Examining Attitudes and Beliefs that Inhibit Pharmacist Implementation of a Statewide Opioid Harm Reduction Program

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ABSTRACT

Background: A statewide opioid risk screening program was introduced to pharmacists to provide them with resources to screen patients who are prescribed an opioid medication. Using opioid risk screening equips pharmacists to deliver education and patient-centered interventions for opioid harm reduction. Nearly 50% of pharmacists that enrolled their pharmacy to participate in this program did not actively implement the program to patients. Little research is dedicated to examining factors which contribute to unsuccessful implementation of pharmacy-centered interventions. This research aims to describe barriers and beliefs which may hinder the ability of pharmacists to integrate innovative practices into existing workflow.

Objectives: Using the theory of planned behavior, determine what attitudes and beliefs contribute to unsuccessful implementation of opioid risk screening.

Methods: A survey was developed within the context of a theoretical framework and distributed to pharmacists who did not successfully implement opioid risk screening 12 month following program inception. Attitude, subjective norm, and perceived behavioral control constructs of the theory of planned behavior were used to identify barriers to opioid risk screening implementation. The responses were analyzed using Mann-Whitney U test, ANOVA, and descriptive statistics.

Results: Twenty-three pharmacists consented to participate in this study and 17 pharmacists completed the survey (response rate 74%). Pharmacists indicated positive attitudes toward reducing negative opioid outcomes for patients using opioid medications. Positive subjective norm responses indicated a perception that patients and collaborative healthcare providers would approve of pharmacists using opioid risk screening for patients. The highest proportion of negative responses was observed in the perceived behavioral control construct which included difficulty in offering the screening and unsuccessful integration of past interventions.

Conclusions: These results suggest that perceived behavioral control of pharmacists is the most influential factor in unsuccessful implementation of opioid risk screening.

Key words: pharmacist, theory of planned behavior, implementation, prescription opioids

Introduction

Over the last decade, the United States has prioritized opioid harm reduction strategies focusing on healthcare delivery practice. These strategies have included the initiation of prescribing guidelines for opioids, Prescription Drug Monitoring Programs (PDMP), and medication disposal initiatives. The objective of these practice changes is the promotion of safe prescription opioid use and pharmacists are in a unique position to address opioid harm reduction by serving as a gatekeeper to medication dispensing. Patients visit their pharmacist more frequently than any other health care provider and pharmacists serve as integral sources of informational, practical, and emotional support during medication focused therapy.

A pharmacy-centered opioid risk screening program was introduced in North Dakota which provides pharmacists with the tools needed to screen patients who are prescribed an opioid medication. This program provides an opioid-risk-tool used in conjunction with the PDMP to identify the potential for opioid misuse and/or overdose in patients prescribed an opioid. Implementing a standardized risk screening tool for opioid safety allows pharmacists to deliver education and provide opioid-harm-reduction strategies to patients at the highest risk for negative outcomes.

Pharmacists as health-care providers possess the means to deliver instrumental patient care, however pharmacists willingness to provide access to opioid-harm-reduction services and fully accept these expanded roles has been slow and associated with significant variability across regions and systems. Patients who are prescribed opioids may require additional pharmacy care services, but barriers, such as lack of education, limited staffing resources, and poor organizational support, may hinder the provision of these services by the pharmacist. Pharmacists, being the most accessible healthcare professionals in our nation, are encouraged to capitalize on opportunities to communicate with patients to optimize opioid-harm-reduction strategies.

Extensive research has been conducted to establish the value and evidence for improved patient outcomes as a result of pharmacy interventions, but limited research is dedicated to understanding determinants of unsuccessful implementation.
of such programs. Slow uptake of new pharmacist roles, reluctance for added responsibility in patient care, and closer involvement with patients have each been cited as reasons for decreased uptake or success of community pharmacy innovations. Understanding how these factors influence the acceptance of novel practice changes has the potential to guide pharmacists for more successful implementation of future patient care services. Successful implementation of patient-care initiatives will contribute to initiatives advancing the role of the pharmacist within interprofessional teams and gaining provider status.

From August 2018 to August of 2019, 67 independent community pharmacists across the state of North Dakota voluntarily enrolled their pharmacy to participate in opioid risk screening. To enroll, pharmacies had to ensure that 50% or more of their pharmacy staff had completed the 3-hour opioid and naloxone training developed for opioid risk screening. The goal of the training was to improve the knowledge and skill of the pharmacist in conducting opioid risk screening and delivery of interventions to patients. Pharmacy locations which had not completed a documented patient screening 12 months following program inception were identified; the respective pharmacists-in-charge who enrolled the pharmacy to participate in this program were the focus of this study. This study was approved by the Institutional Review Board at North Dakota State University.

