Journal of Substance Abuse Treatment 52 (2015) 67–72

Contents lists available at ScienceDirect

Journal of Substance Abuse Treatment

Brief articles

Factors Associated With Provision of Addiction Treatment Information by Community Pharmacists ☆

Nicholas E. Hagemeier, PharmD, Ph.D. [a,*], Arsham Alamian, MSc, Ph.D. [b], Matthew M. Murawski, Ph.D. [c], Robert P. Pack, M.P.H, Ph.D. [b]

[a] East Tennessee State University Gatton College of Pharmacy, Johnson City, Tennessee
[b] East Tennessee State University College of Public Health, Johnson City, Tennessee
[c] Purdue University College of Pharmacy, West Lafayette, Indiana

ARTICLE INFO

Article history:
Received 14 July 2014
Received in revised form 5 November 2014
Accepted 10 November 2014

Keywords:
Addiction treatment
Community pharmacist
Communication

ABSTRACT

Community pharmacists in the United States have significant opportunity to engage in community-level prescription substance abuse prevention and treatment efforts, including dissemination of information specific to available addiction treatment options. Our cross-sectional study of Tennessee community pharmacists noted that 26% had previously provided addiction treatment facility information to one or more patients in the past. The purpose of this study was to employ multivariate modeling techniques to investigate associations between community pharmacist and community pharmacy factors and past provision of addiction treatment information to pharmacy patients. Multivariate logistic regression indicated having addiction treatment facility information in a pharmacy setting (aOR = 8.19; 95% CI = 4.36–15.37), having high confidence in ability to discuss treatment facility options (aOR = 4.16; 95% CI = 2.65–6.52), having participated in prescription opioid abuse-specific continuing education (aOR = 2.90; 95% CI = 1.70–4.97), being male (aOR = 2.23; 95% CI = 1.38–3.59), and increased hours per week in the practice setting (aOR = 1.02; 95% CI = 1.004–1.05) were all significantly associated with provision of information about addiction treatment. Dissemination of addiction treatment information, improvements in communicative self-efficacy beliefs, and dissemination of prescription opioid abuse-specific continuing education are modifiable factors significantly associated with increased provision of addiction treatment information by community pharmacists.

1. Introduction

Community pharmacists are the primary providers (i.e., dispensers) of prescription opioids (POs) to patients (IMS Health, 2012). In 2012, pharmacists dispensed 172 million prescriptions for hydrocodone/- and oxycodone/acetaminophen; the 1st and 22nd most dispensed medications in the United States (U.S.), and the two most prescribed POs, respectively (IMS Health, 2012). Similar to many states in the U.S., Tennessee has experienced an exponential increase in PO dispensing, overdoses, and overdose deaths over the past decade (Centers for Disease Control & Prevention, 2011; Jones, Mack, & Paulozzi, 2013; Tennessee Department of Health, 2013b). In 2010, hydrocodone-containing products were dispensed in Tennessee at a rate of 53 tablets per resident aged 12 years or older (Tennessee Department of Health, 2011). Overdose deaths in Tennessee increased by 250% from 2001 to 2010 and accounted for 7% of prescription drug overdose deaths nationally despite comprising only 2.3% of the nation's population (Centers for Disease Control & Prevention, 2011; Tennessee Department of Health Safety Subcabinet Working Group, 2012).

