

Applying Kingdon's Multiple Streams Framework to Understand Health Policy Processes: A Systematic Review

Betelhem G Abraham¹, Wang Wei¹, Meseret A Chanie^{2*}, Amsalu K Addis^{4,5}, Cai Baozhong² and Shi Fang³

¹School of Public Administration and Law, Hunan Agricultural University, Hunan, China

²Research Institute of Rural Revitalization, Hunan University of Science and Engineering, P.O.BOX 425199, Yongzhou, China

³School of Humanities and Management, Hunan University of Chinese Medicine, Changsha, Hunan Province, China

⁴School of Business, Hubei University, Wuhan, P.R. China

⁵Research Center of Open Economy, Hubei University, Wuhan, P.R. China

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***Corresponding author:** Meseret A. Chanie, Research Institute of Rural Revitalization, Hunan University of Science and Engineering, P.O.BOX 425199, Yongzhou, China

Abstract

Agenda-setting and policy formulation are crucial in public health policy analysis. This systematic review assesses the effectiveness of Kingdon's Multiple Stream Framework (MSF) in this context. Using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method, we reviewed literature from Web of Science and Scopus databases, focusing on empirical studies of MSF in health policy analysis. We followed established guidelines for transparency and rigor, including literature search, study selection, data extraction, and quality assessment. Of 3211 articles initially identified, 41 peer-reviewed articles met our criteria. These were analyzed to gain insights into MSF's application in health policy and governance across 25 countries, emphasizing the United States and Australia. Our review indicates that the relevance and impact of the MSF on health policy are predominantly observed in developed countries. This review underscores MSF's relevance and effectiveness in analyzing agenda-setting and policy formulation in public health, offering valuable insights for scholars, policymakers, and practitioners engaged in health policy analysis and governance.

Keywords: Kingdon's multiple stream framework; Health policies; Policy analysis

Abbreviations: MSF: Multiple Stream Framework; PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses; HRH: Human Resources for Health

Highlights

- Kingdon's MSF captures problem recognition, policy solutions, and political influences effectively.
- Policy entrepreneurs drive substantive policy changes within the MSF framework.
- Alignment of streams influences health policy formulation and implementation.
- Methodological diversity enriches MSF application in health policy analysis.
- Review offers insights for policymakers, researchers, and practitioners.

Introduction

The repercussions of inadequate and inappropriate health policies in the contemporary world are dire and far-reaching, exacerbating disparities, compromising healthcare quality, and perpetuating systemic injustices Thomson et al. [1]. Such deficiencies have wide-ranging effects, including

fragmented healthcare delivery, escalating costs, limited access to essential services, and compromised public health outcomes Gauld [2]; Zhang [3]. Furthermore, the absence of effective health policies undermines healthcare system resilience in the face of crises and perpetuates inequities, leaving vulnerable populations marginalized and deprived of critical care Jakovljevic et al. [4].

These deficiencies not only sow seeds of discord and exacerbate social inequalities, but also impede progress towards achieving universal health coverage and sustainable development goals. In a world grappling with complex health challenges, the absence of proper and appropriate health policies represents a profound failure to uphold human dignity, safeguard public well-being, and foster a healthier, more equitable future for all Lucero-Prisno et al. [5]. The profound implications outlined here underscore the urgent need for a comprehensive and equitable health policy system. Such a system is essential to mitigate disparities, promote social justice, and uphold the fundamental right to health for all individuals.

The field of health policy analysis holds great importance in shaping healthcare services, their accessibility, and ultimate outcomes, highlighting the need to comprehend and evaluate policies governing this sector Paola [6]; Sheikh et al. [7]. These policies not only determine the allocation of resources and the organization of healthcare systems, but also profoundly influence public health outcomes and the well-being of individuals and communities Raghupathi and Raghupathi [8]. Given the complex nature of health policies, there is an urgent requirement for robust policy analysis methods that can offer profound insights into decision-making processes, implementation challenges, and overall policy effectiveness Pineo [9].

The Multiple Streams Framework (MSF) developed by Kingdon [10] offers a comprehensive framework for dissecting policy factors, facilitating a deep understanding of the intricacies of health policy and promotes groundbreaking innovation in healthcare systems Hoefer et al., 2022. Consequently, conducting

a meticulous review of the MSF in the context of health policies is vital. Such a review contributes to the advancement of evidence-based policy analysis practices and enrich our understanding of how policy decisions sculpt the landscape of healthcare delivery and public health outcomes.

MSF, initially introduced by John Kingdon in 1984 and revised in 2010, has gained recognition as a renowned methodology for examining policymaking across diverse policy domains and nations Kingdon [10]. This framework serves as a theoretical lens through which policy processes can be comprehensively examined, with a specific focus on three fundamental streams: the problem stream, the policy stream, and the political stream (see Figure 1). The extensive utilization of MSF in comparative policy analysis is noteworthy, as highlighted by Daniel and Michael (2016). The framework posits that policy change materializes when these streams converge during a policy window, creating opportunities for agenda setting and decision-making (Rawat and Morris, 2016). The problem stream involves identifying critical issues that demand policy attention, whereas the policy stream encompasses potential solutions and proposals. Finally, the political stream encompasses the factors influencing decision-making, such as public opinion, political events, and actions by policy entrepreneurs. Understanding the interactions and alignment of these streams enables policymakers and analysts to comprehend the intricacies of policymaking. It allows them to anticipate opportunities for change and strategically advocate for policy solutions within the broader political landscape. This framework empowers stakeholders to navigate complex policy landscapes with a deeper comprehension of the dynamics at play and advocate for more effective policies.

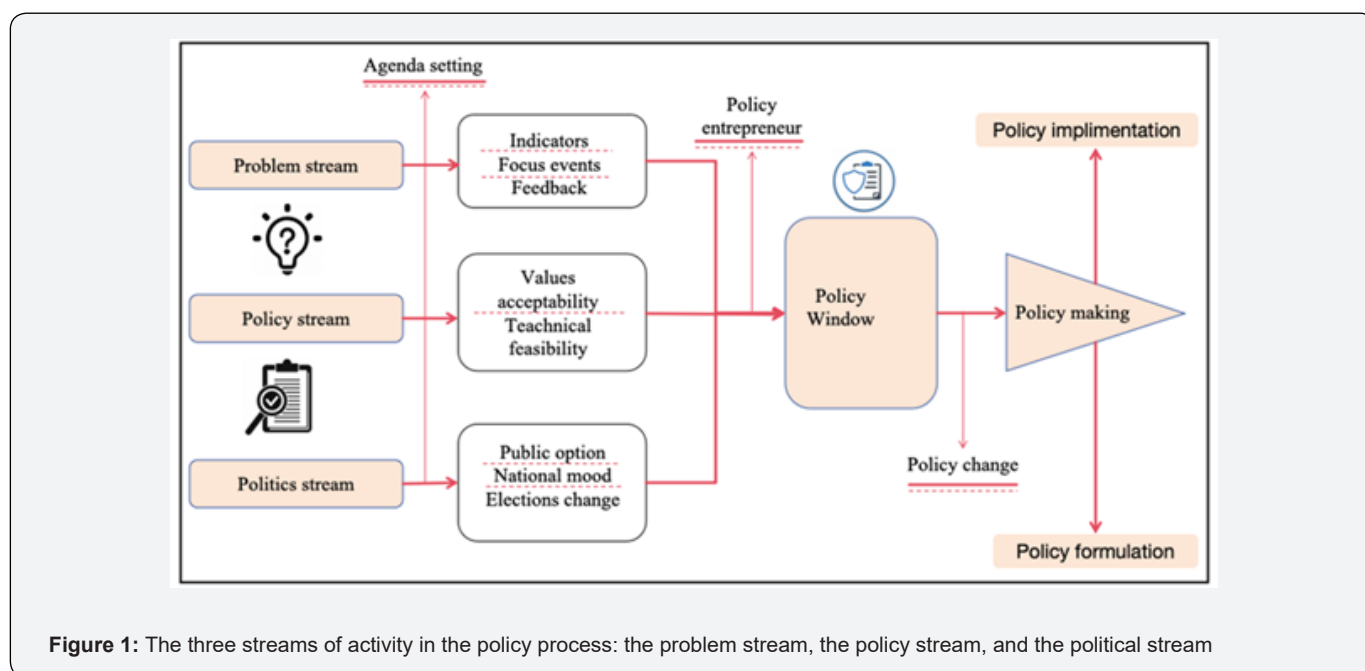


Figure 1: The three streams of activity in the policy process: the problem stream, the policy stream, and the political stream

