

Exploring patient willingness to pay for pharmacist-led clinical services in a primary care setting

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Background

Currently, pharmacists offer a range of clinical services, such as medication reviews to thoroughly assess appropriateness of medication therapy,^{1,2} and health screenings,^{3,4} which allow pharmacists to provide preventive care and drug therapy problem management. As the pharmacy profession continues to expand its scope of practice, it is also important to consider the remuneration model or patients' willingness to pay for expanded clinical services, due to the implications on sustainability. For the purposes of this study, willingness to pay (WTP) is defined as "the maximum price a given consumer accepts to pay for a product or service."⁵

One of the barriers affecting pharmacist uptake of clinical services described in the literature is the lack of remuneration. In New Zealand, only 55.6% of the Medication Use Review (MUR) and Adherence Support accredited pharmacists were providing MUR services.⁶ In addition, 47% of the accredited pharmacists disagreed/strongly disagreed that the payment was adequate.⁶ In the United States, one of the barriers leading to low pharmacy participation (37.9% participation rate for only 1 year) for the Wisconsin Medicaid Pharmaceutical Care Program was the low reimbursement amount for the clinical services pharmacists offered.⁷

Pharmacists play an integral role in providing primary care services. They provide patient consultations, which are often appointment based and scheduled for 30 to 60 minutes.⁸ However, to our knowledge, there is a lack of literature describing patients' WTP for pharmacy services within the primary care practice setting. Previous studies have explored WTP in community pharmacy and hospital settings in the United States and Canada for clinical services such as antibiotic therapy, medication management and point-of-care testing (POCT) services.⁹⁻¹¹ To ensure feasibility and promote the development of new

services, there is a need to better understand patients' willingness to pay for pharmacist-led clinical services in primary care.

The UBC Pharmacists Clinic (Clinic), located on the UBC Vancouver campus, provides pharmacist-led patient consultations, learning opportunities for health professionals and students and a living laboratory environment that supports health care research and evaluation.¹² The Clinic also provides health promotion services such as cardiovascular risk assessments (blood pressure, lipid panel, Framingham risk), diabetes awareness and fracture risk assessments. The 3 categories of clinical services offered at the Clinic are initial assessments (60-minute appointments to discuss medical and medication-related issues), follow-up appointments (30-minute appointment to follow up on implementation of the care plan and continue the patient assessment) and POCT services. Patients who are new to the clinic will receive an initial assessment before a follow-up appointment, with the exception of those who only received POCT services. The Clinic does not charge patients for clinical services, as it is funded partially by the university and provincial government.

Objective

The objective of this study was to explore patients' willingness to pay for comprehensive medication management services offered at the Clinic.

Methods

A cross-sectional survey was conducted from July 2020 to October 2020 at the Clinic as part of an undergraduate student pharmacist-directed studies project. Eligible participants were patients who received 1 or more clinical services at the Clinic. Two recruitment methods were used. For patients who agreed to be contacted for research on their patient intake form, an

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invitation email with a description of the study and the link to the online survey was sent by the Clinic's receptionist. Patients who were contacted by the Clinic's receptionist to schedule and/or confirm appointments were verbally invited to participate in the study. Participants were reassured that the research process was nonjudgmental and all perceptions and opinions expressed would not affect their care at the Clinic. In addition, investigators reassured participants that the Clinic did not intend to introduce fees for the clinical services and the data were strictly for research and evaluation purposes.

Participant consent was implied when they completed the survey and they were able to withdraw their participation at any time. Survey questions were developed based on existing literature and the study objective and can be found in Appendix 1 (available at www.cpjjournal.ca).^{9-11,13-15} Investigators conducted a preliminary literature search on PubMed for previous studies on WTP conducted in different care settings, countries and specific clinical services to help guide the development of the survey.^{9-11,13-15} The survey included questions related to sociodemographic information, WTP for services offered at the Clinic and variables that may affect patients' WTP. Survey questions were reviewed by 2 patient partners who provided feedback and recommendations. The data were anonymized and stored in a secure server at UBC with access restricted to only the research team. Quantitative survey data were analyzed using descriptive statistics, including median and standard deviations for continuous variables and proportions for categorical variables. Ethics approval was obtained by the UBC Behavioural Research Ethics Board (H20-01756).

