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**The Corporatization of Retail Pharmacy: Changes in Efficacy,
Reliability, and Expedience**

By

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An undergraduate honors thesis submitted in partial fulfillment of the requirements

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Abstract

The retail pharmacy of the present has undergone a large shift in ownership from private to corporate in the form of chain pharmacies. In this literature review, the effects of this shift in ownership, otherwise referred to as “corporatization” are examined in order to determine both the benefits and areas of concern regarding this change. This review suggests that the benefits include: Decreases in filling time and increases in patients of satisfaction. The areas of concern include: Decreasing patient-pharmacist counseling rates, increases in Adverse Drug Reaction rates and decreased pharmacy costs but not patient costs. It is concluded that the areas of concern outweigh the potential benefits. In order to improve on these areas of concern regarding corporatized pharmacies several changes must be made. First, pharmacists must be educated on proper counseling techniques in reduced time-frame to ensure patient understanding of medication. Second, these pharmacies should consider more staffing to ensure that patient-pharmacist counseling times don’t decrease more. Finally, more research needs to be done into the specific effects of corporatization in order to draw a more robust and complete conclusion on its overall effects on the retail pharmacy.

Introduction and Background

In today’s retail pharmacy, the emphasis has shifted from providing a positive experience for the patient to putting more importance on cost efficiency and effectiveness. To be more specific, shifts have occurred in both the way the patient interacts with the pharmacy as well as in the pharmaceutical setting itself. Through this change, certain aspects of the pharmacy have been altered; these alterations will be the main focus of this literature review. First, I will provide a brief history of the change in ownership occurring in retail pharmacies from private to

corporate. Second, I will compare both the benefits as well as the areas of concern regarding corporatization and how they affect both the pharmacy and the patient including the methods behind this research. Third, I will provide details behind the methods of research used in this literature review as well as some possible future methods that could be employed in order to further the research on this topic. Finally, I will summarize the overall effect of corporatization in the retail pharmacy in order to show how these changes matter to the average person using one of these pharmacies.

An important purpose of this review was to divide the scholarly debate on the corporatization of pharmacy into both benefits and areas of concern so the effects of this shift could be determined. To elaborate, the benefits were divided into two major categories: decreases in filling time due to technology and increases in patient satisfaction. The areas of concern included decreases in counseling time between the pharmacist and patient, decreases in pharmacy cost but not patient cost, and increases in Adverse Drug Reactions (Referred to as ADRs). All of these aspects will be examined in order to conclude whether or not this corporatization has had a beneficial or harmful effect on the field of pharmaceuticals and what can be done to fix or improve this change.

Before both the historical and contextual background of this topic is explained, I first want to mention my own stake in this debate. As a current pharmacy technician and future pharmacy student, I wholeheartedly believe that both the satisfaction and the health outcome of the patient should be the primary goals in the pharmacy setting. Having worked in one of these “corporatized” pharmacies, I see first-hand both the beneficial as well as detrimental consequences occurring in these settings. This careful review of the literature is meant to summarize what corporatization means for the field of pharmacy as a whole. In addition to this, I

have attempted to remain as unbiased as I can in order to provide an honest and complete conclusion on this subject. I hope that through this work, I can both improve my future career as a pharmacist as well as help to provide the best possible experience and outcome to my future patients.

To begin with relevant terms, ‘corporatization’ in this paper will be defined as the takeover of independent, privately-owned pharmacies by larger pharmacy chains including supermarkets as well as the emphasis in these retail pharmacies on both cost and time efficiency (Bush et al, 2008). Corporatization has been associated with several factors that are important to note. First, automation in the form of script-filling machinery and electronic systems such as computer databases is prevalent in corporatized pharmacies (Bush et al, 2008). Corporatization is also associated with other changes including increases in efficiency of workflow, reduced staffing and increases in ADR rates (Green et al, 2011, Onder et al, 2008). ‘Compliance’ otherwise referred to as ‘adherence’ or ‘concordance’ is defined generally by the World Health Organization (WHO) as: “The extent to which a person’s behavior – taking medications, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health care provider” (WHO, 2003). This paper will focus more specifically on drug compliance which implies the same definition, just in regards to pharmaceutical drugs.