MSF has proven to be an invaluable framework for analyzing health policies owing to its capacity to encapsulate the intricate interplay of factors that shape policy decisions in the healthcare sector De Wals [11]. By scrutinizing the convergence of problem recognition, policy proposals, and political contexts in health policy development, MSF offers a systematic approach to understanding the policymaking process Santosh and Kane [12]. This framework emphasizes the pivotal role of policy entrepreneurs, the significance of seizing policy windows, and the necessity of aligning policy solutions with political feasibility. These aspects enable a nuanced analysis of health policies and their implementation. However, it is important to note that the effectiveness of MSF may contingent on the specific context and the degree to which it is tailored and implemented in practice. Therefore, conducting a comprehensive review of existing studies is imperative to provide a thorough assessment of the application of this framework and its impact on health policy outcomes. Such a review will contribute to our understanding of the strengths, limitations, and practical implications of employing MSF in the field of healthcare policy analysis.

This review offers a meticulous evaluation of the application and efficacy of MSF in dissecting health policies. It places a strong focus on delineating the strengths, constraints, and pragmatic implications of this approach. The study specifically focuses on assessing the effectiveness of using MSF to unravel the intricacies of health policy development and its contributions to enriching

our understanding dynamics involved in policymaking within healthcare environments. Furthermore, it explores the practical implications of adopting Kingdon’s methodology, including its potential to promote evidence-based decision-making, refining policy formulation procedures, and tackling critical challenges in health policy implementation. The objective of this comprehensive analysis is to provide valuable insights to policymakers, scholars, and practitioners working in the field of public health policy.

This systematic review aims to enhance the existing literature by thoroughly evaluating the effectiveness and applicability of the MSF in health policy analysis. By synthesizing research findings, this review provides invaluable insights, fills knowledge gaps, and proffers recommendations to improve policy analysis in healthcare, thereby empowering policymakers, researchers, and practitioners. Given the relevance of the MSF in dissecting intricate health policy processes, conducting this focused systematic review is imperative. The assessment strives to deepen understanding of the method’s effectiveness, explore its practical implications for health policy analysis, and highlight its contributions to evidence-based decision-making in public health. Additionally, it seeks to identify any inconsistencies or constraints in current research on the MSF, dispense insights into optimal practices, shed light on areas that can enhance, and ultimately elevate the quality and usefulness of health policy analysis within the broader policymaking milieu.

The integration of the three frameworks in the health policy making process

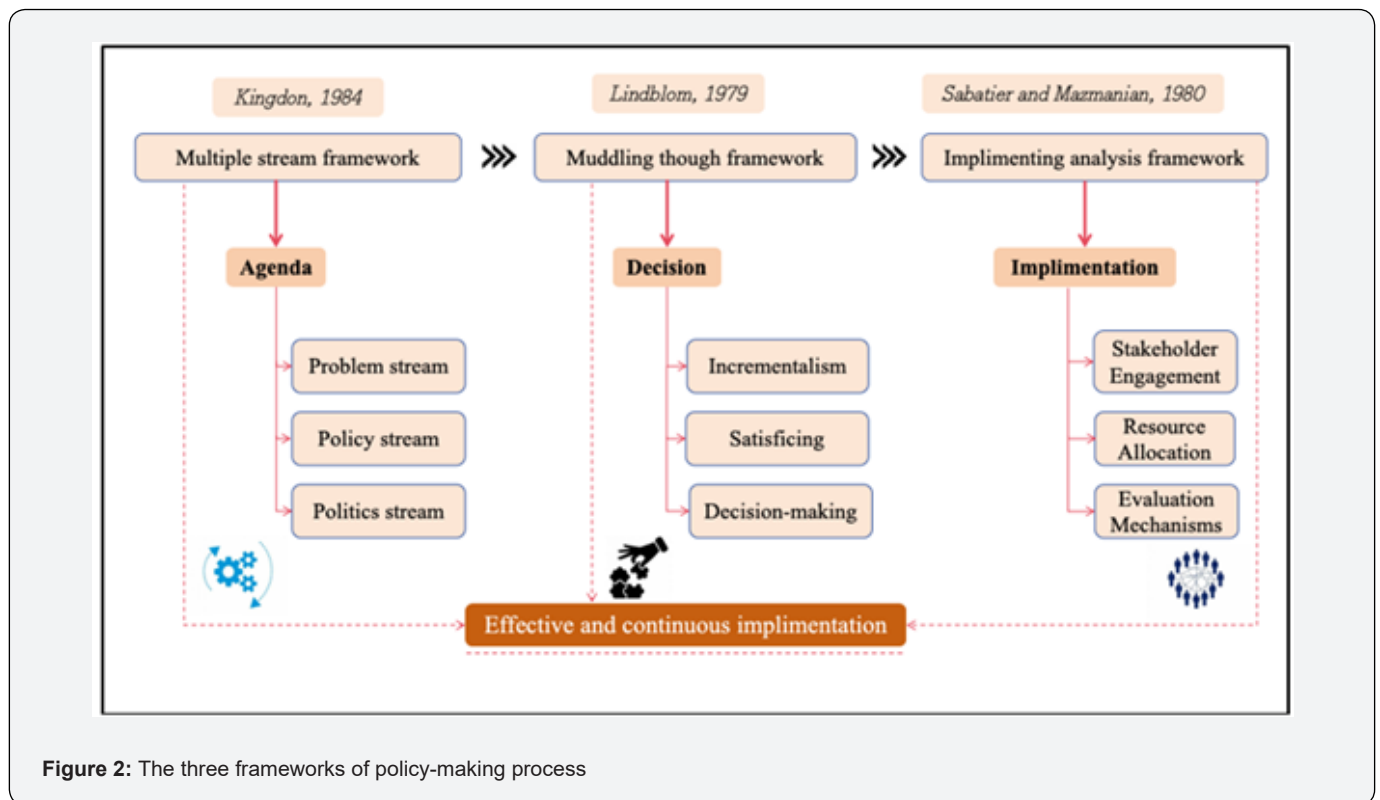


Figure 2: The three frameworks of policy-making process

Multiple streams framework, implementation analysis framework and muddling through models used in policy analysis and decision-making processes. These frameworks offer invaluable perspectives and tools for comprehending the intricacies of policy formulation, execution, and adaptation within the realm of public administration and governance Allen [13]. Figure 2 delineates the triad of frameworks governing the policy-making process. The MSF serves as a critical lens through which to decipher the mechanisms of policy transformation by accentuating the convergence of three pivotal streams: problems, policies, and politics Daniel and Michael (2023). Emphasizing the pivotal role of policy windows, MSF underscores moments when these streams align, engendering propitious opportunities for substantial policy shifts. Conversely, the incremental approach embodied in the muddling through framework posits that policy-making is frequently marked by gradual modifications and adaptive responses to intricate challenges, with policymakers deftly maneuvering obstacles as they surface, rather than adhering to a predetermined blueprint Makkonen [14]. This methodology underscores the pragmatic, adaptable essence of policy-making, spotlighting gradual troubleshooting and adjustment in an ever-evolving landscape. On the other hand, the implementation analysis framework proffers profound insights into the pragmatic facets of policy execution Fixsen [15]. It delves into the intricate process of translating policy decisions into tangible action, scrutinizing factors such as vigilant monitoring, rigorous evaluation, stakeholder engagement, and astute resource allocation.

