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Analysis of medication adherence-related notes from a service-oriented community pharmacy

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ABSTRACT

Background: Medication nonadherence is a significant public health problem. Community pharmacists are positioned to intervene, however, the process is not well understood.
Objective: To classify and quantify the reasons for nonadherence documented by community pharmacists.
Methods: A retrospective content analysis of pharmacist notes related to nonadherence at a service oriented community pharmacy in the Midwest United States. Notes from the site's dispensing custom documentation software were obtained from September 1, 2014 through February 28, 2015 that were labeled "compliance", either prompted by proportion of days covered calculations or entered as a drug therapy problem. A code list was iterated for the notes based on the literature and by reading the notes and generating descriptive codes. A reliability analysis was calculated for two coders. Notes were coded, check-coded, and discrepancies were resolved using a consensus process. Frequencies were calculated for each code and representative text was selected.
Results: Pharmacists documented 3491 notes as part of their continuous medication monitoring process. Nineteen codes were developed. The reliability for the coders had a Cohen's Kappa of 0.749. The majority of notes (61.4%) documented the pharmacist evaluated the refill and had no concerns or would continue to follow. Also documented were specific reasons for out of range PDCs not indicative of a nonadherence problem. Only 2.2% of notes specifically documented a nonadherence problem, such as forgetfulness or cost.
Conclusion: While pharmacists encountered many false positive nonadherence alerts, following up with patients led to hundreds of discussions and clarifications about how patients use their medications at home. These results suggest a small minority of late refills are judged by pharmacists as indicative of an adherence problem, contrary to the prevailing literature. Pharmacists may benefit from modifying their approach to nonadherence interviewing and documentation as they seek to address nonadherence in practice.
Synopsis: This study descriptively coded community pharmacist notes related to medication non-adherence. Most notes were prompted by automatic calculations by the documentation software of the proportion of days covered. This prompted regular conversations about non-adherence issues and clarifications on how medications are being used at home. Documentation suggested most adherence problems were technical in nature rather than stemming from patient factors like medication beliefs. Pharmacists could be more intentional and descriptive when documenting nonadherence issues so that more targeted follow up can be made, including a greater investigation of medication beliefs.

1. Introduction

Medication nonadherence is a significant public health problem with an estimated direct cost exceeding $100 billion annually in the United States alone.[1,2] Rates of medication nonadherence typically are reported at 30–50%, with significant variation associated with the chronic disease being targeted, the complexity of the regimen, and numerous well-documented intentional and unintentional reasons for nonadherence.[3–5] Studies also show that 15% of patients fail to start their treatment and half may stop taking their medication within a year.[6]

Community pharmacists are positioned to intervene on

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nonadherence as they dispense 1.5 billion chronic prescriptions annually.[7] While pharmacists appear to have a positive role belief about monitoring medication adherence,[8,9] busyness and time limitations are documented obstacles to adherence counseling.[9–11] Limited opportunities for payment have been implicated for infrequent adherence interventions, although there are signs that community pharmacists will have new quality-based financial incentives to improve medication nonadherence among patients.[12] Another factor that may affect a pharmacist's effectiveness in addressing nonadherence is their focus on technical issues related to nonadherence, and prescriptions in general, rather than explore psychosocial or belief-based issues surrounding medication-taking behaviors.[13,14]

A recent observational study of patients with artificially contrived nonadherence reported that patients rarely (~25% of the time) were asked about a missed refill when at the pharmacy, rarely were counseled by the pharmacist about the importance of adherence, and rarely were called by the pharmacy regarding a late refill.[15] Research has found, however, that patients want more information from pharmacists about their chronic medications.[16] Patient interest in side effect information, clarifying complex instructions, the indication of the drug, and cost, all could relate to their interest in taking the medication long-term and as directed. It is important, however, for pharmacists to take initiative as patients often are hesitant to engaging their pharmacist due to a fear of embarrassment and viewing the pharmacist as unapproachable.[16] Some attention also has been given to activating patients to ask questions of their pharmacist.[17]

There is a need to better understand the pharmacists approach to nonadherence.[18] Specifically, what issues and interventions community pharmacists use in the course of daily practice and what gaps exist in the range of adherence problems identified by pharmacists? One way to investigate these questions is to examine pharmacist documentation of their assessments made during dispensing. The objective of this study was to classify and quantify pharmacist documentation notes related to reasons for medication nonadherence in a community pharmacy setting.