The theory of planned behavior (TPB) was selected as a framework to evaluate pharmacists’ attitudes and beliefs that may be hindering implementation of opioid risk screening. The TPB has emerged as an influential framework for the study of human action; although originally developed and tested within the context of social psychology, the TPB has been adopted by healthcare researchers. The TPB includes three overarching constructs: 1. attitude, 2. subjective norms, and 3. perceived behavioral control. Attitude refers to the degree to which a person has a favorable or unfavorable assessment of the behavior in question. Subjective norm refers to the social cues to perform or not perform the behavior. Perceived behavioral control refers to the ease or difficulty of performing the behavior. In addition, perceived behavioral control also reflects past experiences and anticipated obstacles during behavior change which determines self-efficacy in performance of future behaviors. These three constructs lead to behavioral intention and resulting behavioral action.

For this study, it was postulated that pharmacists’ non-active participation was due to attitudes based on perceived value of program, subjective norms such as social cues or social pressure, and perceived behavioral control related to self-efficacy and confidence. The objective of this study is to determine what behavioral factors contribute to a pharmacists hesitancy to implement opioid risk screening.

Methods
A 17-item survey was designed and disseminated to the PIC who enrolled their pharmacy location to participate in opioid risk screening, but unsuccessfully implemented this program 12 months from inception. This pharmacist was contacted via phone by the primary researcher and consented to participate. The survey was adapted from a prior instrument examining attitudes and beliefs of pharmacists toward medication therapy management services (MTM) and author permission was granted to modify the instrument. The survey questions were divided into the three TPB constructs (Table 1). Questions used a 5-point Likert scale (1= strongly disagree to 5=strongly agree). Demographic information collected included pharmacy practice location ([urban >2500 population] vs [rural < 2500 population]) and years of pharmacy practice experience. The survey was self-administered and completed anonymously.

Excel (Microsoft 2019) and Statistical Package for Social Sciences (IBM SPSS version 24.0) were used for data analysis. Shapiro-Wilk and ANOVA two-factor analysis was conducted to analyze distribution and reliability of instrument. A Mann-Whitney U was used to identify differences between the theory constructs and location of pharmacy practice variable. Reverse coding was conducted on negatively phrased questions to ensure consistent data analysis.

Results
Of the 29 non-active pharmacies, 23 pharmacists-in-charge consented to participate in the study. Of these, 17 completed and returned the survey for analysis with a response rate of 74%. Survey responses demonstrated non-normal distribution and the Cronbach alpha value for this survey was 0.84, indicating a high internal consistency and reliability for the instrument. Reported in Table 1, ‘agree’ and ‘strongly agree’ were aggregated for percent agreement and ‘disagree’ and ‘strongly disagree’ aggregated for percent disagreement.

Responses in the attitude constructs (Table 1) included a positive disposition for medication safety and therapy recommendations which are important to patient safety (100%), prioritization of the opioid epidemic (94%), importance of pharmacist participation in opioid harm reduction in reducing negative opioid outcomes (94%), and opioid risk screening providing an elevated level of care (76%). Pharmacist responses to whether opioid risk screening would improve patient trust in the pharmacist indicated a relatively equal distribution of responses, agree (30%), neutral (35%), and disagree (35%).

Responses to the social norm constructs indicated that over 70% of pharmacists agreed that patients and public health advocates would like to see the pharmacist promote opioid harm reduction strategies in their community and 82% of pharmacists believe that physicians would approve of the use of risk screening during opioid medication filling (Table 1). These results suggest that pharmacists perceive other
healthcare providers would not disapprove of expanding the scope of practice for opioid risk screening, but rather physicians would affirm the role of pharmacist screening for opioid harm reduction. Fifty-three percent of pharmacists agreed that fellow pharmacy staff members would support opioid risk screening.

For the perceived behavioral control construct, nearly half of pharmacists indicated that their pharmacy had the necessary support staff to implement opioid risk screening (Table 1). However, pharmacists were split as to whether pharmacy workflow was conducive to the additional time spent on screening, 35% agree, 30% neutral, and 35% disagree; suggesting pharmacists perceive little control over adapting new patient care strategies into existing workflow. Nearly 60% of pharmacist agreed that offering the screening and resulting interventions to patients would be difficult, revealing low self-efficacy.

Pharmacists reported a 70% agreement to having control over the interventions that their pharmacy participates in, and 82% agreement that they possess the knowledge and skills to provide opioid risk screening. One question focusing on ‘past behavioral control’ was used to assess the significance of past successes or failures of new pharmacy practice interventions. Over half (53%) of pharmacists agreed that previous experience with successful integration of new interventions had been difficult.

