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The Conceptualization and Measurement of Research Impact in Primary Health Care: Protocol for a Rapid Scoping Review

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The Conceptualization and Measurement of Research Impact in Primary Health Care: Protocol for a Rapid Scoping Review

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Abstract

Background: The generation of research evidence and knowledge in Primary Health Care (PHC) is crucial for informing the development and implementation of interventions and innovations and driving health policy, health service improvements, and potential societal changes. The specific and in-depth exploration of the definition and measures of research impact within PHC is notably absent in the existing literature. Current measures of research impact focus on academic productivity, prompting the need to examine the conceptualization and measures of research impact in PHC.

Objective: This review protocol aims to address the existing gap in understanding the conceptualizations and measures of research impact within the realm of PHC. By synthesizing existing knowledge and identifying trends in impact conceptualization and measurement, this review seeks to guide future research endeavors and enhance methodologies used in assessing research impact within PHC.

Methods: The protocol outlines the rapid review and environmental scan approach that will be used to explore research impact in PHC. The rapid review follows scoping review guidelines (PRISMA-SCr). The environmental scan will be done by consulting with professional organizations, academic institutions, information science, and PHC experts. The search strategy will involve multiple databases, citation and forward citation searching, and manual searches of grey literature databases, think-tank websites, and relevant catalogs. We will include grey and scientific literature focusing explicitly on research impact in PHC from high-income countries, using the World Bank classification. Publications published in English from 1970 to the present will be considered. The collected articles will undergo screening using Covidence software and a two-stage independent review process based on predetermined inclusion criteria. The research team will extract data from selected studies based on the research questions and the CRISP protocol statement. The team will discuss the extracted data, enabling the identification and categorization of key themes regarding research impact conceptualization and measurement in PHC. The narrative synthesis will evolve iteratively based on the identified literature.

Results: The results of this study are expected at the end of 2024.

Conclusions: This review will extensively explore the conceptualization and measurement of research impact in PHC. The synthesis will offer crucial insights that will guide subsequent research, emphasizing the need for a standardized approach that incorporates diverse perspectives to comprehensively gauge the true impact of research in this pivotal healthcare domain. Furthermore, trends and gaps in current methodologies will set the stage for future studies aimed at enhancing our understanding

of and measurement of research impact in PHC.

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Abstract

Background: The generation of research evidence and knowledge in Primary Health Care (PHC) is crucial for informing the development and implementation of interventions and innovations and driving health policy, health service improvements, and potential societal changes. PHC research has broad effects on patients, practices, services, population health, community, and policy formulation. The specific and in-depth exploration of the definition and measures of research impact within PHC is essential for broadening our understanding of research impact in the discipline and how it compares to other health services research.

Objective: The objectives of the study are to: 1) understand the conceptualizations and measures of research impact within the realm of PHC; and 2) identify methodological frameworks for evaluation and research impact and the benefits and challenges of using these approaches. The forthcoming review seeks to guide future research endeavors and enhance methodologies used in assessing research impact within PHC.

Methods: The protocol outlines the rapid review and environmental scan approach that will be used to explore research impact in PHC and will be guided by established frameworks such as the Canadian Academy of Health Sciences (CAHS) Impact Framework and the Canadian Health Services and Policy Research Alliance (CHSaPRA). The rapid review follows scoping review guidelines (PRISMA-SCr). The environmental scan will be done by consulting with professional organizations, academic institutions, information science, and PHC experts. The search strategy will involve multiple databases, citation and forward citation searching, and manual searches of grey literature databases, think-tank websites, and relevant catalogs. We will include grey and scientific literature focusing explicitly on research impact in PHC from high-income countries, using the World Bank classification. Publications published in English from 1978 will be considered. The collected articles will undergo a two-stage independent review process based on predetermined inclusion criteria. The research team will extract data from selected studies based on the research questions and the CRISP protocol statement. The team will discuss the extracted data, enabling the identification and categorization of key themes regarding research impact conceptualization and measurement in PHC. The narrative synthesis will evolve iteratively based on the identified literature.