‘Patient satisfaction’, another important term, is defined simply in medical dictionaries as “the patient's opinion of care received” (Patient Satisfaction, 2015). Though this definition seems simple, there is so much more that goes into patient satisfaction than just these few words can describe. Over the last few decades for example, one study notes that the word “Patient Satisfaction” as a key word has increased more than 10-fold over the period from 1975 to 1997 (Kravitz, 1998). Clearly patient satisfaction is an important concept that has been growing in

popularity for a long period of time now. This is not just a coincidence however, as many medical institutions (including pharmacies) are beginning to focus on increasing levels of patient satisfaction as one of their primary goals. Adverse Drug Reactions or ADRs are defined as “an appreciably harmful or unpleasant reaction, resulting from an intervention related to the use of a medicinal product, which predicts hazard from future administration and warrants prevention or specific treatment, or alteration of the dosage regimen, or withdrawal of the product” (Edwards et al, 2000). More specific to this project however, the focus will be put on ADRs following patient-use of the retail pharmacy instead of speaking of ADRs in all medical settings. Pharmacy “intervention service” is defined as the act of the pharmacist reviewing patient clinical information including age, weight, lab values and diagnosis in order to determine possible drug interactions and complications associated with prescribed medications (IHI, 2015).

While details of specific research on the benefits and areas of concern regarding the corporatization of retail pharmacies will be examined in the following literature review, it is still important to note some common trends occurring in the scholarly community. First, studies show that there has been a large shift in the ownership of retail pharmacies from being independently owned to being largely owned by chains, from 66% of pharmacies being locally owned to 42% in a period of 10 years from the 1990's to 2000's (Bush et al, 2008, Light et al, 2013). There has been much research done into the communication between the patient and pharmacist as well as research into changes in filling time, ADR rates and other aspects of the pharmacy. However, there still exists a gap in this research regarding the exact effects of corporatization and changes in structure occurring in the retail pharmacy today (Shah and Chewning, 2006). This change in structure specifically relates to the shift in the way pharmacies are operated to be both more

efficient as well as more cost effective to the corporate owners than their privately-owned counterparts.

Though there does exist a gap in the literature, there is still quite a large amount of data that notes the instances of ADRs, average time spent counseling by pharmacists, rates of patient satisfaction and other vital information. If all of this research, literature review, and data collection are combined into one literature review, a more comprehensive conclusion can be made on corporatization and its effects on the pharmaceutical setting. In the following literature review, all of these topics will be examined in order to explain the outcomes of these changes. In the following sections, this question will be examined: What are the benefits and areas of concern regarding the corporatization of retail pharmacy on the patient in regards to ADRs, Patient-Pharmacist counseling, cost and filling time?

Methods

In this literature review, several resources were employed in order to find the articles chosen. The main resource was Google Scholar's search function. With Google Scholar, many articles were found by using keywords such as "retail pharmacy changes," "corporatization pharmacy," "pharmacist-patient communication," and "pharmacy ADR rates." In addition to this resource, several science and pharmacy based search databases such as PUBMED, the American Journal of Health-System Pharmacy (AJHP), Pharmacy.org and the Journal of American Pharmacists (JAPHA) were used to find articles. Like in Google Scholar, the above keywords were used in order to find and select the best articles for this research. Articles that did not specifically focus on corporatization were excluded. The "best" articles were the ones that focused on corporatized pharmacies specifically and not just pharmacies or the medical

profession as a whole. While there were thousands of articles that focused on just pharmacies or just the medical profession, there were not nearly as many that focused on corporatized pharmacies themselves. This idea definitively serves as a reason as to why there needs to be more research conducted into corporatized retail pharmacies specifically in order to make more confident conclusions on both their benefits as well as areas of concern. Even though this lack of specificity proved to be a problem, through these resources as well as through the Portland State University Library resources, more than 30 articles were still compiled for this literature review.

Literature Review

In the United States alone, corporatized pharmacies make up just over 50% of all pharmacies in the nation, and that number is continuing to rise (NPMS, 2010). This shift occurring in retail pharmacy ownership needs to be thoroughly examined and understood in order to accurately determine just what it means for both the patient and the pharmacist. For example, if the patient does not receive all of the information about their prescription drug due to inadequate counseling by a pharmacist working in a corporate setting, serious consequences can occur. In addition to this, if pharmacists are not being trained to effectively work in a fast-paced corporate environment their own quality of work will decrease, affecting the patient as well. For these reasons, I have undertaken this literature review in order to both strengthen my own understanding of what corporatization means to me as a future pharmacist as well as figure out what the best options for improvement are for patients of these corporatized pharmacies.

This literature review will be divided into both the benefits as well as areas of concern regarding the corporatization of the retail pharmacy. Through this format, this research hopes to create a complete and organized picture of the state of the pharmaceutical field in current times

as well as provide an understanding as to how corporatization has changed the patient experience.