Results

Out of 127 invitations, 29 patients (22.8% response rate) completed the survey. The average duration of the survey, excluding 2 anomalies, was 8.36 minutes. Approximately 65% of the respondents were female, and there was an even distribution of age groups and gross household income (Table 1). Most of the respondents completed postsecondary education (89.7%) and about half were actively employed (51.8%).

In terms of the respondents' medical information, 69% had health benefit plans, 96.6% had a family doctor and 50% had 6 or more annual visits to their family doctor on average. The most frequent medical conditions reported by respondents included neurological, endocrine and gastrointestinal conditions. About 65% of the respondents were taking 4 or more medications. Approximately 93% of the participants had 1 to 5 visits at the Clinic, 96.6% received an initial assessment and 69% received follow-up appointments. More than 85% of the participants were satisfied/very satisfied with the initial assessment service offered at the Clinic, and 88.3% of them were satisfied/very satisfied with the follow-up service offered at the Clinic.

The following WTP values are reported as median values, as this was more suitable based on the small sample size. For initial consultations, the median lowest WTP was \$40 CAD

(range: \$0-\$100) and highest was \$50 CAD (range: \$0-\$250) (Table 2). For follow-up consultations, the median lowest WTP was \$15 CAD (range: \$0-\$50) and highest was \$50 CAD (range: \$0-\$100). When participants were provided with context with the British Columbia (BC) provincial government coverage on other health care services (i.e., eye exam, dental care), 26.9% and 6.3% of the participants indicated their WTP would increase for the initial assessment and follow-up services, respectively. The respective fee schedules in BC that were provided to the participants as a reference are available in Table 2. In addition, 53.5% and 53.8% of the participants indicated that their WTP would increase if the initial assessment and follow-up services offered additional services with pharmacists' expanded scope of practice (e.g., prescribing for ambulatory conditions, prescribing authority, ordering laboratory tests). Additional factors that increased the WTP were inclusion of telehealth services (initial assessment: 23.3%; follow-up services: 23.0%) and involvement of student pharmacist(s) (initial assessment: 13.3%; follow-up services: 0.0%).

Discussion

This study was the first to explore patients' WTP and factors that may influence their WTP within a primary care practice setting. Novel findings included patients' WTP for initial assessment (median lowest WTP: \$40 CAD, median highest WTP: \$50 CAD) and follow-up services (median lowest WTP: \$15 CAD, median highest WTP: \$50 CAD). Factors that contributed to change in WTP included knowledge of provincial coverage of other health care services, availability of telehealth services, student pharmacist involvement and expanded scope of practice services.

Previous studies have described patients' WTP for pharmaceutical care services in various practice settings.⁹⁻¹¹ Marra et al.⁹ elicited patients' WTP for the adult outpatient parenteral antibiotic therapy program at a Canadian adult tertiary care teaching hospital. For participants who preferred treatment at home, they indicated a median WTP of \$490 CAD (mean \$949, range \$20 to \$6250), while those who preferred treatment in the hospital indicated a median WTP of \$500 CAD (mean \$949, range \$20 to \$6250).⁹ Friedrich et al.¹⁰ determined that patients' average WTP was \$17.57 USD for medication therapy management services at grocery chain pharmacies in the Chicago metropolitan area. Another study by Hohmeier et al.¹¹ identified patients' WTP for POCT services offered in community pharmacies in the United States. Seventy-nine percent of the entire sample indicated that they preferred to pay \$50 USD or less for POCT services.¹¹ In addition, there is existing literature evaluating patient WTP for pharmacy services, but the participants were given hypothetical situations or only a portion of patients had lived experiences with pharmacist-led clinical services, compared to our study, in which all participants had received clinical services.¹⁶ In comparison, current provincial government funding for standard medication review services in Canada ranges from \$52.50 to \$60.¹⁷