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Introduction

High-performing primary health care (PHC) is recognized as the cornerstone of robust healthcare systems.[1, 2] High-income countries often possess robust healthcare systems with well-established PHC organizations and research institutions, making them pivotal in shaping global health policies and practices [3, 4]. High-quality research identifying what is needed to strengthen the performance of PHC organizations and their integration with each other and the broader health system is essential to inform the sustainable development of health care.[5] A PHC orientation to health services research strives to understand the influence of health's socioeconomic, physical, biological, and cultural determinants within the relevant broader political, socio-historical, and economic contexts. PHC services can improve health and health services delivery, which could result in improved individual, community and population health outcomes.

The need for PHC research to determine the efficacy of treatment, test theories, and develop new models of care has been documented.[6] PHC encompasses primary care, disease prevention, health promotion, population health, and community development within a holistic framework, to provide essential community-focused health care.[7, 8] We operationalize “PHC research" to refer to studies that investigate a broad range of topics related to preventive care, health promotion, diagnosis, treatment, ongoing management of common illnesses and chronic conditions, and the social determinants of health within the context of PHC settings.[9]

There are several conceptual frameworks and approaches that have been developed for research impact assessment.[10] In Canada, the Canadian Academy of Health Sciences (CAHS) Framework has been adapted to examine the impact of investments in health research. The CAHS Framework uses five impact categories: advancing knowledge, capacity building, informing decision-making, health impacts, and socioeconomic impacts, and provides a menu of nearly 70 indicators that map onto these domains.[11] In 2018, the Canadian Health Services and Policy Research Alliance (CHSaPRA) was developed by the Canadian health research community based on CAHS to guide the assessment of the impact of research on decision-making.[12]

Despite the development of these frameworks, little is known about how research impact is conceptualized in PHC.[13] Globally, PHC research is a small proportion of research output [14]. While existing reviews address research impact within the healthcare and health service research context [15, 16], these reviews are not tailored to consider the unique functions of PHC. As noted by the Council of Academic Family Medicine, PHC research is unique since it involves the delivery of care to patients across the care life cycle, which includes disease prevention, health promotion, and chronic care management [17] [18-20]. It also provides evidence that is unique for the organization and delivery of care, evaluation of innovations, translation of research into practice, and participatory action and community-based approaches [17]. Due to the broader effects of research on patients, practices, services, population health, community and policy formulation, a dedicated review in PHC is essential to broaden our understanding of research impact, including nuances of how it may or may not be different than other health services research. To establish directions to evolve definitions of research productivity in the context of PHC, funders, academic institutions, researchers, and the public need a better understanding of "research impact" in PHC.

Several scoping reviews, such as those conducted by Murphy, Burge, and Wong [21] on measurement in rural PHC, Noorihekmat et al. [22] on performance measurement frameworks in public health and primary care systems, and Akl et al. [23] on faculty productivity in academic medical centers, have explored aspects of research productivity and measurement within healthcare. However, to the best of our knowledge, there is no existing review that has offered a focused exploration of the specific conceptualizations and measures of research impact within the context of PHC. Such a review would offer a unique and detailed analysis that aims to elucidate the nuances and intricacies of research productivity, thereby contributing a distinct perspective to the existing literature.

This review protocol aims to fill a gap in knowledge by examining the scientific literature on

research impact in the context of PHC. Drawing from established frameworks like the Canadian Academy of Health Sciences (CAHS) Impact Framework [24] and Canadian Health Services and Policy Research Alliance (CHSaPRA) [25], we will aim to: (1) elucidate the various conceptualizations of research impact within the context of PHC and; (2) identify measures of research impact used in the PHC literature by PHC researchers. The study will contribute to understanding and identifying trends in how the impact is understood and measured, highlighting existing gaps or areas needing further investigation within this domain. The findings of the study will be leveraged to inform a future study that will explore the perspectives of patients, citizens, community groups representing equity-deserving groups, PHC leaders, researchers, and policymakers on the definition and measurement of research impact in PHC.