The National Drug Control Strategy put forward by the U.S. Office of National Drug Control Policy promotes expanding the extent to which health care professionals screen for and address substance use disorders (Office of National Drug Control Policy, 2013). Previous studies regarding the role of community pharmacists in mitigating PO abuse have largely focused on their utilization of prescription drug monitoring programs (PDMPs) to inform dispensing behaviors (Fleming et al., 2014a, 2014b; Fleming, Chandwani, Barner, Weber, & Okoro, 2013; Gavaza, Fleming, & Barner, 2014). Exploration and implementation of evidence-based substance abuse screenings or risk assessments such as the National Drug Control Strategy-promoted screening, brief intervention and referral to treatment (SBIRT) models in pharmacy settings have also recently been explored (Dhital, Whittlesea, Norman, & Milligan, 2010; Fleming et al., 2014a, 2014b; Horsfield, Sheridan, & Anderson, 2011; Khan et al., 2013; McCaig, Fitzgerald, & Stewart, 2011; Sheridan, Stewart, Smart, & McCormick, 2012; Sheridan et al., 2008). Two studies by Cochran et al. explored the attitudes of and predictors for Texas and Utah pharmacists regarding screening for and intervening in prescription misuse (Cochran, Field, & Lawson, 2014; Cochran, Field, Lawson,

☆ Declaration of Interest: Project Funding Source: East Tennessee State University Research Development Committee Major Grant Award (Hagemeier, PI) Drs. Hagemeier, Alamian, Murawski, and Pack declare no direct or indirect sources of funding with tobacco, alcohol, pharmaceutical, or gaming industries or any body substantially funded by one of these agencies.

* Corresponding author at: East Tennessee State University Gatton College of Pharmacy, Box 70657, Johnson City, TN 37614. Tel.: +1 423 439 6239; fax: +1 423 439 6784.
E-mail address: hagemeier@etsu.edu (N.E. Hagemeier).

http://dx.doi.org/10.1016/j.jsat.2014.11.006
0740-5472/

& Erickson, 2013). Pharmacists in their studies indicated interest in employing SBIRT-type models in pharmacy settings, and over 40% of the surveyed pharmacists indicated that they already screen for PO misuse.

Considering the high level of access to community pharmacists, legal requirements to counsel patients on their medications, the trust placed in pharmacists societally (Gallup Inc., 2013), and the extent to which they dispense POs (IMS Health, 2012), community pharmacists are uniquely positioned to educate patients on multiple aspects of prescription drug abuse and engage patients in prescription drug abuse prevention and treatment efforts. Our descriptive study of Tennessee community pharmacists noted that 26% of respondents had provided addiction treatment information to one or more patients in the past (Hagemeier, Murawski, Lopez, Alamian, & Pack, 2014). Additional research supports the idea that some provision of information about addiction treatment does occur in community pharmacies (Brooks, Brock, & Ahn, 2001; Fleming et al., 2014a, 2014b; Lafferty, Hunter, & Marsh, 2006). The objective of this study was to employ multivariate modeling techniques to identify correlates of provision of addiction treatment information to pharmacy patients by community pharmacists.

2. Methods

2.1. Sampling

We sought to maximize sampling of community pharmacist respondents as opposed to obtaining responses from licensed pharmacists who are employed in other settings (e.g., hospital, pharmaceutical industry) and thus do not engage in outpatient prescription dispensing. A directory of pharmacists (n = 2,975) who had previously been or were currently affiliated with one of two community pharmacist-specific societies within the Tennessee Pharmacists Association (TPA) was purchased from the Association. This directory consisted of pharmacists known to TPA to currently or previously have been employed in a community pharmacy setting. The TPA directory was cross-referenced with a publicly available directory of all (i.e., not setting specific) licensed pharmacists in the state to verify licensure status and home address (Tennessee Department of Health, 2013a). Pharmacists in the TPA directory were excluded if they had an inactive license or out-of-state address. The state directory was downloaded as an Excel spreadsheet from the Tennessee Department of Health Website and cleaned by the researchers. Employing the same exclusion criteria, 7,438 eligible pharmacists comprised the state directory. Pharmacists were thereafter sorted by county of residence. If the state directory indicated fewer than 30 pharmacists residing in a county, all pharmacist residents of that county were included in the sampling frame. Overall, 47 of Tennessee's 95 counties had fewer than 30 pharmacists residing therein at the time the study was conducted. After including all pharmacists from these 47 counties (n = 549) and removing said counties from the TPA directory, 1,451 pharmacists were then randomly selected from the TPA directory of 2,223 pharmacists, resulting in a total study sample of 2,000 actively licensed pharmacists. Based on national-level pharmacy workforce estimations and state licensing data, the 2,000 pharmacist sample represented approximately 50% of actively licensed Tennessee community pharmacists (Midwest Pharmacy Workforce Research Consortium, 2010; Tennessee Department of Health, 2013a).

