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Complete List of Authors:	Bhatia, Dominika; University of Toronto, Institute of Health Policy, Management and Evaluation Mishra, Sujata; University of Toronto, Institute of Health Policy, Management and Evaluation; University of Toronto Dalla Lana School of Public Health Kirubarajan, Abirami Yanful, Bernice; University of Toronto Dalla Lana School of Public Health, Allin, Sara; University of Toronto, Institute of Health Policy, Management and Evaluation Di Ruggiero, Erica
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Identifying priorities for research on financial risk protection to achieve universal health coverage: A scoping overview of reviews

Authors

Dominika Bhatia[1*‡] dominika.bhatia@mail.utoronto.ca ORCID: 0000-0002-9621-0672

Sujata Mishra[1,2*] sujata.mishra@mail.utoronto.ca

Abirami Kirubarajan[1,2] abi.kirubarajan@gmail.com

Bernice Yanful[2] b.yanful@utoronto.ca

Sara Allin[1§] sara.allin@utoronto.ca

Erica Di Ruggiero[2§] e.diruggiero@utoronto.ca

Author affiliations

[1] Institute of Health Policy Management and Evaluation, Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada

[2] Public Health Sciences Division, Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada

*co-lead authors

[§] co-senior authors

[‡] corresponding author

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ABSTRACT

Objective: Achievement of universal health coverage (UHC) through financial risk protection (FRP) is embedded in the Sustainable Development Goals. We conducted a scoping overview of reviews to characterize what is known about FRP in the UHC context and to identify priorities for future research.

Methods: We used the Arksey & O'Malley and Levac & Colquhoun framework to guide the review process. MEDLINE, PsycINFO, CINAHL-Plus, and PAIS Index were searched systematically for studies published between January 1, 1995 and April 29, 2020. Titles, abstracts, and full-text articles were screened by two independent reviewers in duplicate using the following eligibility criteria: (i) literature review methodology; (ii) focus on FRP in the UHC context; (iii) written in English or French; (iv) published after 1995; and (v) peer-reviewed. Descriptive content analysis was performed to synthesize findings.

Results: 35 studies were included. Most studies were systematic reviews focusing on low- and middle-income countries. Study periods spanned 1990 and 2018. While FRP was generally recognized as a dimension of UHC, it was rarely defined as a concept. Out-of-pocket, catastrophic, and impoverishing health expenditures were most commonly used to measure FRP. Pooling arrangements, expansion of insurance coverage, and financial incentives were the most frequent interventions for achieving FRP. Evidence gaps pertained to the effectiveness, cost-effectiveness, and equity implications of efforts aimed at increasing FRP. Methodological gaps related to trade-offs between single-country and multi-country analyses; lack of process evaluations; inadequate mixed-methods evidence, disaggregated by relevant sociodemographic characteristics; lack of comparable data and standardized measurement; and short follow-up periods.

Conclusion: This scoping overview of reviews mapped out the state of the evidence on FRP in the UHC context and found evidence gaps related to the effectiveness, cost-effectiveness, and equity implications of FRP interventions. Theory-informed research using high-quality, longitudinal, mixed-methods, and disaggregated data is needed to address these objectives.

Abstract word count: 299/300

Keywords: evidence gaps, financial risk protection, research priority setting, scoping review, universal health coverage

STRENGHTS AND LIMITATIONS OF THIS STUDY

- This is the first scoping overview of reviews synthesizing the research priorities on financial risk protection as a concept, intervention, and outcome in the context of universal health coverage.
- This study was guided by a prospectively registered protocol, a rigorous search strategy, and systematic evidence review methods.
- Our searches were limited by language (English and French) and publication year (1995-2020); however, the study periods of the individual included reviews ranged from 1990 to 2018.
- We sought to characterize the published evidence base and, as such, relied on academic peer-reviewed literature.
- As recommended in scoping review guidelines, we relied on the interpretations of the authors of the included reviews, rather than impose our own meanings.

INTRODUCTION

According to the World Health Organization (WHO), the goal of universal health coverage (UHC) is achieved when "all people and communities can use the promotive, preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship" (1). The goal of UHC has been articulated in the Sustainable Development Goal (SDG) 3 of the global 2030 Agenda (2). The WHO Thirteenth General Programme of Work (GPW13) also specified a goal of one billion more people benefitting from UHC by the year 2023 (3).

Despite notable progress towards UHC over the past 30 years, an estimated 389 million people will benefit from UHC by 2023, significantly undershooting the GPW13 target (4). Moreover, over 925 million people have been estimated to experience health-related financial hardship and nearly 90 million are pushed into extreme poverty each year (5). Health-related impoverishments also tend to disproportionately affect individuals in low- and middle-income countries (LMIC), as well as populations experiencing social and economic marginalization in high-income countries (HIC) (6).

Financial risk protection (FRP) is one of the three core dimensions of the goal of UHC, along with quality of care and equity. Although FRP has been of interest to economists and researchers for many years, there is substantial debate regarding its conceptualization, measurement, and implementation (7). Since the goal of UHC has also been interpreted as a universal human right to health, equity can be understood as an inherent and cross-cutting dimension (8). As such, evaluating whether FRP is achieved uniformly within the population is a necessary prerequisite to eliminating systemic barriers that produce unjust inequities in healthcare access and health outcomes (9).

Bibliometric analyses suggest that the release of SDGs has stimulated considerable volume of scholarly research activity related to UHC, with nearly half of the studies published after 2015 (10). Research priority setting is an important function of health policy and systems research that ensures alignment between evidence needs and research efforts (11,12). While some recent studies have outlined research priorities related to SDGs implementation (13,14), no studies have focused on priorities related to ensuring equitable FRP to achieve UHC. To assess this need, we performed a scoping overview of reviews (i) to

synthesize the existing knowledge on FRP in the context of UHC and (ii) to identify evidence gaps that should be prioritized in future work.

METHODS

Conducting a scoping overview of reviews of academic literature using systematic methods is a common methodology for research priority setting (11,12), as it allows (i) to provide a high-level summary of the state of the evidence, and (ii) to map out the evidence gaps and directions for future research, as identified by the research community. We used the five-step scoping review methodological framework by Arksey & O'Malley and Levac & Colquhoun (15–17). We adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) reporting guidelines (18,19) and were guided by a research protocol published prospectively on Open Science Framework (20).

Information sources and search strategy

The search strategy (**Supplementary file 1**) was developed in consultation with an information specialist with expertise in public health. We searched MEDLINE (Ovid), APA PsycINFO (Ovid), CINAHL-Plus (EBSCO), and PAIS Index (ProQuest) for English and French-language sources published between January 1, 1995 and April 29, 2020. This cut-off was chosen because >97% of the literature on UHC was published after 1995 (10), likely due to the adoption of the Millennium Development Goals (MDGs) in 2000, in which MDGs 1 and 4-7 expressed a need for universal access to treatment for select health issues (21). We used validated search filters to identify review articles (22). The search terms included controlled vocabulary and keywords related to the concepts of (i) UHC, (ii) FRP, and (iii) equity or impoverishment (23). The bibliographic searches were supplemented by a review of forward, backward, and co-citations (24).

Study selection process

Search strategies were imported into a web-based systematic review management software, Covidence (www.covidence.org), to remove duplicate citations and perform citation screening against the predefined selection criteria (**Supplementary file 2**). Studies

were eligible if they (i) employed a literature review methodology; (ii) focused on discussing FRP in the UHC context; (iii) were written in English or French; (iv) were published after 1995; (v) were an original peer-reviewed published work; and (vi) could be retrieved through the University of Toronto library. The selection criteria were first piloted on a sample of 100 citations by two independent researchers (DB, SM). Citations were then screened in full by the two independent researchers in two phases: (i) titles and abstracts and (ii) full-text articles. The average Cohen's kappa was calculated to be 0.5, reflecting fair inter-rater agreement (25). Conflicting votes at both screening phases were resolved through discussion with other members of the research team.

Data extraction and synthesis

The data were extracted verbatim from the included articles. A data charting template was first piloted in duplicate by two independent reviewers (DB, SM) on a random selection of 15 articles and discrepancies were discussed with the other co-authors. Data extraction on the remaining set of articles was divided between the two reviewers. Data items included publication information; study methodology; study objectives; descriptive characteristics; definitions of FRP (concepts, measurements, and interventions); and evidence gaps. Evidence gaps were retrieved from the results, discussion, and limitation sections of the included articles.

To address the first objective, we summarized what is currently known in the literature about FRP, including its conceptualization, measurement, and implementation. To address the second objective, we performed a descriptive content analysis of the extracted data to identify what remains unknown in the literature on FRP and methodological considerations for future research. Similar to the approach taken by other studies on research priority-setting in global health (26), this information was framed more broadly to enable applicability to multiple contexts and research topics. Descriptive approaches to content analysis involve staying close to the data and are less interpretive than other meta-aggregative approaches, such as grounded theory or meta-ethnography (27,28). Descriptive approaches to synthesis are recommended for scoping reviews, as scoping reviews seek to characterize the state of the literature and clarify concepts (19).

Patient and public involvement

No patients or members of the public were involved in this study.

RESULTS

Following the review of 2,224 records and handsearching, 35 peer-reviewed articles were included (**Figure 1**), with their characteristics presented in **Tables 1** and **2**. Publication years ranged from 2010 to 2020, with most reviews (n = 24, 69%) published between 2015 and 2020, covering study periods between 1990 and 2018. Most designs were systematic reviews (n = 26, 74%), followed by narrative reviews (n = 3, 9%), and review-based comparative analyses (n = 3, 9%). Among the geographical regions covered by the included reviews, 66% considered countries in the African region; 60% in the South-East Asian and Western-Pacific regions, each; 43% in the Pan-American region; 23% in the European region; and 6% in the Eastern-Mediterranean region. Over half the studies (n = 18, 51%) comprised two or more WHO regions. Over three-quarters (n = 27, 77%) of the reviews focused on LMIC and seven (20%) considered both LMIC and HIC. Ten studies (29%) focused on FRP in specific populations, including women and children, low-income groups, individuals with multimorbidity, and those with mental health issues.

What is known in the literature about financial risk protection?

Financial risk protection as a concept. Sixteen studies (46%) explicitly defined FRP and recognized FRP as a necessary step to achieving UHC (29–44). Some studies suggested that FRP is achieved when households are able to use safe, effective, and high-quality health services, without sacrificing other necessities of wellbeing, such as nutrition (29–31,43). Others considered FRP more narrowly as a means of reducing illness-related expenditures (32–34,45–48). Studies further suggested that a lack of FRP may exacerbate health and socioeconomic inequalities by reducing access to health services and discouraging or delaying care-seeking (31,49).

Financial risk protection as a measure. Twenty-eight studies (80%) described one or more of the following FRP measures: (i) out-of-pocket expenditures (OOPE) (n = 21, 60%); (ii) catastrophic health expenditures (CHE) (n = 17, 49%); and (iii) impoverishing health expenditures (IHE) (n = 8, 23%), with 13 (37%) studies mentioning at least two

measures, and six (17%) considering all three. These measures may be calculated for all health-related expenditures or specific categories of services, such as chronic disease, infectious disease, or maternal health (38). As CHE and IHE are measured against thresholds, some studies may also calculate the mean positive overshoot of the threshold to quantify the intensity of financial hardship (38,43,50).

Out-of-pocket expenditures. OOPE include payments, not reimbursed by insurance, made by individuals or households to meet health-related needs (31,36,44,45,51). Direct payments include health service costs and indirect payments may include transportation costs and losses in productivity or income when accessing health services (31,36,45,51). OOPE indicators may be measured as changes in spending due to illness (44,52); as the proportion of annual wages or disposable income (37); or as a proportion of the ability to pay, defined as basic need expenditures (with food often used as a proxy for basic needs) (31,38,53). OOPE may reflect a low degree of FRP because even small OOPE can cause financial hardship for poor households (31).

Catastrophic health expenditures. CHE was defined as excess spending on health that may cause financial catastrophe, measured as health-related OOPE in the numerator and total income or consumption (budget share method) or spending on basic needs (ability to pay method) in the denominator (31,38,43,45,52,53). Thresholds of 10-25% are used for the budget share method (10% of total household expenditures or 20-25% of total household income) (31,43,45), and 25-40% for the ability to pay method (31,45,50,53). Some studies use the normative food spending approach to define ability to pay, where a household's food-related expenditures are subtracted from total consumption and the remaining amount is used in the denominator to calculate CHE (31,43,45,53). An advantage of CHE indicators is that they can be calculated for all income groups; however, these indicators do not capture descent into poverty owed to healthcare expenditures (43).

Impoverishing health expenditures. To understand whether health needs push households into poverty, health-related OOPE may be measured against predefined poverty lines (31,38,43,44,47,50,52). Poverty lines represent the level at which the basic needs of life cannot be met (43). Absolute poverty lines may be used, such as the World Bank international poverty line (currently, $1.90 per person per day) (31,50) or national poverty lines based on the World Bank poverty assessment, food poverty (cost of minimum

food requirements), or basic needs (cost of the basket of goods considered to satisfy basic biological needs) (31). Relative thresholds may also be considered, calculated as household income over the national mean or median income (31).

Financial risk protection as an intervention. Among the included studies, the following interventions were employed to increase FRP in the population: (i) pooling arrangements (n = 8, 23%); (ii) expanding insurance coverage (including either the benefit package or the proportion of the population or covered) (n = 19, 54%); and (iii) implementing financial incentives (n = 7, 20%).

Pooling arrangements. Risk pooling involves de-linking health-related financial contributions from health risk, enabling lower-need (and by extension, younger and/or wealthier) individuals to subsidize higher-need (and by extension, older and/or poorer) individuals (29,34,36,54–56). Consequently, health-related financial risk is spread to a pool of individuals, rather than being borne by a single person experiencing ill health (54,56). The design of pooling arrangements, including whether contributions are compulsory or voluntary, the size of the pool, the number of pools, and government subsidization, affects the extent to which risk pooling is achieved (29,34,54,56). The pooling arrangements examined by the included studies comprised social health insurance (SHI; compulsory schemes operated by the government) (29,42,44,55–57), community-based health insurance (CBHI; voluntary schemes operated by non-profit and non-governmental entities) (29,33,40,57,58), and private health insurance (PHI; voluntary schemes operated by private for-profit entities) (29,42,57).

Expanding coverage. Several studies examined the effects of expanding the benefit package (i.e., the health services covered by insurance schemes) and extending coverage to a greater proportion of the population (41,43–46,48,50,51,58–60). Limited health service coverage may result in greater OOPE, thereby reducing FRP (44,45,48,50). Populations experiencing socioeconomic marginalization may also be more vulnerable to increased OOPEs due to barriers to insurance enrollment, such as premiums (32,59,61). While previously, many health benefits packages tended to prioritize coverage for low-probability, high-cost inpatient services, there has been increasing recognition that outpatient chronic disease prevention and management, including prescription drugs, drive health-related OOPE (37,43,44).

Financial incentives. Financial incentives, including cash transfers, vouchers, removal of user fees, and other subsidies, seek to reduce financial barriers to specific health services and facilitate utilization, adherence to long-term or chronic treatments, and health-promotive behaviours in targeted populations experiencing marginalization (29,30,44,46,49,62,63).

Which evidence gaps remain in the literature on financial risk protection?

Studies identified evidence gaps related to the effectiveness of FRP interventions, their equity implications, and their cost-effectiveness. The identified research evidence gaps are summarized in **Table 3**.

Evidence of effectiveness. Studies (n = 16, 46%) recognized that implementation of FRP programs should be informed by evidence of their effectiveness in relation to health service use, FRP, health status, and patient experiences.

Impact on health service utilization. Expansion of the benefit package, SHI and CBHI insurance models, as well as incentive programs have shown mixed impacts on health service use (29,43,44,52,56,57). The effects of PHI have been uncertain due to scant impact evaluations (29,57). In addition to considering the type of FRP intervention, studies may consider stratifying utilization by health service type. Since many countries are expanding coverage to outpatient chronic disease and mental health services and prescription drugs, future studies will need to understand whether this yields increased access and utilization (29,39,43,44). There is also little evidence regarding the role of FRP interventions in incentivizing overuse of health services, particularly high-cost invasive procedures (46,49,56).