Methods

A rapid scoping review [26] and environmental scan[27] will be conducted. A rapid scoping review methodology is suitable for this investigation as it allows for a comprehensive but expedited exploration of the existing literature surrounding research impact within PHC. Given the breadth of the topic and the need to capture a wide array of literature quickly, the rapid scoping review methodology aligns with the urgency to understand conceptualizations and measurements of research impact in PHC [26]. This approach permits the incorporation of diverse study designs, including grey literature and various publication types, facilitating a thorough investigation of research impact concepts within a condensed timeframe [26]. However, the rapid review will be informed by existing guidelines for scoping reviews [28] and the Arskey and O'Malley methodological steps (described below) [29], aiming for standardized execution and reporting, enhancing the credibility of the findings. Scoping reviews aim to map fundamental concepts in a research area, define key terms and delineate conceptual limits, making it suitable for our purposes [29, 30]. We will use the CRISP Statement (Consensus Reporting Items for Studies in Primary Care) proposed by Phillips et al. [32] for the comprehensive extraction and reporting in PC research to enable the analysis of practices and policies across a diverse range of countries and territories.

Similar to a rapid review, an environmental scan is often used by institutions to collect information [27]. An environmental scan is a systematic approach to gathering and analyzing information from various sources beyond traditional academic literature, including publicly available data, unpublished reports, and consultations with experts [31]. It aims to comprehensively identify relevant information, trends, and developments within a specific field or context [31]. Researchers can also use an environmental scan to identify current and potential research needs and trends to enhance decision-making[27]. While there are various methodologies and sources for collecting and analyzing information for an environmental scan[32], we will conduct our environmental scan by identifying professional organizations, academic institutions, and experts in the fields of information science and PHC to begin our search.

We will adhere the reporting of our review to the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) Extension for Scoping Reviews (PRISMA-SCRA) reporting guidelines[33], as there are currently no existing guidelines for rapid reviews. The study will be conducted in 2024 with results anticipated by end of year. The research team is comprised of PHC researchers (clinicians, PhD-trained) or leaders in the field.

Stage 1: identifying the research question(s)

We intend to address the following research questions:

(1) How is research impact conceptualized in PHC?

(2) How is research impact measured in PHC?

(3) What methodological or conceptual frameworks are used to evaluate PHC research impact? What are the benefits and challenges of assessing PHC research impact?

Stage 2: identifying relevant studies

We will work with an information specialist to develop a search strategy for the following academic databases: PsycINFO Medline, Embase and CINAHL Plus. These databases were intentionally

selected for their inclusion of PHC literature and thus are likely to capture relevant scholarly material. The strategy will initially be applied in MEDLINE before being adapted for other databases. We will also search for literature in Google Scholar to "the wide range of resources including articles from academic journals, conference papers, theses and dissertations" [34](pg. 3). The peer-reviewed search strategy will also be used in Google Scholar. We will conduct a citation search of the reference lists of selected articles to ensure that a wider scope of articles is included. Forward citation searching will also be done for literature that cites eligible studies included in the review [35]. Scopus, Web of Science, and Google Scholar will be used for forward citation tracking to ensure a comprehensive search.

To ensure a comprehensive review of relevant sources and databases, we will hand search relevant grey literature databases, catalogues and search engines (e.g., Google, OpenGrey, TripPro) across high-income countries. We will also explore white papers through healthcare-focused think-tank websites. We will also contact librarians in the field of PHC and information specialists through several mailing lists (including Canadian Medical Libraries and expert searching through the College of Family Physicians of Canada) to ask for further studies or grey literature. We define grey literature as "that which is produced on all levels of government, academics, business and industry in print and electronic formats, but which is not controlled by commercial publishers" [36].

We will also conduct an environmental scan of institutes and initiatives that follow their strategic funding to understand research impacts, such as the Canadian Institute for Health Research's Community-Based Primary Health Care (https://cihr-irsc.gc.ca/e/52315.html) Reports and the SPOR Evidence Alliance[37]. https://knowledgetranslation.net/portfolios/evaluating-the-impact-of-the-community-based-primary-health-care-innovation-teams/). We also aim to examine metrics used by funding agencies within jurisdictions. We will contact each one individually for any published or unpublished evaluations of these PHC activities and ask for any other organizations or experts that may help us to find as many materials as possible.

The search strategies for the databases were devised in collaboration with the two information specialists (please see Appendix 1 for search strategy).

Before the literature search and screening process, reviewers will receive training from the Principal Investigator (MA) to ensure a foundational grasp of the field's background and the review's objectives.

Stage 3: study selection

Two Research Assistants will perform all searches in the databases, citation searching as well as the environmental scan.

Findings from all databases will be amalgamated and imported into Covidence for streamlined documentation and management of studies throughout the review process [38]. Additionally, any duplicate publications will be eliminated.