**Discussion**

The TPB framework was valuable in assessing the most attributable behavioral determinants of pharmacists who were unsuccessfully in administering opioid risk screening to patients. The theoretical framework allowed for identification of both positive and negative behavioral factors which allows recognition of the most significant barriers and affordances to program implementation. These findings have the potential to enhance educational opportunities and pharmacist engagement in the goal of successful opioid risk screening implementation.

Attitude responses indicate that pharmacists were aware of the opioid epidemic and understood the profession of pharmacy offers a valuable resource during care provision to mitigate this problem. These results support the notion that attitude may be a significant and positive predictor of pharmacists enrolling in the program, but this finding is not as influential as the other constructs in actively performing the behavior of opioid risk screening. The survey question ‘Patients will trust me more by opioid risk screening’ received the highest negative response rate in the attitude section of survey responses (Table 1). Pharmacists may feel that patients will not understand the importance of opioid risk screening nor appreciate the benefits of gathering a comprehensive history to guide patient care recommendations during pharmacist consultation.

Positive beliefs in the subjective norm constructs included the finding that public health advocates, patients, and physicians would be supportive of a pharmacy screening to promote opioid harm reduction. These results solidify the perceived role of the pharmacist in the community, while also highlighting the importance of their role on the healthcare team and their contributions interprofessional collaborations. Further demonstrating the need of pharmacists to achieve provider status.

Perceived behavioral control was associated with positive beliefs including having necessary support staff, adequate knowledge, and significant control over interventions that are implemented. Prior studies have indicated the need to focus on education and a concern expressed by pharmacists to improve knowledge for successful intervention implementation. However, these results demonstrate that pharmacists expressed confidence in having acquired the knowledge and skills for opioid risk screening and recommendations. This may be attributed to the opioid risk screening education that was made available to pharmacists preparing them for evaluation of screening results and associated interventions for patients receiving prescription opioids. Continuing education for healthcare professionals focuses on changing behavior, ascertaining knowledge, and improving self-efficacy. However, self-report of knowledge and confidence that one can perform a task, may be an insufficient indicator of true self-efficacy.

Negative perceptions regarding perceived behavioral control included difficulty in offering the opioid risk survey, time constraints, and difficult past experiences during implementation of new interventions. Pharmacists routinely make recommendations during prescription and over-the-counter medication education. Therefore, it is assumed that recommendations are not the largest control factor inhibiting the screening, but instead offering the opioid risk screening may be an obstacle. This barrier may be perceived as a challenge to incorporating a new process into existing pharmacy workflow. Pharmacists may feel that competing priorities would hinder them from implementation due to the time commitment in discussing the screening tool and asking patients for voluntary participation. Pharmacies whom have successfully implemented opioid risk screening spent on average of 5 minutes with patients during the opioid risk screening process, demonstrating a limited amount of time is required to incorporate this program in the community pharmacy.

High workload negatively impacts the amount and quality of advice and services provided to patients and is a major deterrent to practice change. Studies have shown that community pharmacists give low priority to logistics and pharmacy management services, but substantial time is devoted to responsibilities that include personnel and inventory management. This may be indicative of a high value
in addressing the opioid epidemic (attitude) and the services that pharmacists can offer, but the realistic concern that the pharmacist will not be able to dedicate the time required to offer and recommend opioid harm reduction strategies due to competing priorities (self-efficacy).

Difficulty in offering the screening may also be attributed to the unique practice of gathering patient information in relation to personal/family history of substance abuse. This may add to pharmacist’s hesitation due to fear of added responsibility, lack of confidence, fear of repercussions, need for approval, and risk aversion. In addition, pharmacists have exhibited a lesser degree of openness to novel experiences as compared to the general public. The nature of questions related to opioid risk screening is new area of practice and may put the pharmacist in an unfamiliar position, as well as a perception that it may make the patient uncomfortable and risk destroying relationships.

A majority of pharmacists (53%) reported difficulty in the implementation of new practices in their past experiences. These results align with the TPB, in that perceived behavioral control is an important mediator of actual behavior because individuals who have been successful with past behavior change will have improved confidence and controllability over future behavior performance. Prior difficulties and struggles with new practice change have significant influence on self-efficacy for behavioral performance. Perceived behavioral control has the potential to significantly influence behavioral action in an independent nature irrespective to the other constructs, which reflects the significance of self-efficacy and controllability in behavioral action outcomes.

Limitations and Future Research
Although the response rate (74%) was high, the small sample size is a limitation reducing the power of the results. This research focused on a single cohort of pharmacists not actively performing opioid risk screening and comparison of non-active to active pharmacists could offer more insight as to the barriers of implementation. The ONE Rx program is limited to the state of North Dakota presently, which limits the generalizability to other parts of the country.