Impact on financial risk protection. The impact of FRP interventions on measures of FRP, including OOPE, CHE, and IHE, has been unclear (35,43,52,55,56). Studies have provided the following suggestions for future research to clarify impact: (i) investigating the specific health services that drive high OOPE (31,43); (ii) the role of chronic illness and multimorbidity in driving high OOPE (37,38); (iii) the role of non-medical services, such as transportation and food, in exacerbating health-related OOPE (38,45); and (iv) whether the cost of premiums or entry fees into insurance schemes (which are presently not included in health-related OOPE calculations) affect FRP (56).

Impact on experience of care. Reviews suggested the need to monitor patient experiences and perceptions of care, as these factors may enable or hinder care-seeking and there is currently little evidence on how FRP interventions affect this outcome (41,45,63).

Impact on health status. Several reviews found little to no evidence regarding the impact of FRP interventions on population health outcomes, including morbidity, mortality, disability, or health utility measures (quality-adjusted life years, QALY, or disability-adjusted life years, DALY), and identified this to be a need for future research (29,46,52,55,62,63). Among the studies that considered health status, intervention impacts were characterized as uncertain (29,56,57). Health outcomes may also be tailored to target populations and health system contexts. For example, the impact of interventions related to maternal and neonatal may be measured by considering maternal and neonatal health status (46,62) and outcomes of home-based versus facility-based deliveries, as FRP interventions may lead to more facility-based deliveries (62).

Equity considerations. Studies noted that evaluations of effectiveness should also assess whether FRP intervention impacts are equitable (n = 13, 37%). Specifically, studies recommended stratifying (i) FRP intervention coverage and (ii) FRP indicators and other outcomes across subgroups experiencing marginalization. Although poverty is the most frequent stratification variable, studies have further suggested expanding the definition of marginalization to other considerations, including advanced geographic area of residence, age, gender, chronic illness, migration status, employment status, homelessness, and institutionalization (e.g., residing in penitentiaries or long-term care homes) (31,32,34,37,39,43).

Stratification of FRP intervention coverage. Two reviews suggested monitoring new enrollees in FRP interventions and estimating what proportion of the population covered was part of a marginalized group, as enrollment may induce selection effects, which may, in turn, affect downstream outcomes like OOPE or health status (44,56,57,63).

Stratification of FRP intervention impacts. Some reviews observed that there were few studies that collected and analyzed OOPE, CHE, or IHE data disaggregated across relevant subgroups to identify those more likely to experience financial hardship (31,39,43). These issues contributed to a limited understanding of whether FRP

interventions reduced inequities in health-related expenditures among marginalized groups, compared to the general population (29–31,43,60). Interestingly, among studies that provided disaggregated data, high expenditures persisted in marginalized groups, suggesting that either FRP interventions were of limited effectiveness or that the evidence base is not mature enough to be conclusive (32,38). As it is hypothesized that removing financial barriers to healthcare would improve population health, studies should similarly disaggregate other intervention impacts, including health service utilization and long-term health status (39,56,57,60).

Evidence of cost-effectiveness. In addition to demonstrating effectiveness, studies (n = 8, 23%) noted that cost-effectiveness should be considered, given its relevance to decision-makers. This involves gaining a comprehensive understanding of program resource requirements, resource management, and comparative cost-effectiveness.

Estimating resource requirements and input costs. Studies highlighted the need to estimate start-up (45,49), operating (49,62), and scale-up (55,62) costs of FRP interventions to ensure adequate coverage of the target population and inform intervention sustainability. This includes standardizing program costing approaches to enable robust comparisons (45,62).

Mobilizing and managing resources. Other key evidence gaps related to articulating clear approaches to mobilizing resources to meet the needs of FRP programs; determining optimal program financing models, including the roles of governments and other payers; and understanding how to best manage resources once programs are funded (34,55,57).

Establishing comparative cost-effectiveness. Cost-effectiveness includes a broad class of analyses that seek to estimate the benefit of programs, such as improvements in health status or changes in health service use, relative to their resource inputs (30,62,63). In addition to estimating the cost-effectiveness of individual FRP programs, researchers should consider how cost-effective programs are relative to alternative programs seeking to achieve the same impacts (49,55,62).

Which methodological gaps remain in the literature on financial risk protection?

A number of methodological issues should be considered when designing studies to address the identified evidence gaps. A concept map outlining the evidence gaps and methodological considerations is presented in **Figure 2**.

Country focus. Researchers should consider the trade-offs of performing single-country versus multi-country analyses. While multi-country studies provide a snapshot of a large body of evidence, these analyses tend to lack depth in terms of time-trends and context-specific factors, prohibiting the ability to infer a link between FRP and national healthcare schemes, population subgroups with inequitable access to care, and factors outside of the healthcare system, such as social welfare policies (31,32). In addition, countries may be unequally represented in multi-country reviews, leading to biased conclusions (31,33,55,57,61). On the other hand, although findings from single-country case studies may not be generalizable to other settings (31,41,50,53), they may provide more detailed contextual information (31,44,57). Multi-jurisdictional case-studies may provide an opportunity to capitalize on the strengths of both approaches (31).

Process evaluations. Despite the widespread political commitment to UHC through FRP, studies noted that implementation of these aims has been suboptimal and there is a lack of understanding of how contextual factors, including political environment, culture, population size, historical investment in the healthcare system, economic growth, and the number of payers (e.g., government, private, and users) may facilitate or hinder implementation, operation, and scaling up of FRP programs (44,47,55,57). More research is also needed to elucidate how implementation of new FRP interventions, such as CBHI or incentive-based programs, could complement the existing health financing arrangements to progress to UHC (33). In addition to implementation issues, studies highlighted a lack of evidence regarding the underlying reasons for why FRP interventions do not achieve their intended impacts after implementation (52). This is especially relevant when considering the failures of some FRP interventions to reduce inequities in coverage; incurred OOPE, CHE, and IHE; and poor health outcomes among socially marginalized segments of the population (36,42,48).

Process evaluation could address research questions related to the optimal contexts and mechanisms for implementing and ensuring the success of FRP interventions (35). Realist evaluation may be a particularly well-suited methodology, as it seeks to describe

what works, for whom and in which circumstances to identify relevant context-mechanism-outcome configurations (32). Finally, two reviews noted that it is challenging to infer whether FRP programs are rooted in specific theories of change (30,60). As such, future studies should consider using conceptual frameworks to inform process evaluations (30). Consensus should also be reached regarding the relevant process indicators to enable process evaluation comparability (35).

Qualitative data. Reviews acknowledged the limited availability of qualitative evidence (32,35,52). Qualitative data are particularly useful for process evaluations and realist approaches, as such data can illuminate the reasons for intervention-outcome associations observed in the quantitative data (particularly counterintuitive ones), including to understand implementation issues, contextual influences, mechanisms of change, and inequitable impacts (32,52,55). Hunter and Murray (2017) also cautioned that studies to date that did include qualitative evidence tended to be situated within large mixed-methods evaluations, which focused their reporting on the quantitative components (49). Future qualitative and mixed methods studies should thus provide more thorough descriptions and rationale regarding the data collection process, analytic methods, and a reflection on the role of the researcher in generating findings (49).

Quantitative data. Poorly controlled observational study designs – particularly, self-reported cross-sectional household surveys – are abundant in the evidence base (32,40,42,43,45,46,52,56,57,61,62) and most have been rated to be of low to medium quality (30,37,45,49). This limits the ability to make causal inferences about FRP efforts and leaves the possibility of residual confounding related to population and health system factors (33,45,49,62). While the use of randomized-controlled trials may clarify intervention impacts (46,52), using such study designs to evaluate government reforms or SHI schemes may not be feasible or ethical, compared to evaluating CBHI or incentive-based interventions (30,52). Future studies may consider alternative designs, such as well-controlled quasi-experimental studies, to evaluate programs (56,61). Further, since countries may employ multiple complex interventions to implement FRP, studies may need to evaluate combinations of interventions over individual programs (61).

Indicator measurement. Reviews note that many studies focus on the incidence of OOPE or CHE, but few consider IHE (31,38). The number of households estimated to be

experiencing CHE or IHE is also contingent on the choice of thresholds, which has implications for equity analyses (31,38,43,44). For instance, IHE measures are affected by poverty lines, and while international poverty lines may be more suitable for comparative studies, they may result in less sensitive indicators for HIC and some middle-income countries (31,38). Using national poverty lines may overcome this issue, but hinder international comparisons (31). In regard to CHE, studies have shown that the budget share method tends to find that health-related financial hardship is concentrated among more wealthy households (31). As such, ability to pay approaches for estimating CHE have been recommended, particularly when considering equity (31).

Data aggregation. Meta-analyses could not be performed in many quantitative reviews (32,45,46,52,53,60). Robust inferences also could not be drawn due to different data sources (38,45), different data scope (e.g., national vs. targeted population surveys) (38), different recall periods (45), unclear documentation of data collection processes (31,43,45), and lack of standardization in data collection across survey cycles and countries (31,43). In some countries, the wait period to receive insurance coverage for new enrollees or migrants may also contribute to the risk of misclassification bias, as these groups would be considered uninsured and may incur higher healthcare costs (45). Finally, it is unclear how the data collected for purposes other than FRP assessment, such as administrative data, may affect estimates of incurred costs (38).

Follow-up duration. Most quantitative studies were conducted early in the FRP program implementation periods, particularly those evaluating program pilots (31,38,42,47,49,62). This may explain few evaluations of population health outcomes and equity, as well as an unclear understanding of long-term trends in FRP indicators, such as OOPE, CHE, or IHE (38,47,62). Future studies should consider using longitudinal and panel data to analyze FRP intervention impacts over time (31,38,42,43,47).

DISCUSSION

In this scoping overview of 35 academic literature reviews, we described the current state of the evidence on FRP in the UHC context and identified evidence gaps that should be prioritized in future research. We found that although FRP is recognized as a necessary component for achieving UHC, it remains unclear whether FRP interventions are

effective at reducing health-related financial burden and optimizing health service utilization, experience of care, and health outcomes. The lack of disaggregated information across sociodemographic groups may further explain the limited understanding regarding how to equitably improve FRP among segments of the population most vulnerable to experiencing poor health and its financial consequences. Finally, there is little evidence regarding the resources required to implement and sustain FRP interventions and regarding their cost-effectiveness. These evidence gaps are further compounded by methodological challenges.

Interpretation and future directions

Previous work has suggested that the theory of change for SDG 3 has notable limitations, including an omission of impact indicators for FRP (where impacts are defined as changes occurring in communities or systems as a result of FRP) (64). This may explain few effectiveness studies of FRP interventions and underscores the need to evaluate their impacts on service utilization, financial risk, experience of care, and health status. Reliance on cross-sectional self-reported surveys in LMIC settings may also underlie data quality issues, including the lack of longitudinal follow-up and poor inter-jurisdictional comparability, that way contributing to the inconclusiveness of effectiveness and cost-effectiveness evaluations (65–67). The growing use of routine health information data systems for research purposes in LMIC may present an opportunity to conduct higher-quality effectiveness and cost-effectiveness studies, as these data sources may be better-equipped to support longitudinal program evaluations (43,67,68). In addition, since impact evaluations are limited in their ability to understand intervention mechanisms of action (69), we note that process evaluations should accompany impact evaluations in future work. The use of qualitative methods may further explain differential intervention impacts across population subgroups and inform equity implications (69).

Inconsistencies in concept definitions may underlie methodological issues. While there is general agreement on the importance of UHC, interpretations of the concepts of universality, health, and coverage vary in breadth, affecting the scope of FRP interventions and the choice of indicators used to monitor progress (8,70,71). The common indicators of FRP – OOPE, CHE, and IHE – may also not sufficiently capture the concept, as these measures rely on healthcare utilization and do not account for individuals deterred from

care-seeking by financial barriers (7,72). In addition, expenditure-based metrics do not take into consideration whether those at risk of financial hardship opt for lower-quality health services (7,44). Equity has often been considered to be implicit in the goal of UHC and an assumed consequence of its achievement (9,73). However, there is an increasing recognition that striving for health for all and reducing disparities are two separate aims, warranting the need to measure and monitor equity in research on UHC (9,73). Similar to our findings, scholars have also suggested broadening the definition of equity from wealth to geographic and cultural disparities (73).

The focus on LMIC in the literature may not be surprising, as the concurrent burden of poverty and infectious and chronic diseases makes the achievement of UHC even more salient in these settings (74). Nonetheless, the underrepresentation of HIC in the literature is notable. In Canada, 7% of households faced CHE between 2010 and 2015, with rural and low-income households spending a greater share of their ability to pay on healthcare (75). In the United States, 29 million people remained uninsured in 2015, with a greater proportion of poor and near-poor households affected (76). Up to 17% of European households experienced CHE between 2011 and 2016, with up to 40% of households in the poorest quintile affected (72). High OOPE in both Europe and North America have largely been driven by expenditures on pharmaceuticals, medical devices, outpatient services, and dental care, likely due to gaps in insurance coverage (72,77,78). Our identified research objectives may therefore be appropriate for investigation in HIC settings to improve FRP among socially marginalized groups.

Strengths and limitations

We conducted the first scoping study to identify priorities for research on FRP. A strength of our study is our use of rigorous systematic searching and evidence review methods. Some limitations should also be considered. First, we limited our search by language and publication dates. Although prior work has shown that the conclusions of systematic reviews of the medical literature are not modified by language restrictions (79), this has not been evaluated in regard to global health. We thus recognize that we may have missed relevant studies written in languages other than English or French. We believe our inclusion of evidence published after 1995 to be reasonable, as bibliometric analyses have shown that research interest in UHC began to grow around the adoption of MDGs in 2000

(10). Furthermore, the study periods of the primary studies within the included reviews covered 1990 and 2018. Second, as our objective was to review the academic evidence base and characterize knowledge gaps, we relied on published peer-reviewed work, rather than grey literature. Third, we employed descriptive content analysis methods, which involve greater reliance on the original study authors' interpretations. As noted earlier, such approaches are appropriate for scoping reviews, which have descriptive aims and do not seek to generate in-depth theories (19).

Conclusion

This scoping overview of reviews mapped out the state of the evidence on FRP in the UHC context and found evidence gaps related to the effectiveness, cost-effectiveness, and equity implications of FRP interventions. Theory-informed research using high-quality, longitudinal, mixed-methods data, disaggregated by socioeconomic marginalization status, is needed to address these objectives.

