

Original Article

Public Health Best-Practices to Support Maternal and Child Health: A Scoping Review

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Abstract

Background: As the health of the mother and the child during pregnancy and the first years of life remain crucial to optimal health outcomes and enhanced growth and development, there remains a scarcity of research to inform nursing prenatal, postnatal, and developmental community-based interventions and public health initiatives.

Objective: To explore current research on maternal and child health including home visits, group-based interventions, innovation in program delivery, along with policies, strategies and models of care pertaining to enhancing maternal and infant healthy development in nursing practice.

Methodology: The scoping review was performed in three electronic databases: MEDLINE/PubMed, CINAHL/EBSCO, and PsycINFO/EBSCO. The review was inspired by Arksey, and O'Malley five-stage approach and the principles defined by Levac and colleagues. Relevant studies from the year 2015 to 2023 were selected, while screening and analysis were completed independently by two researchers.

Results: A total of 44 peer-reviewed publications were selected. Four major concepts were reported most frequently in describing maternal and child health initiatives, such as maternal and infant home visits, group-based interventions, innovative technology in program delivery, and strategies and policies pertaining to the enhancement of maternal and infant health outcomes in nursing care.

Conclusions: Providing universal maternal and child health services is essential to ensure positive health outcomes and a healthy beginning. Fostering healthy development through nurse-led home visit intervention remains one of the most common interventions found in this review. However, further research is needed to provide some perspective on this approach and its long-term benefits for mothers and children.

Keywords: "Maternal Health"[Mesh], "Child Health"[Mesh], "Population Health"[Mesh], "Public Health"[Mesh], "Health Promotion"[Mesh]

Introduction

International, national, and provincial health organizations have been advocating for a stronger maternal and child health (MCH) strategy that ensures universal access to prenatal care, antenatal care, skilled birth

attendance, and early postnatal care. These services are crucial for reducing maternal and neonatal mortality rates and enhancing child development and maternal health. The World Health Organization (WHO) (World Health Organization, 2015) has recommended home

visits for all women and infants in the first week postpartum. In many Western countries, women and infants receive either a home visit from a healthcare provider shortly after birth or support through media platforms or community-based settings, such as postnatal clinical visits, group meetings, and breastfeeding services (i.e., postnatal clinical visits, group meetings, breastfeeding services) (Barboza *et al.*, 2018; Barimani and Vikström, 2015; Condon, 2019; Haroz *et al.*, 2020). In Canada, maternal and child health programs utilize a Continuum of Care Approach, which includes promoting antenatal care visits, birthing preparations, hospital liaison, and early and subsequent postnatal in-home visits. However, most home visit programs target high-risk families (e.g., low income, substance abuse) and are not universally accessible to all parents and infants (Dol *et al.*, 2022; O'Malley *et al.*, 2021).

In various Canadian provinces, public health nurses follow up with women after delivery through phone calls and/or home visits. These follow-ups aim to assess needs, recommend community programs, and provide advice on feeding, safety, early childhood development, and more. The specifics of Public Health (PH) home visits and follow-ups vary depending on the province and jurisdiction, including target population, timing of the first visit, subsequent visits, and program content. Despite the universal healthcare system in Canada, postpartum home visits, eligibility, and frequency of follow-up care are managed provincially, leading to inconsistencies in postpartum care across the country. Some authors argue that the current platform and follow-up care are insufficient, highlighting the need for a more standardized national approach to postpartum care (Dol *et al.*, 2022). These provincial differences result in inconsistencies in postpartum standardized care across programs and health systems, which must be addressed to improve access to healthcare and achieve better maternal and child health outcomes (Dol *et al.*, 2022).

Purpose: The objective was to review the current evidence, emerging practices, policies, and population health initiatives from the past

seven years that have impacted maternal and child health at a population health level. This review aims to inform program planners on the most appropriate approaches for Maternal and Child Health (MCH) practices.

