

**Appendix 1 (part 1 of 2):** Questions in a survey of pharmacists about their research experience and interests; references are indicated for questions derived from the literature (see Appendix 2 for the specific flow of questions for each group of respondents)

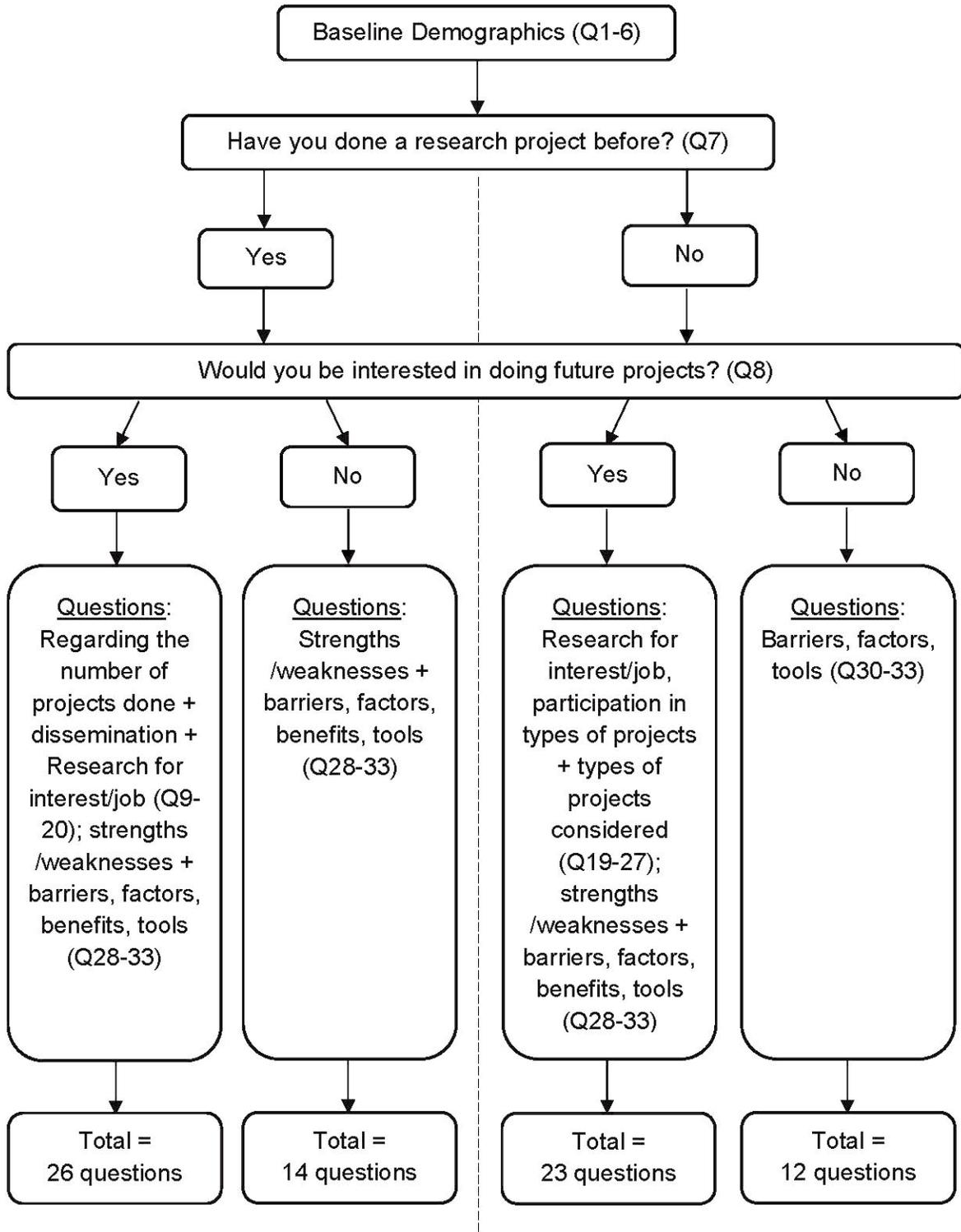
1. Which site/health authority within the LMPS are you currently working in? (if you work at more than one site/health authority, select the one health authority you spend the majority of the time)
    - a. Vancouver Coastal Health (Vancouver General Hospital, Richmond Hospital, UBC Hospital, Lions Gate Hospital etc)
    - b. Providence Health Care (St. Paul's Hospital, Mount Saint Joseph Hospital etc)
    - c. Fraser Health Authority (Royal Columbian Hospital, Surrey Memorial Hospital, Eagle Ridge Hospital, Burnaby General Hospital etc)
    - d. Provincial Health Services Authority (BC Cancer Agency, BC Children's Hospital, BC Women's Hospital etc)
  2. What is your current position within the LMPS?
    - a. Dispensary Pharmacist
    - b. Clinical Pharmacist
    - c. Clinical Coordinator
    - d. Clinical Supervisor
    - e. Other [Text box]
  3. How many years have you worked in a pharmacy? [Number]
  4. What is your highest level of education? Choices are listed in alphabetical order:
    - a. BScPharm
    - b. Fellowship
    - c. MSc
    - d. PhD
    - e. Post-Graduate PharmD
    - f. Residency
    - g. Undergraduate PharmD
    - h. Other [Text box]
  5. How many years of practice do you have? [Number]
- [Questions 6, 9–18 were derived from the literature and had been used to classify the level of expertise of the respondent]
6. How would you self-identify your current research skills?
    - a. Experienced
    - b. Moderately experienced
    - c. Inexperienced — no experience with any research projects
  7. Have you participated in projects before? (excluding projects that were mandatory, such as projects completed in partial fulfillment of the requirements for your program)
    - a. Yes
    - b. No
  8. Are you interested in participating in future projects?
