Assessment of pharmacist knowledge change by practice site following completion of an online continuing pharmacy educational diabetes management activity

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Background

Continuing pharmacy education (CPE) programs are crucial for educating pharmacists and maintaining current, evidence-based practices. One method by which pharmacists can obtain CPE is via an online monograph. Pharmacists in different practice settings may not face uniform challenges in managing type 2 diabetes mellitus (T2DM) in their patients. There is little data available that details whether pharmacist practice setting (health-system, retail, etc.) is associated with different levels of pre- and post-test knowledge following online monograph CPE and whether there are similar barriers to implementing changes in practice in these different settings.

Objectives

- To assess pharmacist change in knowledge regarding glucagon-like peptide-1 (GLP-1) receptor agonists (RAs) in the management of T2DM after completing an online CPE monograph, and to determine if pharmacy practice setting is a factor in knowledge change.
- To evaluate intended practice changes and barriers to change identified by pharmacists completing the online CPE monograph.

Methods

- Pharmacist participants were given a pre- and post-assessment comprised of five knowledge questions following completion of an online monograph on GLP-1 RAs for T2DM management (N=3871).
- Pharmacist participants were also given an optional evaluation of the session, which included questions about whether they intended to make a change in practice resulting from the information learned and what barriers impeded making these practice changes (N=3740).
- Percentage of correct responses was calculated for each question for all participants and again by practice setting (characterized as health-system, retail, or other practice setting).
- Knowledge questions included administration frequency and preparation of GLP-1 RAs, American Diabetes Association (ADA) and European Association for the Study of Diabetes (EASD) recommendations on combination therapy with GLP-1 RAs, GLP-1 RA mechanism of action, and strategies to encourage adherence to anti-diabetic therapy.
- Change in performance on knowledge assessment from pre- to post-activity was calculated via chi square analysis for each question by practice setting, with a priori significance set at 0.05.
- Frequency of response for intentions to make a change in practice and barriers to making a change was calculated by pharmacist practice setting.
- Analysis was conducted with Stata v12.0 and Microsoft Excel.

Results

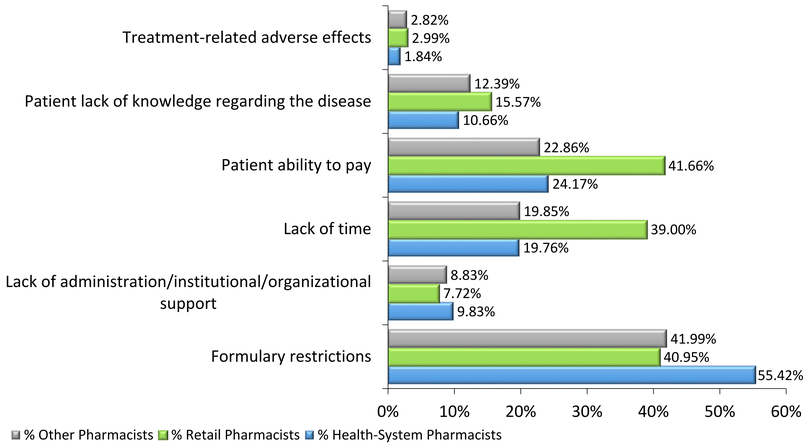
- Of 3871 participants, 27% were health-system pharmacists, 39% were retail pharmacists, and 34% were pharmacists practicing in other settings (primarily composed of managed care, long-term care, and academic pharmacists).
- Statistically significant improvement was demonstrated on all knowledge assessment questions, with pharmacists from each practice setting improving performance at post-assessment on every question ($P<0.01$, all questions).

Figure 1: Anticipated Changes in Practice, by Pharmacist Practice Setting

Table 1: Summary of All Pre-/Post-Question Results, by Practice Setting

	Other Pharmacists			*Retail Pharmacists*			*Health-System Pharmacists*		
	% Correct Pre	% Correct Post	Δ% Correct	% Correct Pre	% Correct Post	Δ% Correct	% Correct Pre	% Correct Post	Δ% Correct
Question 1	40.50%	71.16%	+30.66%	41.18%	76.87%	+35.69%	43.59%	80.68%	+37.09%
Question 2	48.52%	75.98%	+27.36%	44.38%	78.63%	+34.25	49.03%	84.82%	+35.79%
Question 3	48.37%	75.32%	+26.95%	46.21%	82.74%	+47.58%	51.71%	86.38%	+34.67%
Question 4	32.20%	70.57%	+38.37%	35.16%	80.65%	+45.49%	33.00%	80.04%	+47.04%
Question 5	82.05%	91.77%	+9.72%	83.73%	94.72%	+10.99%	86.73%	95.49%	+8.76%

Figure 2: Barriers to Change in Practice, by Pharmacist Practice Setting



Limitations

- Data focuses on one continuing educational method via monograph analysis.
- Data is not available for actual changes in practice that occurred due to knowledge gained from the GLP-1 RA monograph.

Conclusions

- Pharmacists across all practice settings demonstrated a statistically significant improvement in knowledge regarding GLP-1 RAs as evidenced by improved pre- vs. post-test results.
- Health-system pharmacists had the highest percent improvement when performance was aggregated for all questions, followed by retail pharmacists.
- Across all practice settings, 64.61% of pharmacists stated they intended to make a change in practice after completing the CPE monograph, suggesting improved knowledge regarding GLP-1 RA may translate to changes in patient care. Types of changes pharmacists intended to make differed by practice setting.
- The main barriers to practice change pharmacists reported across all practice settings related to drug access. Health-system pharmacists were more likely to encounter formulary barriers while retail pharmacists reported patient ability to pay as a major issue.
- These findings highlight differences in educational outcomes exist for pharmacists participating in a CPE monograph activity when analyzed by practice setting; suggesting future CPE activities should take pharmacist practice setting into account when developing educational content.

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