Benefits

The benefits of corporatization include: Decreases in filling time and increases in patient satisfaction. These benefits were selected for several reasons. First, filling time is one metric that is considered both important to the patient as well as the pharmacies themselves. When patients spend less time waiting in the pharmacy, their satisfaction has been shown by research to increase (Kamei et al, 2002). Also, patient satisfaction is another important area of research in regards to both pharmaceuticals as well as the medical field as a whole. Pharmacies want repeat business and if patients are more satisfied with these pharmacy's services, they will keep coming back.

Decreases in Filling Time

Decreases in filling time means that the pharmacist and technician(s) complete the process of "filling" a prescription in less time than they used to before corporatization. This decrease in filling time is accomplished through the use of technology as well as the increase in efficiency of the pharmacy as a whole. Both of these changes are often associated with corporatized pharmacies due to the increases in efficiency and automation (Chui, 2011).

The process of filling includes several steps. First, the patient either receives a hand-written prescription from their doctor or the doctor calls or sends in an electronic prescription to the pharmacy. Next, the pharmacist or technician reviews the prescription and checks the patient's insurance plan in order to make sure the prescribed drug is covered through the patient's insurance plan. Following the approval of the drug through the insurance, the actual filling process will begin as the pharmacy technician types or "enters" the prescription into their

computer system for review by the pharmacist. After review of the prescription is completed, the technician or automated machinery will actually fill the prescription with the proper drug and the pharmacist will check the prescription once more. After all of these steps are completed, the pharmacist will finalize the prescription and it is then ready to be sold to the patient (Prescription Filling, 2014).

Many articles note decreases in filling time in corporatized pharmacies when compared to their privately-owned counterparts. Some literature has found that filling time has decreased “significantly” in corporatized pharmacies when compared to privately owned pharmacies. While no exact number is given in the research, it is still concluded that the changes mentioned in this review offer some benefits to the idea of corporatization (Bush et al, 2008).

In regards to the effect of automated filling machinery in pharmacies, there is research that notes both pros and cons to the change. These automated filling machines are sometimes referred to as “robots” and include machines such as the ScriptPro. This device serves to count pills or capsules for prescriptions in the proper amounts and sometimes even fill vials for patients so the technicians or pharmacist take a smaller part in the actual filling process. The amount of technology in corporatized pharmacies does vary, but there are a large number of corporatized pharmacies that contain some kind of automated filling device according to these studies (Chui, 2011, Lin et al, 2007, Angelo et al, 2005, Aurora Pharmacy, 2012).

One such study noted that after the installation of prescription filling machinery, the average time spent filling prescriptions was reduced by 1 to 2 minutes. This is significant when hundreds of prescriptions are being filled in some pharmacies daily. These researchers also noted that while this automated machinery did reduce prescription-filling time, there were still staffing adjustments (such as proper training and practice with machinery) needed in order to optimize

the newly-gained efficiency associated with automation. These changes included training both technicians and pharmacists to accurately diagnose and repair problems with the filling machinery as well as operate it properly (Lin et al, 2007).

There is research that focuses on the workflow changes associated with automation in corporatized pharmacies. In one article, researchers note that the average prescription filling time was reduced by 40 seconds per prescription with the use of the robot (Chui, 2011). However workflow interruptions as well as what were described as “workarounds” increased from 1.5 to 1.8 (per prescription on average) and from 10% to 36% respectively (Chui, 2011). These interruptions and workarounds were associated with errors made by the machinery such as filling prescriptions with an incorrect number of pills or the machine malfunctioning altogether. While prescription filling time was significantly decreased through the use of automation, problems in the technology still exist that need to be ironed out in order for this change to have a completely beneficial effect. Changes like improved efficiency in these automated devices as well as the reduction of machine-errors associated with improvements in technology were cited as primary factors in improving the automated pharmacy as a whole (Chui, 2011). Because of these aforementioned reasons, the technology used in today’s corporatized pharmacies provides some benefit in the form of decreasing filling time. However, this technology also leaves much to be desired in that it causes other problems such as filling errors due to glitches in the system. Also, not all pharmacy staff is adequately trained to use this technology to its fullest extent in order for it to have the greatest beneficial effect on filling operations.