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Tables and figures

Tables

Table 1. Characteristics of the included studies

Table 2. Summary of the characteristics of the included studies

Table 3. Evidence gaps identified from the literature

Figures

Figure 1. PRISMA study selection flowchart

Figure 2. Concept map of financial risk protection interventions, impacts, evidence gaps, and methodological considerations

Table 1. Characteristics of the included studies

Study	Study design	Resource level	Geographic scope	FRP defined?	FRP interventions	FRP measures	No. studies	No. databases	Study period
Acharya 2012 (56)	Systematic review	LMIC	PAR, AFR, SEAR, EUR, WPR	No	PA	OOPE, CHE	24	10 academic, 3 grey	≤2010
Adebayo 2015 (40)	Systematic review	LMIC	PAR, AFR, SEAR, WPR	No	EC	OOPE	25	17	2003-2013
Angell 2019 (55)	Systematic review, Delphi panel	LMIC, HIC	SEAR, WPR	No	PA	OOPE, CHE	31 studies, 10 grey reports	3 academic, 14 grey	2008-2018
Bellows 2013 (62)	Narrative review	LMIC	AFR, EMR, EUR, WPR	No	FI	NS	28 voucher programs	NS	1995-2011
Bright 2017 (30)	Systematic review	LMIC	PAR, AFR, SEAR, WPR	Yes	FI	NS	57	4	≤2015
Bucagu 2012 (59)	Systematic review	LMIC	AFR	No	EC	CHE	14	1	2005-2011
Comfort 2013 (46)	Systematic review	LMIC	PAR, AFR, SEAR, EUR, WPR	Yes	EC, FI	NS	29	NS	1997-2012
Docrat 2020 (39)	Systematic review	LMIC	PAR, AFR, SEAR, WPR	No	EC	OOPE	18	9	≤2018
Erlangga 2019 (52)	Systematic review	LMIC	PAR, AFR, SEAR, WPR	No	EC	OOPE, CHE, IHE	68	5 academic, 3 grey	2010-2016
Fadlallah 2018 (33)	Systematic review	LMIC	PAR, AFR, SEAR, EUR, WPR	Yes	EC	OOPE	51	6	1992-2015
Grainger 2014 (63)	Narrative review	LMIC	PAR, AFR, SEAR, WPR	No	FI	NS	40 voucher programs	NS	≤2011
Hunter 2017 (49)	Systematic review	LMIC	PAR, AFR, SEAR, WPR	No	FI	OOPE	98	19	1990-2015
Izzanie 2019 (42)	Systematic review	LMIC	SEAR, WPR	No	EC	OOPE, CHE, IHE	13	4	1993-2017
Koch 2017(43)	Systematic review	LMIC	PAR	Yes	EC	OOPE, CHE, IHE	16	3	2008-2015
Lagomarsino 2012 (44)	Comparative analysis	LMIC	AFR, SEAR, WPR	Yes	PA, EC, FI	OOPE, IHE	NS	3	NS

Mathauer 2019 (54)	Comparative analysis	NS	NS	No	PA	OOPE	NS	2	NS
Meng 2011 (61)	Systematic review	LMIC, HIC	PAR, AFR, SEAR, WPR	No	EC	NS	86	45	1995-2007
Myint 2019 (36)	Systematic review	LMIC, HIC	SEAR, WPR	No	PA	OOPE, CHE	77	2	2010-2017
Njagi 2018 (38)	Scoping review	LMIC	AFR	Yes	NS	CHE, IHE	34	5	2006-2017
Odeyemi 2014 (58)	Systematic review	LMIC	AFR	No	EC	CHE	26	2	2003-2012
Odeyemi 2013 (51)	Comparative analysis	LMIC	AFR	No	EC	OOPE	16	3	2000-2012
Okedo-Alex 2019 (50)	Systematic review	LMIC	AFR	Yes	EC	CHE	20	5	2003-2018
Okem 2015 (48)	Systematic review	LMIC	EUR	Yes	EC	OOPE	76	≥10	2000-2012
Okoroh 2018 (45)	Systematic review	LMIC	AFR	Yes	EC	OOPE, CHE	7	6	2003-2017
Prinja 2017 (35)	Systematic review	LMIC	SEAR	No	EC	OOPE, CHE	14	4	2005-2015
Rezaei 2019 (53)	Meta-analysis	LMIC	EMR	Yes	NS	CHE	24	6	2001-2015
Salmi 2017 (60)	Systematic review, survey	LMIC, HIC	EUR	No	EC	NS	108	4	2000-2010
Sanogo 2019 (41)	Systematic review	LMIC	PAR, AFR, SEAR, EUR, WPR	No	EC	NS	12	4	2005-2018
Spaan 2012 (57)	Systematic review	LMIC	AFR, WPR, SEAR	No	PA	NS	159	19	≤2011
Sum 2018 (37)	Systematic review	LMIC, HIC	PAR, WPR, SEAR	Yes	NS	OOPE	14	5	2000-2016
Uzochukwu 2015 (34)	Systematic review	LMIC	AFR	Yes	PA	OOPE, IHE	NS	6	2009-2014
van Hees 2019 (32)	Systematic review	LMIC	PAR, AFR, SEAR, WPR	Yes	EC	CHE	44	11	1995-2018
van Minh 2014 (47)	Narrative review	LMIC, HIC	SEAR, WPR	Yes	NS	OOPE, CHE, IHE	NS	8	1995-2017

Wiysonge 2017 (29)	Cochrane review	LMIC	PAR, AFR, SEAR, WPR	Yes	PA, FI	OOPE, CHE	15	20	2005-2016
Yerramilli 2018 (31)	Systematic review	LMIC, HIC	EUR	Yes	NS	OOPE, CHE, IHE	54	4	1990-2017

Abbreviations: African region, AFR; catastrophic health expenditure, CHE; financial incentives, FI; financial risk protection, FRP; Eastern Mediterranean region, EMR; European region, EUR; expanding coverage, EC; high-income countries, HIC; impoverishing health expenditures, IHE; low- and middle-income countries, LMIC; not specified, NS; out-of-pocket expenditures, OOPE; Pan American region, PAR; pooling arrangements, PA; South East Asian region, SEAR; Western Pacific region, WPR; World Health Organization, WHO

Table 2. Summary of the characteristics of the included studies

Study characteristic	No. (%) (N = 35)	References
Publication year		
1995-1999	0 (0)	-
2000-2004	0 (0)	-
2005-2009	0 (0)	-
2010-2014	11 (31)	(44,46,47,51,56–59,61–63)
≥2015	24 (69)	(29–43,45,48–50,52–55,60)
Study period*		
1990-1994	9 (26)	(30,31,33,39,42,49,56,57,63)
1995-1999	14 (40)	(30–33,39,42,46,47,49,56,57,61–63)
2000-2004	23 (66)	(30–33,37,39,40,42,45–51,53,56–58,60–63)
2005-2009	30 (86)	(29–35,37–43,45–51,53,55–63)
2010-2018	33 (94)	(29–43,45–53,55–63)
Not specified	2 (6)	(44,54)
Resource level		
LMIC	27 (77)	(29,30,32–35,38–46,48–53,56–59,62,63)
HIC	0 (0)	-
LMIC and HIC	7 (20)	(31,36,37,47,55,60,61)
Not specified	1 (3)	(54)
Geographic scope*		
African region	23 (66)	(29,30,32–34,38,40,41,44–46,49–52,56–59,61–63)
European region	8 (23)	(31,33,41,46,48,56,60,62)
Eastern-Mediterranean region	2 (6)	(53,62)
South-East Asian region	21 (60)	(29,30,32,33,35–37,39–42,44,46,47,49,52,55–57,61,63)
Western-Pacific region	21 (60)	(29,30,32,33,36,37,39–42,44,46,47,49,52,55–57,61–63)
Pan-American region	15 (43)	(29,30,32,33,37,39–41,43,46,49,52,56,61,63)
≥2 WHO regions	18 (51)	(29,30,32,33,36,37,39–42,46,47,49,52,55,61–63)
Not specified	1 (3)	(54)
Study design		
Systematic review	26 (74)	(30–37,39–43,45,46,48–50,52,55–61)
Narrative review	3 (9)	(47,62,63)
Meta-analysis	1 (3)	(53)
Cochrane overview of reviews	1 (3)	(29)
Scoping review	1 (3)	(38)
Comparative analysis	3 (9)	(44,51,54)
Target population		
Women and children	4 (13)	(30,46,59,62)
Poor or marginalized groups	4 (19)	(32,41,58,61)

Multimorbidity	1 (3)	(37)
Mental health	1 (3)	(39)
Studies with concept definitions*		
Defined universal health coverage	23 (65)	(29,30,32–36,39–47,50–54,62,63)
Defined financial risk protection	16 (46)	(29–40,42–44)
Defined equity	13 (37)	(31,32,36,37,41–43,45,51,55,60,61,63)
Financial risk protection measures*		
Out-of-pocket expenditures	21 (60)	(29,31,33–37,39,40,42–45,47–49,51,52,54–56)
Catastrophic health expenditures	17 (49)	(29,31,32,35,36,38,42,43,45,47,47,50,52,53,55,56,58,59)
Impoverishing health expenditures	8 (23)	(31,34,38,42–44,47,52)
Financial risk protection interventions*		
Pooling arrangements	8 (23)	(29,34,36,44,54–57)
Expanding insurance coverage	19 (54)	(32,33,35,39–46,48,50–52,58–61)
Financial incentives	7 (20)	(29,30,44,46,49,62,63)

*Overlapping categories

Abbreviations: high-income countries, HIC; low- and middle-income countries, LMIC; World Health Organization, WHO

Table 3. Evidence gaps identified from the literature

Category No. (%)	Specific evidence need	References
Evidence of effectiveness N = 16 (46)	*Impact on health service utilization* • Understand how pooling arrangements, expansion of insurance coverage, and financial incentives affect overall health service use and specific health service types, including unintended outcomes (e.g., incentivizing inappropriate over- or underutilization of services)	(29,39,43,44,46,49,52,56,57)
	Impact on financial risk • Understand how pooling arrangements, expansion of insurance coverage, and financial incentives affect OOPE, CHE, and IHE • Understand how pooling arrangements, expansion of insurance coverage, and financial incentives affect OOPE, CHE, and IHE related to specific health services, chronic health conditions and multimorbidity, non-medical services, or spending on premiums and entry fees into insurance schemes	(31,35,37,38,43,45,52,55,56)
	Impact on experience of care • Understand how pooling arrangements, expansion of insurance coverage, and financial incentives affect people's experiences with the healthcare system	(41,45,63)
	Impact on health status • Understand how pooling arrangements, expansion of insurance coverage, and financial incentives affect population health outcomes, including morbidity, mortality, disability, and measures of utility (e.g., QALYs, DALYs)	(29,46,52,55–57,62,63)
Equity considerations N = 13 (37)	*Stratification of FRP program coverage* • Consider proportion of population covered or served by FRP intervention that is experiencing marginalization	(44,56,57,63)
	Stratification of FRP indicators and other outcomes • Consider the distribution of OOPE, CHE, and IHE across marginalized groups to understand whether FRP intervention efforts are equitable • Consider stratification of health service utilization, experience of care, and health status across marginalized groups to understand whether FRP intervention efforts are equitable	(29–32,38,39,56,57,60)
Evidence of cost-	*Estimating resource requirements and input costs*	(45,49,55,62)

N = 8 (23)	• Estimate start-up, operating, and scale-up costs of FRP interventions using standard methods to enable comparability between programs	
	Mobilizing and managing resources	(34,44,55)
	• Identify optimal strategies to mobilize and finance FRP interventions • Identify optimal strategies to manage resources once FRP interventions are funded	
	Establishing cost-effectiveness	(30,49,55,62,63)
	• Estimate gains in utilization, FRP, experience of care, or health status relative to resource needs • Compare cost-effectiveness between FRP interventions	

Abbreviations: catastrophic health expenditures, CHE; disability-adjusted life years, DALYs; financial risk protection, FRP; impoverishing health expenditures, IHE; out-of-pocket expenditures, OOPE; quality-adjusted life years, QALYs; universal health coverage, UHC

Figure 1. PRISMA study selection flowchart

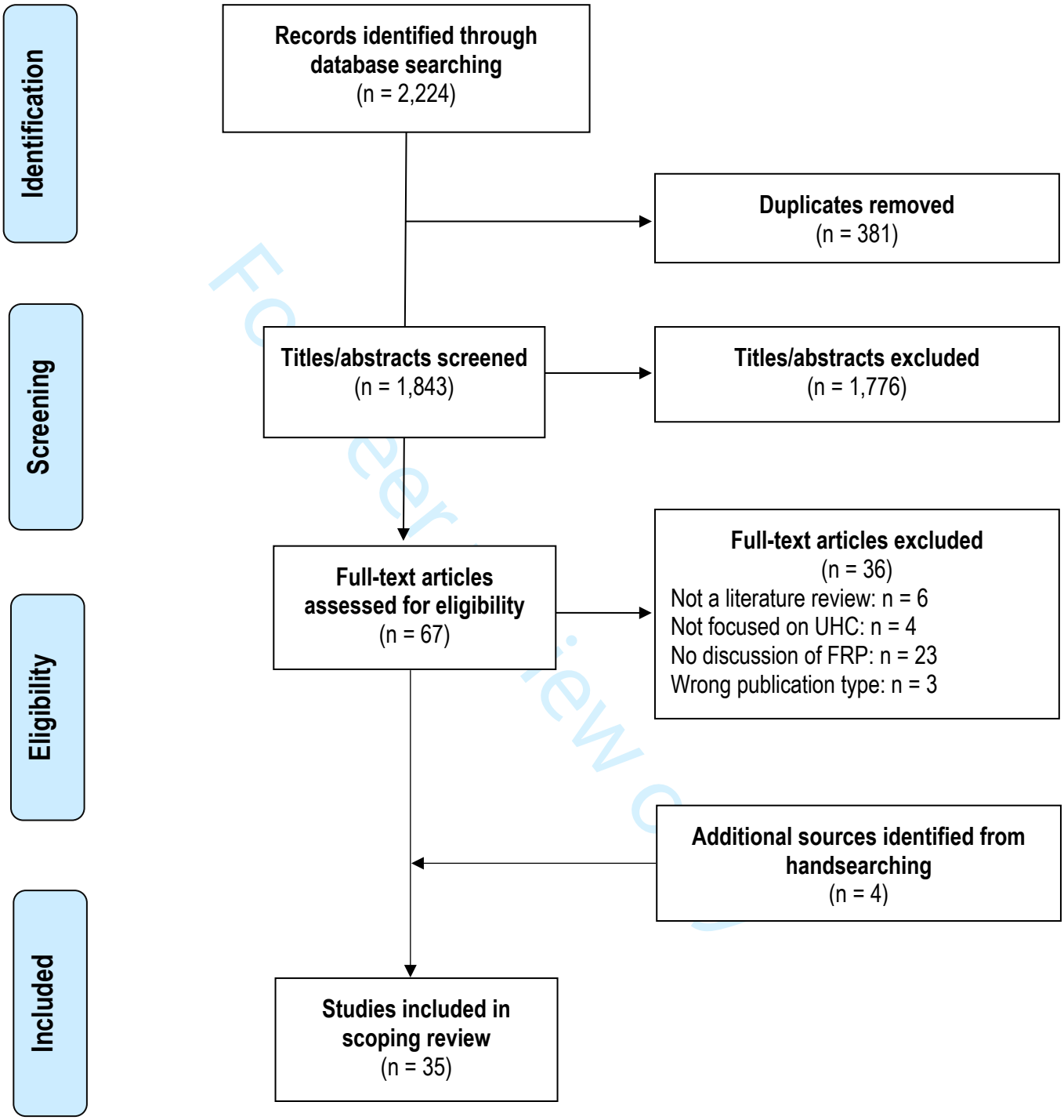
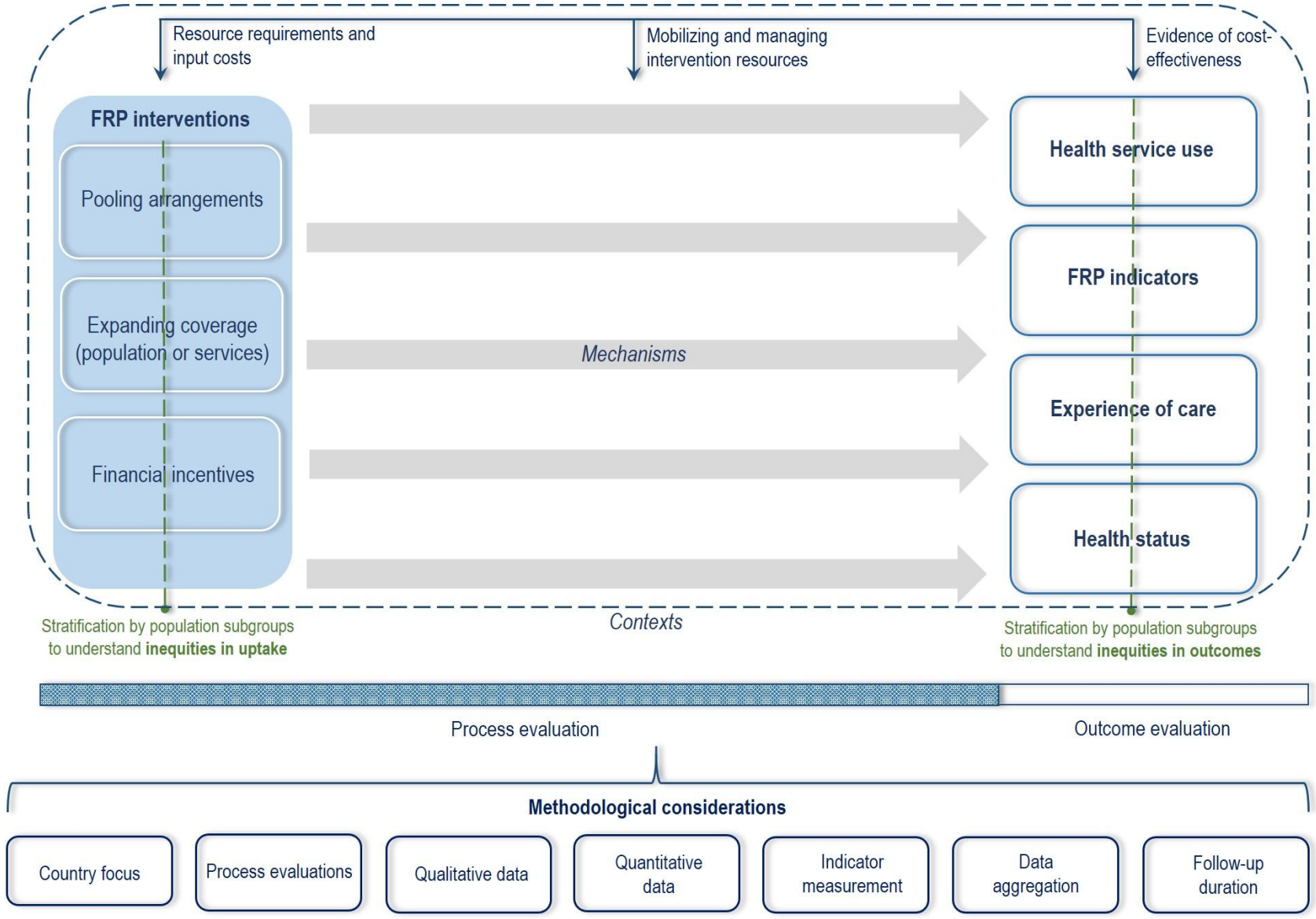