Methods

Study Design: The research team followed the five methodological steps outlined by Arksey and O'Malley (2005) to conduct this review, as these steps were most suitable for synthesizing evidence from a large body of literature on MCH practices. The scoping review was conducted and reported in adherence to the recent PRISMA-ScR guidelines (Tricco *et al.*, 2018).

Search Strategy: A literature search, for peer-reviewed publications, was executed between July 2023 to August 2023, via three electronic databases:

MEDLINE/PubMed, CINAHL/EBSCO, and PsycINFO/EBSCO. In collaboration with a research librarian, the search query was tailored to the specific requirements of each database using terms such as “public health”, “maternal health”, “child* health”, “social determinant of health”, “population health”, “health promotion” and “health best practices. The database search was restricted to academic publications published between 2015 and 2023, and limited to works available in English and French.

Identification and selection of relevant studies:

The search yielded 2,520 publications after removing duplicates. Studies included in this review were conducted in countries relevant to the Canadian healthcare system context (e.g., Australia). During literature selection, a student researcher and both lead researchers independently screened all selected titles and abstracts for relevance and data extraction. The inclusion criteria were as follows: 1) reported maternal and/or child health (0 to 2 years), 2) described best practices, 3) studied a context similar to the Canadian context, 4) peer-reviewed quantitative or qualitative studies published in French or

English, as the research team was completely bilingual. Excluded were studies that 1) pertained to best practices related to specific maternal and/or child health issues (e.g., drug

abuse), and 2) animal studies, literature reviews, systematic reviews, as well as editorial, commentary, and theoretical or conceptual articles. Figure 1 provides details of the study selection process.

Data extraction and charting: Two researchers completed the data extraction, resolving any discrepancies collectively. The extraction focused on descriptive information,

such as authors' names, title, year of publication, research location (e.g., context, country), research objectives, intervention or program description, outcomes, and any additional relevant information to address the scoping review's purpose. The complete summary was added to Table 1, and a research report was presented to the provincial MCH program planners.