The survey did not contain questions related to the pharmacists’ role beliefs, moral norms, and personal norms. These areas could aid in identifying feelings of personal responsibility regarding non-performance of interventions and role-identity during pharmacy practice obligations.

Future research opportunities include the application of TPB as a framework for qualitative analysis evaluating pharmacist unsuccessful implementation of new practices. This has the potential to expose underlying elements relating to attitudes, norms, or behavioral controls that cannot be identified with a survey.

Conclusion
This study determined that pharmacists enrolled to perform opioid risk screening had positive intentions to adopt the program and the TPB was useful for identifying obstacles hindering the implementation of screening. Pharmacists reported unsuccessful implementation due to limited resources (i.e. time, staff, workflow constraints), difficulty in offering the screening tool, or prior struggles of implementing other pharmacy innovations. As indicated with the highest proportion of negative responses, these results suggest that perceived behavioral control of pharmacists is the most influential factor in unsuccessful implementation of opioid risk screening.

Identifying avenues to strengthen perceived behavioral control (self-efficacy, controllability), would allow for improved chances of successful implementation of novel pharmacy practice opportunities in the future. Opioid risk screening delivered by the pharmacist establishes a foundation for safe and responsible prescription opioid use in communities. This practice not only elevates patient-centered care, but additionally focuses on health promotion in our communities.

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Table 1: Pharmacist Responses: ONE Rx and the Theory of Planned Behavior (n=17)

| Attitude Constructs                                                                 | Mean (SD) | % Agree<sup>a</sup> | % Neutral | % Disagree<sup>b</sup> |
|--------------------------------------------------------------------------------------|-----------|----------------------|-----------|------------------------|
| As a pharmacy provider, medication safety and therapy recommendations are crucial to patient health outcomes. | 4.76 (0.44) | 100%                | 0%        | 0%                     |
| I feel that the opioid crisis should be a top priority in our state.                | 4.24 (0.56) | 94%                 | 6%        | 0%                     |
| Pharmacist participation in providing opioid harm-reduction is an important step to reducing opioid misuse and overdose. | 4.24 (0.56) | 94%                 | 6%        | 0%                     |
| My patients will trust me more if I provide ONE Rx services.                        | 3 (0.91)   | 30%                 | 35%       | 35%                    |
| Opioid risk screening allows the pharmacist to provide an elevated level of care to patients. | 4 (0.69)   | 76%                 | 24%       | 0%                     |

| Subjective Norm Constructs                                                                 | Mean (SD) | % Agree<sup>a</sup> | % Neutral | % Disagree<sup>b</sup> |
|-------------------------------------------------------------------------------------------|-----------|----------------------|-----------|------------------------|
| Other pharmacies I am familiar with intend to participate in the ONE Rx project.           | 3.24 (0.83) | 24%                 | 65%       | 11%                    |
| My pharmacy staff would support the use of the opioid risk survey.                      | 3.41 (0.87) | 53%                 | 29%       | 18%                    |
| Patients and public health advocates would like to see me promote opioid harm reduction in my community. | 3.76 (0.73) | 71%                 | 23%       | 6%                     |
| Physicians would approve of me providing opioid screenings to patients.                  | 4 (0.59)   | 82%                 | 18%       | 0%                     |

| Perceived Behavioral Control Constructs                                                                 | Mean (SD) | % Agree<sup>a</sup> | % Neutral | % Disagree<sup>b</sup> |
|--------------------------------------------------------------------------------------------------------|-----------|----------------------|-----------|------------------------|
| I have the necessary support staff to participate in ONE Rx screening program.                      | 3.29 (1.02) | 47%                 | 24%       | 29%                    |
| To me, offering the opioid risk survey and recommendations would be difficult<sup>c</sup>.         | 2.59 (1.09) | 59%                 | 18%       | 23%                    |
| The workflow of the pharmacy does not allow for additional time spent with the opioid risk tool.<sup>c</sup> (controllability) | 3 (0.84) | 35%                 | 30%       | 35%                    |
| I have the necessary knowledge and skills to provide ONE Rx services.                            | 4.11 (0.83) | 82%                 | 12%       | 6%                     |
| I have significant control in determining what interventions my pharmacy participates in.         | 3.76 (0.88) | 70%                 | 18%       | 12%                    |
| Successfully integrating new interventions in my pharmacy has been difficult in the past.<sup>c</sup> (past behavior) | 2.82 (0.92) | 53%                 | 12%       | 35%                    |

<sup>a</sup> = agree and strongly agree aggregated for percent agreement  
<sup>b</sup> = disagree and strongly disagree aggregated for percent disagreement  
<sup>c</sup> = reverse coding performed on negatively phrased question