Figure 2. Concept map of financial risk protection interventions, impacts, evidence gaps, and methodological considerations



Supplementary material

Supplementary file 1. Search strategy in Ovid MEDLINE
Supplementary file 2. Detailed eligibility criteria for scoping review

Checklist. PRISMA-ScR reporting checklist

Supplementary file 1. Search strategy in Ovid MEDLINE (last updated April 29, 2020)

Ovid MEDLINE: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE® Daily and Ovid MEDLINE® <1946-Present> (n = 1,045)		
#	**Searches**	**# Results**
1	exp Insurance Coverage/	16473
2	(UHC or ((universal or population or public or national or essential or social) adj4 (coverage or benefit* or insurance or care or healthcare or health care or health-care or health servic* or medicin*))).tw,kf.	169251
3	1 or 2	181722
4	(financial adj3 (protection or risk or coverage or risk-sharing or hardship or assist* or barrier* or access)).tw,kf.	6425
5	(financing adj3 (health or healthcare or health care or health-care or health service* or medicin*)).tw,kf.	5340
6	(cost-sharing or cost sharing or social health protection or social protection in health or social health promotion or reimbursement incentive* or monetary incentive* or cash transfer or cash transfers or cash grant or cash grants or monetary grant or monetary grants or non-monetary grant or non-monetary grants or non monetary grant or non monetary grants or social welfare or social assist* or social grant or social grants or social safety net or social safety-net or sociali?ed healthcare or sociali?ed health care or sociali?ed health-care or social security or health security or healthcare security or health care security or health-care security or public welfare servic*).tw,kf.	19277
7	4 or 5 or 6	30210
8	Vulnerable populations/ or exp Socioeconomic Factors/ or Healthcare Disparities/ or Health Status Disparities/ or Poverty Areas/ or Urban Population/ or "Social Determinants of Health"/	511247
9	(health adj3 (gap or gaps or gradient* or hierarch*)).tw,kf.	3606
10	(equit* or inequit* or inequalit* or disparit* or equality).tw,kf.	126400
11	((social* or socio-economic or socioeconomic or economic or structural or material) adj3 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant* or vulnerab* or insecurit*)).tw,kf.	128011
12	(SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or educational level or level of education or educational attainment or well educated or better educated or unemploy* or home owner* or tenure or affluen* or well off or better off or worse off).tw,kf.	286812
13	(poverty or precar* or impoverish* or depriv* or destitut* or marginalis* or marginaliz* or indigen* or low-income or low income).tw,kf.	191177
14	((out-of-pocket or out of pocket or catastrophic) adj4 (spend* or expend* or cost* or expens* or payment*)).tw,kf.	5467
15	8 or 9 or 10 or 11 or 12 or 13 or 14	937614
16	3 and 7	6347
17	3 and 15	41528
18	16 or 17	44386
19	Meta-Analysis as Topic/	17769
20	meta analy$.tw.	168560
21	metaanaly$.tw.	2049
22	Meta-Analysis/	113810

23	(systematic adj (review$1 or overview$1)).tw.	166886
24	exp Review Literature as Topic/	13560
25	19 or 20 or 21 or 22 or 23 or 24	295552
26	cochrane.ab.	81387
27	cochrane.ab.	81387
28	(psychlit or psyclit).ab.	917
29	(psychinfo or psycinfo).ab.	34763
30	(cinahl or cinhal).ab.	27697
31	science citation index.ab.	3106
32	bids.ab.	523
33	cancerlit.ab.	630
34	26 or 27 or 28 or 29 or 30 or 31 or 32 or 33	118658
35	reference list$.ab.	17743
36	bibliograph$.ab.	17890
37	hand-search$.ab.	6841
38	relevant journals.ab.	1167
39	manual search$.ab.	4393
40	35 or 36 or 37 or 38 or 39	43046
41	selection criteria.ab.	30113
42	data extraction.ab.	20665
43	41 or 42	48490
44	Review/	2637301
45	43 and 44	29227
46	Comment/	842745
47	Letter/	1072443
48	Editorial/	525373
49	animal/	6593170
50	human/	18427932
51	49 not (49 and 50)	4659940
52	46 or 47 or 48 or 51	6424847
53	25 or 34 or 40 or 45	351311
54	53 not 52	333353
55	18 and 54	1081
56	limit 55 to (english or french)	1052
57	limit 56 to yr="1995 -Current"	1045

Supplementary file 2. Eligibility criteria for scoping review

Criterion	Definition for inclusion	Definition for exclusion
Research design	Study methodology is a literature review (e.g., narrative, systematic, scoping, rapid, comparative, or realist reviews, including syntheses of quantitative, qualitative, or mixed methods data). Reviews could be combined with other methodologies (e.g., Delphi panel).	Study designs other than literature reviews.
Focus on universal health coverage (UHC)	Study is focused on UHC, where UHC is of central interest to the article.	Study incidentally mentions UHC, but it is not the focus of the article.
Focus on financial risk protection	Study discusses interventions aimed at minimizing health-related financial risk and/or financial risk protection indicators or outcomes.	Study does not discuss financial risk protection interventions/mechanisms or indicators/outcomes.
Language	Study is written in English or French.	Studies in any language other than English or French.
Time frame	Study is published in or after 1995.	Any studies published before 1995.
Type of publication	Study is an original published work that has undergone peer-review.	Conference abstracts, posters, editorials, thesis dissertations, technical reports, or books/book chapters.
Availability	Full text is accessible through the University of Toronto library services	

Checklist. Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) reporting checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	4
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	4
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	5
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	6
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	5
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	5, Suppl. 1
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	5,6
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	6
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	6
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	NA

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	6
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	7
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	7
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	NA
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Table 1
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	7-15, Tables 1-3
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	15,16
Limitations	20	Discuss the limitations of the scoping review process.	17,18
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	18
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	18

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850.

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Identifying priorities for research on financial risk protection to achieve universal health coverage: A scoping overview of reviews

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Identifying priorities for research on financial risk protection to achieve universal health coverage: A scoping overview of reviews

Authors

Dominika Bhatia[1‡] dominika.bhatia@mail.utoronto.ca ORCID: 0000-0002-9621-0672

Sujata Mishra[1] sujata.mishra@mail.utoronto.ca

Abirami Kirubarajan[1] abi.kirubarajan@gmail.com

Bernice Yanful[2] b.yanful@utoronto.ca

Sara Allin[1] sara.allin@utoronto.ca

Erica Di Ruggiero[2] e.diruggiero@utoronto.ca

Author affiliations

[1] Institute of Health Policy Management and Evaluation, Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada

[2] Public Health Sciences Division, Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada

[‡] corresponding author

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Tables and figures: 5/5

References: 99/100

ABSTRACT

Objectives: Financial risk protection (FRP) is an indicator of the Sustainable Development Goal 3 universal health coverage (UHC) target**.** We sought to characterize what is known about FRP in the UHC context and to identify evidence gaps to prioritize in future research.

Design: Scoping overview of reviews using the Arksey & O'Malley and Levac & Colquhoun framework and the PRISMA-ScR guidelines.

Data sources: MEDLINE, PsycINFO, CINAHL-Plus, and PAIS Index were searched for studies published between January 1, 1995 and July 20, 2021.

Eligibility criteria: Records were screened by two independent reviewers in duplicate using the following criteria: (i) literature review; (ii) focus on UHC achievement through FRP; (iii) English or French language; (iv) published after 1995; and (v) peer-reviewed.

Data extraction and synthesis: Two reviewers extracted data using a standard form and descriptive content analysis was performed to synthesize findings.

Results: 50 studies were included. Most studies were systematic reviews focusing on low- and middle-income countries. Study periods spanned 1990 and 2020. While FRP was recognized as a dimension of UHC, it was rarely defined as a concept. Out-of-pocket, catastrophic, and impoverishing health expenditures were most commonly used to measure FRP. Pooling arrangements, expansion of insurance coverage, and financial incentives were the main interventions for achieving FRP. Evidence gaps pertained to the effectiveness, cost-effectiveness, and equity implications of efforts aimed at increasing FRP. Methodological gaps related to trade-offs between single-country and multi-country analyses; lack of process evaluations; inadequate mixed-methods evidence, disaggregated by relevant characteristics; lack of comparable and standardized measurement; and short follow-up periods.

Conclusions: This scoping overview of reviews characterized what is known about FRP as a UHC dimension and found evidence gaps related to the effectiveness, cost-effectiveness, and equity implications of FRP interventions. Theory-informed mixed-methods research using high-quality, longitudinal, and disaggregated data is needed to address these objectives.

Abstract word count: 300/300

Keywords: evidence gaps, financial risk protection, overview, research priority setting, scoping review, umbrella review, universal health coverage

STRENGHTS AND LIMITATIONS OF THIS STUDY

- This is the first scoping overview of reviews synthesizing the evidence gaps related to the conceptualization of financial risk protection, interventions aimed at increasing financial risk protection, and outcomes used to measure financial risk protection in the context of universal health coverage.
- This study was guided by a prospectively registered protocol, a rigorous search strategy, and systematic evidence review methods.
- Study searches were limited by language (English and French) and publication year (1995-2021); however, the study periods of the individual included reviews ranged from 1990 to 2020.
- In order to characterize the published evidence base, this research relied on academic peer-reviewed literature.
- As recommended in scoping review guidelines, we relied on the interpretations of the authors of the included reviews, rather than impose our own meanings.

INTRODUCTION

At the 58th World Health Assembly in 2005, Member States committed to transitioning to universal coverage to guarantee access to necessary health services to the entire population, while protecting against financial risk (WHA58.33) (1). This objective was reaffirmed in the 2015 ratification of the United Nations 2030 Agenda for Sustainable Development, which outlined 17 Sustainable Development Goals (SDGs) and 169 targets that aim to provide "peace and prosperity for people and the planet" (2). Specifically, SDG 3 called on Member States to ensure healthy lives and promote wellbeing for all at all ages through the "achieve[ment] of universal health coverage (UHC), including financial risk protection (FRP), access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all" (target 3.8) (2). The countries' progress towards the UHC target through FRP is monitored using indicators 3.8.1 (coverage of essential health services among the general and most disadvantaged populations) and 3.8.2 (proportion of population with large household expenditures on health as a share of total household expenditure or income) (2).

The World Health Organization (WHO) Thirteenth General Programme of Work (GPW13), which provides a framework for measuring progress towards the health-related SDG targets, specified a goal of one billion more people benefitting from UHC by the year 2023 (3). However, despite notable progress towards UHC over the past 30 years, nearly 90 million people are pushed into extreme poverty due to healthcare expenditures each year (4), and only an estimated 389 million additional people will benefit from UHC by 2023, significantly undershooting the GPW13 target (5). While nearly all countries impose direct user payments for health services, this form of healthcare financing is especially predominant in low- and middle-income countries (LMIC) (6,7), and is more prohibitive to populations rendered socially and economically marginalized by systemic barriers in both LMIC and high-income countries (HIC) (6). Indirect payments related to transportation and lost wages further increase the risk of financial catastrophe and exacerbate inequities (6).

Bibliometric analyses suggest that the release of SDGs has stimulated considerable scholarly research on UHC, with nearly half of the studies published after 2015 (8). Nonetheless, substantial debate remains on the conceptualization of FRP as a dimension of UHC, the established metrics for measuring FRP and its absence, and mechanisms for achieving UHC through FRP (9–12). These ambiguities complicate the decision-makers' ability to translate UHC from an aspirational objective into practical public policy (11). Identifying research priorities through evidence synthesis is an important function of health policy and systems research that ensures alignment between evidence needs, research funding, and research efforts (13–16). While some recent studies have outlined priority research gaps related to SDGs implementation (17,18), no studies have focused on research priorities related to the achievement of UHC through FRP. In this study, we performed a scoping overview of reviews (i) to synthesize the existing knowledge on FRP in the UHC context and (ii) to identify evidence gaps to prioritize in future research.

METHODS

Study design and rationale

Since there is no single accepted methodology for identifying evidence gaps (15), our approach requires some justification. Overviews of literature reviews ("overviews"), where secondary studies are the unit of analysis, have been described as the preferred review methodology when the evidence base is vast and when policy- or decision-makers are the intended knowledge users (19–21). As identifying inconsistent or insufficient evidence is already implicit in syntheses of primary studies (15,22), overviews are able to summarize this information as evidence gaps that are generalizable and applicable in future research (19–21). Although standardized recommendations for the conduct of overviews are not available, existing review methodologies for primary studies can be adapted (20,21,23). Scoping reviews are better suited to exploratory and descriptive objectives, such as mapping of the evidence and identification of key concepts, while systematic reviews have more narrow objectives that are explanatory or analytical in nature (24). Consequently,

scoping overviews of the academic literature have been frequently used for global health services and systems research agenda-setting (14,17,18,25).

In conducting this scoping overview, we used the five-step scoping review methodological framework by Arksey & O'Malley and Levac & Colquhoun (26–28). We adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) reporting guidelines (24,29) and were guided by a research protocol published prospectively on Open Science Framework (30).

Information sources and search strategy

The search strategy (see **Supplementary file 1**) was developed in consultation with a public health information specialist. We searched MEDLINE (Ovid), APA PsycINFO (Ovid), CINAHL-Plus (EBSCO), and PAIS Index (ProQuest) for English and French-language sources published between January 1, 1995 and July 20, 2021. This date cut-off was chosen because >97% of the literature on UHC was published after 1995 (8), likely due to the adoption of the Millennium Development Goals (MDGs) in 2000, in which MDGs 1 and 4-7 expressed a need for universal access to treatment for select health issues (31). We used pre-tested search filters to identify review articles (32). The search terms included controlled vocabulary and keywords for the concepts of (i) UHC, (ii) FRP, and (iii) equity or impoverishment (33). We used a broad set of synonyms for each concept, as, for example, UHC-related terms have evolved over time and usage has varied between HIC ("universal health care") and LMIC ("universal health coverage") (10,12). To capture possible variation in FRP definitions, search concepts were combined using the following logic: (UHC AND FRP) OR (UHC AND equity). The bibliographic searches were supplemented by a review of forward, backward, and co-citations (34).

Study selection process

Search strategies were imported into a web-based systematic review management software, Covidence (www.covidence.org), to remove duplicate citations and perform citation screening against the predefined selection criteria (described in detail in **Supplementary file 2**). Studies were eligible if they (i) employed a literature review

methodology (where an explicit methodology section was provided to confirm that a literature review was undertaken); (ii) focused on the achievement of UHC through FRP; (iii) were written in English or French; (iv) were published after 1995; (v) were an original peer-reviewed published work; and (vi) could be retrieved through the University of Toronto library. The selection criteria were first piloted on a sample of 100 citations by two independent researchers (DB, SM). Citations were then screened in full by the two independent researchers in two phases: (i) titles and abstracts and (ii) full-text articles. The average Cohen's kappa was calculated to be 0.5, reflecting fair inter-rater agreement (35). Conflicting votes at both screening phases were resolved through discussion with the research team.