TABLE 1 Participant demographic summary

Characteristic	n (%)
Gender	
Male	10 (34.5)
Female	19 (65.5)
Age group, y	
≤25	1 (3.4)
26-30	0 (0.0)
31-35	1 (3.4)
36-40	4 (13.8)
41-45	1 (3.4)
46-50	3 (10.3)
51-55	1 (3.4)
56-60	4 (13.8)
61-65	2 (6.9)
66-70	1 (3.4)
71-75	7 (24.1)
76+	4 (13.8)
Highest level of education	
Secondary/high school	2 (6.9)
Postsecondary (e.g., university, college, vocational, technical school)	26 (89.7)
Prefer not to disclose	1 (3.5)
Marital status	
Divorced/separated	4 (13.8)
Married/common law/cohabiting	20 (69.0)
Single/never been married	5 (17.2)
Employment status	
Employed full-time (40 or more hours per week)	8 (27.6)
Employed part time (less than 40 hours per week)	1 (3.5)
Homemaker	1 (3.5)
Prefer not to disclose	1 (3.5)
Retired	11 (37.9)
Self-employed	6 (20.7)
Student	1 (3.5)
Health benefit plans	
Yes	20 (69.0)
No	7 (24.1)
Prefer not to disclose	2 (6.9)

(continued)

TABLE 1 (continued)

Characteristic	n (%)
Gross household income range	
Under \$20,000	1 (3.5)
\$20,000 to \$39,999	3 (10.3)
\$40,000 to \$59,999	4 (13.8)
\$60,000 to \$79,999	5 (17.2)
\$80,000 to \$99,999	2 (6.9)
\$100,000 to \$119,999	3 (10.3)
\$120,000 and above	6 (20.7)
Prefer not to disclose	5 (17.2)
Have a family doctor	
Yes	28 (96.6)
No	1 (3.4)
Average number of visits to family doctor	
0 to 2 visits	2 (7.1)
3 to 5 visits	11 (39.3)
6 to 9 visits	3 (10.7)
10 visits and above	11 (39.3)
Prefer not to disclose	1 (3.6)
Medical conditions (select all that apply)*	
Gastrointestinal (e.g., ulcers, acid reflux, Crohn's disease, inflammatory bowel disease)	8 (28.6)
Liver (e.g., hepatitis, cirrhosis, fatty liver disease)	1 (3.6)
Cardiovascular (e.g., hypertension, stroke, heart attack, angina)	8 (28.6)
Visual (e.g., glaucoma, vision loss)	2 (7.1)
Renal/kidney problems	2 (7.1)
Cancers	5 (17.9)
Endocrine (e.g., diabetes)	10 (35.7)
Neurological (e.g., Parkinson's disease, migraines)	13 (46.4)
Mood (e.g., depression, anxiety)	10 (35.7)
Other	5 (17.9)
Prefer not to disclose	1 (3.6)
Currently taking prescription medications	
None	2 (6.9)
1 to 3 medications	7 (24.1)
4 to 6 medications	11 (37.9)
7 to 9 medications	3 (10.3)
10 medications and above	5 (17.2)
Prefer not to disclose	1 (3.4)

(continued)

TABLE 1 (continued)

Characteristic	n (%)
Visits to UBC Pharmacists Clinic	
1 to 5 visits	27 (93.1)
6 to 10 visits	2 (6.9)
Type of clinical services received/are receiving at the UBC Pharmacists Clinic (select all that apply)*	
Initial assessment	28 (96.6)
Follow-up appointments	20 (69.0)
Point-of-care testing	2 (6.9)
Satisfaction with the clinical services offered at the UBC Pharmacists Clinic	
Initial assessment	
Very satisfied	21 (75.0)
Satisfied	3 (10.7)
Neutral	2 (7.1)
Not satisfied	0 (0.0)
Very dissatisfied	2 (7.1)
Follow-up appointments	
Very satisfied	13 (76.5)
Satisfied	2 (11.8)
Neutral	1 (5.9)
Not satisfied	0 (0.0)
Very dissatisfied	1 (5.9)

*Percentages do not add up to 100% because patients can select multiple options.