In regards to filling automation and accompanied effects on patient care, other articles examined just what this automation machinery does to increase the patient experience. One study concluded that automation was associated with, “high prescription productivity” and as a result

decreased time spent filling by pharmacy staff. This study also concluded that these automation systems were considered a positive aspect of this change in retail operations and allowed pharmacists to offer counseling to a larger number of patients, though actual counseling rates were not higher when compared to non-automated pharmacies (Angelo et al, 2005). This is important to examine because it implies that even with all of this new technology that is supposed to increase efficiency for the pharmacy, pharmacists still do not counsel more patients or counsel for longer periods. If this technology only serves to increase cost-efficiency for the pharmacy owners, what benefit does it bestow upon the patient?

The maker of one of the automated filling machines called “ScriptPro” recently released a pamphlet which detailed the changes in one pharmacy’s prescription filling time as well as cost to the patient. The pamphlet touted both the cost reduction provided by its machine as well as the reduction in filling time that ultimately served to allow pharmacists “more patient contact at the store level” as well as more time to “perform tasks that directly benefit patients” (Aurora Pharmacy, pages 2-3, 2012). While this pamphlet is undoubtedly biased, it still shows that automation is expected to have a substantial effect on the filling time of prescriptions. This should allow pharmacists to spend more time interacting with patients than before. This is an intriguing point considering that it has been mentioned in other research that pharmacists actually do not spend more time counseling patients in pharmacies with this automated equipment (Chui, 2011). In fact, it is noted that corporatization actually decreases counseling time for other reasons (Bush et al, 2008). This idea will be examined in later portions of the literature review.

Overall, all of these articles provide a good case as to why the process of corporatization, which often includes automation, can have at least one beneficial effect in the form of decreasing

the time spent filling prescriptions. Though some of the research examined noted that even though filling time decreased, time spent fixing machinery or hours lost by pharmacy staff due to automation detracted from the overall benefit provided through automation (Bush et al, 2008). Another important idea that emerges out of this aspect of corporatization is the seemingly unchanged time spent counseling by pharmacists on their patients. After examining all of this research on workflow automation, the only main benefit found was the decrease in cost to the pharmacy. There were no studies that suggested that this reduction in cost to the pharmacy ultimately reduced costs to the patients or even provided a better patient experience at the pharmacy. The idea that these machines haven't been conclusively proven to allow pharmacists to spend more time counseling patients or simply counsel a higher number of patients is also troubling.

Increases in Patient Satisfaction

The term “patient satisfaction” is defined as the “patient’s opinion of care received” (Patient Satisfaction, 2015). However, as mentioned in the introduction, this is not a simple concept and is also not easily measured by studies. Because of this, it is difficult to find comprehensive and conclusive studies of patient satisfaction in these corporatized pharmacies that all use the same method to operationalize and measure what patient satisfaction entails. For the purpose of this review, patient satisfaction was included due to its ever increasing frequency of use as a metric to measure the patient experience in both the pharmacy as well as the healthcare setting (Ware et al, 2002). Studies of patient satisfaction use surveys, interviews and data sets in order to gather both what is making the patient more “satisfied” as well as what can be done to increase a patient’s satisfaction with their pharmacy, or healthcare provider’s service.

There were multiple studies found that measured patient satisfaction in corporate-owned community pharmacies (Panvelkar et al, 2009). They concluded that though there are a sizeable number of studies that measure patient satisfaction in these corporatized community pharmacy settings, further research is still needed in order to develop and test instruments used to measure satisfaction as well as exact levels of satisfaction in patients. It was also noted that patients were especially satisfied with general services (filling, counseling, customer service, etc.), intervention services and the decreased time spent in these pharmacies (Panvelkar et al, 2009). These studies conclude that patients are overall satisfied with corporatized pharmacies. This idea is elaborated on by showing that mostly due to the reduction in time spent in the pharmacies; patients became more satisfied with the experience in corporatized pharmacies as a whole. Even though patients did not note that they felt they understood the necessary information for their prescription drugs more thoroughly in these corporatized pharmacies, the reduction in time was enough by itself to show a marked increase in satisfaction. Whether or not this decrease in time is necessarily good for the patient in terms of decreasing ADR rates or filling errors is another topic altogether.

Another study created a survey that was distributed to patients regarding their preferences in corporatized pharmacies. Through these surveys, researchers noted that patients often valued convenience the most when asked about these pharmacies. As convenience is often associated with corporatized retail pharmacies, researchers noted that these characteristics as well as others such as decreased filling time also increase patient satisfaction (Kamei et al, 2002). This survey once again shows that patient satisfaction increases as long as convenience is increased. The question still remains though, does this convenience actually serve to reduce the patient's risk of suffering from an ADR or other negative consequences after using one of these pharmacies?