Data extraction and synthesis

The data were extracted verbatim from the included articles. A data charting template was first piloted by two independent reviewers (DB, SM) on a random selection of 15 articles and discrepancies were discussed with the other co-authors. Data extraction on the remaining set of articles was divided between the two reviewers. Data items included publication information; study methodology; study objectives; descriptive characteristics; definitions of FRP (concepts, measurements, and interventions); and evidence gaps. By "FRP interventions", we broadly mean the implementation of policies, programs, and mechanisms aimed at reducing health-related financial burden among health system users. Evidence gaps were defined as research findings or propositions identified as insufficient and meriting further study by the research community (i.e., authors of the included studies) (15). Evidence gaps were retrieved from the results, discussion, and limitation sections of the included articles.

To address the first objective, we summarized what is currently known in the literature about FRP, including its conceptualization, measurement, and implementation as an intervention. To address the second objective, we performed a descriptive content analysis of the extracted data to describe and summarize the evidence gaps identified by the research community, classified as gaps related to the evidence base and to methodology.

Similar to the approach taken by other studies on research priority-setting in global health (17,18,25), this information was framed more broadly to enable applicability to multiple contexts and research topics. Descriptive approaches to content analysis involve staying close to the data; consequently, this synthesis is more summative than interpretive, compared to other meta-aggregative approaches (e.g., grounded theory or meta-ethnography) (36,37). Descriptive synthesis is recommended for scoping reviews, as scoping reviews seek to describe the state of the literature (24).

Patient and public involvement

No patients or members of the public were involved in this study.

RESULTS

Following the review of 2,902 records and handsearching, 50 peer-reviewed articles were included (**Figure 1**), with their characteristics presented in **Tables 1** and **2**. Publication years ranged from 2010 to 2021, with most papers (n = 39, 78%) published between 2015 and 2021 and study periods covering 1990 and 2020. Most study designs were systematic reviews (n = 34, 68%), followed by narrative reviews (n = 4, 8%), and review-based comparative analyses (n = 4, 8%). Among the geographical regions covered by the included reviews, 62% considered countries in the African region, 56% in the South-East Asian region, 54% Western-Pacific region, 44% in the Pan-American region, 24% in the European region, and 8% in the Eastern-Mediterranean region. Over half the studies (n = 27, 54%) included two or more world regions. Nearly three-quarters (n = 36, 71%) of the reviews focused on LMIC, one review (2%) focused on HIC, and 12 (24%) considered both LMIC and HIC. Fifteen studies (30%) focused on FRP in specific populations, including women and children, low-income groups, individuals with multimorbidity, those with mental health issues, and surgical, cancer, and tuberculosis patients.

What is known in the literature about financial risk protection?

Financial risk protection as a concept. Twenty-six (52%) studies defined FRP as a concept (38–62), with 23 (46%) studies specifically referring to FRP as a necessary step to achieving UHC (38–52,54–57,59–63). Some studies suggested that FRP is achieved when households are able to use safe, effective, and high-quality health services, without sacrificing other necessities for wellbeing, such as nutrition (38–40,51,55,57,59,60). Others considered FRP more narrowly as a means of reducing illness-related expenditures (41–43,54,58,64–67). This includes "financial toxicity", which describes the distress and financial hardship experienced by patients and their caregivers following a cancer diagnosis (54,58). Studies further suggested that a lack of FRP may exacerbate health and socioeconomic inequalities by reducing access to health services and discouraging or delaying care-seeking (19,40,53,56,62).

Financial risk protection as a measure. Thirty-nine studies (78%) used one or more of the following FRP measures: (i) out-of-pocket expenditures (OOPE) (n = 28, 56%); (ii) catastrophic health expenditures (CHE) (n = 25, 50%); and (iii) impoverishing health expenditures (IHE) (n = 11, 22%), with 20 (40%) studies mentioning at least two measures, and nine (18%) considering all three. These measures may be calculated for all health-related expenditures or specific categories of services, such as chronic disease, infectious disease, or maternal health (47,54,58,61). As CHE and IHE are measured against thresholds, some studies may also calculate the mean positive overshoot of the threshold to quantify the intensity of financial hardship (47,51,68).

Out-of-pocket expenditures. OOPE include payments, not reimbursed by insurance, made by individuals or households to meet health-related needs (40,45,52,59,62,64,69). Direct payments include health service costs and indirect payments may include transportation costs and losses in productivity or income when accessing health services (40,45,54,58,61,64,69). OOPE indicators may be measured as changes in spending due to illness (52,59,61,70); as the proportion of annual wages or disposable income (46); or as a proportion of the ability to pay, defined as basic need expenditures (with food often used as a proxy for basic needs) (40,47,61,71). OOPE may reflect a low degree of FRP because even small OOPE can cause financial hardship for poor households (40,62,72).

Catastrophic health expenditures. CHE was defined as excess spending on health that may cause financial catastrophe, measured as health-related OOPE in the numerator and total income or consumption (budget share method) or spending on basic needs (ability to pay method) in the denominator (40,47,51,55,64,70,71). Thresholds of 10-25% are used for the budget share method (10% of total household expenditures or 20-25% of total household income) (40,51,55,61,64), and 25-40% for the ability to pay method (40,55,59,61,64,68,71,73). Some studies use the normative food spending approach to define ability to pay, where a household's food-related expenditures are subtracted from total consumption and the remaining amount is used in the denominator to calculate CHE (40,51,55,59,64,71). An advantage of CHE indicators is that they can be calculated for all income groups; however, these indicators do not capture descent into poverty owed to healthcare expenditures (51).

Impoverishing health expenditures. To understand whether health needs push households into poverty, health-related OOPE may be measured against predefined poverty lines (40,47,51,52,66,68,70). Poverty lines represent the level at which the basic needs of life cannot be met (51). Absolute poverty lines may be used, such as the World Bank international poverty line (currently, $1.90 per person per day) (40,68) or national poverty lines based on the World Bank poverty assessment, food poverty (cost of minimum food requirements), or basic needs (cost of the basket of goods considered to satisfy basic biological needs) (40). Relative thresholds may also be considered, calculated as household income over the national mean or median income (40).

Financial risk protection as an intervention. Among the included studies, the following interventions were employed to increase FRP in the population: (i) pooling arrangements (n = 18, 36%); (ii) expanding insurance coverage (including either the benefit package or the proportion of the population or costs covered) (n = 23, 46%); and (iii) implementing financial incentives (n = 9, 18%).

Pooling arrangements. Risk pooling involves de-linking health-related financial contributions from health risk, enabling lower-need (and by extension, healthier and/or wealthier) individuals to subsidize higher-need (and by extension, sicker and/or poorer) individuals (38,43,45,56,59,60,74–77). Consequently, health-related financial risk is spread to a pool of individuals, rather than being borne by a single person experiencing ill health (74,76,77). The design of pooling arrangements, including the source of funds and extent of government subsidization; whether contributions are compulsory or voluntary; and the size, number, and competitiveness of pools; affects the extent to which risk pooling is achieved (38,43,53,56,59,72,74,76,77). The pooling arrangements examined by the included studies comprised national or social health insurance (SHI; compulsory schemes operated by the state, which are publicly financed through taxation or social security schemes) (38,50,52,57,62,72,75–79); community-based health insurance (CBHI; voluntary schemes operated by non-profit and non-governmental insurers, in which insurers apply community-rated premiums) (38,42,49,53,56,57,78,80); and private health insurance (PHI; voluntary schemes operated by private for-profit insurers with little to no state involvement, in which insurers apply risk-related premiums) (38,50,57,59,72,73,78). PHI schemes can be further classified as complementary (covering residual OOPE, such as co-payments, or additional health services, excluded from the state benefit package), supplementary (providing enhanced provider choice and access), or substitutional (providing coverage to those unable to receive state benefits) (59,72–74).

Expanding insurance coverage. Several studies examined the effects of expanding the benefit package (i.e., the health services covered by insurance schemes) and extending insurance coverage to a greater proportion of the population or healthcare costs (51,52,60,62–65,67–69,73,80–83). Limited health service coverage may result in greater OOPE, thereby reducing FRP (52,64,67,68,83). Populations experiencing socioeconomic marginalization may also be more vulnerable to increased OOPEs due to barriers to insurance enrollment, such as premiums (41,73,81,84). While previously, many health benefits packages tended to prioritize coverage for low-probability, high-cost inpatient services, there has been increasing recognition that outpatient chronic disease prevention and management, including prescription drugs, drive health-related OOPE (46,51,52).

Financial incentives. Financial incentives, including general and conditional cash transfers, vouchers, removal of user fees, and other subsidies, seek to reduce financial barriers to specific health services and facilitate utilization, adherence to short-term and long-term treatments, and health-promotive behaviours among health system users and targeted populations experiencing marginalization (19,38,39,52,62,65,83,85,86).

Which evidence gaps remain in the literature on financial risk protection?

Studies identified evidence gaps related to the effectiveness of FRP interventions, their equity implications, and their cost-effectiveness. The identified research evidence gaps are summarized in **Table 3**.

Evidence of effectiveness. Studies (n = 25, 50%) recognized that implementation of FRP programs should be informed by evidence of their effectiveness in relation to health service use, FRP, patient experiences, and health status.

Impact on health service utilization. Expansion of health insurance through SHI and CBHI had mixed effects on general health service use (38,52,70,76,78). Among reviews that considered the types of health services, SHI and CBHI were associated with increases in the use of antenatal (53,65,76,79) and outpatient (including curative, disease management, and preventive care) (53,70,75,76,78,79) services, as well as increases in (78) or no association with inpatient service use (53). The included reviews further noted that few studies examined the effects of PHI on health service use (38,78). In the United States (US) and China, PHI was associated with increased use of preventive care (59,73), but was not associated with the use of inpatient or outpatient care (73). Other reviews found that financial incentives may improve adherence to long-term but not short-term treatments (38,76). As countries are expanding coverage to outpatient chronic disease and mental health care and pharmaceuticals, several reviews noted that future studies should investigate whether this yields increased access and utilization of these services (38,48,51–

53). It also remains unclear what proportion of the observed increases in utilization represent health service overuse, particularly for high-cost invasive procedures (19,65,76).

Impact on financial risk protection. The impact of FRP interventions on measures of FRP, including OOPE, CHE, and IHE, has been characterized as inconsistent (44,51,70,75,76). SHI, CBHI, and financial incentives have been associated with reductions in OOPE in some reviews (44,70,75,78,79,83) and no significant effect in others (44,70,76). Studies have provided the following suggestions for future research to clarify impacts: (i) investigating the specific health services that drive high OOPE (40,51,61); (ii) the role of chronic illness and multimorbidity in driving high OOPE (46,47,54); (iii) the role of non-medical services, such as transportation and food, in exacerbating health-related OOPE (47,54,61,64); and (iv) whether the cost of premiums or entry fees into insurance schemes (which are presently not included in health-related OOPE calculations) affect FRP (76).

Impact on experience of care. Reviews suggested the need to monitor patient experiences and perceptions of care, as these outcomes are relevant to care-seeking but are not typically considered among FRP intervention impact evaluations (63,64,86). In one review that reported on this outcome, enrolment in SHI was associated with the perception that care is more affordable, compared to uninsured individuals (79).

Impact on health status. Several reviews noted that population health outcomes, including morbidity, mortality, disability, or health utility measures (quality-adjusted life years, QALY, or disability-adjusted life years, DALY) should be considered in FRP impact evaluations (38,65,70,75,85,86). Among reviews that evaluated health outcomes, FRP interventions were associated with improvements in tuberculosis treatment rates and perinatal maternal and infant outcomes in some reviews (79,83) and were not significantly associated with perinatal infant outcomes and general health status in others (38,76,78,79). Health outcomes may also be tailored to target populations and health system contexts. For example, the impact of maternal and neonatal FRP interventions may be measured by stratifying maternal and neonatal health status by home- and facility-based deliveries, as FRP interventions may lead to more facility-based deliveries (65,85).

Equity considerations. Studies noted that evaluations of effectiveness should assess whether FRP intervention impacts are equitable (n = 15, 30%). Specifically, studies recommended stratifying (i) FRP intervention coverage and (ii) FRP indicators and other outcomes across subgroups experiencing marginalization. Poverty, chronic illness, and older age were observed to be the most frequent strata reported by primary studies (40,41,43,46,48,51), possibly because these subgroups are more readily identifiable in the data (41). Several reviews have suggested considering additional subgroups, including area of residence, age, gender, citizenship/migration status, ethnicity, employment status, homelessness, and institutionalization (40,41,43,46,48,51); however, these facets of marginalization remain more challenging to operationalize due to variation in political and cultural contexts (41).

Stratification of FRP intervention coverage. Reviews suggested monitoring new enrollees in FRP interventions and estimating what proportion of the population covered was part of a marginalized group, as overall enrollment estimates may mask inequalities in coverage among marginalized populations (52,53,76,78,86). For instance, fewer PHI selling agencies, lower availability of PHI information, and poor access to healthcare providers in rural and low-income areas may underlie inequalities in PHI enrollment (53). Others have suggested that while affordable premiums may support CBHI enrollment among poorer segments of the population, higher co-payments may discourage care seeking, resulting in poorer households subsidizing wealthier enrollees (53). Disparities in coverage may further exacerbate inequities in downstream outcomes (e.g., OOPE or health status) (52,76,78,86).

Stratification of FRP intervention impacts. The included reviews observed a need to collect and analyze disaggregated OOPE, CHE, or IHE data to investigate whether FRP interventions reduce inequities in health-related expenditures among subgroups experiencing marginalization, compared to the general population (38–40,48,51,53,82). Interestingly, among reviews that identified studies with disaggregated data, high expenditures persisted among individuals with chronic illnesses, older adults, and individuals with disabilities (41,47).

As it is hypothesized that removing financial barriers to healthcare would improve population health, reviews highlighted a need to also disaggregate intervention impacts across other outcomes, including health service utilization and health status (48,76,78,82). Among reviews that identified studies that disaggregated health service utilization, CBHI has been associated with more equitable need-based healthcare use across income quartiles, compared to those uninsured (53,78). SHI has been associated with greater health service use among low-income groups, though differences remained in the use public versus private healthcare facilities (57,78). PHI has shown mixed effects on cancer screening uptake in the US across racial subgroups (59), while in China, PHI has been associated with greater healthcare utilization only among urban residents (73).

Evidence of cost-effectiveness. In addition to demonstrating effectiveness, studies (n = 9, 18%) noted that cost-effectiveness should be considered, given its relevance to decision-makers. This involves gaining a comprehensive understanding of program resource requirements, resource management, and comparative cost-effectiveness.

Estimating resource requirements and input costs. Studies highlighted the need to estimate start-up (19,64), operating (19,85), and scale-up (75,85) costs of FRP interventions to ensure adequate coverage of the target population and inform intervention sustainability. This includes standardizing program costing approaches to enable robust comparisons (64,85).

Mobilizing and managing resources. Other key evidence gaps related to articulating clear approaches to mobilizing resources to meet the needs of FRP programs; determining optimal program financing models, including the roles of governments and other payers; and understanding how to best manage resources once programs are funded (43,75,78).

Establishing comparative cost-effectiveness. Cost-effectiveness includes a broad class of analyses that seek to estimate the benefit of programs, such as improvements in health status or changes in health service use, relative to their resource inputs (39,57,85,86). In

addition to estimating the cost-effectiveness of individual FRP programs, researchers should consider how cost-effective programs are relative to alternative programs seeking to achieve the same impacts (19,75,85).

Which methodological gaps remain in the literature on financial risk protection?

A number of methodological issues should be considered when designing studies to address the identified evidence gaps. A concept map outlining the evidence gaps and methodological considerations is presented in **Figure 2**.

