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## **RESEARCH NOTES**

# Community pharmacy staff perceptions on preventing alcohol and medication interactions in older adults

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#### ARTICLE INFO

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#### ABSTRACT

*Objectives:* To examine rural and urban pharmacy staff perceptions on messaging, barriers, and motivators for preventing alcohol and medication interactions (AMI) in older adults (>65 years of age).

*Methods:* A survey was distributed through the local pharmacist association and statewide pharmacy registry in Kentucky. A total of 255 responses were received from pharmacists, pharmacy technicians, and pharmacy students.

Results: Across rural and urban regions alike, among the AMI prevention messages provided, participants identified the most important messages to be: AMI can be potentially dangerous and life threatening; emergency rooms should be used when experiencing an AMI; and doctors and pharmacists should be consulted about AMI. The most common AMI prevention barriers indicated were stigma, costs, and low perceived risks. The most common AMI prevention motivators indicated were physical health improvement, promoting a healthy lifestyle, convenient setting, and financial incentives.

Conclusion: Regardless of geography, participants similarly rated the presented AMI prevention messages, barriers, and motivators. With the use of these findings, the development of an AMI prevention program is suggested to use messaging about AMI threat, behavioral management, and behavioral prevention.

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There is an imperative need to prevent alcohol and medication interactions (AMI) in older adults.<sup>1</sup> Research indicates a 3000% increase in fatal medication errors related to alcohol and illicit drug use from 1983 to 2004,<sup>2</sup> a 124% increase in alcohol and medication comorbid hospitalizations among older adults from 2001 to 2012,<sup>3</sup> and a 24% increased risk of adverse drug reactions with moderate alcohol use.<sup>4</sup> It is extremely important to focus on older adults to prevent AMI, owing to the increase of older adults with concomitant alcohol and medication use,<sup>5</sup> decreased medication metabolism with aging,<sup>6</sup> higher medication consumption with

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aging,<sup>7</sup> and medication overdoses being commonly associated with alcohol among older adults.<sup>8</sup> Pharmacy staff and pharmacies have been successfully involved in community health and substance use health promotion programming,<sup>9-11</sup> but not specifically to prevent alcohol and medication interactions

Furthermore, alcohol consumption is common in older age, with more than one-half reporting consuming alcohol, <sup>12</sup> almost 25% to 50% drinking above recommended thresholds of 2 to 3 drinks per day, <sup>13</sup> and expected increase in consumption among future cohorts. <sup>14</sup> Also, 77% of older adults take at least 1 alcohol-interactive medication, <sup>15</sup> and a substantial proportion are consuming alcohol while taking alcohol-interactive medications <sup>16</sup> and while having alcohol-sensitive morbidities. <sup>17</sup> Consequently, combined alcohol and medication use can lead to: a) ineffective or compromised medical treatments, b) negative health incidents (i.e., falls, cognitive impairment), and c) fatalities. <sup>2,18-20</sup> A need for alcohol screenings has been acknowledged when prescribing alcohol-interacting medications <sup>19</sup> and for pharmacists to

**Table 1**Participant demographics according to pharmacy location

Variable	$All\ (n=255)$	Rural ( $n = 112; 44\%$ )	Urban (n = 143; 56%)	P value
Age, mean (y) ( $\sigma = 13.98$ )	36.9	37.9	35.7	0.209
Sex (%)				
Male	38.4	33.0	42.7	0.122
Female	61.6	67.0	57.3	
Race or ethnicity (%) <sup>a</sup>				
White	92.5	96.4	89.5	0.053
Black/African American	3.5	1.8	4.9	0.306
American Indian	0.4	0.9	0.0	0.439
Asian	2.7	0.0	4.9	0.019
Hispanic	1.6	1.8	1.4	1.00
Other (e.g., Puerto Rican)	0.8	0.01	0.01	1.00
Average number of prescriptions filled per week, mean ( $\sigma = 1219.11$ )	1290.6	1190.8	1380.8	0.253
Degree (%) <sup>b</sup>				
Associate (Technician)	10.2	13.4	7.7	0.149
Bachelor	36.1	29.5	41.3	0.066
Master	3.5	1.8	4.9	0.306
PharmD	31.8	33.9	30.1	0.588
PhD	0.4	0.9	0.0	0.439
Employment status (%)				
Full-time	69.3	77.7	62.7	0.025
Part-time	24.4	21.4	26.8	
As needed	2.8	0.0	4.9	
Consulting	0.4	0.0	0.7	
Unemployed	1.6	0.9	2.1	
Other (e.g., retired, student)	1.6	0.0	0.03	
Employment setting (%)				
Community chain	28.7	20.5	35.2	< 0.001
Community independent	33.9	63.4	10.6	
Hospital	26.0	10.7	38.0	
Nursing home	1.2	0.9	1.4	
Other (e.g., academic, home, clinic)	10.2	0.04	14.8	
Home location (%)				
Rural	47.8	85.7	18.2	< 0.001
Urban	52.2	14.3	81.8	
Workplace location (%) <sup>c</sup>				
Wet (state designated, county alcohol sale legal)	83.1	61.3	100.0	< 0.001
Dry (state designated, county alcohol sale illegal)	16.9	38.7	0.0	

<sup>&</sup>lt;sup>a</sup> Race and ethnicity were separate yes or no questions for each category. Because participants could respond yes to more than 1 category, these numbers do not add up to 100%. No participants reported Native Hawaiian or Pacific Islander categories.

provide such medication safety. However, beyond acknowledgment, AMI prevention research has been limited.

Moreover, preventing alcohol and medication interactions is considered to be a rural health priority. Rural older adults are at highest risk of untreated prescription drug misuse and alcohol problems. This is partly due to a greater alcohol burden, and the lateral prescription drug misuse and alcohol burden, are the lateral prescription drug misuse and alcohol burden, are the lateral prescription and accessibility, are greater burden of disease, and the culture of independence. Accordingly, the present study sought to examine pharmacy staff perceptions on preventing AMI among older adults and to explore differences across rural and urban regions.

#### Methods

Through October 2012 to July 2013, an online link to the AMI self-report survey was made available. The link was distributed to more than 1000 pharmacists and pharmacy technicians, through the state pharmacist association

list-serve and the pharmacist association meeting. Also, through the statewide licensing registry, survey flyers were mailed to selected pharmacies and pharmacists with valid addresses. A total of 255 participants provided informed consent and completed the survey, a response rate of approximately 25%. Participants were compensated \$10 for completed surveys. Data were collected and managed with the use of Research Electronic Data Capture, <sup>32</sup> a National Institutes of Health—approved online data collection tool. Institutional Review Board approval was obtained for all study procedures.

### Study variables and instruments

The independent variable of rural or urban status was obtained for self-reported employment zip codes, and were designated according to the 2013 Rural-Urban Continuum U.S. Department of Agriculture Codes.<sup>33</sup> The classification scheme distinguishes metro counties (urban, codes 1-3) and

<sup>&</sup>lt;sup>b</sup> Education degree were separate yes or no questions for each category. Note that because individuals could report more than 1 degree, these numbers do not add up to 100%. No participants reported having a Medical degree.

<sup>&</sup>lt;sup>c</sup> State-designated status of alcohol sale was included as a descriptive characteristic comparison of rural and urban counties.

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