in the US that has increased the number of opioid prescription (here opioid prescription is used an example of our current drug usage, as its negative outcome is clearly evident in our society) from 76 million in 1991 to nearly 207 million in 2013, and has resulted in alarming increase in negative consequences all across this country and in all segments of this society [8]. In a country where 4.2 billion prescriptions were written in 2011, averaging 13 prescriptions per average American [9], clearly indicating our current approach-“a pill for every ill”, is not delivering the desired healthcare outcome.

Perhaps most crucially, pharmacists should know more about medicinal herbs because patients are frequently consuming them. The popularity of medicinal herb use as an “alternative” form of medicine has been widely and rapidly growing for decades. The Center for Disease Control and Prevention (CDC) first conducted a study from 1988 to 1994 called the National Health and Nutrition Examination Survey or NHANES III. This study was used to determine the actual usage of herbs and dietary supplements in the United States during that time period. The study showed that roughly forty percent of the American population was taking some form of dietary supplements during that time period [10]. They also noted that White Americans were more likely to use supplements than African Americans or Hispanics and women were more likely than men to use supplements [11]. The number of products used also increased with age, probably due to the increase in co-morbidities seen with aging. The CDC followed up the study in 2003 to 2006. They observed that the number of dietary supplements used grew from 2003 to 2006 by 53% [12]. Total herbal supplement sales in US in 2016 was 7.45 billion dollars, 77% increase over 2000 [13]. The overall profile of the consumers using these products (herbs and supplements) is, they are highly educated, and who are interested in taking an active role in improving their health.

Due to this dramatic increase in herb and supplement use, pharmacists and pharmacy interns must be ready to counsel patients appropriately on these products. Pharmacists need to be able to decipher which of these products are efficacious for what conditions and have information on the type of evidence that has been published to support or debunk the claims that these herbal supplements have been proven to work. Armed with knowledge gained in a medicinal herb course, pharmacists will be better able to recommend appropriate products, and also able to dissuade patients’ from purchasing a product that is not effective or safe for said patient.

Furthermore, pharmacists trained in medicinal herbs can counsel effectively on side effects and educate patients on its appropriate use. For example, what many consumers and other health professionals are not aware that manufacturing practices for dietary supplements or other medicinal herb products are not regulated like the other over-the-counter (OTC) products. According to a 2002 consumer survey, two thirds of the public thought that the Food and Drug Administration (FDA) required safety and efficacy data like adverse events to be on the label of dietary supplements [14]. Another survey polled 300 medical residents and one third of them thought that the FDA had to approve supplements before they hit the pharmacy shelves. While many reputable companies follow good manufacturing practices, but they do not have to receive approval by the FDA to bring the product to market [15]. Once these products are on the market, they can be only removed following multiple reports of harm by the consumers to the FDA. According to Cohen in his article American Roulette-Contaminated Dietary Supplements, FDA has isolated 140 products that contain ingredients other than those that are represented on the manufacturer’s label

of the dietary supplement. These contaminants consisted of controlled substances like amphetamine salts (a central nervous system stimulant) and even traces of other prescription drugs like furosemide (a loop diuretic) and certain benzodiazepines, which are used for anxiety or other psychiatric disorders. There are reported cases where supplements are sold that contained prescription drugs, both unethical and illegal, to generate revenue for the supplement manufacturer, but could be very dangerous for the patient consuming that product [14,15]. As pharmacists, we have to be able to question and have confidence to skeptically analyze the data that many presume to be true. This is only possible with knowledge on the topic.

Two other articles have addressed this issue as it relates to US pharmacy curriculum. Geldenhuys et al. [16] have reported their findings on the evolution of natural products and nutraceuticals course in the pharmacy curriculum in the Northeast Ohio Medical University College of Pharmacy. Their conclusion was similar to what we have observed, that course was favorably evaluated, and students reported significant improvement in advising patients on natural products. Lapidus [17] reported her experience of collaborating with a librarian in offering an elective course on herbal medicines that significantly improved students’ perceived knowledge of information in this area.

While there are few other research publications demonstrating development and incorporating of medicinal herb/alternative medicine courses in the pharmacy curriculum in different parts of the world, we did not find a single “commentary” arguing that it is time every pharmacist gains basic expertise in this area. We cannot outsource or expect any other healthcare professional to help patient in this matter as pharmacist are the drug experts. A pharmacist who has taken such a course in their pharmacy curriculum may be more appreciative of the fact that when used properly, many herbal supplements could aid patients and will be in a position to direct the more appropriate use of these agents in his or her patient population.

Conclusion

In conclusion, our healthcare prescribers are prescribing ever increasing number of prescription medications that are clearly associated with increased healthcare expenditures and negative patient outcomes. Patient’s on the other hand have started treating their ailments with herbs and supplements that do not require prescription and rarely inform their healthcare professional regarding their use, as they rightly believe, most of them have very little knowledge on these products. Pharmacists with knowledge on medicinal herbs will play an important role in bridging this information gap to better provide improved patient outcomes.

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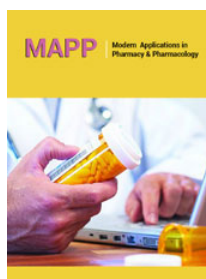
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