Though there are plenty of articles that speak of methods used to actually measure patient satisfaction in the medical setting and the pharmacy (Mackeigan and Larson, 1989, Ware et al, 2002, Larson, 1994), there still needs to be further research focused on patient satisfaction in corporatized pharmacies specifically. There has been research done into these corporatized pharmacies, but there are still many more articles that focus on all pharmacies as a whole or different pharmacies such as those located in hospitals. Because of this gap in research as well as the fact that the studies mentioned above only show marginal and often hard to quantify increases in patient satisfaction in these pharmacies, patient satisfaction has only shown to be marginally increased in corporatized retail pharmacies. What is the exact value of having higher patient satisfaction and what does it mean for the patient experience as a whole? If the patient is merely more satisfied because they spent less time in the pharmacy, does that still mean that their experience is positive? Patients should be satisfied because they are receiving all of the adequate information about their prescription medications as well as the risks and side-effects associated with them instead of just being happier to only spend 15 minutes waiting in the pharmacy itself. Due to all of these reasons and questions, patient satisfaction is identified as one of the major gaps in the research into the exact effects of corporatized pharmacies

Areas of Concern

Now that the two main benefits of this change in retail pharmaceutical operations have been outlined, the focus will be turned to the areas of concern that are involved with the corporatization of retail pharmacy including the lack of decreased cost to the patient in these pharmacies and reduction in pharmacist-patient counseling. These two main topics were chosen for the following reasons. First, cost is and always will be an important factor to the patient when selecting both which pharmacy to use as well as which prescription drugs to actually buy.

Because of this, it is vital that patient costs remain at a level that is affordable to the patient in order to make sure the patient is actually buying and adhering to their prescription medications. In addition to this, pharmacist-patient counseling brings many added benefits to the patient experience in corporatized pharmacies. One of the pharmacist's goals is to make sure the patient is aware of exactly what medication they're taking and how to use it. Pharmacists also need to make patients aware of possible side-effects, allergic reactions, overdose risks and just what to expect when taking a given prescription medication. If the pharmacist is not able to convey this information to the patient after the patient receives a new medication due to time constraints, ADRs such as overdoses, improper usage and other problems can occur putting the patient at risk of injury or death.

Decreases in Pharmacy Cost but not Patient Cost

In this section of the literature review, decreases in pharmacy cost without decreases in patient cost are focused on. Though there is evidence that corporatization as well as automation decreases cost to the pharmacy, there was not convincing research that found decreases in the costs to the pharmacy also decreases cost to the patient. Due to this reason, this idea was placed into the areas of concern category because it shows that these corporatized pharmacies are not lowering the cost of these drugs to the patient even though the corporate owners of these pharmacies have been successfully lowering their own cost through corporatization.

A pamphlet written by one of the companies that creates an automated dispensing machine called "ScriptPro" makes several claims regarding both the cost efficiency as well as time efficiency of its product. In the pamphlet, which compares the operation of one retail pharmacy chain before and after the introduction of this automated filling machine, it is shown

that when the pharmacy chain installed this machine it was able to reduce “more than 60 hours” of weekly staff time per store on average” (Aurora Pharmacy, pg. 2, 2012). This means more profit for the company but what about for the patient? While the pamphlet does say that these pharmacies can essentially “pass the savings on to the patient” they do not make the claim that this actually occurs. This is problematic due to the fact that just because the cost is decreasing for the pharmacy does not mean that the cost is decreasing for the patient. If all of these automated devices serve to reduce the cost so much to the pharmacy itself, why are these savings not shown to be passed on to the patient? Can these machines even be considered beneficial when they have only been shown to allow the pharmacy owners to reduce the hours of their employees in order to make a higher profit?

There is one article that focuses mainly on the corruption of the pharmaceutical production industry and its perverse relationship with the Food and Drug Administration (FDA). Though this is seemingly unrelated to the subject at hand, this article elaborates on an interesting idea regarding the reduction in costs of retail pharmacies due to these “contracts” with drug companies. It states that this collaboration between pharmacies, drug companies and the FDA causes a large number of new drugs with slightly different therapeutic effects to constantly be released in order to provide an ever-increasing profit stream to all parties involved (Light et al, 2013). Due to this, patients will be buying more and more different types of drugs that can often be exceedingly expensive due to a lack of a generic equivalent. Based on this idea, the cost could actually be *increasing* for the patient due to the increased prices of brand drugs when compared to generics. Once again, these ideas emphasize the fact that corporatized pharmacies are doing everything in their power to decrease their own cost through automation, staffing decreases and increasing the volume of prescriptions filled, yet none of these savings occurring in corporate

operations have been shown to be passed onto the patient. In fact, a survey conducted in 2013 which compared the total out-of-pocket cost for 5 common generic drugs (pioglitazone, escitalopram, atorvastatin, clopidogrel and montelukast) noted that when comparing corporatized chain-pharmacies such as Walmart, Walgreens, Target and Rite-Aid to independent pharmacies, patients paid up to 500 dollars or more at the chains than at independent pharmacies for the same drugs (Drug Costs, 2013).