For the grey literature and environmental scan, the Research Assistants will independently conduct searches across the sources. The Research Assistants will document the sources and databases accessed for grey literature, specifying the search terms, strategies, and any limitations applied. Any date range, filters, and criteria used to identify relevant grey literature sources will be noted. The Research Assistants will document the results obtained, including the number of documents retrieved, and provide a clear account of any exclusions made along with justifications. During frequent team meetings, the research team will discuss how duplicates were managed. This documentation should ensure transparency and reproducibility, allowing others to follow and validate the search methodology [39, 40]. Grey literature will be organized and managed in a structured Excel spreadsheet. Excel will also be used to organize details of the environmental scan, such as the institute or initiative names, contact information, links to relevant reports or evaluations, dates of contact, and any additional notes or follow-up actions required.

We will include grey and scientific literature of any study design, that: (1) have an explicit focus on the research impact; (2) explicitly focus on PHC research and ; (3) are published from a high-income

country (defined as per the World Bank classification [41], i.e., Andorra, Antigua and Barbuda, Aruba, Australia, Austria, Bahamas, Bahrain, Barbados, Belgium, Bermuda, British Virgin Islands, Brunei Darussalam, Canada, Cayman Islands, Channel Islands, Chile, Croatia, Curaçao, Cyprus, Czech Republic, Denmark, Estonia, Faroe Islands, Finland, France, French Polynesia, Germany, Gibraltar, Greece, Greenland, Guam, Hong Kong SAR China, Hungary, Iceland, Ireland, Isle of Man, Israel, Italy, Japan, Korea Rep., Kuwait, Latvia, Liechtenstein, Lithuania, Luxembourg, Macao SAR China, Malta, Monaco, Nauru, Netherlands, New Caledonia, New Zealand, Northern Mariana Islands, Norway, Oman, Palau, Poland, Portugal, Puerto Rico, Qatar, San Marino, Saudi Arabia, Seychelles, Singapore, Sint Maarten (Dutch part), Slovakia, Slovenia, Spain, St. Kitts and Nevis, St. Martin (French part), Sweden, Switzerland, Taiwan China, Trinidad and Tobago, Turks and Caicos Islands, UK, United Arab Emirates, Uruguay, USA, Virgin Islands (USA)

We define an "explicit focus on the research impact" as studies or articles where the primary or significant emphasis is placed on evaluating, measuring, or discussing the effects, outcomes, influence, or implications of research activities or interventions in the field of PHC or by PHC providers. This includes studies employing both formal methodological frameworks, such as the CAHS Framework, and ad-hoc approaches utilizing single or limited metrics. This could involve investigations into the tangible outcomes or effects of research endevours such as changes in healthcare practices, policy implications, patient outcomes, health system improvements, or societal impacts resulting from PHC research initiatives [42]. Additionally, studies proposing frameworks for evaluating PHC research impact, regardless of whether they are empirically trialed or piloted, are considered, recognizing the value of theoretical advancements in this domain. However, studies predominantly focused on assessing the impact of healthcare interventions themselves, rather than the research process or outcomes, are excluded to ensure a manageable scope and relevance to the review objectives.

Limiting inclusion to studies published from high-income countries aligns with the rapid nature of this review while ensuring a focus on PHC research that reflects contexts, systems, and healthcare settings that share similar socioeconomic and healthcare infrastructure characteristics.

Only literature from 1978 (signing of the Alma-Ata Declaration [43]) to the present day and published in English will be considered. Research conducted within this timeframe ensures relevance to contemporary PHC practices and current understanding but also allows for the inclusion of recent advancements, methodologies, and perspectives in the field. Setting a specific timeframe and language criteria can help manage the volume of literature to be reviewed, which is key in a rapid review [26, 44].