The survey instrument was evaluated for face validity and pilot tested with five licensed practicing pharmacists to assess clarity and relevance of items prior to full-scale administration. Instrument terminology was modified for consistency, and definitions of abuse, addiction, physical dependence, and opioid pain relievers were added as a result of pilot testing. Survey administration occurred thereafter during October and November of 2012 and employed a modified version of Dillman's Tailored Design Method (Dillman, Smyth, & Christian, 2009). One week after sending a pre-notification postcard to all potential respondents, pharmacists were sent a packet that contained a personalized cover letter, a numbered survey instrument, and a self-addressed, stamped return envelope. The unique number on the survey instrument was used solely to remove respondents from subsequent mailings. One week later a postcard was sent to the sample thanking those who had already returned their questionnaires and simultaneously encouraging those who had not responded to do so. Finally, approximately 10 days after sending the postcard, a second packet was sent to all non-responders. Unique numbers were not included on the second questionnaire. Surveys were considered usable if 50% of applicable survey items were completed; surveys below this threshold (N = 3) were excluded from the analysis.

Analyses in this study were limited to pharmacists (n = 637) who indicated that they are employed in a community setting for a minimum of 8 hours per month. The overall response rate of returned questionnaires was 40% using the conventions of the American Association for Public Opinion Research (response rate 2 calculation) (The American Association for Public Opinion Research, 2011).

2.2. Measures

2.2.1. Dependent variable

Pharmacists were asked whether they had "given addiction treatment information to patients in the past." Addiction was defined as "compulsive drug seeking and use despite sometimes devastating consequences" (National Institute on Drug Abuse, 2011). This variable was developed to capture a specific communicative behavior rather than assessing prescription drug abuse-related communication in general. Given potential recall bias inherent in this study design, the authors focused on a potentially memorable physical task linked with provision of tangible information (e.g., giving a pamphlet or written phone number). Responses included "yes", "no", or "unsure". The latter two responses were collapsed, resulting in a binary dependent variable.

2.2.2. Independent variables

Survey items were developed based on a review of health communication literature with particular emphasis on communicative self-efficacy beliefs (Bandura, 1977; Booth-Butterfield, Chory, & Beynon, 1997; Daly, McCroskey, Ayres, Ayers-Sonandre, & Wongprasert, 2009; McCroskey, 1982; McCroskey & McCroskey, 1988; McCroskey, Richmond, & McCroskey, 2009; Teven, Richmond, McCroskey, & McCroskey, 2010). All theoretically plausible potential precursors to provision of addiction information were evaluated as potential independent variables, as were all demographic and practice setting characteristics.

The majority of pharmacists' perceptions were gathered using a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). Items assessed pharmacists' perceptions of PO abuse as a problem in their practice settings, perceived professional responsibility for PO abuse, self-efficacy beliefs regarding PO abuse detection and communication, perceptions of adequacy of training to address PO abuse, and communication behaviors of other prescribers and pharmacists. Respondents were also asked whether they have addiction treatment information readily available in their practice settings, and whether they had participated in one or more continuing education (CE) programs specific to PO abuse.

Demographic items included: gender, years in practice, hours worked per week, community practice setting type (e.g., independent, chain, grocer/discount store), number of prescriptions dispensed per week, geographic region within the state (Health Information Tennessee, 2013), and practice county rural designation (whole or partial rural vs. not rural) (Health Resources & Services Administration, 2003).

2.3. Data analysis

Univariate and multivariate logistic regression techniques were employed to examine the associations between the theoretical determinants, pharmacy and pharmacist characteristics and provision of addiction treatment information. On average, less than 5% of cases were