It is easy to see from the above research that there is a major problem occurring in corporatized pharmacies in regards to patient cost. The research proves that patients using corporatized pharmacies usually end up paying more than when they use a privately-owned pharmacy. Because of this importance, more research needs to be done into why the patient pays more at corporatized pharmacies as well as how to decrease the cost for the patient whether it be through insurance changes or changes in the pricing of drugs from these corporatized pharmacies themselves. However, it is likely that one of the reasons why research on cost reduction on the patient when using corporatized pharmacies is lacking is due to the fact that these pharmacies don't want to have that information shared with the patient.

Decrease in Pharmacist-Patient Counseling and relationship to ADRs

In this section of the literature review, several articles will be examined which note that the counseling time between the pharmacist and the patient has decreased over the last 20 to 30 years. This is largely due to the effects of corporatization and accompanying changes in operations have on retail pharmacy. This topic is significant because lower counseling times have been shown in other studies to cause problems such as increased ADRs and incomplete information given to the patient (Shah and Chewning, 2006). "Counseling" refers to the

discussion that takes place between the pharmacist and the patient regarding new prescriptions that occurs before the patient leaves the pharmacy. This consultation is supposed to provide the patient with the necessary information they need in order to both take their prescription drug properly as well as be on the look-out for signs of ADRs such as drug allergies and other serious side-effects so they can contact their doctor immediately. It is important to note that since research into this topic is conducted nationwide, there are different regulations on counseling depending on which state the study was conducted in. For example, in Oregon the pharmacist is required by law to counsel all patients in a face-to-face manner on new prescriptions (OBOP, 2015). This law might not exist in the exact form depending on the state research is conducted in. Either way, all of this research is vital to understanding just how often pharmacists counsel all patients (new and continuing) and trends in both time spent counseling as well as rates of counseling done by pharmacists in corporatized pharmacies.

One literature review makes several observations and conclusions about the change in the communication between the pharmacist and patient over the last 20 to 30 years. Researchers note that even though patients in general are satisfied with their interaction with the pharmacist in these corporate retail pharmacy settings, patient counseling rates (the rate in which the pharmacist counseled the patient on both new and continuing prescriptions) have decreased significantly based on conducted surveys. One such study noted a decrease from 74% to 33% (Guirguis and Chewning, 2005). In addition to this, it is also noted that patients are often not provided with all of the useful information needed about a given prescription drug. This lack of information is also inferred to increase rates of ADRs in patients. This inferred increase in ADRs is a significant point of interest regarding lack of counseling from pharmacists. If more ADRs are occurring because of the lack of complete counseling by the pharmacist due to corporatization,

this change in retail pharmacy operations becomes even more concerning. The literature review concludes that in order to improve this lack of counseling, pharmacists need to “affirm their role of patient-focused counseling” so they can realize their “professional potential” (Guirguis and Chewning, pg. 14, 2005).

Another literature review seeks to provide a summary of the research done on corporatized community pharmacies and more specifically pharmacist-patient communication in order to draw conclusions on their change over time and the effect on the patient. Through this detailed review, researchers ultimately make the conclusion that though there is some evidence of decreases in communication between the pharmacist and patient in these settings due to increased pharmacy workflow and decreased staffing, more research needs to be done on this topic in order to confirm the idea. It is also mentioned that many studies aimed to quantify the communication between the pharmacist and patient in regards to the extent and type of information provided by the pharmacist. While this is useful, this does not completely explain the effectiveness of the communication between the pharmacist and the patient. The length does not necessarily imply that the consultation was complete in the sense that it provided that patient with all of the necessary information required as well as provided them contact options for further questions if needed (Shah and Chewning, 2006).