The wide range of WTP values in the existing literature likely is attributed to the different practice settings, services offered and health care systems. While government and other third-party payers are more likely to contribute to remuneration of select clinical services compared to individual patients, this study demonstrates that patients are willing to pay for pharmacist services, which may be an option in the absence of other remuneration sources.^{17,18} Pharmacists planning to implement similar clinical services in their practice may consider using the results of this study in addition to existing data to inform their patient payment model. Additional factors affecting values to charge patients include pharmacist resources, administrative support, equipment and supplies required for POCT services. Although this study focused on a patient population within a primary care practice setting, these results can be applied to a community pharmacy practice setting that uses an appointment-based model for clinical consultations.¹⁹ Future investigations should include further evaluation of patient WTP for pharmacist-led services specific to expanded scope of practice services, such as pharmacist prescribing and laboratory test ordering.

This study had several limitations. The survey was available for a short time frame due to the nature of being part of an undergraduate student pharmacist-directed studies course. The low response rate may account for the variability of the results and affect the generalizability of the results. This led to restricting the types of analyses that could be conducted on the results. The low response rate may potentially be explained with fewer patient visits due to COVID-19 and lack of incentives for participating in the study. In addition, it is important to keep in mind the patient population and type of clinic when applying the findings of the study. The respondents in this study were on the high end of the sociodemographic spectrum. The majority of the respondents had completed postsecondary education and had family physicians and health benefit plans. The respondents were also aware of what a consultation entails when completing the survey, which may have affected their WTP compared to an unknown or hypothetical situation. The Clinic is funded through the university and provincial government, and therefore, the results, if valid, would only apply to academic clinics and not community pharmacy practice. These factors limit the overall generalizability of our study results to community pharmacy practice.

TABLE 2 Willingness to pay (WTP) for clinical services offered at the UBC Pharmacists Clinic

Question	Initial assessment*	Follow-up*
Lowest WTP		
Median	\$40	\$15
Range	\$0-\$100	\$0-\$50
Highest WTP		
Median	\$50	\$50
Range	\$0-\$250	\$0-\$100
Change in WTP after providing context [†]		
Yes		
<i>n</i> (%)	7 (26.9)	1 (6.3)
Median	\$90	NA
Range	\$25-\$100	NA
Value	NA	\$50
No, <i>n</i> (%)	19 (73.1)	15 (93.8)
Would WTP change if [‡]		
Included telehealth services [§]		
Yes, <i>n/N</i> (%)	7/30 (23.3)	3/13 (23.0)
Median	\$65	\$32.50
Range	\$5-\$100	\$25-\$40
Included involvement of student pharmacist(s)**		
Yes, <i>n/N</i> (%)	4/30 (13.3)	0/13 (0.0)
Median	\$82.50	NA
Range	\$20-\$100	NA
Offered additional services with pharmacists' expanded scope of practice ^{††}		
Yes, <i>n/N</i> (%)	16/30 (53.3)	7/13 (53.8)
Median	\$100	\$60
Range	\$5-\$150	\$3-\$150
Other		
Yes, <i>n/N</i> (%)	3/30 (10.0)	3/13 (23.1)
Median	\$67.50	\$47.50
Range	\$0-\$250	\$0-\$150

NA, not applicable.

*WTPs are presented in Canadian dollars.

[†]Some of the clinical service fees that the Medical Services Plan (MSP) covers for dental scaling (maximum \$266.04 per calendar year), physiotherapy initial consult (\$80.00-\$110.00 depending on location) and eye examination (\$47.08 for full eye exam) for adult patients. These values are based on the respective fee schedules available on the Government of BC website and do not represent the full amount charged to the patient. The amount that the patient pays differs based on the clinic and the type of insurance benefits.

[‡]Percentages do not add up to 100% because patients can select multiple options.

[§]For example, virtual, online appointments, remote monitoring.

**For example, PharmD students/pharmacy residents joining the consultation to shadow/colead the consultation with the clinician.

^{††}For example, prescribing for ambulatory conditions, initiating prescription drug therapy, ordering and interpreting laboratory tests.