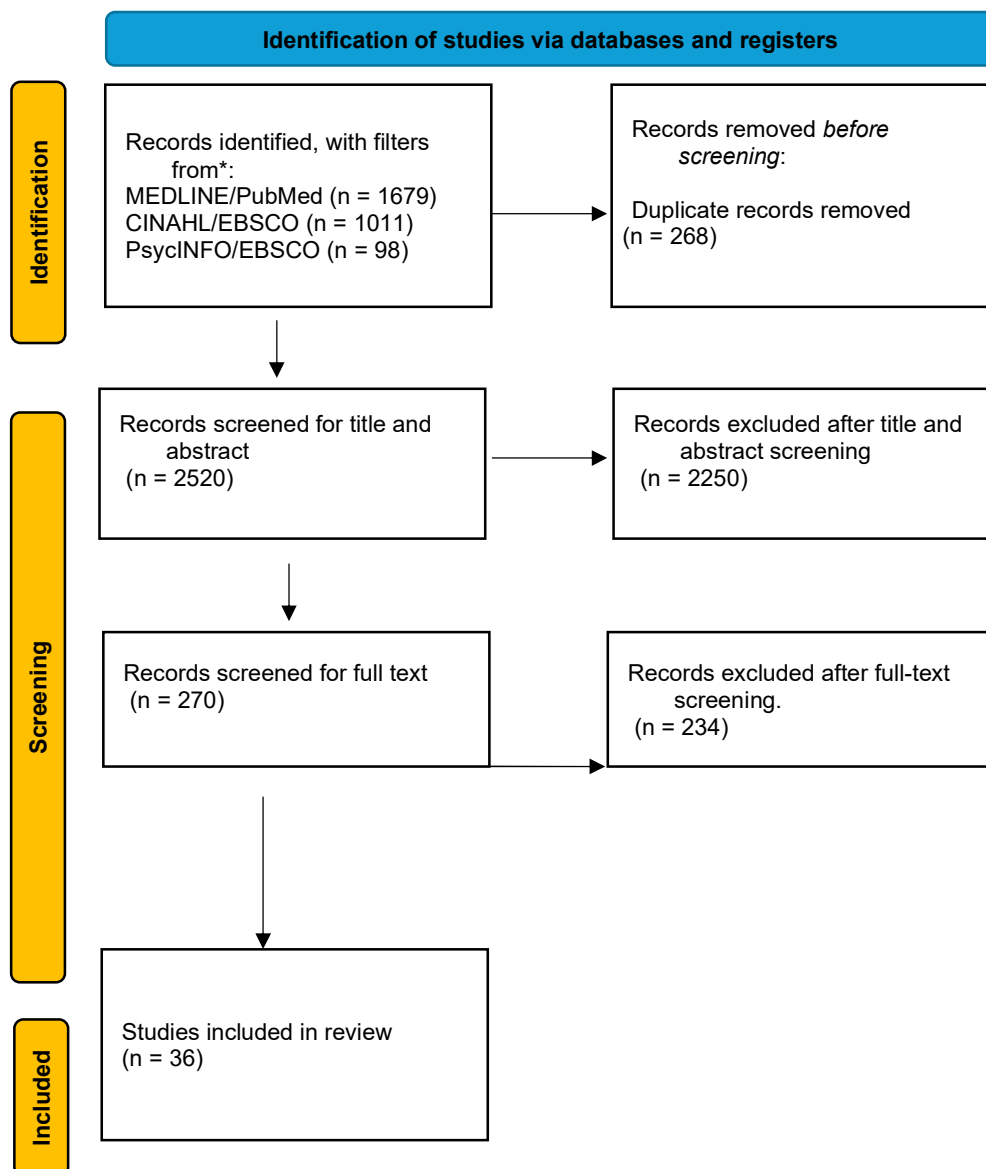


Figure 1. PRISMA-ScR – flow diagram Results

A total of 36 peer-reviewed publications were selected for this scoping review after applying inclusion and exclusion criteria during title, abstract, and full-text screening. The studies included were all written in English and primarily conducted in the United States (n = 19), Australia (n = 6), Sweden (n = 3), Canada (n = 2), and other countries (n = 6). Our review did not find sufficient evidence to support or refute the "best practice" for maternal and infant care outcomes. The team categorized the results based on similar characteristics relevant to the purpose of the scoping review: 1) home-based interventions, 2) group-based interventions, 3) technology-based interventions, and 4) strategies, policies, and models of maternal and child health care.

Home-based interventions

A total of 14 articles described home visit program delivery models of care focused on maternal and child health development. These articles generally outlined a nursing-based approach targeting vulnerable populations. The home visits typically covered content related to enhancing the healthy development of children under the age of two, initiating activities that foster growth, and enabling families to live healthier lives in a safe environment. Most of the selected studies described home-visit programs that emphasized prenatal care, antenatal education, postnatal health promotion activities, clinical evaluations, and growth/development interventions (Altmayer and DuBransky, 2019; Barboza *et al.*, 2028; Haroz *et al.*, 2020; Massi *et al.*, 2021).

Most authors emphasized the importance of a universal home-visit system for all families. The Welcome Baby model, which serves mild to moderate at-risk families from the prenatal period to nine months postpartum, showed significant improvements in breastfeeding, childhood development, maternal well-being, immunization, and safety. Families who joined the program during the prenatal phase experienced more lasting outcomes at 24 months (Altmayer and DuBransky, 2019). Robling *et al.*, (2022) found the Nurse-Family Partnership approach effective in reducing maltreatment and improving educational

outcomes up to kindergarten, including healthy development and reading and writing skills. Barimani *et al.*, (2015) highlighted a successful early postpartum program for new mothers and infants in Sweden, which enhances continuity of care, increases new parents' satisfaction, and builds parental capacities. Saade *et al.*, (2022) found that early home visits provided practical and emotional support, although they did not significantly impact breastfeeding outcomes.