These frameworks play crucial roles in various stages of health policy development. The Multiple Streams Framework (MSF) helps in understanding how health policy agendas are set by identifying when problems, policies, and political climates align to create windows of opportunity for change. During policy formulation, the MSF guides policymakers in selecting and refining policy solutions that address identified health issues within the prevailing political context. The Implementation Analysis Framework assists in planning and executing health policies by evaluating resource allocation, stakeholder engagement, and organizational structures to ensure effective implementation. Meanwhile, the Muddling Through Framework acknowledges the complexity of health policy decision-making, advocating for pragmatic, incremental approaches that adapt to evolving circumstances and incorporate diverse stakeholder perspectives. Together, these frameworks provide a comprehensive lens for analyzing and navigating the multifaceted process of developing, formulating, and implementing health policies.

Methods

PRISMA approach

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) method is a structured approach utilized for conducting systematic reviews. It provides guidelines

for transparent reporting and rigorous methodology, aiming to ensure completeness, clarity, and reproducibility in the review process Moher et al. [16] and Page et al. [17]. By adhering to the PRISMA guidelines, researchers can systematically search, select, evaluate, and synthesize relevant studies, thereby promoting a comprehensive and unbiased approach to evidence synthesis. The application of the PRISMA method serves to minimize bias, improve the quality of literature reviews, facilitate comparisons across studies, and provide valuable insights for decision-making in various fields, including healthcare, policy analysis, and academia.

Search strategy

The search strategy used to identify relevant studies for the systematic review on the MSF in health policies involved searching electronic databases including Web of Science and Scopus. Keywords including MSF, health policy analysis, and related terms were employed to conduct the search. Boolean operators were utilized to combine keywords and ensure a comprehensive search. In Web of Science, we utilize the query string "TS= (("Kingdon's multiple stream method" OR "Multiple streams framework") AND ("health policy" OR "healthcare policy" OR "public health policy"))", while in Scopus, the query string is "TITLE-ABS-KEY= (("Kingdon's multiple stream method" OR "Multiple streams framework") AND ("health policy" OR "healthcare policy" OR "public health policy"))" (Supplementary material- Table 1). This search strings designed to target relevant articles that specifically explore the application of MSF in examining health policies, with the intention of including them in the systematic review. The search was limited to English-language studies published within a specified time frame (2011-2023) to capture the most recent and relevant literature on the application of MSF in health policy analysis.

Inclusion and exclusion criteria

The study selection criteria included peer-reviewed articles and reviews that focused on applying MSF to analyze health policies, encompassing empirical evidence, case studies, theoretical analyses, and practical applications within healthcare policy. Table 1 presents the inclusion and exclusion criteria for this systematic. Exclusion criteria involved studies not written in English, those outside the specified time frame, and studies unrelated to health policy analysis or not directly addressing the framework. Additionally, studies that lacked sufficient detail on applying MSF in health policy contexts or failing to meet predefined quality standards were excluded from the review.

Data extraction and quality assessment

The data extraction process involved systematically collecting relevant information from the selected studies, encompassing details such as study design, key findings, methodology, and the application of the MSF in health policy analysis. A structured form was utilized during the data extraction phase to ensure consistency

and completeness across all selected studies. A quality assessment of the studies was conducted, employing established criteria to evaluate the rigor and reliability of the research. The assessment encompassed the use of standardized quality assessment tools or frameworks specifically designed for health policy analysis. These

tools aimed to assess the methodological soundness, validity, and overall quality of the included studies, ensuring that the review was based on high-quality evidence (Supplementary material-Table 2).

Table 1: Inclusion and exclusion criteria.

Criteria	Inclusion	Exclusion
Study type	Research articles	Non-research articles including review articles, proceedings and conference paper
Language	English	Non-English
Focus	Application of Kingdon’s multiple stream method in health policy analysis	Studies unrelated to health policy analysis or not directly addressing Kingdon’s multiple stream method
Content	Empirical evidence, case studies, theoretical analyses, practical applications of the framework within healthcare policy context	Studies lacking detail on the application of the framework in health policies
Publication year	2011-2023	Studies outside the specified time frame
Quality Assessment	Studies meeting predefined quality standards	Studies lacking methodological soundness, validity

Results

Search result

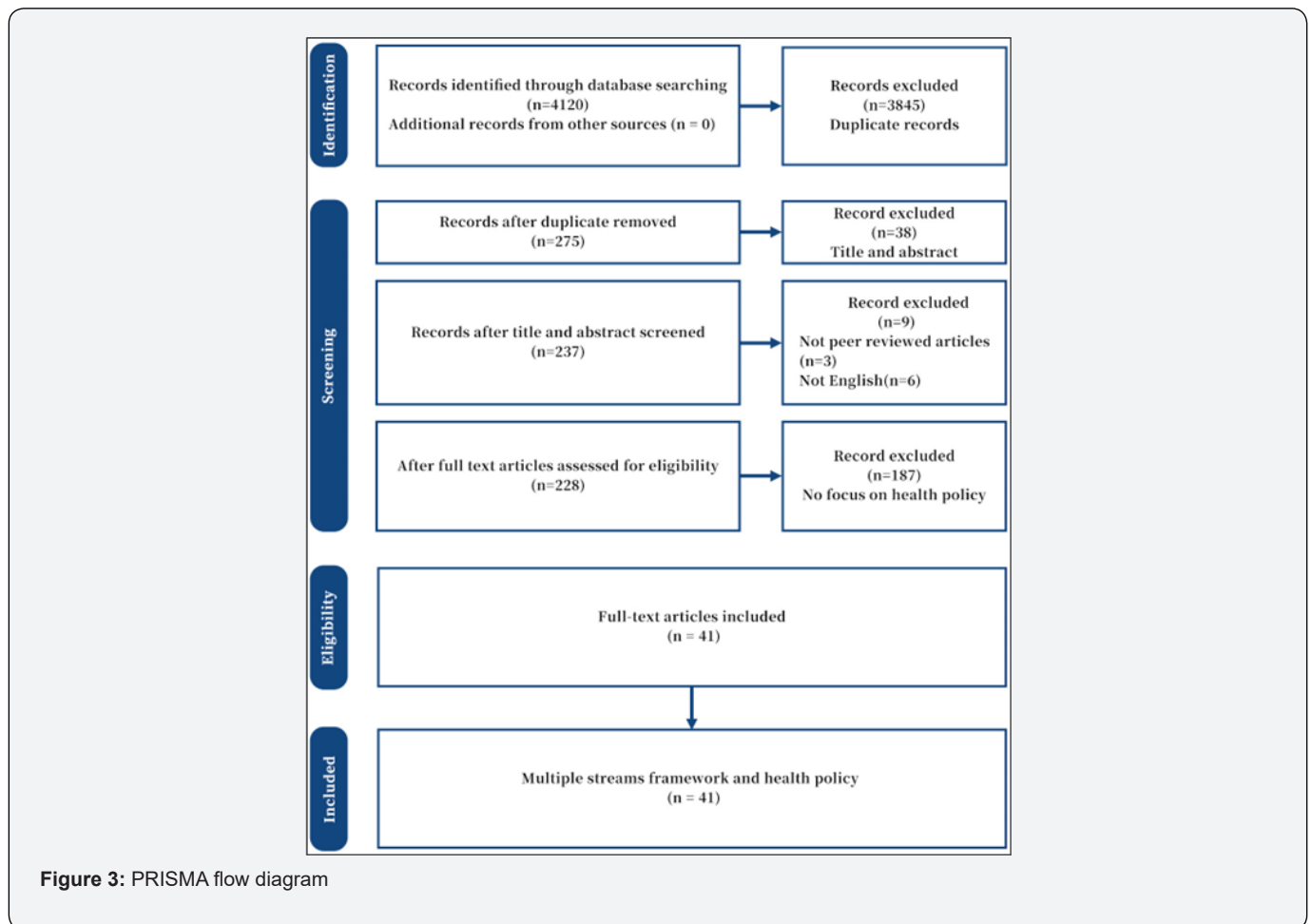
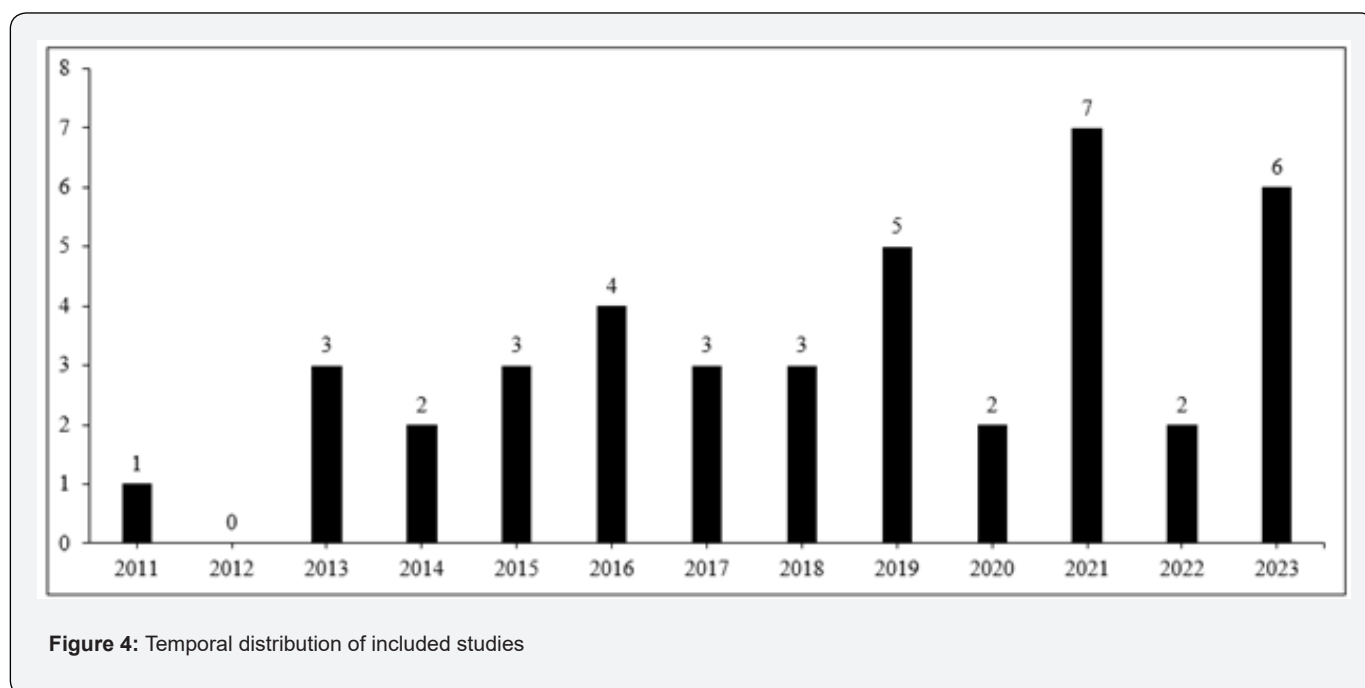