Country focus. Researchers should consider the trade-offs of performing single-country versus multi-country analyses. While multi-country studies provide a snapshot of a large body of evidence, these analyses tend to lack depth in terms of time-trends and contextual features within and outside of the healthcare system (40,41). In addition, countries may be unequally represented in multi-country reviews, leading to biased conclusions (40,42,56,75,78,84). On the other hand, although findings from single-country case studies may not be generalizable to other settings (40,57,63,68,71), they may provide more detailed contextual information (40,52,78). Multi-jurisdictional case-studies and health system comparative research may provide an opportunity to capitalize on the strengths of both approaches (40,60,72).

Process evaluations. Despite the widespread political commitment to UHC through FRP, studies noted that implementation of these aims has been suboptimal and there is a lack of understanding of how contextual factors, including the political environment, social welfare policies, culture, population size and characteristics, historical investment in the healthcare system, economic growth, and the number of payers (e.g., government, private, and users), may facilitate or hinder financing, implementing, operating, and scaling up of FRP interventions (40,41,52,53,66,75,78). More research is also needed to elucidate how implementation of new FRP interventions, such as CBHI or incentive-based programs, could complement the existing health financing arrangements to progress towards UHC (42,73). In addition to implementation issues, studies highlighted the current limited

understanding of the reasons why FRP interventions do not achieve their intended impacts after implementation (53,70). This is especially relevant when considering the failures of some FRP interventions to reduce inequities in coverage; incurred OOPE, CHE, and IHE; and poor health outcomes among marginalized segments of the population (45,50,67).

Process evaluation could address explanatory research questions related to how contexts affect the implementation and success of FRP interventions (44,53,60,62). Realist evaluation methods may be particularly well-suited to addressing such aims, as realist evaluation seeks to identify context-mechanism-outcome configurations that describe what works, for whom and in which circumstances (41,62). Finally, two reviews noted that it is unclear whether FRP programs and their evaluations are informed by specific conceptual frameworks or theories of change (39,82). Consensus should also be reached regarding the relevant process indicators to enable process evaluation comparability (44).

Qualitative data. Reviews acknowledged the limited availability of qualitative evidence, including key stakeholder perspectives (41,44,60,70). Qualitative data can support process and realist evaluations by illuminating how implementation issues, contexts, and mechanisms of change may influence the intervention-outcome associations observed in the quantitative data, including inequitable impacts (41,60,70,75). Hunter and Murray (2017) also cautioned that many studies with qualitative components tend to be situated within large mixed-methods evaluations, in which more attention is devoted to reporting the quantitative findings (19). Future qualitative and mixed methods studies should thus provide more thorough descriptions of and rationale for the chosen data collection and analytic methods, as well as reflections on the role of the researcher in generating results (19).

Quantitative data. Poorly controlled observational study designs – particularly, self-reported cross-sectional household surveys – are abundant in the evidence base (19,39,41,46,49–51,53,54,64,65,70,76,78,84,85). This limits the ability to make causal inferences about FRP interventions and leaves the possibility of residual confounding related to population and health system factors (19,42,64,85). While the use of

randomized-controlled trials may clarify intervention impacts (59,65,70), using such study designs to evaluate government reforms or SHI schemes may not be feasible or ethical, compared to evaluating CBHI or incentive-based interventions (39,70). Future studies may consider alternative designs, such as well-controlled quasi-experimental studies, to evaluate programs (58,59,62,76,84). Further, since countries may employ multiple complex interventions to implement FRP, studies may need to evaluate combinations of interventions over individual programs (73,84).

Indicator measurement. Reviews note that many studies focus on the incidence of OOPE or CHE, but few consider IHE (40,47). The number of households estimated to be experiencing CHE or IHE is also contingent on the choice of thresholds, which has implications for analyses of equity impacts (40,47,51,52). For instance, IHE measures are affected by poverty lines, and while international poverty lines may be more suitable for comparative studies, they may result in less sensitive indicators for HIC and some middle-income countries (40,47). Using national poverty lines may overcome this issue, but hinder international comparisons (40). In regard to CHE, studies have shown that the budget share method tends to find that health-related financial hardship is concentrated among more wealthy households (40). As such, ability to pay approaches for estimating CHE have been recommended, particularly when considering equity in the analysis (40). One review recommended that costs should be consistently converted to US dollars to improve comparability (61). Two reviews also noted a lack of validated disease-specific measures of financial risk, such as cancer-related financial toxicity, which limits comparability (54,58).

Data aggregation. Meta-analyses could not be performed in many quantitative reviews (41,56,64,65,70,71,73,82,83). Robust inferences also could not be drawn due to different data sources (47,64), different data scope (e.g., national vs. targeted population surveys) (47), different recall periods (64), unclear documentation of data collection processes (40,51,64), and lack of standardization in data collection and outcome measures across survey cycles and countries (40,51,56). In some countries, the wait period to receive insurance coverage for new enrollees or migrants may also result in misclassification bias, as these groups would be considered uninsured and may incur higher healthcare costs

(64). Finally, it is unclear how the data collected for purposes other than FRP assessment, such as administrative data, may affect estimates of incurred costs (47).

Follow-up duration. Most quantitative studies were conducted early in FRP intervention implementation, particularly those evaluating program pilots (19,40,47,50,66,85). This may, in part, explain the aforementioned evidence gaps related to impact evaluations on health status and equity, as well as the lack of clarity regarding long-term trends in FRP indicators, such as OOPE, CHE, or IHE (47,66,85). Future studies should consider using longitudinal and panel data to provide sufficient variation to analyze FRP intervention impacts over time (40,47,50,51,53,53,54,66).

DISCUSSION

In this scoping overview of 50 academic literature reviews, we described the current state of knowledge on FRP in the UHC context and evidence gaps that should be prioritized in future research. We found that although FRP is recognized as a necessary dimension for achieving UHC, it remains unclear whether interventions increase FRP and optimize health service utilization, experience of care, and health status. The lack of disaggregated information across measures of social marginalization may further explain the limited understanding regarding how to equitably increase FRP among subgroups at greatest risk of poor health and its financial consequences. Finally, there is little evidence regarding the resources required to implement and sustain FRP interventions and regarding their cost-effectiveness. These evidence gaps are further compounded by methodological challenges.

Interpretation and future directions

Previous work has suggested that the theory of change for SDG 3 has some limitations, as not all input, process, and impact indicators clearly align (87). This included an omission of impact indicators for FRP (where impacts are defined as long-term changes occurring in communities or systems as a result of FRP) (87), which may explain the limited evidence of effectiveness of FRP interventions in relation to service utilization, experience of care, and

health status, in addition to financial risk. Reliance on cross-sectional self-reported household surveys in LMIC may partially underpin methodological issues, such as the lack of longitudinal follow-up and poor inter-jurisdictional comparability, and contribute to the inconclusiveness of existing effectiveness evaluations (9,88–90). Furthermore, the problem of unmeasured confounding persists even among well-designed observational studies, limiting causal interpretations (91). The growing use of routine health information systems (RHIS) for research in LMIC may present an opportunity to conduct higher-quality FRP intervention evaluations (51,92). For instance, RHIS data has been successfully used to support longitudinal program impact evaluations in relation to health service use and disease-related outcomes using time series and difference-in-difference designs (though it should be noted that RHIS do not provide information on FRP metrics like household OOPE, CHE, and IHE) (92). In addition, ambiguities in the quantitative evidence of effectiveness of FRP interventions may be owed to the inherent complexities of implementing and evaluating public health interventions within dynamic settings (93), rather than a limited evidence base. As such, our findings suggest that process evaluations using qualitative and mixed methods should accompany impact evaluations to elucidate FRP mechanisms of action across different health system contexts and population subgroups (94).

Inconsistencies in concept definitions may underlie methodological issues. While there is general agreement on the importance of UHC, interpretations of the concepts of universality, health, and coverage vary in breadth, affecting the scope of FRP interventions and the choice of indicators used to monitor progress (10,11,95). The common indicators of FRP – OOPE, CHE, and IHE – may also not sufficiently capture the FRP concept, as these measures rely on healthcare utilization and do not account for individuals deterred from care-seeking by financial barriers, those opting for lower-quality health services, and those resorting to borrowing or selling assets to afford health services (9,52,61,96). In addition, while equity has often been thought to be implicit in the goal of UHC and an assumed consequence of its achievement (11,97,98), there is increasing recognition that striving for health for all and reducing disparities are two separate aims, warranting the need to explicitly measure and monitor equity in UHC interventions using disaggregated data (97). Although there is no agreement on which stratifying variables should be selected when

measuring inequities (97), the reviews included in this overview highlighted a need to disaggregate data across several social determinants of health (e.g., area of residence and migration status), in addition to income status.

Strengths and limitations

We conducted the first scoping study to identify research needs in the FRP knowledge base. A strength of our study is our use of rigorous systematic searching and evidence review methods. Several limitations should also be considered. First, we limited our search by language and publication dates. Relevant studies in languages other than English or French may thus have been missed. We believe our inclusion of evidence published after 1995 to be reasonable, as bibliometric analyses have shown that UHC publications began to increase after the adoption of MDGs in 2000 (8), and the study periods of the included reviews spanned 1990 and 2020. Second, since our objective was to describe knowledge gaps within the academic evidence base, we relied on published peer-reviewed work, rather than grey literature. Third, we employed descriptive content analysis methods, which involve greater reliance on the original study authors' interpretations. Importantly, as performing a critical appraisal of the quality of the evidence is outside the scope of a scoping review (24), we are unable to make robust conclusions regarding the evidence of intervention effectiveness (99). The identified evidence gaps should be interpreted as a descriptive summary of research needs characterized by the authors of the included reviews, rather than our own inferences. Participatory approaches, such as Delphi panels and stakeholder interviews, should follow the present work in order to rank the identified research priorities and further develop the UHC research agenda (14). Fourth, while an advantage of overviews is their provision of an overall picture of a research field or phenomenon (21), most of the included reviews were multi-country and/or multi-region studies with limited information on the sociopolitical, legal, and fiscal contexts within which FRP efforts were undertaken. Fifth, while we did not select for specific literature review study designs, the overrepresentation of LMIC among the included studies may be owed to more evidence syntheses on UHC in these settings, but not necessarily a lack of primary studies in HIC.

Conclusion

This scoping overview of reviews summarized what is known about achieving UHC through FRP and found evidence gaps related to the effectiveness, cost-effectiveness, and equity implications of FRP interventions. Theory-informed, high-quality mixed methods research using longitudinal and disaggregated data is needed to address the identified gaps.

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Tables and figures

Tables

Table 1. Characteristics of the included studies

Table 2. Summary of the characteristics of the included studies

Table 3. Evidence gaps identified from the literature

Figures

Figure 1. PRISMA study selection flowchart

Figure 2. Concept map of financial risk protection interventions, impacts, evidence gaps, and methodological considerations

Table 1. Characteristics of the included studies

Study	Study design	Resource level	Geographic regions	FRP defined?	FRP interventions	FRP measures	No. studies	No. databases	Study period
Acharya 2012 (76)	SR	LMIC	AFR, EUR, PAR, SEAR, WPR	No	PA	CHE, OOPE	24	10 academic, 3 grey	≤2010
Adebayo 2015 (49)	SR	LMIC	AFR, PAR, SEAR, WPR	No	EC	OOPE	25	17	2003-2013
Angell 2019 (75)	SR, Delphi	HIC, LMIC	SEAR, WPR	No	PA	CHE, OOPE	31 studies, 10 grey	3 academic, 14 grey	2008-2018
Aragão 2021 (83)	SR	LMIC	AFR, PAR, SEAR	No	EC, FI	NS	9	5	≤2019
Artignan 2021 (53)	RR	LMIC	AFR	Yes	PA	NS	16	3	≤2019
Bazyar 2021 (77)	CA	HIC, LMIC	EUR, SEAR, WPR	No	PA	NS	NS	3 academic, 3 grey	≤2020
Bhanvadia et al. 2021 (54)	SR	HIC, LMIC	EUR, PAR, WPR	Yes	NS	OOPE	23	5	≤2020
Bellows 2013 (85)	NR	LMIC	AFR, EMR, EUR, WPR	No	FI	NS	28 voucher programs	NS	1995-2011
Bright 2017 (39)	SR	LMIC	AFR, PAR, SEAR, WPR	Yes	FI	NS	57	4	≤2015
Bucagu 2012 (81)	SR	LMIC	AFR	No	EC	CHE	14	1	2005-2011
Christmals 2020 (79)	ScR	LMIC	AFR	No	PA	NS	77	5	2003-2018
Comfort 2013 (65)	SR	LMIC	AFR, EUR, PAR, SEAR, WPR	Yes	EC, FI	NS	29	NS	1997-2012
Docrat 2020 (48)	SR	LMIC	AFR, PAR, SEAR, WPR	No	EC	OOPE	18	9	≤2018
Doshmangir 2020 (55)	MA	LMIC	EMR	Yes	NS	CHE	53	6	≤2019
Erlangga 2019 (70)	SR	LMIC	AFR, PAR, SEAR, WPR	No	EC	CHE, IHE, OOPE	68	5 academic, 3 grey	2010-2016
Fadlallah 2018 (42)	SR	LMIC	AFR, PAR, SEAR, EUR, WPR	Yes	EC	OOPE	51	6	1992-2015
Grainger 2014 (86)	NR	LMIC	AFR, PAR, SEAR, WPR	No	FI	NS	40 voucher programs	NS	≤2011
Hunter 2017 (19)	SR	LMIC	AFR, PAR, SEAR, WPR	No	FI	OOPE	98	19	1990-2015
Hussien 2021 (56)	SR	LMIC	AFR, SEAR	Yes	PA	CHE, IHE, OOPE	27	3 academic, 1 grey	2005-2020
Ifeagwu 2021 (57)	SR	LMIC	AFR	Yes	PA	CHE, IHE, OOPE	39	7	2005-2019
Izzanie 2019 (50)	SR	LMIC	SEAR, WPR	No	EC	CHE, IHE, OOPE	13	4	1993-2017
Koch 2017(51)	SR	LMIC	PAR	Yes	EC	CHE, IHE, OOPE	16	3	2008-2015
Lagomarsino 2012 (52)	CA	LMIC	AFR, SEAR, WPR	Yes	EC, FI, PA	IHE, OOPE	NS	3	NS
Longo 2020 (58)	SR	HIC, LMIC	EUR, PAR, WPR	Yes	NS	OOPE	32	6	2005-2019
Mathauer 2019 (74)	CA	NS	NS	No	PA	OOPE	NS	2	NS

Meng 2011 (84)	SR	HIC, LMIC	AFR, PAR, SEAR, WPR	No	EC	NS	86	45	1995-2007
Motaze 2021 (59)	CR	HIC	PAR	Yes	PA	CHE, OOPE	7	7 academic, 9 grey	≤2019
Myint 2019 (45)	SR	HIC, LMIC	SEAR, WPR	No	PA	CHE, OOPE	77	2	2010-2017
Njagi 2018 (47)	ScR	LMIC	AFR	Yes	NS	CHE, IHE	34	5	2006-2017
Odeyemi 2014 (80)	SR	LMIC	AFR	No	EC	CHE	26	2	2003-2012
Odeyemi 2013 (69)	CA	LMIC	AFR	No	EC	OOPE	16	3	2000-2012
Odoch 2021 (60)	ScR	HIC, LMIC	AFR, EMR, SEAR, WPR	Yes	PA, EC	CHE, IHE, OOPE	12	5	2012-2020
Okedo-Alex 2019 (68)	SR	LMIC	AFR	Yes	EC	CHE	20	5	2003-2018
Okem 2015 (67)	SR	LMIC	EUR	Yes	EC	OOPE	76	≥10	2000-2012
Okoroh 2018 (64)	SR	LMIC	AFR	Yes	EC	CHE, OOPE	7	6	2003-2017
Platt 2021 (61)	SR	LMIC	AFR, PAR, SEAR	Yes	NS	CHE, OOPE	31	2	≤2019
Prinja 2017 (44)	SR	LMIC	SEAR	No	EC	CHE, OOPE	14	4	2005-2015
Ravindran 2020 (62)	NR	LMIC	AFR, PAR, SEAR, WPR	Yes	PA, EC, FI	OOPE	253	2 academic, 7 grey	2010-2019
Rezaei 2019 (71)	MA	LMIC	EMR	Yes	NS	CHE	24	6	2001-2015
Salmi 2017 (82)	SR, survey	HIC, LMIC	EUR	No	EC	NS	108	4	2000-2010
Sanogo 2019 (63)	SR	LMIC	AFR, EUR, PAR, SEAR, WPR	No	EC	NS	12	4	2005-2018
Spaan 2012 (78)	SR	LMIC	AFR, SEAR, WPR	No	PA	NS	159	19	≤2011
Sum 2018 (46)	SR	HIC, LMIC	PAR, SEAR, WPR	Yes	NS	OOPE	14	5	2000-2016
Uzochukwu 2015 (43)	SR	LMIC	AFR	Yes	PA	IHE, OOPE	NS	6	2009-2014
Vaidya 2021 (72)	SR	HIC, LMIC	EUR, PAR, SEAR	No	PA	CHE, OOPE	50	3 academic, 4 grey	2000-2019
van Hees 2019 (41)	SR	LMIC	AFR, PAR, SEAR, WPR	Yes	EC	CHE	44	11	1995-2018
van Minh 2014 (66)	NR	HIC, LMIC	SEAR, WPR	Yes	NS	CHE, IHE, OOPE	NS	8	1995-2017
Wiysonge 2017 (38)	CR	LMIC	AFR, PAR, SEAR, WPR	Yes	FI, PA	CHE, OOPE	15	20	2005-2016
Wu 2020 (73)	SR	LMIC	WPR	No	PA, EC	CHE, OOPE	44	3	2000-2018
Yerramilli 2018 (40)	SR	HIC, LMIC	EUR	Yes	NS	CHE, IHE, OOPE	54	4	1990-2017

