Collaborative Care in Ambulatory Psychiatry: Content Analysis of Consultations to a Psychiatric Pharmacist

By Dorothy Gotlib, Jolene R. Bostwick, Seema Calip, Elizabeth Perelstein, Jacob E. Kurlander, Thomas Fluent

ABSTRACT - Objectives: To determine the volume and nature (or topic) of consultations submitted to a psychiatric pharmacist embedded in an ambulatory psychiatry clinic, within a tertiary care academic medical center and to increase our understanding about the ways in which providers consult with an available psychiatric pharmacist. Experimental Design: Authors analyze and describe the ambulatory psychiatric pharmacist consultation log at an academic ambulatory clinic. All consultation questions were submitted between July 2012 and October 2014. Principal Observations: Psychiatry residents, attending physicians, and advanced practice nurse practitioners submitted 280 primary questions. The most common consultation questions from providers consulted were related to drug-drug interactions (n = 70), drug formulations/dosing (n = 48), adverse effects (n = 43), and pharmacokinetics/lab monitoring/cross-tapering (n = 36). Conclusions: This is a preliminary analysis that provides information about how psychiatry residents, attending physicians, and advanced practice nurse practitioners at our health system utilize a psychiatric pharmacist. This collaborative relationship may have implications for the future of psychiatric care delivery. Psychopharmacology Bulletin. 2017;47(4):53–58.

There is a well-documented shortage of mental health providers and a need to utilize available resources to optimize patient care, efficiency and safety.1 Utilization of psychiatric pharmacists is one strategy to improve patient...
outcomes, and primary care and psychiatric clinics are partnering with pharmacists to develop innovative delivery models emphasizing the value of collaborative care.2–8

With the above in mind, we sought to integrate psychiatric pharmacists into our ambulatory psychiatry clinical operations. Psychiatry leadership supported the initiative by agreeing to cover the cost of a psychiatric pharmacist time for one-half day each week. We aspired to improve collaboration amongst practitioners with different training backgrounds in order to enhance quality of care delivery within adult ambulatory psychiatry at our institution. Our psychiatry department is situated in a large, Midwestern, tertiary care center and provides approximately 60,000 patient visits per year and, each year, trains 17–25 outpatient third and fourth year psychiatry resident trainees.

One of the services provided by the pharmacist was to address consultation questions submitted by outpatient attending physicians, psychiatry residents, and advanced practice nurse practitioners. Clinicians and trainees were made aware of this resource during orientation and informational meetings throughout the year. These meetings were scheduled approximately quarterly with the encouragement and support of psychiatry leadership to remind residents and other prescribers about the availability of this resource. In this exploratory study, we sought to analyze the number and nature of questions by the staff and trainees at a tertiary care center.

Methods

Study authors sorted by topic and described the outpatient log of submitted consultation questions directed to a psychiatric pharmacist embedded in an ambulatory psychiatry clinic within a large academic medical center. Data used was a convenience sample. All consultation questions were submitted between July 2012 and October 2014 and the majority of the consults were submitted via e-mail or the medical record. These questions and responses from the pharmacist were reviewed and categorized based on provider type (attending physician, nurse practitioner, 3rd and 4th year psychiatry residents, or other). The study coder analyzed each consult request and categorized them into hierarchical mutually exclusive categories (see Table 1). This study received “Not Regulated” status from the authors’ Institutional Review Board.

Descriptive statistics were utilized to calculate the number of questions asked in each topic category and were stratified by provider type. Descriptive statistics for the number of questions asked per participating provider are also provided (See Table 1). Chi-squared analysis
### Questions by Provider Type

<table>
<thead>
<tr>
<th>QUESTION TYPE</th>
<th>PRIMARY QUESTION</th>
<th>ATTENDING PHYSICIANS</th>
<th>ADVANCED PRACTICE NURSE PRACTITIONERS</th>
<th>PSYCHIATRY RESIDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug-drug interactions</td>
<td>70 (25.0%)</td>
<td>7 (13.2%)</td>
<td>34 (31.5%)</td>
<td>26 (24.3%)</td>
</tr>
<tr>
<td>Drug formulations and dosing</td>
<td>48 (17.1%)</td>
<td>13 (24.5%)</td>
<td>12 (11.1%)</td>
<td>22 (20.1%)</td>
</tr>
<tr>
<td>Adverse effects</td>
<td>43 (15.4%)</td>
<td>7 (13.2%)</td>
<td>20 (18.5%)</td>
<td>14 (13.1%)</td>
</tr>
<tr>
<td>Pharmacokinetics and lab monitoring, cross tapering</td>
<td>36 (12.9%)</td>
<td>6 (11.3%)</td>
<td>11 (10.2%)</td>
<td>17 (15.9%)</td>
</tr>
<tr>
<td>Misc./Policy/admin/costs/teaching requests</td>
<td>28 (10.0%)</td>
<td>8 (15.1%)</td>
<td>8 (7.4%)</td>
<td>10 (9.4%)</td>
</tr>
<tr>
<td>Depression in medically complicated cases</td>
<td>12 (4.3%)</td>
<td>3 (5.7%)</td>
<td>4 (3.7%)</td>
<td>5 (4.7%)</td>
</tr>
<tr>
<td>Treatment resistant depression, antidepressant augmentation</td>
<td>11 (3.9%)</td>
<td>3 (5.7%)</td>
<td>5 (4.6%)</td>
<td>3 (2.8%)</td>
</tr>
<tr>
<td>Complementary and alternative treatment</td>
<td>8 (2.9%)</td>
<td>1 (1.9%)</td>
<td>4 (3.7%)</td>
<td>3 (2.8%)</td>
</tr>
<tr>
<td>Sleep disorders</td>
<td>7 (2.5%)</td>
<td>2 (3.8%)</td>
<td>3 (2.8%)</td>
<td>2 (1.9%)</td>
</tr>
<tr>
<td>Substance use disorders</td>
<td>5 (1.8%)</td>
<td>1 (1.9%)</td>
<td>3 (2.8%)</td>
<td>1 (0.9%)</td>
</tr>
<tr>
<td>Weight gain</td>
<td>5 (1.8%)</td>
<td>2 (3.8%)</td>
<td>2 (1.9%)</td>
<td>1 (0.9%)</td>
</tr>
<tr>
<td>Pregnancy, perinatal and contraception</td>
<td>7 (2.5%)</td>
<td>2 (3.8%)</td>
<td>3 (2.7%)</td>
<td>3 (2.8%)</td>
</tr>
</tbody>
</table>