Figure 3: PRISMA flow diagram

The search process involved initially identifying 4,120 records through database searching, with no additional records obtained from other sources. After removing duplicate records, 3,845 were excluded, leaving 275 unique records. Title and abstract screening further refined the selection, retaining 237 records for assessment, while excluding 38. Reasons for exclusion at this stage included not being peer-reviewed (3 records) and not being in English (6 records). Full-text assessment was then conducted on 228 articles, with 187 being excluded due to a lack of focus on health policy. Ultimately, 41 articles were included in the systematic review based on meeting the eligibility criteria established for the study (Figure 3).

Temporal distribution

The temporal distribution of included studies indicates variations in the number of papers published over the years, as depicted in Figure 4. The distribution from 2011 to 2023 reveals a fluctuating pattern, with certain years exhibiting relatively low publication numbers while others show higher numbers. Notably, no publications were recorded in 2012, and the number of papers published per year ranged from 1 to 7 throughout this period. Remarkable peaks in publication activity occurred in 2019 and 2021. These findings suggest potential shifts in research interest or activity related to the application of MSF in analyzing health policies during the specified time frame.



Geographical distribution

The geographic dispersion analysis of the included studies reveals a diverse range of countries and regions in researching the application of the MSF method in health policy analysis, as demonstrated in Figure 5. The United States, Australia, and Iran emerged as the frontrunners, with each contributing 4 papers, showcasing their significant research output. Following closely behind were Canada and the United Kingdom, which made notable contribution with 3 and 2 papers, respectively. Other countries such as India, Ghana, and France also made noteworthy contributions with 2, 1, and 1 paper, respectively. Furthermore, nations such as Kenya, Russia, New Zealand, and Greece each presented 1 publication, underlining a broad international representation in exploring the application of MSF in health policy analysis.

Focus area distribution

The distribution of focus areas among the studies included in the analysis reveals that certain topics have garnered more attention. The overview of the focus areas covered in the included studies presented in table A2. Health policy and governance received substantial attention with 12 studies focusing on areas such as implementing government health policies, analyzing the global right to health norm, and examining COVID-19 policy responses. This indicates a significant interest in policy-related analyses within the health sector. Public health is also a prominent focus area, with 4 studies scooping into topics such as multi-drug resistant tuberculosis, social determinants of health, and universal health coverage, highlighting the importance placed on public health issues.

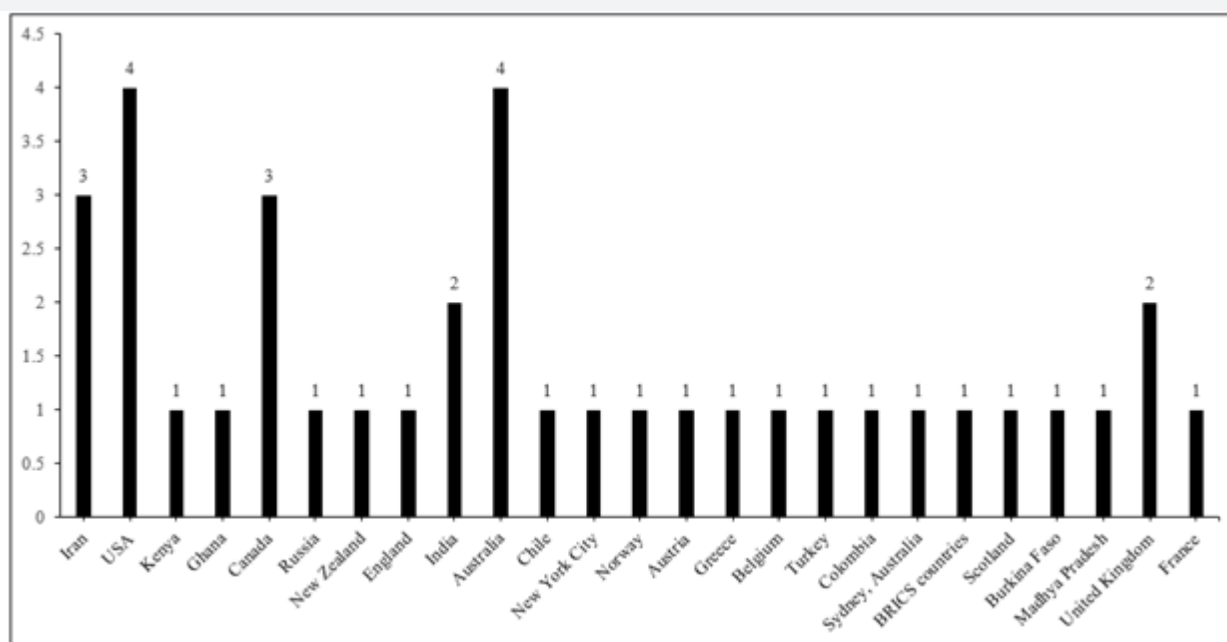


Figure 5: Geographical distribution of the studies.

Additionally, disease prevention and control garnered attention with 3 studies, particularly addressing aspects such as papillomavirus and the public health crisis triggered by COVID-19. Other categories received varying levels of attention. Behavioral health, global health, and prevention and intervention each attracted 3 studies, while health inequalities and social determinants, as well as health system management and innovation, collectively accounted for 5 studies. Generally, this distribution showcases the diverse yet concentrated focus of research utilizing MSF method to analyze health policies.