Abbreviations: African region, AFR; catastrophic health expenditure, CHE; comparative analysis, CA; Cochrane review, CR; financial incentives, FI; financial risk protection, FRP; Eastern Mediterranean region, EMR; European region, EUR; expanding coverage, EC; high-income countries, HIC; impoverishing health expenditures, IHE; low- and middle-income countries, LMIC; meta-analysis, MA; not specified, NS; narrative review, NR; out-of-pocket expenditures, OOPE; Pan American region, PAR; pooling arrangements, PA; rapid review, RR; scoping review, ScR; South East Asian region, SEAR; systematic review, SR; Western Pacific region, WPR

Table 2. Summary of the characteristics of the included studies

Study characteristic	No. (%) (N = 50)	References
Publication year		
1995-1999	0 (0)	-
2000-2004	0 (0)	-
2005-2009	0 (0)	-
2010-2014	11 (22)	(52,65,66,69,76,78,80,81,84–86)
≥2015	39 (78)	(19,38–51,53–64,67,68,70–75,77,79,82,83)
Study period*		
1990-1994	16 (32)	(19,39,40,42,48,50,53–55,59,61,76–78,83,86)
1995-1999	21 (42)	(19,39–42,48,50,53–55,59,61,65,66,76–78,83–86)
2000-2004	33 (66)	(19,39–42,46,48–50,53–55,59,61,64–69,71–73,76–80,82–86)
2005-2009	43 (86)	(19,38–44,46–51,53–59,61,63–69,71–73,75–86)
2010-2020	48 (96)	(19,38–51,53–73,75–86)
Not specified	2 (4)	(52,74)
Resource level		
LMIC	36 (72)	(19,38,39,41–44,47–53,55–57,61–65,67–71,73,73,76,78–81,83,85,86)
HIC	1 (2)	(59)
HIC and LMIC	12 (24)	(40,45,46,54,58,60,66,72,75,77,82,84)
Not specified	1 (2)	(74)
Geographic regions*		
African region	31 (62)	(19,38,39,41–43,47,49,52,53,56,57,60–65,68–70,76,78–81,83–86)
European region	12 (24)	(40,42,54,58,63,65,67,72,76,77,82,85)
Eastern-Mediterranean region	4 (8)	(55,60,71,85)
South-East Asian region	28 (56)	(19,38,39,41,42,44–46,48–50,52,56,61–63,65,66,70,72,75–78,83,84,86)
Western-Pacific region	27 (54)	(19,38,39,41,42,45,46,48–50,52,54,58,60,62,63,65,66,70,73,75–78,84–86)
Pan-American region	22 (44)	(19,38,39,41,42,46,48,49,51,54,58,59,61–63,65,70,72,76,83,84,86)
≥2 world regions	27 (54)	(19,38,39,41,42,45,46,48–50,54,56,58,60–63,65,66,70,72,75,77,83–86)
Not specified	1 (2)	(74)
Study design		
Systematic review	34 (68)	(19,39–46,48–51,54,56–58,61,63–65,67,68,70,72,73,75,76,78,80–84)
Comparative analysis	4 (8)	(52,69,74,77)
Narrative review	4 (8)	(62,66,85,86)
Scoping review	3 (6)	(47,60,79)
Meta-analysis	2 (4)	(55,71)

Cochrane review	2 (4)	(38,59)
Rapid review	1 (2)	(53)
Target population		
Women and children	5 (10)	(39,62,65,81,85)
Low-income groups	4 (8)	(41,63,80,84)
Cancer	2 (4)	(54,58)
Multimorbidity	1 (2)	(46)
Mental health	1 (2)	(48)
Tuberculosis	1 (2)	(83)
Surgery	1 (2)	(61)
Studies with concept definitions*		
Defined universal health coverage	31 (62)	(38,39,41–45,48–52,55–57,59–66,68–71,73,74,85,86)
Defined financial risk protection	26 (52)	(38–62)
Defined equity	14 (28)	(40,41,45,46,50,51,63,64,69,72,75,82,84,86)
Financial risk protection measures*		
Out-of-pocket expenditures	31 (62)	(19,38,40,42–46,48–52,54,56–62,64,66,67,69,70,72–76)
Catastrophic health expenditures	25 (50)	(38,40,41,44,45,47,50,51,55–57,59–61,64,66,66,68,70–73,75,76,80,81)
Impoverishing health expenditures	12 (24)	(40,43,47,50–52,56,57,60,66,70)
Financial risk protection interventions*		
Pooling arrangements	18 (36)	(38,43,45,52,53,56,57,59,60,62,72–79)
Expanding insurance coverage	23 (46)	(41,42,44,48–52,60,62–65,67–70,73,80–84)
Financial incentives	9 (18)	(19,38,39,52,62,65,83,85,86)

*Overlapping categories

Abbreviations: high-income countries, HIC; low- and middle-income countries, LMIC

Table 3. Evidence gaps identified from the literature

Category No. (%) (N = 50)	Specific evidence need	References
Evidence of effectiveness N = 25 (50)	*Impact on health service utilization* • Understand how pooling arrangements, expansion of insurance coverage, and financial incentives affect overall health service use and specific health service types, including unintended outcomes (e.g., incentivizing inappropriate over- or underutilization of services)	(19,38,48,52–54,59,60,62,65,70,75–78)
	Impact on financial risk • Understand how pooling arrangements, expansion of insurance coverage, and financial incentives affect OOPE, CHE, and IHE • Understand how pooling arrangements, expansion of insurance coverage, and financial incentives affect OOPE, CHE, and IHE related to specific health services, chronic health conditions and multimorbidity, non-medical services, or spending on premiums and entry fees into insurance schemes	(40,44,46,47,51,54,57,58,61,62,64,70,75,76,78)
	Impact on experience of care • Understand how pooling arrangements, expansion of insurance coverage, and financial incentives affect people's experiences with the healthcare system	(63,64,86)
	Impact on health status • Understand how pooling arrangements, expansion of insurance coverage, and financial incentives affect population health outcomes, including morbidity, mortality, disability, and measures of utility (e.g., QALYs, DALYs)	(38,65,70,75,76,78,85,86)
Equity considerations N = 15 (30)	*Stratification of FRP program coverage* • Consider proportion of population covered or served by FRP intervention that is experiencing marginalization	(52,53,73,76,78,86)
	Stratification of FRP indicators and other outcomes • Consider the distribution of OOPE, CHE, and IHE across marginalized groups to understand whether FRP intervention efforts are equitable • Consider stratification of health service utilization, experience of care, and health status across marginalized groups to understand whether FRP intervention efforts are equitable	(38–41,47,48,53,76,78,82)
Evidence of	*Estimating resource requirements and input costs*	(19,64,75,85)

cost-effectiveness N = 9 (18)	• Estimate start-up, operating, and scale-up costs of FRP interventions using standard methods to enable comparability between programs	
	Mobilizing and managing resources	(43,52,75)
	• Identify optimal strategies to mobilize and finance FRP interventions • Identify optimal strategies to manage resources once FRP interventions are funded	
	Establishing cost-effectiveness	(19,39,57,75,85,86)
	• Estimate gains in utilization, FRP, experience of care, or health status relative to resource needs • Compare cost-effectiveness between FRP interventions	

Abbreviations: catastrophic health expenditures, CHE; disability-adjusted life years, DALYs; financial risk protection, FRP; impoverishing health expenditures, IHE; out-of-pocket expenditures, OOPE; quality-adjusted life years, QALYs; universal health coverage, UHC

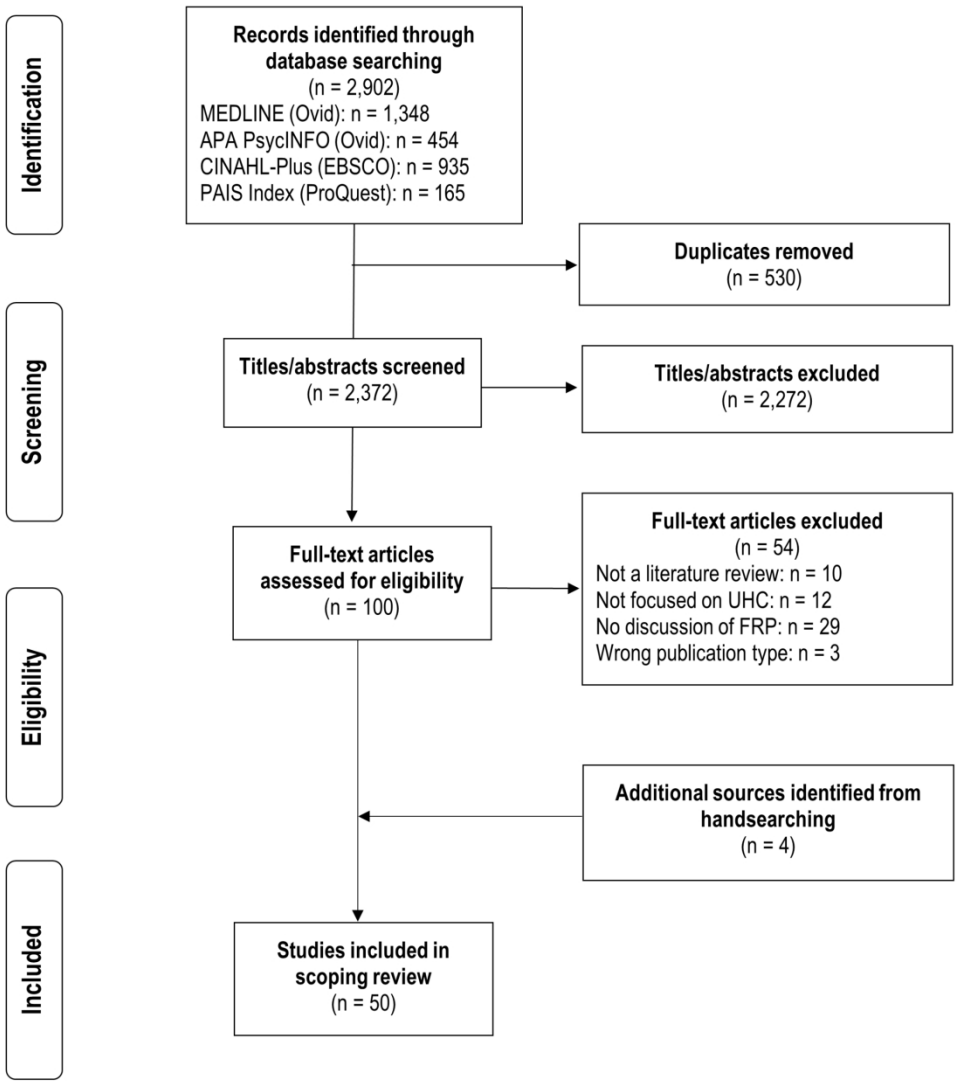

Figure 1. PRISMA study selection flowchart

184x207mm (300 x 300 DPI)

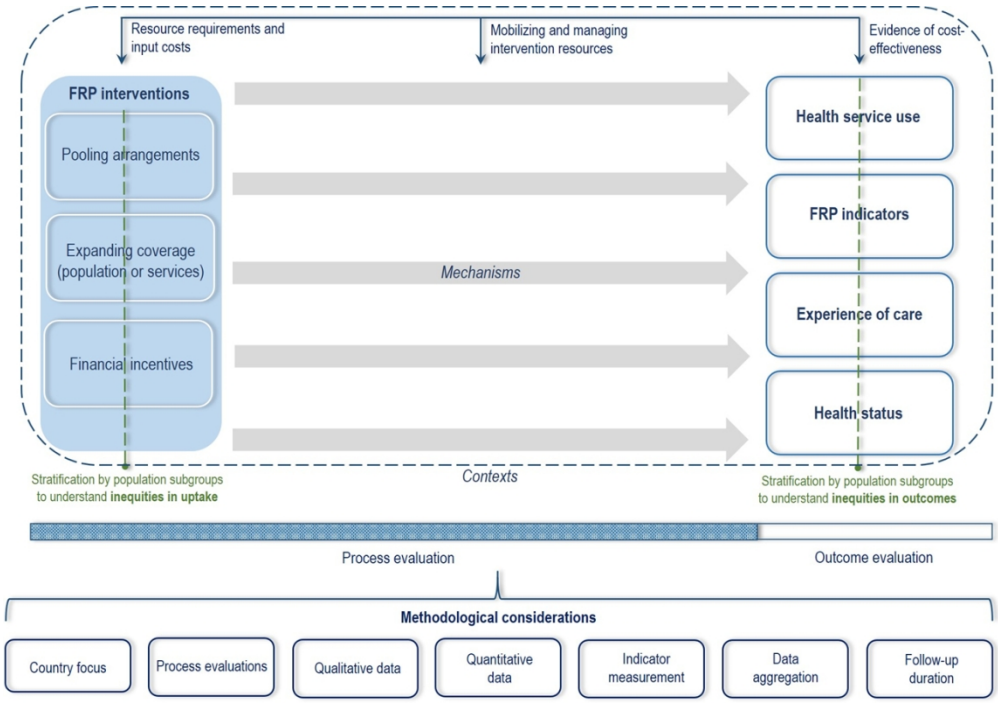

Figure 2. Concept map of financial risk protection interventions, impacts, evidence gaps, and methodological considerations

221x154mm (150 x 150 DPI)

Supplementary material

Identifying priorities for research on financial risk protection to achieve universal health coverage: A scoping overview of reviews

Supplementary file 1. Electronic database search strategy
Supplementary file 2. Detailed eligibility criteria for scoping overview of reviews

Supplementary file 1. Electronic database search strategy (last updated July 20, 2021)

Ovid MEDLINE (n = 1,348)