  9. How many projects have you participated in within the last 5 years? [Number]
  10. Of those studies that you participated in the last 5 years, how many studies have you been the primary investigator?<sup>1</sup> [Number]
  11. Of those studies that you participated in the last 5 years, how many studies have you been the co-investigator?<sup>1</sup> [Number]
  12. In the research projects you participated in the past 5 years, how many times did you develop a research protocol?<sup>1</sup>
    - a. never
    - b. 1–3 times
    - c. greater than 3 times
  13. In the research projects you participated in the past 5 years, how many times did you apply for grant funding?<sup>1</sup>
    - a. never
    - b. 1–3 times
    - c. greater than 3 times
  14. In the research projects you participated in the past 5 years, how many times did you perform study data analysis?<sup>1</sup>
    - a. never
    - b. 1–3 times
    - c. greater than 3 times
  15. In the research projects you participated in the past 5 years, how many times did you present (example: poster presentation at a conference, podium presentation) your study findings?<sup>1</sup>
    - a. never
    - b. 1–3 times
    - c. greater than 3 times
  16. In the research projects you participated in the past 5 years, how many times did you publish your study findings?<sup>1</sup>
    - a. never
    - b. 1–3 times
    - c. greater than 3 times
  17. What type of studies have you conducted in the past? (Select all that apply)<sup>1</sup>
    - a. Survey
    - b. Chart Review
    - c. Controlled Clinical Trial
    - d. Focus group or qualitative
    - e. Case-control or cohort study
    - f. Other [Text box]
  18. Of those studies conducted/participated in, what types of knowledge dissemination activities have you or the study/research group conducted? (Select all that apply)
    - a. Published journal articles
    - b. Podium presentations
    - c. Poster presentations
    - d. Keynote presentation
    - e. Other [Text box]
  19. Do you conduct research for your personal interest?
    - a. Yes
    - b. No
  20. Do you conduct research as part of your job requirement?
    - a. Yes
    - b. No