2. Methods

This study includes data from a service oriented community pharmacy in the Midwest United States which fills approximately 1600 prescriptions per week. Data entered from 9 pharmacists were included in the cross sectional retrospective analysis of pharmacist documentation. This chart review analysis was deemed exempt by the University of Iowa Institutional Review Board. This particular pharmacy has developed a computer-based system to support pharmacist documentation of assessments and actions during the drug utilization review (DUR) and prescription dispensing process. The pharmacy had been iterating this system for several years and it is used by all pharmacists and integrated into workflow.[19]

This system automatically calculates 90-day adherence rates in the form of proportion of days covered (PDC) and the pharmacist is alerted during the prescription verification process when PDCs are high or low. This PDC alert prompts the pharmacist to make an entry into the documentation system. Pharmacists also can manually insert notes as warranted without prompting from the PDC calculator. Other note categories include therapeutic duplications, drug-drug interactions, use of high risk medication in the elderly, other drug therapy problems identified, and several other categories for patient counseling and medication management, for example, generic switches and over the counter medication consultations.

The dataset made available to the two researchers included 3491 notes that either were prompted by an out of range PDC or manually entered and tagged with the drug therapy problem “compliance.” Notes were dated from September 1, 2014 through February 28, 2015. This represents approximately 40% of the total of about 8500 notes entered during this period and making it the most common category of documentation. The term “compliance” was chosen by the developers of the system. The University researchers have chosen to use the term “adherence” in their description, analysis and discussion as to fit with the predominant verbiage in the literature. When documenting a compliance note, the software included 2 optional check-boxes to automatically enter pre-populated text in the interest of saving pharmacist time when appropriate. These included text for acute/PRN (as needed) medications, and continue to monitor compliance. It was not required, however, that a checkbox be selected and the pharmacist was free to enter text to document detail about a nonadherence problem or situation.

The description of the content analysis procedure is based on a multi-step, quantitatively-focused process outlined by Holdford.[20] The first step is to define a research question. The research question for the present analysis is *“What reasons for nonadherence are present in a sample of medication adherence related notes from a progressive community pharmacy?* The theoretical foundation for this question is grounded in both the World Health Organization's report on medication nonadherence and Horne's necessity-concerns framework.[5,21] The justification for this research question and theory selection is to better understand what nonadherence reasons pharmacists are encountering in practice and to what extent these reasons parallel the reasons reported in the broader nonadherence literature.

The next step was to identify a priori constructs of interest based on the literature. For this analysis, forgetfulness, low need for the medication, concern about side effects or actual side effects, and cost were identified. The remainder of codes were iterated inductively from reviewing and re-reading the notes to identify patterns in the data which could be associated with a code.[22] The unit of analysis was the individual note. These ranged from a few words to a long paragraph. The coders were one PharmD, PhD and one student pharmacist. There was no sampling or data collection plan since the dataset was provided in its entirety to the researchers.

The codebook for this study was created in a process as follows. First, a priori codes were specified. These included two codes for the two pre-populated check box options which automatically populate the note field with text. Also included a priori were four codes from the literature of seminal reasons for nonadherence: forgetfulness, cost, low perceived need, and side effect concerns. The rest of the codes were developed using an inductive process whereby two researchers independently created lists of descriptive codes based on a thorough reading of the data set. These researchers met to create a consensus list of codes with accompanying detailed descriptions so the coder can decide which code to apply to what text segment in a consistent manner. The goal of coding was to assign a succinct code that characterized the content of the note in one or more words. This allows the codes and corresponding text to be sorted so the text could be interpreted together. One code was applied to each note which focused on the most salient reason for the out of range PDC, reason for nonadherence, or other characterization of the note content. The two researchers also discussed arranging the codes into broader categories or themes. The coders both coded three sets of 100 randomly selected notes to refine the code list and discuss discrepancies in coding. After the third coding, a reliability analysis using Cohen's Kappa was conducted using ReCal v.2.0. Given a satisfactory reliability for exploratory analyses, the data set was coded by one researcher and check coded by the other.[22] Discrepancies were discussed using a consensus process. Descriptive statistics were calculated using Microsoft Excel (Redmond, WA). Lastly, codes were sorted into themes for the purpose of data consolidation to focus

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