Conclusion

The results from this study indicate that patients seem to be willing to pay for pharmacists' clinical services in a primary care setting. The fee that patients are willing to pay may be increased

if the pharmacist consultation included additional clinical services. This highlights the need for further research into patient willingness to pay for pharmacists' services in the community pharmacy setting and expanded scope of practice services. ■

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References

- Canadian Pharmacists Association. Medication Therapy Reviews. Available: <https://www.pharmacists.ca/advocacy/advocacy-government-relations-initiatives/value-for-services/medication-therapy-reviews/> (accessed Jan. 10, 2021).
- American Pharmacists Association. Medication Therapy Management (MTM) services. Available: <https://www.pharmacist.com/medication-therapy-management-services> (accessed Jan. 10, 2021).
- Papastergiou J, Folkins C, Li W. Community pharmacy-based A1c screening: a Canadian model for diabetes care. *Int J Pharm Pract* 2016;24(3):189-95.
- Weidle PJ, Lecher S, Botts LW, et al. HIV testing in community pharmacies and retail clinics: a model to expand access to screening for HIV infection. *J Am Pharm Assoc (2003)* 2014;54(5):486-92.
- Gall-Ely ML. Definition, measurement and determinants of the consumer's willingness to pay: a critical synthesis and directions for further research. 2009. (Post-Print). Available: <https://ideas.repec.org/p/hal/journal/hal-00522828.html> (accessed Jan. 10, 2021).
- Lee E, Braund R, Tordoff J. Examining the first year of Medicines Use Review services provided by pharmacists in New Zealand: 2008. *N Z Med J* 2009;122(1293):3566.
- Look KA, Mott DA, Leedham RK, Kreling DH, Hermansen-Kobulnicky CJ. Pharmacy participation and claim characteristics in the Wisconsin Medicaid Pharmaceutical Care Program from 1996 to 2007. *J Manag Care Pharm* 2012;18(2):116-28.
- Jorgenson D, Dalton D, Farrell B, Tsuyuki RT, Dolovich L. Guidelines for pharmacists integrating into primary care teams. *Can Pharm J (Ott)* 2013;146(6):342-52.
- Marra CA, Frighetto L, Goodfellow AF, et al. Willingness to pay to assess patient preferences for therapy in a Canadian setting. *BMC Health Serv Res* 2005;5:43.
- Friedrich M, Zgarrick D, Masood A, Montuoro J. Patients' needs and interests in a self-pay medication therapy management service. *J Am Pharm Assoc (2003)* 2010;50(1):72-7.
- Hohmeier KC, Loomis B, Gatwood J. Consumer perceptions of and willingness-to-pay for point-of-care testing services in the community pharmacy. *Res Social Adm Pharm* 2018;14(4):360-6.
- Pharmacists Clinic. Faculty of Pharmaceutical Sciences. Available: <https://pharmsci.ubc.ca/pharmacists-clinic> (accessed Jan. 10, 2021).
- Shafie AA, Hassali MA. Willingness to pay for a pharmacist's dispensing service: a cross-sectional pilot study in the state of Penang, Malaysia. *Pharm Pract (Granada)* 2010;8(2):116-21.
- Daftary MN, Lee E, Dutta AP, Olagundoye A, Xue Z. Patients' willingness to pay for cognitive pharmacy services in ambulatory care settings in the USA. *J Pharm Pract Res* 2003;33(4):265-7.
- Tsao NW, Khakban A, Gastonguay L, Li K, Lynd LD, Marra CA. Perceptions of British Columbia residents and their willingness to pay for medication management services provided by pharmacists. *Can Pharm J (Ott)* 2015;148(5):263-73.
- Larson RA. Patients' willingness to pay for pharmaceutical care. *J Am Pharm Assoc (Wash)* 2000;40(5):618-24.
- Houle SK, Carter CA, Tsuyuki RT, Grindrod KA. Remunerated patient care services and injections by pharmacists: an international update. *J Am Pharm Assoc (2003)* 2019;59(1):89-107.
- Houle SK, Grindrod KA, Chatterley T, Tsuyuki RT. Paying pharmacists for patient care: a systematic review of remunerated pharmacy clinical care services. *Can Pharm J (Ott)* 2014;147(4):209-32.
- Barnes B, Hincapie AL, Luder H, Kirby J, Frede S, Heaton PC. Appointment-based models: a comparison of three model designs in a large chain community pharmacy setting. *J Am Pharm Assoc (2003)* 2018;58(2):156-62.e1.