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21. Have you considered participating in a research or quality assurance project in the past?
    - a. Yes
    - b. No
  22. Are you interested in leading or joining a research team?
    - a. Yes
    - b. No
  23. Do you wish to conduct research for your personal interest?
    - a. Yes
    - b. No
  24. Do you feel conducting research is part of your job requirement?
    - a. Yes
    - b. No
  25. Have you ever considered working with other health professionals in a quality assurance or research project?
    - a. Yes
    - b. No
  26. What type of studies are you considering? (Select all that apply)
    - a. Survey
    - b. Chart Review
    - c. Controlled Clinical Trial
    - d. Focus group or qualitative
    - e. Case-control or cohort study
    - f. Other [text box]
  27. More specificity, which areas of designing, implementation and publication of a study would you feel you are **strongest** in? <sup>2</sup> (Select all that apply)
    - a. Extracting, critiquing, and evaluating scientific evidence from the literature
    - b. Generating a research hypothesis
    - c. Designing an appropriate experiment to address the research questions from your experience
    - d. Conducting the experiment
    - e. Finding possible problems in the design and execution of your study
    - f. Develop appropriate ways to recruit study participants for your study
    - g. Statistical analysis of the data
    - h. Protecting the rights and well-being of the participants of your study
    - i. Identifying meaningful ways to translate research into discoveries about human health
    - j. Clearly and succinctly present the information to your target audience
    - k. None of the above
  28. Which areas of designing, implementation, and publication of a study would you feel you are **weakest** in? <sup>1</sup> (Select all that apply)
    - a. Extracting, critiquing, and evaluating scientific evidence from the literature
    - b. Generating a research hypothesis
    - c. Designing an appropriate experiment to address the research questions from your experience
    - d. Conducting the experiment
    - e. Finding possible problems in the design and execution of your study
    - f. Develop appropriate ways to recruit study participants for your study
    - g. Statistical analysis of the data
    - h. Protecting the rights and well-being of the participants of your study
    - i. Identifying meaningful ways to translate research into discoveries about human health
    - j. Clearly and succinctly present the information to your target audience
    - k. All of the above
  29. Which of the following would you consider to be a possible barrier to performing clinical research? (Select all that apply)
    - a. Lack of dedicated time
    - b. Lack of skills to carry out study
    - c. Competing priorities with workload
    - d. Lack of support from management
    - e. Lack of resources to conduct higher level studies
    - f. Unaware of possible ongoing research
    - g. No personal interest
    - h. No ideas as to the possible barriers
  30. Which of the following would factor into whether you chose to take part in a research project? (Select all that apply)
    - a. Advancement to the profession
    - b. Opportunity to learn more about a disease state
    - c. Incentive of a financial reward
    - d. Incentive of a promotion
    - e. Personal satisfaction
  31. What are the benefits for you to do research? (Select all that apply)
    - a. Personal growth
    - b. Improve knowledge
    - c. Work satisfaction
    - d. Variety in job
    - e. Improve patient care
    - f. Filling in an existing gap in the knowledge base
  32. Of the following, which would you find useful to conduct research? (Select all that apply)
    - a. Lists of resources to develop skills through independent self-study
    - b. Videos or webinars
    - c. Opportunities to join existing teams
    - d. Workshops on relevant research based topics
    - e. Mentorship program with more experienced researchers
    - f. Other [Text box]
  33. Any further comments? [Text box]
- References**
1. Perreault MM, Thiboutot Z, Burry LD, Rose L, Kanji S, LeBlanc JM, et al. Canadian survey of critical care pharmacists' views and involvement in clinical research. *Ann Pharmacother.* 2012;46(9):1167-73.
  2. Poloyac SM, Empey KM, Rohan LC, Skledar SJ, Empey PE, Nolin TD, et al. Core competencies for research training in the clinical pharmaceutical sciences. *Am J Pharm Educ.* 2011;75(2):Article 27.

Supplementary material for Lee R, Dahri K, Lau TTY, Shalansky S. Perceptions of hospital pharmacists concerning clinical research: a survey study. *Can J Hosp Pharm.* 2018;71(2):105-10.

**Appendix 2:** Survey flow, showing questions for each group of respondents (according to their experience with and interest in performing research)



Supplementary material for Lee R, Dahri K, Lau TTY, Shalansky S. Perceptions of hospital pharmacists concerning clinical research: a survey study. *Can J Hosp Pharm.* 2018;71(2):105-10.