Finding based analysis

This review provides a comprehensive analysis of health policy issues across various countries and regions, offering valuable insights into the application of the Multiple Streams Framework (MSF) in diverse health policy contexts. Taghizadeh [18] examined childhood obesity prevention policies in Iran through the MSF lens, elucidating the complex dynamics of agenda-setting in addressing this significant public health concern. Similarly, Walhart [19] explored the use of MSF in studying human papillomavirus-related anal intraepithelial neoplasia in different contexts, revealing intricate mechanisms driving policy transformation in response to specific health challenges. Mauti et al. [20] analyzed Kenya's health in all Policies strategy, highlighting the efficacy of MSF in comprehending factors influencing health policy development and execution within a distinct national framework. Furthermore, Kusi-Ampofo [21] examined resistance and change in health policy formulation in Ghana, providing valuable insights into the pivotal role of multiple streams in shaping policy outcomes and adapting to evolving health concerns.

The retrospective analysis conducted by Aghapour [22] on vitamin D deficiency prevention policies in Iran underscores the significance of the Multiple Streams Framework (MSF) in evaluating historical policy decisions and their impacts on public health initiatives. Moreover, a case study by N. Smith et al. [23] examining priority setting and resource allocation processes in a Canadian healthcare institution exemplifies the practical application of multiple streams theory within a specific organizational context. Gómez and Kucheryavenko's [24] investigation into Russia's efforts to combat HIV/AIDS reveals the influential role of institutional and agenda-setting forces in shaping health policy outcomes, providing valuable insights into the complexities of addressing persistent health challenges. Additionally, the analysis by Amri and Logan [25] on policy responses to COVID-19 as a driver for transformative shifts in global health policy demonstrates the heuristic capacity of MSF in deciphering pivotal moments in policy formulation.

The examination conducted by V. Smith and Cumming [26] on the role of institutional entrepreneurs of MSF in enacting pay-for-performance initiatives in primary healthcare illuminates the pivotal actors and processes shaping policy changes within healthcare systems. Similarly, Milton and Grix's [27] scrutiny of public health policy concerning walking in England provides valuable insights into the temporal dynamics of policy windows and their implications for advancing public health agendas. Lessons drawn from policymaking amidst the COVID-19 crisis highlight the significance of proactive state interventions and the factors influencing successful policy implementation, thereby demonstrating the relevance of the MSF in emergency health

response contexts Choi [28]. Additionally, Kundu et al.'s [29] analysis of financial protection policies for multi-drug resistant tuberculosis in Chhattisgarh state, India, illustrates the utility of MSF in evaluating specific health insurance schemes and their impacts on public health outcomes.

Examining agenda-setting for the social determinants of health through critical frameworks, insights from the MSF elucidate the potential for amalgamating diverse analytical methods within MSF to achieve a comprehensive understanding of health policy dynamics Townsend [30]. Furthermore, analyzing the politics of health policy agenda setting in India, as exemplified by the PMJAY (Pradhan Mantri Jan Arogya Yojana) program, offers perspectives on power dynamics and stakeholder influences that shape health policy priorities Kalita and Croke [31]. The narrative detailing the pivotal drivers behind the formulation of the learning from deaths policy emphasizes the contextual elements and occurrences contributing to the inception of a specific health policy endeavor Lalani and Hogan [32]. Similarly, exploring the inclusion of youth mental health on Australia's 2011 federal policy agenda reveals the intricate interplay of MSF of advocacy, evidence, and political considerations in shaping attention and responses to health policies Whiteford, et al. [33].

Examining long-term care on the policy agenda, as evidenced by the case study of Chile, elucidates MSF role and the determinants impacting the prominence and prioritization of specific health issues within policy spheres Villalobos Dintrans [34]. Additionally, scrutinizing visions and strategies for behavioral health policy innovation emphasizes the pivotal role of MSF of policy entrepreneurs and external shocks in propelling policy transformations in the domain of behavioral health Figueroa et al. [35]. Addressing health inequalities in Norway demonstrates the utilization of linear and non-linear models in policymaking, providing a methodological lens to navigate the intricacies of mitigating health disparities through MSF of policy interventions Strand and Fosse [36]. Furthermore, MSF delves into Europeanization in e-Health policy processes across diverse national contexts, shedding light on the transnational dynamics influencing the evolution of health policies Bérut [37].

Exploring public values concerning health inequalities raises queries regarding the evidence and discourse influencing policy windows of MSF, underscoring the necessity for robust empirical foundations to guide health policy decision-making McHugh [38]. Analyzing the navigation of political and technical hurdles in formulating a national Human Resources for Health (HRH) strategy in Greece provides pragmatic insights into the complexities of healthcare workforce planning and the impact of MSF of policy mechanisms on shaping strategic interventions Onvlee [39]. Adopting a public health perspective towards and MSF palliative care in Canada yields a nuanced comprehension of integrating public health principles into end-of-life care policies

and practices, illuminating the dynamic evolution of health policy arenas Sirianni [40]. The establishment of a global right to health norm, exemplified by the unresolved issue of universal access to quality emergency obstetric care, highlights the enduring challenges in promoting global health norms and the influence of policy processes on shaping international health agendas Hammonds & Ooms [41].

Examining the development of political priority through MSF for public health issues in Turkey provides valuable insights from tobacco control and road safety initiatives, shedding light on the contextual and strategic factors steering the prioritization of public health concerns Hoe [42]. Additionally, scrutinizing MSF for public health policy underscores the methodological diversity in scientific publications used to analyze and guide public health policy development Montenegro Martínez [43]. The MSF provide tools to process behind Australia's health star rating policy offers instructive lessons for global policy-making in front-of-pack nutrition labeling, highlighting the potential for international knowledge transfer and collaboration in the realm of public health policy Kumar [44]. Furthermore, the study on Australian health policy documents addressing social determinants of health and health equity sheds light on the integration of social determinants of health into policy discourse, elucidating the evolving narrative of health equity within policy documents Fisher [45].

The study of pop-up cycleways in Sydney, Australia, highlights the transformative impact of policy windows. It demonstrates how the COVID-19 pandemic created novel opportunities for integrating urban planning, transport, and health considerations within policy agendas Harris & McCue [46]. Additionally, examining BRICS countries and the global movement for universal health coverage provides valuable insights into the influence of emerging economies on global health governance and policy trajectories Tediosi [47]. An exploration of the development of minimum unit pricing of alcohol in Scotland offers a qualitative analysis of the policy process. It elucidates the intricate interplay of evidence, interests, and political dynamics in shaping alcohol pricing policies Katikireddi [48]. Furthermore, the analysis of policymaking in Burkina Faso's health sector unveils the complexities involved in establishing health system support units. It offers critical lessons in health system strengthening and policy implementation in resource-constrained settings Zida et al. [49]. These cases underscore the relevance of the MSF in understanding the dynamics of policy processes and the factors influencing policy agenda-setting and implementation.

The ascent of maternal health as a political priority in Madhya Pradesh, India, illustrates the intricate interplay of contextual and relational factors that shape the prominence of maternal health on policy agendas. This case provides valuable insights into the dynamics of health issue salience within the framework of the MSF Jat [50]. Moreover, the acceptability and feasibility study of

a national essential medicines list in Canada delved into decision-makers' and stakeholders' perceptions, offering a qualitative exploration of the complexities inherent in pharmaceutical policy development and implementation, within the lens of the MSF Jarvis [51]. Examining perspectives of public health leaders on food insecurity and human rights in Australia afforded a critical examination of the intricate intersections between food insecurity, human rights, and public health, elucidating multifaceted health policy challenges through the MSF framework Godrich [52]. Furthermore, the analysis of conditions influencing the adoption of a soda tax for public health in France scrutinized the French case from 2005 to 2012, providing insights into the political and social dynamics underpinning the implementation of public health interventions, within the analytical framework of the MSF Le Bodo [53].