Ovid MEDLINE: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE® Daily and Ovid MEDLINE® <1946-Present>		
#	**Searches**	**# Results**
1	exp Insurance Coverage/	18088
2	(UHC or ((universal or population or public or national or essential or social) adj4 (coverage or benefit* or insurance or care or healthcare or health care or health-care or health servic* or medicin*))).tw,kf.	192191
3	1 or 2	205627
4	(financial adj3 (protection or risk or coverage or risk-sharing or hardship or assist* or barrier* or access)).tw,kf.	7609
5	(financing adj3 (health or healthcare or health care or health-care or health service* or medicin*)).tw,kf.	5727
6	(cost-sharing or cost sharing or social health protection or social protection in health or social health promotion or reimbursement incentive* or monetary incentive* or cash transfer or cash transfers or cash grant or cash grants or monetary grant or monetary grants or non-monetary grant or non-monetary grants or non monetary grant or non monetary grants or social welfare or social assist* or social grant or social grants or social safety net or social safety-net or sociali?ed healthcare or sociali?ed health care or sociali?ed health-care or social security or health security or healthcare security or health care security or health-care security or public welfare servic*).tw,kf.	21032
7	4 or 5 or 6	33432
8	Vulnerable populations/ or exp Socioeconomic Factors/ or Healthcare Disparities/ or Health Status Disparities/ or Poverty Areas/ or Urban Population/ or "Social Determinants of Health"/	548521
9	(health adj3 (gap or gaps or gradient* or hierarch*)).tw,kf.	4294
10	(equit* or inequit* or inequalit* or disparit* or equality).tw,kf.	153269
11	((social* or socio-economic or socioeconomic or economic or structural or material) adj3 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant* or vulnerab* or insecurit*)).tw,kf.	145322
12	(SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or educational level or level of education or educational attainment or well educated or better educated or unemploy* or home owner* or tenure or affluen* or well off or better off or worse off).tw,kf.	335018
13	(poverty or precar* or impoverish* or depriv* or destitut* or marginalis* or marginaliz* or indigen* or low-income or low income).tw,kf.	214037
14	((out-of-pocket or out of pocket or catastrophic) adj4 (spend* or expend* or cost* or expens* or payment*)).tw,kf.	6509
15	8 or 9 or 10 or 11 or 12 or 13 or 14	1045017
16	3 and 7	7126
17	3 and 15	48135
18	16 or 17	51289
19	Meta-Analysis as Topic/	20252

20	meta analy$.tw.	209726
21	metaanaly$.tw.	2309
22	Meta-Analysis/	141057
23	(systematic adj (review$1 or overview$1)).tw.	215867
24	exp Review Literature as Topic/	17597
25	19 or 20 or 21 or 22 or 23 or 24	360568
26	cochrane.ab.	102470
27	cochrane.ab.	102470
28	(psychlit or psyclit).ab.	915
29	(psychinfo or psycinfo).ab.	44220
30	(cinahl or cinhal).ab.	34735
31	science citation index.ab.	3359
32	bids.ab.	576
33	cancerlit.ab.	635
34	26 or 27 or 28 or 29 or 30 or 31 or 32 or 33	149833
35	reference list$.ab.	19743
36	bibliograph$.ab.	19851
37	hand-search$.ab.	7592
38	relevant journals.ab.	1253
39	manual search$.ab.	5024
40	35 or 36 or 37 or 38 or 39	47958
41	selection criteria.ab.	32644
42	data extraction.ab.	25296
43	41 or 42	55488
44	Review/	2855357
45	43 and 44	30460
46	Comment/	926722
47	Letter/	1150406
48	Editorial/	579399
49	animal/	6910459
50	human/	19655862
51	49 not (49 and 50)	4848355
52	46 or 47 or 48 or 51	6770006
53	25 or 34 or 40 or 45	426013
54	53 not 52	404619
55	18 and 54	1399
56	limit 55 to (english or french)	1370
57	limit 56 to dt=19950101-20210720	1348

Ovid APA PsycINFO (n = 454)

APA PsycInfo <1806 to August Week 5 2021>		
#	**Searches**	**# Results**
1	Health Care Reform/ or Global Health/	4912
2	health insurance/ or exp employee health insurance/ or "underinsured (health insurance)"/ or "uninsured (health insurance)"/	6044
3	(UHC or ((universal or population or public or national or essential or social) adj4 (coverage or benefit* or insurance or care or healthcare or health care or health-care or health servic* or medicin*))).ti,ab.	50112
4	1 or 2 or 3	58615
5	(financial adj3 (protection or risk or coverage or risk-sharing or hardship or assist* or barrier* or access)).ti,ab.	3467
6	(financing adj3 (health or healthcare or health care or health-care or health service* or medicin*)).ti,ab.	693
7	(cost-sharing or cost sharing or social health protection or social protection in health or social health promotion or reimbursement incentive* or monetary incentive* or cash transfer or cash transfers or cash grant or cash grants or monetary grant or monetary grants or non-monetary grant or non-monetary grants or non monetary grant or non monetary grants or social welfare or social assist* or social grant or social grants or social safety net or social safety-net or sociali?ed healthcare or sociali?ed health care or sociali?ed health-care or social security or health security or healthcare security or health care security or health-care security or public welfare servic*).ti,ab.	8625
8	5 or 6 or 7	12656
9	health disparities/	9049
10	exp Socioeconomic Status/	60784
11	health disparities/	9049
12	poverty/ or disadvantaged/ or lower income status/ or poverty areas/	18173
13	"Equity (Social)"/ or "Equity (Payment)"/	3162
14	(health adj3 (gap or gaps or gradient* or hierarch*)).ti,ab.	1830
15	(equit* or inequit* or inequalit* or disparit* or equality).ti,ab.	84511
16	((social* or socio-economic or socioeconomic or economic or structural or material) adj3 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant* or vulnerab* or insecurit*)).ti,ab.	97625
17	(SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or educational level or level of education or educational attainment or well educated or better educated or unemploy* or home owner* or tenure or affluen* or well off or better off or worse off).ti,ab.	189818
18	(poverty or precar* or impoverish* or depriv* or destitut* or marginalis* or marginaliz* or indigen* or low-income or low income).ti,ab.	108472
19	((out-of-pocket or out of pocket or catastrophic) adj4 (spend* or expend* or cost* or expens* or payment*)).ti,ab.	977
20	9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19	400615
21	4 and 8	2166

22	4 and 20	13418
23	21 or 22	14597
24	(((comprehensive* or integrative or systematic*) adj3 (bibliographic* or review* or literature)) or (meta-analy* or metaanaly* or "research synthesis" or ((information or data) adj3 synthesis) or (data adj2 extract*))).ti,ab,id. or ((review adj5 (rationale or evidence)).ti,ab,id. and "Literature Review".md.) or (cinahl or (cochrane adj3 trial*) or embase or medline or psyclit or pubmed or scopus or "sociological abstracts" or "web of science").ab. or ("systematic review" or "meta analysis").md.	105124
25	23 and 24	504
26	limit 25 to up=19950101-20210720	486
27	limit 26 to (english or french)	454

EBSCO CINAHL-Plus (n = 935)

EBSCO CINAHL Plus with Full Text		
#	**Searches**	**# Results**
S21	S14 AND S20 Limiters - Published Date: 19950101-20210731; Exclude MEDLINE records; Language: English, French	935
S20	S18 OR S19	50,552
S19	S15 AND S17	47,638
S18	S15 AND S16	5,991
S17	S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13	559,599
S16	S3 OR S4 OR S5	14,448
S15	S1 OR S2	232,140
S14	(TI (systematic* n3 review*)) or (AB (systematic* n3 review*)) or (TI (systematic* n3 bibliographic*)) or (AB (systematic* n3 bibliographic*)) or (TI (systematic* n3 literature)) or (AB (systematic* n3 literature)) or (TI (comprehensive* n3 literature)) or (AB (comprehensive* n3 literature)) or (TI (comprehensive* n3 bibliographic*)) or (AB (comprehensive* n3 bibliographic*)) or (TI (integrative n3 review)) or (AB (integrative n3 review)) or (JN “Cochrane Database of Systematic Reviews”) or (TI (information n2 synthesis)) or (TI (data n2 synthesis)) or (AB (information n2 synthesis)) or (AB (data n2 synthesis)) or (TI (data n2 extract*)) or (AB (data n2 extract*)) or (TI (medline or pubmed or psyclit or cinahl or (psycinfo not “psycinfo database”) or “web of science” or scopus or embase)) or (AB (medline or pubmed or psyclit or cinahl or (psycinfo not	231,631

	"psycinfo database") or "web of science" or scopus or embase)) or (MH "Systematic Review") or (MH "Meta Analysis") or (TI (meta-analy* or metaanaly*)) or (AB (meta-analy* or metaanaly*))	
S13	TI((out-of-pocket or out of pocket or catastrophic) N4 (spend* or expend* or cost* or expens* or payment*)) or AB((out-of-pocket or out of pocket or catastrophic) N4 (spend* or expend* or cost* or expens* or payment*))	3,485
S12	TI(poverty or precar* or impoverish* or depriv* or destitut* or marginalis* or marginaliz* or indigen* or low-income or low income) or AB(poverty or precar* or impoverish* or depriv* or destitut* or marginalis* or marginaliz* or indigen* or low-income or low income)	68,496
S11	TI(SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or educational level or level of education or educational attainment or well educated or better educated or unemploy* or home owner* or tenure or affluen* or well off or better off or worse off) or AB(SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or educational level or level of education or educational attainment or well educated or better educated or unemploy* or home owner* or tenure or affluen* or well off or better off or worse off)	151,541
S10	TI((social* or socio-economic or socioeconomic or economic or structural or material) N3 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant* or vulnerab* or insecurit*)) or AB((social* or socio-economic or socioeconomic or economic or structural or material) N3 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant* or vulnerab* or insecurit*))	62,2760
S9	TI(equit* or inequit* or inequalit* or disparit* or equality) or AB(equit* or inequit* or inequalit* or disparit* or equality)	71,667
S8	TI(health N3 (gap or gaps or gradient* or hierarch*)) or AB(health N3 (gap or gaps or gradient* or hierarch*))	3,571
S7	(MH "Health Status Disparities") OR (MH "Social Determinants of Health") OR (MH "Healthcare Disparities")	27,070
S6	(MH "Socioeconomic Factors+")	370,443
S5	TI(cost-sharing or cost sharing or social health protection or social protection in health or social health promotion or reimbursement incentive* or monetary incentive* or cash transfer or cash transfers or cash grant or cash grants or monetary grant or monetary grants or non-monetary grant or non-monetary grants or non monetary grant or non monetary grants or social welfare or social assist* or social grant or social grants or social safety net or social safety-net or sociali#ed healthcare or sociali#ed health care or sociali#ed health-care or social security or health security or healthcare security or health care security or health-care security or public welfare servic*) or AB(cost-sharing or cost sharing or social health protection or social protection in health or social health promotion or reimbursement incentive* or monetary incentive* or cash transfer or cash transfers or cash grant or cash grants or monetary grant or monetary grants or non-monetary grant or non-monetary grants or non monetary grant or non monetary grants or social welfare or social assist* or social grant or social grants or social safety net or social safety-net or sociali#ed healthcare or sociali#ed health care or sociali#ed health-care or social security or health security or healthcare security or health care security or health-care security or public welfare servic*)	7,688

S4	TI(financing N3 (health or healthcare or health care or health-care or health service* or medicin*)) or AB(financing N3 (health or healthcare or health care or health-care or health service* or medicin*))	2,168
S3	TI(financial N3 (protection or risk or coverage or risk-sharing or hardship or assist* or barrier* or access)) or AB(financial N3 (protection or risk or coverage or risk-sharing or hardship or assist* or barrier* or access))	4,954
S2	TI(UHC or ((universal or population or public or national or essential or social) N4 (coverage or benefit* or insurance or care or healthcare or health care or health-care or health servic* or medicin*))) or AB(UHC or ((universal or population or public or national or essential or social) N4 (coverage or benefit* or insurance or care or healthcare or health care or health-care or health servic* or medicin*)))	118,296
S1	(MH "Insurance+")	123,553

ProQuest PAIS Index (n = 165)

Search	Results
ti,ab((((UHC or ((universal or population or public or national or essential or social) NEAR/4 (coverage or benefit* or insurance or care or healthcare or "health care" or health-care or "health service" or "health services" or medicin*))) AND ((financial NEAR/3 (protection or risk or coverage or risk-sharing or hardship or assist* or barrier* or access)) OR (financing NEAR/3 (health or healthcare or "health care" or health-care or "health service" or "health services" or medicin*)) OR (cost-sharing or "cost sharing" or "social health protection" or "social protection in health" or "social health promotion" or "reimbursement incentive" or "reimbursement incentives" or "monetary incentive" or "monetary incentives" or "cash transfer" or "cash transfers" or "cash grant" or "cash grants" or "monetary grant" or "monetary grants" or "non-monetary grant" or "non-monetary grants" or "non monetary grant" or "non monetary grants" or "social welfare" or "social assistance" or "social grant" or "social grants" or "social safety net" or "social safety-net" or "socialized healthcare" or "socialised healthcare" or "socialized health care" or "socialised health care" or "socialized health-care" or "socialised health-care" or "social security" or "health security" or "healthcare security" or "health care security" or "health-care security" or "public welfare"))) OR ((UHC or ((universal or population or public or national or essential or social) NEAR/4 (coverage or benefit* or insurance or care or healthcare or "health care" or health-care or "health service" or "health services" or medicin*))) AND ((health NEAR/3 (gap or gaps or gradient* or hierarch*)) OR (equit* or inequit* or inequalit* or disparit* or equality) OR ((social* or socio-economic or socioeconomic or economic or structural or material) NEAR/3 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant* or vulnerab* or insecurit*)) OR (SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or “educational level” or “level of education” or “educational attainment” or “well educated” or “well-education” or “better educated” or “better-educated” or unemploy* or homeowner or “home-owner” or “home owner” or homeowners or “home-owners” or “home owners” or tenure or affluen* or “well off” or “well-off” or “better off” or “better-off” or “worse off” or “worse-off”) OR (poverty or precar* or impoverish* or depriv* or destitut* or marginalis* or marginaliz* or indigen* or low-income or “low income”) OR ((out-of-pocket or “out of pocket” or catastrophic) NEAR/4 (spend* or	165

expend* or cost* or expens* or payment*))))) AND (((comprehensive* or integrative or systematic* or realist or scoping or rapid or narrative) NEAR/3 (bibliographic* or review* or literature)) OR (meta-analy* or metaanaly* or “meta analysis” or “meta analyse” or “meta analyze” “meta analysed” or “meta analyzed” or “meta analyzing” or “meta analysing” or "research synthesis") OR ((information or data) NEAR/3 synthesis) OR (data NEAR/2 extract*) OR (review NEAR/5 (rationale OR evidence)) OR (cinahl or cinhal or cochrane or embase or medline or psyclit or psychlit or pubmed or scopus or "sociological abstracts" or "web of science"))) Limit dates: 1995-01-01 to 2021-07-20 Limit language: English (no French option)	

Supplementary file 2. Detailed eligibility criteria for scoping overview of reviews

Criterion	Definition for inclusion	Definition for exclusion
Research design	Study methodology is a literature review (e.g., narrative, systematic, scoping, rapid, comparative, or realist reviews, including syntheses of quantitative, qualitative, or mixed methods data). Reviews could be combined with other methodologies (e.g., Delphi panel, survey, stakeholder interviews). An explicit 'Methods' section that confirms that a literature and/or document review was undertaken is available.	Study designs other than literature reviews. Studies where the methodology is unclear or not provided.
Focus on universal health coverage (UHC)	Study is focused on UHC, where UHC is of central interest to the article. UHC may be described using different terms denoting universality (e.g., universal coverage, insurance, or care).	Study does not discuss UHC. Study incidentally mentions UHC, but it is not the focus of the article.
Focus on financial risk protection	Study focuses on the achievement of UHC through FRP, where FRP is discussed in detail (e.g., as a concept, measure, or intervention). FRP is discussed in relation to the protection of health system users from financial hardship.	Study does not discuss FRP. Study incidentally mentions FRP, but it is not discussed in detail (e.g., as a concept, measure, or intervention). Study incidentally mentions FRP, but it is not discussed in the context of/as a dimension of UHC.
Language	Study is written in English or French.	Studies in any language other than English or French.
Time frame	Study is published in or after 1995.	Any studies published before 1995.
Type of publication	Study is an original published work that has undergone peer-review.	Conference abstracts, posters, editorials, thesis dissertations, technical reports, or books/book chapters.
Availability	Full text is accessible through the University of Toronto library services	

Checklist. Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) reporting checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	4
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	4
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	6
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	7, Suppl. 2
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	6
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	6, Suppl. 1
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	7, Suppl. 2
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	7, 8
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	7
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	NA

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	7, 8
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	8, Fig. 1
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	8, Tables 1-2
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	NA
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Table 1-3
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	9-19, Tables 1-3
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	19, 20
Limitations	20	Discuss the limitations of the scoping review process.	21, 22
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	22
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	23

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850.