Face-to-face interviews with community pharmacists in corporatized pharmacies were used in one article in order to determine how many ADRs were reported as well as how much the pharmacists knew about the ADR reporting process. This interesting study concluded that even though nearly all of the pharmacists (93%) were aware of how to report ADRs, only around half of them had actually recalled using this knowledge to report ADRs. The article concludes with the idea that even though pharmacists are aware of ADRs and their rates, they need to further

stress the importance of actually reporting incidents of ADRs so both doctors and patients can be made more aware of their prevalence. It is noted that the actual rates of ADRs in retail-chain pharmacies vary between 1.8% and 6.7% depending on the study conducted (Bond and Raehl, 2006, Pirmohamed, 2004, Onder, et al, 2008, Lazarou, 1998). While these numbers may seem small, they still mean that up to 1 in 16 patients will experience some kind of adverse drug reaction after receiving and taking their drugs from the retail pharmacy. This number needs to be reduced as much as possible in order to protect the health of patients using these pharmacies for their prescriptions. Other articles state that more research needs to be done on the topic of ADR reporting in order to start reducing the number of ADRs occurring every year in the United States (Green et al, 2011).

A final article examined a sizeable number of corporate pharmacies and reports on the amount of counseling done by the pharmacist when compared across states, the “busyness” of the pharmacist and finally the age of the pharmacist. Ultimately this study found that around 63% of patients were given oral drug information by the pharmacist, with younger pharmacists often giving more information to the patient. This piece of information does give the idea that pharmacy schools may be training new pharmacists to provide a more complete consultation to the patient which is a benefit. However, the study also found that most of these pharmacies, especially the busy ones, had counseling rates on new prescriptions as low as 40% overall depending on state regulations on counseling. The article concludes by stating that because of the wide variance in counseling between these corporate pharmacies, more nationwide regulation needs to be placed on these pharmacies in order to increase consistency in counseling as well as drug information provided (Svarstad et al, 2004).

After looking through all of these areas of concern regarding corporatization, the overall effects of this change in retail pharmacy operations begin to make itself more apparent. Both the lack of reduction in costs to the patient as well as the reduced counseling rates provided to the patient serve to be a large area of concern within the topic of corporatized retail pharmacies. The first gap that exists in this literature is the lack of a large scale research study done specifically on corporatized pharmacies and not just pharmacies as a whole. There are few studies done on corporatized pharmacies. Also, another gap is present on the topic of cost reduction for the pharmacy and possibly the patient. Within this subject, there was plenty of information that concluded that retail pharmacy costs are decreasing for several reasons. However, there was no conclusive evidence of this ultimately causing a lowered cost to the patient. Research on this idea would be vitally important to further concluding on the overall effects of the corporatization of retail pharmacy. Following this literature review, the possible methods that could be used to further research the topic at hand will be examined.

Conclusion and Discussion

The main goal of this paper was to describe the benefits and areas of concern to patients regarding the corporatization of retail pharmacies. The benefits of this change included: Decreases in filling time, and increases in patient satisfaction. The areas of concern included: Decreases in pharmacy cost without decreases in patient cost, and decreases in counseling time between the pharmacist and patient and rates of ADRs. Before delving into final conclusions, the limitations of this literature review as well as avenues for future research will be examined.

Though hundreds of articles were found and read through, there were still a few limitations. One major limitation was the fact that I did not have access to all of the pharmacy

and scientific journals due to restrictions such as subscription fees, publicly available articles and articles that were not made available through the PSU library or free on Google Scholar. Some were requested, but responses were never received regarding receiving access to these articles even after follow-up requests were sent. Another concern is my own lack of a complete knowledge of the inner-workings and jargon of the pharmaceutical setting. As a current technician and beginning pharmacy student, I am not completely aware of all the details regarding the field of pharmacy and its operations. However, with supplementation from both credited online sources as well as current pharmacists I work with, I believe that I have achieved enough of an understanding to confidently discuss the topic of corporatization as well as specific ideas regarding pharmacy practice. Finally, one more limitation is the lack of articles that focus on the corporatization of retail pharmacy specifically. Many articles will focus on the field of pharmacy, hospital pharmacies, or other settings instead of these corporatized chain retail pharmacies that I am interested in examining. Due to this, there were not as many articles found as would be hoped for. Overall, though there were some limitations, I still believe that I was able to find a complete collection of articles and papers for review in order to draw my conclusions on the effect of corporatization.