The policy analysis of preventing malnutrition among children under 5 years old in Iran shed light on the specific policy measures and strategies implemented to address childhood malnutrition. This study offered valuable insights into the role of policy interventions in managing health risks among vulnerable populations, as per the analytical framework of the MSF Mohseni [54]. Moreover, an audience research study aimed at disseminating evidence on comprehensive state mental health parity legislation to US state policymakers delineated a structured protocol for engaging policymakers in the dissemination of mental health policy evidence. It underscored the importance of effective communication strategies in informing and influencing policy decisions, within the analytical framework of the MSF Purtle [55].

A study focusing on scaling up population health interventions, from decision-making using MSF to sustainability, provided valuable insights into the challenges and opportunities encountered during the transition from initial decision-making stages to long-term sustainability Lee et al. [56]. The development of a patient-directed policy framework for managing orphan and ultra-orphan drugs underscored the intricate nature of orphan drug policy and emphasized the necessity for tailored policy frameworks to effectively address the unique therapeutic challenges associated with such drugs Menon [57]. An exploration into the integration of health into foreign policy, using the case study of Health is Global, a UK Government Strategy from 2008-2013, yielded insights into the intersection of health and foreign policy. This study demonstrated the pivotal role of MSF in shaping global health diplomacy and fostering international cooperation Gagnon & Labonté [58].

Discussion

MSF has emerged as a prominent theoretical approach in the field of policy analysis, offering valuable insights into the complexities of policy change and implementation. Originating from the seminal work of John W. Kingdon in the 1980s, the MSF

has since been refined and extended by scholars across various disciplines. Herweg [59] provides a comprehensive overview of the theoretical underpinnings of the MSF, emphasizing its focus on the interplay of problems, policies, and politics in shaping policy outcomes. This framework conceptualizes policy change as the result of three distinct streams - problems, policies, and politics - which may converge under certain conditions to create windows of opportunity for policy entrepreneurs to advance their agenda Béland & Howlett [60].

In this systematic review, several key findings have emerged. The review revealed a consistent trend in the use of MSF to understand the complexities of agenda-setting in health policy development, particularly in identifying how problems, policies, and political factors interact to influence policy change. Themes such as the importance of policy windows, the role of policy entrepreneurs, and the impact of external events on policy agendas were prevalent across the studies. Additionally, patterns emerged highlighting the challenges in aligning the streams, the need for stakeholder engagement, and the iterative nature of policy processes within the health sector. This review demonstrated the value of MSF in providing a comprehensive and nuanced analysis of health policy dynamics, offering insights that can inform future research and practice in the field of health policy analysis [61].

The findings of this systematic review on the application of MSF in examining health policies contribute significantly to the existing literature in this field. While previous studies have highlighted the utility of MSF in understanding policy change dynamics, our review adds depth by synthesizing insights from a diverse range of included studies, providing a comprehensive overview of the method's application in health policy analysis. Comparing and contrasting the findings with existing literature, our review enhances the current understanding of how MSF can be effectively utilized to navigate the complexities of health policy development and implementation. Specifically, our review emphasizes key themes such as the role of policy entrepreneurs, the influence of external factors on policy agendas, and the challenges in stream alignment, offering valuable insights for policymakers, practitioners, and researchers.

Furthermore, the review highlights the methodological diversity and geographic breadth of empirical studies examining the application of the MSF in health policy analysis. While the majority of the selected studies focus on the United States and Australia, the inclusion of research from various regions enriches our understanding of the generalizability and transferability of MSF concepts across different healthcare systems and policy contexts. Moreover, by showcasing the patterns and trends identified across the included studies, our review sheds light on the nuances of applying MSF in the context of health policies, thereby informing future research directions and facilitating evidence-based decision-making in the realm of health policy

analysis. Overall, this systematic review contributes to the ongoing discourse on the utility of the MSF in examining health policies, offering valuable insights for future research, policy formulation, and decision-making in public health.

Methodological Considerations

The methodological approaches used in the studies included in this systematic review varied, with some employing qualitative case studies, while others utilized quantitative analyses or mixed methods to apply MSF method in examining health policies. Strengths of using this method include its ability to offer a comprehensive framework for understanding the complex interplay of factors influencing policy change, providing a structured approach to analyzing how problems, policies, and politics converge within the health policy domain. However, limitations were identified, such as the potential for oversimplification of the policy process, the challenge of accurately capturing the dynamic nature of policy development, and the need for robust data to support the application of the framework. Common challenges observed in the literature included the difficulty in identifying and engaging key policy entrepreneurs, the limited predictive power of MSF in certain contexts, and the lack of consensus on the most effective way to operationalize MSF in health policy analysis.

Despite these challenges, this systematic review underscores the value of MSF in offering a structured approach to examining health policies and highlights the importance of addressing methodological considerations to enhance its applicability and robustness in research and practice. Acknowledging the strengths and limitations of the methodological approaches used in the reviewed studies, researchers and policymakers can gain a more nuanced understanding of how to effectively leverage MSF to navigate the complexities of health policy analysis. Addressing common challenges and gaps identified in the literature, such as the need for more empirical validation and tailored applications of the method to diverse health policy contexts, can further enhance the utility and relevance of MSF in informing evidence-based decision-making and driving positive policy change in the realm of healthcare.

Practice and policy implications

This systematic review holds significant practical implications for policymakers, practitioners, and researchers in the field of health policy. Applying MSF, policymakers can gain a more comprehensive understanding of the intricate dynamics shaping health policy development, enabling them to identify opportune moments for policy change, engage relevant stakeholders, and navigate the complex interplay of problems, policies, and politics. Practitioners can leverage the insights gained from our review to inform the design and implementation of health interventions, aligning them with the broader policy landscape and strategic windows of opportunity. Furthermore, researchers can utilize the nuanced understanding of policy processes offered by MSF

to conduct targeted evaluations of health policies, assess their impact, and contribute evidence to shape future policy initiatives. Ultimately, the application of MSF can serve as a valuable tool for advancing evidence-based policymaking in the realm of health, fostering more informed decision-making and enhancing the effectiveness and responsiveness of health policies to address critical public health challenges.

Future research directions

Future research directions in the field of health policy can be guided by (Table 3 Supplementary Material), which outlines key areas for exploration and methodological advancements to enhance the use of MSF. These include validating the predictive power of the framework in diverse contexts, leveraging digital technologies and data analytics for real-time policy analysis, exploring the impact of global health trends on domestic policy agendas, and assessing stakeholder engagement strategies. Additionally, future research could delve into the integration of theoretical models with MSF, examine cultural and contextual influences on the framework's applicability, employ mixed methods approaches for a comprehensive analysis, and evaluate the long-term outcomes of policy changes. Addressing these research directions, scholars can further advance evidence-based policymaking in healthcare and contribute valuable insights to the field of health policy analysis.

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Limitation of this systematic review

One limitation of this systematic review is the potential for selection bias due to the inclusion of studies obtained solely from two databases, which may limit the comprehensiveness and generalizability of the findings. Additionally, by focusing exclusively on peer-reviewed articles, there is a possibility of excluding relevant grey literature or unpublished studies that could provide valuable insights. Furthermore, the exclusion of studies published in languages other than English may lead to language bias and overlook important contributions from non-English sources, potentially impacting the overall scope and depth of the review.

Conclusion

This systematic review has shed light on the methodological approaches used in examining health policies through the lens of MSF. The review identified both strengths and limitations in the application of this framework, showcasing its capacity to offer a comprehensive understanding of the complex interplay of factors influencing policy change within the health domain. While some studies effectively employed qualitative and quantitative analyses to apply MSF, challenges such as oversimplification of the policy process and the need for robust data were also noted. These findings underscore the importance of addressing methodological considerations to enhance the applicability and robustness of MSF in health policy analysis.

The practical implications of our review are far-reaching, offering valuable insights for policymakers, practitioners, and researchers in the field of health policy. Leveraging MSF, policymakers can gain a more comprehensive understanding of the dynamics shaping health policy development, while practitioners can use these insights to inform the design and implementation of health interventions aligned with the broader policy landscape.