The results from all databases will be imported into Endnote, and all duplicates will be removed[45]. The unique articles will then be added to Covidence software to help facilitate screening, study selection and extraction[38]. After generating a list of articles from our search strategy, we will engage in a two-stage screening process with at least one independent reviewer at each stage. In the first stage, two trained, independent reviewers will screen articles for suitability based on their titles and abstracts in duplicate. We will report on the calculation of inter-rater reliability using Cohen's kappa coefficient [46] to assess the consistency of screening decisions between reviewers and ensure the reliability of the study selection process. A third reviewer will review 25% of the excluded articles to ensure no articles were inadvertently excluded. If there is ambiguity on whether specific articles fit the scope of this protocol, the principal investigator will be consulted. In the second stage, single reviewers will conduct full-text reviews of the potentially eligible studies using the inclusion criteria aforementioned [47]. Again, a third reviewer will review 25% of the excluded articles to ensure no articles were inadvertently excluded. Throughout the process, disagreements between reviewers regarding the inclusion or exclusion of articles will be resolved via discussion with the Principal Investigator, who will advise the reviewers of the outcome (i.e., include or exclude). Given the iterative nature of scoping reviews, the inclusion and exclusion criteria will be refined (e.g., added specificity), if needed, after increased familiarity with the data.

The comprehensive outcomes of both the searches (i.e., databases, grey literature, including the environmental scan) and the study inclusion procedure will be thoroughly detailed in the final report of the review. These will be articulated using a PRISMA-ScR flow diagram, ensuring a clear and structured presentation of the search process and the selection of studies for the review [33].

Stage 4: charting the data

The research team will develop initial charting variables based on the research questions and the CRISP Statement [48]. The preliminary variables that will be extracted from the studies will include: (1) authors, (2) year, (3) country where the study was conducted or country of first author's affiliation, (4) journal, (5) methodology of paper (including whether a framework or ad-hoc approach is utilized for measuring impact) (6) definition or conceptualization of impact (including how impact is measured) (7) notice of research team's primary care experience and collaboration (8) description of the study participants and populations in the context of primary care (9) description of the primary care team (10) describe the conditions under study in the context of primary care outcome measures (primary and secondary), (11) units of analysis (12) findings and (13) recommendations/discussion (e.g., gaps, challenges or barriers, recommendations, evidence-based or best practices).

Two team members will independently chart the first five articles that meet our inclusion criteria and refine the definitions for the variables/charting categories if necessary. The research team will discuss the extracted data. If consensus is reached, one researcher will extract data from the remaining articles. If consensus is not reached, the two individuals will continue to extract one article in duplicate until consensus is reached. All discrepancies between reviewers will be addressed through discussion and by involving additional individuals. The charted data will be organized and presented in a Microsoft Excel spreadsheet.

Stage 5: collating, summarizing and reporting the results

To achieve our aims, we will adopt three distinct strategies for reporting and presentation. Initially, the research team will employ a PRISMA-ScR checklist to ensure systematic reporting of our methods and screening processes [33]. Additionally, the charted data will be reviewed, synthesized and analyzed through a numerical summary analysis that will include an overview of study characteristics and help to identify predominant conceptualizations and measurement frameworks utilized for research impact in PHC [29]. A directed content analysis will be carried out on the extracted data [49]. This method entails identifying specific concepts, definitions, methodological approaches, recommendations, benefits, and challenges associated with research impact in PHC. We will develop a coding framework based on established theories and frameworks relevant to PHC research impact, ensuring that the analysis remains focused and aligned with the study objectives. Each piece of extracted data will be systematically coded according to predefined categories, allowing for consistent and structured analysis. Through the directed content analysis, key themes extracted from the selected articles will be categorized, summarized and presented using a narrative synthesis[47] that describes how research impact is conceptualized and measured in PHC. This analysis will also encompass definitions of research impacts, methodological techniques to measure research impact, recommendations for improving PHC research impact and identified benefits or challenges of measurements of research impact in the context of PHC.

Finally, the synthesis will address strengths, study limitations, existing knowledge gaps, and potential avenues for future research pertinent to research impact in the realm of PHC. This is aligned with the goals of scoping reviews, which aims to comprehensively outline the scope and characteristics of existing literature [29]. However, as consistent with the scoping review methodology, we anticipate that the narrative synthesis will be an iterative process and dependent on the literature found [47].

Results

The results of this study are expected in December of 2024. The dissemination of findings from this rapid scoping review on the conceptualization and measurement of research impact in PHC will ensure that the insights generated are shared with relevant stakeholders and contribute to informed decision-making and further research efforts.