Note: Twelve questions were generated by fellows and other individuals outside of the health system as previously specified and were not further analyzed.
was conducted to compare the two largest question categories across provider type. The analysis was done with Stata 13.

RESULTS

There were a total of 280 consult questions recorded in the log (Table 1). The majority of questions were initiated by psychiatry residents and nurse practitioners, however, nearly 20% were initiated by attending physicians. Thirty-two unique psychiatry residents initiated questions. There were four questions initiated by fellowship level trainees, and 8 other inquiries initiated by psychiatrists no longer affiliated with the health system. These were not included in our data analysis or in the table. Twenty-two attending physicians and 13 nurse practitioners submitted questions. Our findings are outlined in Table 1. The most common question types overall were related to drug-drug interactions (n = 70), drug formulations and dosing (n = 48), adverse effects (n = 43), monitoring/cross-tapering (n = 36). Other common themes in questions posed to the pharmacist included: herbal supplements and complementary and alternative medicine, medically complicated cases, and augmentation strategies/treatment resistant depression. We did not collect detailed information about patient gender or age.

Examples illustrating the question categories include: how to minimize risk of combining birth control and antiepileptic agents (drug-drug interactions), how and when to monitor QTc prolongation in patients with known elevated QTc (adverse effects), inquiries regarding reputable data on complementary and alternative agents, guidance about monitoring INR in patients taking 3A4 substrates with warfarin (drug-drug interactions) and thyroid monitoring after initiating liothyronine for depression augmentation (lab monitoring).

DISCUSSION

To our knowledge, this is the first study published in either the inpatient or ambulatory setting that reviews and describes psychiatry provider initiated consults directed to a psychiatric pharmacist. Our psychiatric pharmacist provides a unique service to our outpatient providers that is utilized, valued, and specialized. This need was particularly evident in the following areas: drug-drug interactions, adverse effects, and drug formulations and dosing. Complementary and alternative medicine was also addressed in multiple consultation questions, and is a topic not currently otherwise covered in psychiatric training. Additionally, the pharmacist fielded several questions about augmentation strategies and
psychopharmacological intervention in medically complicated cases. It should be noted, with all consultation responses, effort was made to include citations and resources to enhance provider self-education and future independence and comfort in awareness and utilization of available resources. As such, we hope this element of our collaborative efforts will provide practitioners with foundational information and skills to investigate and answer future inquiries on their own.

This study has a number of limitations. We only analyzed outpatient inquiries and this approach may have overlooked important questions that emerge in other settings, such as with inpatients, where pharmacists have also demonstrated collaborative value. Use of a convenience sample indicates not all inquiries were captured, particularly those that were not submitted in writing (e.g., verbal inquiries or pages may not have been included in the log). Another limitation is our categorizing of questions. For example, many questions could have arguably been placed in another or more than one category, such as a question about a medically complicated geriatric patient taking lithium for treatment resistant depression. We also did not record data regarding the specific details of the patients who were being consulted about. For this study, we attempted to capture the aspect of the question that we deemed most significant, but in simplifying the data for analysis, complexity of questions may not be fully appreciated. The data may be biased to represent those providers who were higher utilizers and future investigations may seek to consider some of these factors in analyzing this type of data.

Finally, it is difficult to know how clinicians without this resource resolve similar questions. Perhaps they find a resource on their own, ask a colleague or proceed with less certainty. It is difficult to know. We also did not study associated outcomes in individuals whose care was augmented with the input of a psychiatric pharmacist. A study looking at a larger sample over time may help glean more about how such a resource impacts outcomes, cost, resources, and time.

Conclusion

Collaborative care efforts involving a psychiatric pharmacist not only provides important and valuable drug information to providers, but also a decision-making partner with unique knowledge and skills for challenging matrix-based psychopharmacologic management. This preliminary and exploratory study may inform and guide other institutions in consideration of how a psychiatric pharmacist may contribute to improved patient care. Further efforts should be directed at cost-benefit analyses and outcomes research. 🌟
DISCLOSURES

On behalf of all authors, the corresponding author states there are no conflicts of interest.

REFERENCES