Moreover, researchers can utilize the nuanced understanding of policy processes offered by MSF to conduct targeted evaluations of health policies and contribute evidence to shape future policy initiatives. Ultimately, applying MSF can serve as a valuable tool for advancing evidence-based policymaking in healthcare, fostering more informed decision-making and enhancing the effectiveness of health policies in addressing critical public health challenges.

Supplementary Material

Table 1: Databases and search string.

Database	Search String
Web of Science	TS= (("Kingdon's multiple stream method" OR "Multiple streams framework") AND ("health policy" OR "healthcare policy" OR "public health policy"))
Scopus	TITLE-ABS-KEY= (("Kingdon's multiple stream method" OR "Multiple streams framework") ("health policy" OR "healthcare policy" OR "public health policy"))

Table 2: Focus area distribution.

Category	Focus areas	Studies
Prevention and intervention	Childhood obesity prevention, Vitamin D deficiency prevention, Eradicate HIV/AIDS	Taghizadeh [18]; Aghapour [22]; Choi [28]; Kundu [29]; Villalobos Dintrans [34]
Health policy and governance	Health in All Policies strategy, health policy making, New Priority Setting and Resource Allocation Processes, Politics of Health, implementation of government health, a global right to health norm, a COVID-19 Policy	Mauti et al. [20]; Kusi-Ampofo [21]; Milton and Grix [27]; Kalita and Croke [31]; Lalani and Hogan [32]; Hoe [42]; Katikireddi [48]; Zida [49]; Jat [50]; Jarvis [51]; Menon [57]
Public health	Public health, multi drug resistant tuberculosis (MDR-TB) financial protection, social determinants of health, Politics of Health, public health issues, Models for public health, SDH/HE in Australian health, universal health coverage	Sirianni [40]; Harris and McCue [46]; Godrich [52]; Lee [56].
Behavioral health	Visions and strategies for behavioral health, youth mental health issues, Palliative Care, comprehensive state mental health parity legislation	Whiteford [33]; Figueroa et al. [35]; Purtle [55]
Health inequalities and social determinants	Tackling health inequalities, Eliciting public values on health inequalities, social determinants of health, maternal health as a political priority, food insecurity and human rights, malnutrition among children under 5 years old	Townsend [30]; Strand and Fosse [36]; Fisher [45]; Gagnon and Labonté [58]
Health system management and innovation	The Learning from Deaths (Lfd), implementing LTC systems served, health interventions from decision to sustainability, Managing Orphan and Ultra-Orphan Drugs	N. Smith [23]
Global health	A Paradigm shift in global health, a global right to health norm, Integration of health in foreign policy	Gómez and Kucheryavenko [24]; Amri and Logan, [21]; Béruit [37]; Onvlee [39]; Hammonds and Ooms [41]; Tediosi [47]; Gagnon Labonté [58]
Disease prevention and control	Papillomavirus, COVID-19 sparked a public health crisis, Minimum Unit Pricing of Alcohol, a soda tax for public health	Walhart [19]; Kundu et al. [29]; Le Bodo [53]

Table 3: Topic area, future research direction, and area of further exploration.

No.	Topic Area	Future research direction	Area of further exploration
1	Validation of predictive power	Conduct empirical studies to validate the predictive power of Kingdon's method in diverse health policy contexts.	Assess the impact of cultural and contextual factors on the applicability of the framework in different healthcare systems.
2	Digital technologies and data analytics	Explore the role of digital technologies in enhancing real-time policy analysis and decision-making using Kingdon's method.	Investigate the potential integration of other theoretical models with the framework for a more comprehensive analysis.
3	Global health trends and transnational factors	Investigate the influence of global health trends on domestic health policy agendas using Kingdon's multiple stream method.	Explore the use of mixed methods approaches to capture the dynamic nature of health policy development and implementation.
4	Stakeholder engagement strategies	Examine the effectiveness of stakeholder engagement strategies in aligning streams and fostering consensus in health policy.	Evaluate the long-term outcomes and sustainability of policy changes initiated through insights from Kingdon's framework.

References

- Thomson K, Hillier BF, Todd A, McNamara C, Huijts T, et al. (2018) The effects of public health policies on health inequalities in high-income countries: An umbrella review. *BMC Public Health* 18(1): 869.
- Gauld R (2023) Health Policy in Asia: A Policy Design Approach. *Journal of Health Politics, Policy and Law* 48(3): 455-456.
- Zhang H (2021) Challenges and Approaches of the Global Governance of Public Health Under COVID-19. *Front Public Health* 9: 727214.
- Jakovljevic M, Chang H, Pan J, Guo C, Hui J, et al. (2023) Successes and challenges of China's health care reform: a four-decade perspective spanning 1985-2023. In *Cost Effectiveness and Resource Allocation* 21(1).
- Lucero PDE, Shomuyiwa DO, Kouwenhoven MBN, Dorji T, Odey GO, et al. (2023) Top 10 public health challenges to track in 2023: Shifting focus beyond a global pandemic. *Public Health Challenges* 2(2).
- Paola AC, Michael RR (2019) Political Analysis for Health Policy Implementation. *Health Systems & Reform* 5(3): 224-235.
- Sheikh K, Gilson L, Agyepong IA, Hanson K, Sengooba F, et al. (2011) Building the Field of Health Policy and Systems Research: Framing the Questions. *PLoS Med* 8(8): e1001073.
- Raghupathi V, Raghupathi W (2023) The association between healthcare resource allocation and health status: an empirical insight with visual analytics. *J Public Health* 31: 1035-1057.
- Pineo H, Zimmermann N, Davies M (2020) Integrating health into the complex urban planning policy and decision-making context: a systems thinking analysis. *Palgrave Commun* 6(21).
- Kingdon JW (1984) *Agendas, Alternatives and Public Policies* (Boston: Little, Brown and Company).
- De Wals P, Espinoza MME, Béliand D (2019) Kingdon's Multiple Streams Framework and the Analysis of Decision Making Processes Regarding Publicly Funded Immunization Programs. *Expert Rev Vaccines* 18(6): 575-585.
- Santosh S, Kane S (2023) Extending Kingdoms Multiple Streams Policy Framework Through an Analysis of How Community Health Workers in India Are Driving Policy Changes. *Sage Open*.
- Allen LJ (2020) From Multiple Streams to Muddling Through Policy Process Theories and Field of Vision. *Open Political Science* 3(1).
- Makkonen H, Olkkonen R, Halinen A (2012) Organizational buying as muddling through: A practice-theory approach. *Journal of Business Research* 65(6).
- Fixsen AAM, Aijaz M, Fixsen DL, Burks E, Schultes MT (2021) Implementation frameworks an analysis. *Active Implementation Research Network* p. 7.
- Moher D, Liberati A, Tetzlaff J, Altman D G, Antes G, et al. (2009) Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLoS Medicine* 6(7): e1000097.
- Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, et al. (2021) The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ* 372: 71.
- Taghizadeh S, Khodayari ZR, Farhangi MA (2021) Childhood obesity prevention policies in Iran: a policy analysis of agenda setting using Kingdoms multiple streams. *BMC Pediatrics* 21(1): 250.
- Walhart T (2013) The application of Kingdoms Multiple Streams Theory for human papillomavirus related anal intraepithelial neoplasia. *Journal of Advanced Nursing* 69(11): 2413-2422.
- Mauti J, Gautier L, De NJW, Beiersmann C, Tosun J, et al. (2019) Kenya's Health in All Policies strategy: A policy analysis using Kingdon's multiple streams. *Health Research Policy and Systems* 17(1).
- Kusi AO, Church J, Conteh C, Heinmiller BT (2015) Resistance and change: A multiple streams approach to understanding health policy making in Ghana. *Journal of Health Politics, Policy and Law* 40(1): 195-219.
- Aghapour B, Kheirouri S, Alizadeh M, Khodayari ZR (2023) Vitamin D deficiency prevention policies in Iran: a retrospective policy analysis. *Frontiers in Nutrition* p. 10.
- Smith N, Mitton C, Dowling L, Hiltz MA, Campbell M, et al. (2016) Introducing new priority setting and resource allocation processes in a Canadian healthcare organization: A case study analysis informed by multiple streams theory. *International Journal of Health Policy and Management* 5(1): 23-31.
- Gómez EJ, Kucheryavenko O (2021) Explaining Russia's Struggle to Eradicate HIV/AIDS: Institutions Agenda Setting and the Limits to Multiple Streams Processes. *Journal of Comparative Policy Analysis Research and Practice* 23(3): 372-388.
- Amri MM, Logan D (2021) Policy responses to COVID-19 present a window of opportunity for a paradigm shift in global health policy: An application of the Multiple Streams Framework as a heuristic. *Global Public Health* 16(8-9): 1187-1197.
- Smith V, Cumming J (2017) Implementing pay for performance in primary health care: The role of institutional entrepreneurs. *Policy and Society* 36(4): 523-538.