After completing the review of relevant literature for the topic of the corporatization of retail pharmacy, there are several ideas that can be suggested in order to strengthen research in the field and ultimately find out the true implications of the shift in ownership from private to corporate. First of all, larger observational studies need to be performed (similar to Green's research) in order to gather more data on rates of patient satisfaction, pharmacist-patient communication and other aspects of the corporatized community pharmacy. Elaborating on this thought, the term "patient satisfaction" and how to measure it properly in the pharmaceutical

setting needs to be revised. In many of the surveys and observational studies patients were surveyed with a few days to a few months after visiting the pharmacy on their overall “satisfaction” with services. Though patients did report higher satisfaction on average in corporatized pharmacies, it would be intriguing to figure out exactly what they are satisfied about and map this over the long-term time frame. For example, researchers could survey patients over the period of several years as they receive all of their drugs from the same corporatized pharmacy in order to gain a more complete understanding of what qualities in a pharmacy the patient approves of. This method could also help to show if the patient is getting all of the necessary information about their medications because the researchers could determine ADR rates in a large number of patients after receiving drugs from these pharmacies over a long period of time. All of these ideas could be performed in future research in order to get a more complete picture of patient satisfaction in these types of pharmacies.

The second suggestion is that more research needs to be done on the cost-reduction occurring in the corporate pharmacies in order to determine whether or not this reduction in costs is actually transferring to the patient. Several articles noted that while the cost for the pharmacies themselves were constantly decreasing due to increases in efficiency and staffing cuts, the cost to the patient seemed to be widely varied depending on the chain pharmacy they received their medications from. Due to this, it would be interesting to find solid research that compares the cost savings of the patient to that of the pharmacy itself in order to determine if any of these savings are truly “passed on to the patient.”

Lastly, more quantitative studies need to be performed on the changes in filling time, rates of ADRs and other vital statistics in order to more fully understand just what effect corporatization has on the pharmacy as well as their patients. There was a limited pool of

research in these statistics to examine and I believe that more studies would allow a confident conclusion to be made on what corporatization means for the retail pharmacy and what can be done to improve the situation.

Even though there are both benefits as well as areas of concern associated with the corporatization of retail pharmacy, the areas of concern seem to outweigh the benefits. First and foremost, ADRs are one of the most important, if not the most important statistic when talking about the patient experience in the pharmacy. Because the rates of ADRs have been shown to be higher in these corporatized pharmacies, this makes the negatives outweigh the positives. In addition to this, the large amount of corruption that exists in the field of pharmaceuticals in regards to drug “contracts” with the FDA and inconsistent pricing leave much to be desired for the patient experience. When the emphasis is shifted from providing the best possible outcome to the patient to making the most profit, the patient will ultimately suffer. Though there are some positives, such as a slight increase in patient satisfaction due to lowered filling time and less time spent waiting in the pharmacy, it is still believed that corporatized pharmacies and their goals are not in the best interest of the patient and need to be changed. If these types of pharmacies were able to both strengthen the patient experience through increased counseling time and more staffing while still maintaining the lowered filling time and increased patient satisfaction, corporatized pharmacies would be seen as a more trusted place to purchase prescription drugs.

There are several changes that can be recommended in order to help combat this detrimental influence corporatization is having on the pharmaceutical industry as a whole. The first is actually brought up by Donald Light in his article on the corruption of pharmaceuticals. Light states that the FDA must be “entirely funded by taxpayers and consumers” and not the pharmaceutical companies themselves in order to reduce corruption and ultimately reduce the

ingrained idea in these pharmacies that the bottom line is purely profit (Light et al, pg. 19, 2013). In addition to this, pharmacists need to be made more aware of the amount of time they spend counseling their patients and if this time is not seen as adequate to give the patient all the necessary information, more staffing by the pharmacy should be considered. This could potentially be accomplished through increased training in both counseling and inter-personal communication skills between health-care providers (such as pharmacists) and patients. Even though the pharmacist might be knowledgeable of all the information about a given prescription drug, they still need to be able to convey this information to the patient in a way that the patient can understand. Finally, more research needs to be done on the topic of corporatization of retail pharmacies in order to make a more detailed and comprehensive plan of action to help increase the integrity of the corporatized pharmacy. Research in the form of surveys, quantitative studies, interviews and literature reviews will all help strengthen the body of knowledge on the topic of corporatization and ultimately help explain just what needs to be done to improve these pharmacies.

As a student of pharmacy and a future community pharmacist, I believe that it is absolutely vital to put the patient first in all things involving pharmaceutical drugs, treatment and patient outcomes. If patients do not come first, the fundamental integrity of the field of pharmaceuticals is at risk of being tainted. Through this literature review and discussion I hope that I convinced you, the reader, that this change in retail operations matters to not just me, your pharmacist, or your doctor. If corporate pharmacies continue down the path of putting profit over patient care, you as the patient will be the one paying the consequences.

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