The findings of this scoping review will be disseminated through various channels to reach a wide audience. A manuscript detailing the methodology, findings, and implications of the rapid review and environmental scan will be submitted to a relevant peer-reviewed journal in the field of PHC, family medicine, health services research, or impact assessment (e.g., Journal of Primary Care & Community Health, BMC Family Practice, Health Services Research, Journal of Health Services Research & Policy, The Annals of Family Medicine). A concise and accessible policy brief summarizing the key findings and their implications for policymakers, stakeholders and PHC leaders will be developed and distributed through appropriate channels (e.g., the College of Family Physicians of Canada (CFPC), Canadian Institute for Health Information (CIHI), the Canadian Foundation for Healthcare Improvement (CFHI), Canadian Institutes of Health Research (CIHR), Canadian Primary Care Sentinel Surveillance Network (CPCSSN) and Canadian Primary Care Research Network (CPCRN). The research team will present the findings at relevant academic conferences, seminars, and workshops attended by researchers, practitioners, and policymakers in the fields of PHC and health services research (e.g., North American Primary Care Research Group (NAPCRG), Canadian Association of Health Services and Policy Research (CAHSPR), Society for Academic Primary Care (SAPC), International Conference on Primary Health Care (ICPHC)). Collaboration with existing networks and initiatives in PHC research and impact assessment will be sought to integrate the findings into ongoing discussions and efforts. The dissemination materials will be tailored to the needs and interests of different stakeholders. For example, academic publications will provide detailed methodology and findings for researchers, while policy briefs will focus on practical implications for decision-makers. We will also create one-page infographics for patient and public communities (e.g., National Association of Community Health Centers (NACHC)). Presentations and webinars will be customized to engage different audiences effectively.

Discussion

Preliminary Findings

The preliminary findings from this study have yet to be compiled and analyzed as the review is ongoing. The forthcoming rapid review and environmental scan on research impact in PHC will help to elucidate conceptualizations and measurement methodologies of impact, shaping the understanding of research impact within this domain. By rigorously and systematically reviewing a breadth of literature sources, this study aspires to unravel the diverse perspectives and approaches utilized to gauge the impact of research activities in PHC. This review will be able to discern trends, illuminate potential gaps, and outline areas necessitating further exploration or refinement in the assessment of research impact. Such delineations are envisioned to inform future research, policy considerations, and practice innovations in medicine and academia, ultimately contributing to the continuous enhancement of PHC services and policies in PHC settings.

Limitations

The methodology and methods outlined for the scoping review and environmental scan present several potential limitations. Firstly, the selection process might carry biases due to restrictions such as language and publication date, possibly excluding valuable insights from diverse settings or languages. We acknowledge that relying solely on the World Bank's classification system for high-income countries may oversimplify the diversity of socioeconomic and healthcare infrastructure characteristics among nations and may not consider the varied healthcare contexts, systems, and priorities among high-income countries that could in turn influence research impact.

Additionally, researcher biases might influence study interpretation or selection, potentially affecting the review's credibility. Secondly, while the rapid review approach aids efficiency, it may compromise a comprehensive understanding of nuanced concepts related to research impact in PHC. Thirdly, accessing relevant unpublished materials in grey literature might pose challenges, potentially affecting the credibility/reliability of findings.

Conclusions

This protocol outlines a rapid scoping review and environmental scan for exploring research impact

in PHC, which will provide critical insights for advancing PHC systems. Recognizing PHC's pivotal role in healthcare, this study underscores the need for comprehensive research to bolster PHC organizations' performance and integration within broader health systems. Drawing from established frameworks such as CAHS and CSHPRA, the forthcoming review will examine how research impact is conceptualized and measured in PHC, addressing an existing gap in knowledge. Emphasizing the scarcity of recent reviews specifically focused on this domain, this upcoming study pioneers a comprehensive analysis, shedding light on the nuances of research impact. By delineating varied conceptualizations of research impact and measures employed in PHC, this review charts a pathway for future research, potentially refining measurement methodologies and informing decision-making for stakeholders in the PHC landscape.

While findings are pending, the study aspires to inform future research endeavors, policy formulations, and practice enhancements in the realm of PHC which has a pivotal role within healthcare systems both provincially and federally e.g. First Nations on-reserve, prisons, etc.

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N/A

Data Availability

The data sets generated and analyzed during this study will be made available from the corresponding author upon reasonable request.

Conflicts of Interest

None declared.

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