27. Milton K, Grix J (2015) Public health policy and walking in England- Analysis of the 2008 policy window. *BMC Public Health* 15(1): 614.
28. Choi S, Allgood M, Swindell D (2023) Policymaking during COVID-19: Preemptive State Interventions and the Factors Influencing Policy Implementation Success. *Public Performance and Management Review* 46(1).
29. Kundu D, Sharma N, Chadha S, Laokri S, Awungafac G, et al. (2018) Analysis of multi drug resistant tuberculosis (MDR-TB) financial protection policy: MDR-TB health insurance schemes in Chhattisgarh state India. *Health Economics Review* 8(1).
30. Townsend B, Strazdins L, Harris P, Baum F, Friel S (2020) Bringing in critical frameworks to investigate agenda setting for the social determinants of health: Lessons from a multiple framework analysis. *Social Science and Medicine* 250: 112886.
31. Kalita A, Croke K (2023) The Politics of Health Policy Agenda Setting in India: The Case of the PMJAY Program. *Health Systems and Reform* 9(1).
32. Lalani M, Hogan H (2021) A narrative account of the key drivers in the development of the Learning from Deaths policy. *Journal of Health Services Research and Policy* 26(4): 263-271.
33. Whiteford HA, Meurk C, Carstensen G, Hall W, Hill P, et al. (2016) How did Youth Mental Health Make it into Australia's 2011 Federal Policy Agenda. *SAGE Open* 6(4).
34. Villalobos DP, Alliende T, Palacios J, Contrucci I, Browne J (2023) Long-term Care in the Agenda: The Case of Chile. *Health Systems and Reform* 9(1).
35. Figueroa C, Castillo E G, Norquist G, Wells KB, Griffith K, et al. (2018) A window of opportunity: Visions and strategies for behavioral health policy innovation. *Ethnicity and Disease* p. 28.
36. Strand M, Fosse E (2011) Tackling health inequalities in Norway: Applying linear and non-linear models in the policy-making process. *Critical Public Health* 21(3).
37. Bérut C (2023) The chemical framework: Exploring Europeanisation in French, Austrian, and Irish eHealth policy processes. *Governance* 36(4): 1063-1081.
38. McHugh N (2022) Eliciting public values on health inequalities: missing evidence for policy windows *Evidence and Policy* 18(4): 733-745.
39. Onvlee O, Kaitelidou D, Scotter C, Dieleman M (2021) Navigating the political and technical challenges of developing a national HRH strategy: a case study in Greece. *Health Policy* 125(12): 1574-1579.
40. Sirianni G (2020) A Public Health Approach to Palliative Care in the Canadian Context. In *American Journal of Hospice and Palliative Medicine* 37(7): 492-496.
41. Hammonds R, Ooms G (2014) The emergence of a global right to health norm - The unresolved case of universal access to quality emergency obstetric care. *BMC International Health and Human Rights* 14(1).
42. Hoe C, Rodriguez DC, Üzümcüoğlu Y, Hyder AA (2019) Understanding political priority development for public health issues in Turkey: Lessons from tobacco control and road safety. *Health Research Policy and Systems* 17(1): 3.
43. Montenegro Martínez G, Carmona MA, Franco GÁ (2021) Models for public health policy analysis reported in scientific publications. *Gaceta Sanitaria* 35(3): 270-281.
44. Kumar M, Gleeson D, Barraclough S (2018) Australia's Health Star Rating policy process: Lessons for global policy-making in front-of-pack nutrition labelling. *Nutrition and Dietetics* 75(2): 193-199.
45. Fisher M, Baum FE, MacDougall C, Newman L, Mcdermott D (2016) To what extent do Australian health policy documents address social determinants of health and health equity. *Journal of Social Policy* 45(3).
46. Harris M, McCue P (2023) Pop-Up Cycleways: How a COVID-19 Policy Window Changed the Relationship Between Urban Planning, Transport, and Health in Sydney, Australia. *Journal of the American Planning Association* 89(2).
47. Tediosi F, Finch A, Procacci C, Marten R, Missoni E (2016). BRICS countries and the global movement for universal health coverage. *Health Policy and Planning* 31(6): 717-728.
48. Katikireddi SV, Hilton S, Bonell C, Bond L (2014) Understanding the development of minimum unit pricing of alcohol in Scotland: A qualitative study of the policy process. *PLoS ONE* 9(3).
49. Zida A, Lavis JN, Sewankambo N, Kouyate B, Moat K, et al. (2017) Analysis of the policymaking process in Burkina Faso's health sector: Case studies of the creation of two health system support units. *Health Research Policy and Systems* 15(1): 10.
50. Jat TR, Deo PR, Goicolea I, Hurtig AK, San Sebastian M (2013) The emergence of maternal health as a political priority in Madhya Pradesh, India A qualitative study. *BMC Pregnancy and Childbirth* 13: 181.
51. Jarvis JD, Murphy A, Perel P, Persaud N (2019) Acceptability and feasibility of a national essential medicines list in Canada: A qualitative study of perceptions of decision-makers and policy stakeholders. *CMAJ* 191(40).
52. Godrich SL, Barbour L, Lindberg R (2021) Problems policy and politics- perspectives of public health leaders on food insecurity and human rights in Australia. *BMC Public Health* 21(1): 1132.
53. Le Bodo Y, Etilé F, Gagnon F, Wals DP (2019) Conditions influencing the adoption of a soda tax for public health: Analysis of the French case. *Food Policy* pp. 88.
54. Mohseni M, Aryankhesal A, Kalantari N (2019) Prevention of malnutrition among children under 5 years old in Iran: A policy analysis. *PLoS ONE* 14(3): e0213136.
55. Purtle J, Lê Scherban F, Shattuck P, Proctor EK, Brownson RC (2017) An audience research study to disseminate evidence about comprehensive state mental health parity legislation to US State policymakers: Protocol. *Implementation Science* 12(1).
56. Lee K, Van Nassau F, Grunseit A, Conte K, Milat A, et al. (2020) Scaling up population health interventions from decision to sustainability - A window of opportunity? A qualitative view from policy-makers. *Health Research Policy and Systems* 18(1): 118.
57. Menon D, Stafinski T, Dunn A, Wong RD (2015) Developing a Patient-Directed Policy Framework for Managing Orphan and Ultra-Orphan Drugs Throughout Their Lifecycle. *Patient* 8(1): 103-117.
58. Gagnon ML, Labonté R (2013) Understanding how and why health is integrated into foreign policy - a case study of health is global a UK Government Strategy. *Globalization and Health* 9(1).
59. Herweg N (2017) Theoretical Approach to the Policy Process: The Multiple Streams Framework. In *International Series on Public Policy*.
60. Béland D, Howlett M (2016) The Role and Impact of the Multiple-Streams Approach in Comparative Policy Analysis. In *Journal of Comparative Policy Analysis: Research and Practice* 18(3).
61. Peng Z, Yang S, Dong L, Sun J (2024) An Effective Alternative Policy Experimentation and the Multiple Streams Framework: An Empirical Study of Chinese Rural Governance Policy Output Sage Open.



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