Home visit programs delivered with cultural sensitivity have shown significant outcomes for First Nations (FN) mothers (Campbell *et al.*, 2018; Haroz *et al.*, 2020; Massi *et al.*, 2021). The Family Spirit program, developed with FN communities, is a successful preventive initiative tailored for young FN mothers and their children, aimed at improving maternal knowledge and enhancing child development (Haroz *et al.*, 2020). Haroz and colleagues (2020) recommend a targeted home visit approach, where interventions are adapted to the family's needs and delivered within an appropriate timeframe. The Australian Nurse-Family Partnership program offers culturally sensitive home interventions for FN mothers to improve health and life outcomes for both mothers and children (Massi *et al.*, 2021). The authors emphasize the importance of culturally appropriate approaches to address health inequities and ensure program uptake. Similarly, Campbell *et al.* (2018) highlight the significance of building trust between health professionals and families for the success of the Baby One program.

Two home visitation programs using mentors showed contrasting results. Rotheram-Fuller *et al.*, (2017) found that the Mentor Mothers program, which used local parents as role models, had little impact on the intervention group compared to the control group. In contrast, Lutenbacher *et al.*, (2018) observed the effectiveness of peer mentors' home visitation for immigrant mothers, demonstrating that a trained mentor-led home visiting program can be a beneficial and cost-effective intervention for immigrants and underserved families.

Regarding the cost-effectiveness of home visit platforms, Bohingamu *et al.*, (2021) conducted

an economic evaluation of the *right@home* Nurse Home Visiting (NHV) program in Australia. This program effectively reduced inequitable outcomes for families experiencing socio-economic and psychosocial inequities. Although the program showed small maternal quality-adjusted life years (QALY) gains at 2 and 3 years, it was not cost-effective at 3 years. The authors cautiously noted that, given the relatively high upfront costs of NHV, long-term follow-up is needed to assess the full health and economic benefits over time.

From a health equity perspective, Barboza et al., (2018) discuss proportionate universalism within a health equity model of care. In Sweden, a postnatal extended home visit program offers first-time parents six home visits over 15 months. Results from the qualitative study show that the extended home visits program is better focused on maternal and child health (MCH), child development, and strengthening roles and relationships within the new family unit. Additionally, it emphasizes the influence and support from the broader external context surrounding the family.

Group-based interventions

Seven studies on group interventions were included in this review. These interventions are often community-based, providing pregnant women with help, support, and companionship, particularly in low-income contexts and among various minorities from different cultural backgrounds (Ahlers-Schmidt *et al.*, 2020; Johnston *et al.*, 2017; Ussher *et al.*, 2016). Addressing social determinants of health through community-based interventions has shown positive outcomes for both mothers and children (Gabbe *et al.*, 2017). Group-based initiatives also offer excellent value for community building within a primary healthcare approach, as they reduce social isolation, increase resource-building capacity in the community, and ensure program sustainability (Stone and Burgess, 2016).

Glavin et al., (2017) explored postpartum maternity group public health interventions in Norway, where maternity groups are delivered through well-child clinics to provide support.

Mothers reported strengthening their social networks and gaining confidence in their parenting roles and children's care. Glavin and colleagues (2017) emphasized that nurses should be trained in group dynamics to enhance participant connection and learning. Stone and Burgess (2016) presented evidence of a successful and cost-effective approach for MCH initiatives, such as the Good Start program, which improves parents' well-being and parent-infant attachment. This program builds knowledge and skills to meet babies' needs and is a collective effort between community agencies. Another innovative community-based support program, MOM2B, showed promising results in improving MCH outcomes among low-income families, including increased breastfeeding rates and support for healthy behaviors (Gabbe *et al.*, 2017).

Other unique group interventions for education include Community Baby Showers (Ahlers-Schmidt *et al.*, 2020) and the House Party model (Anderson-Reeves *et al.*, 2017). Mothers who attended the Safe Sleep Community Baby Shower expressed their intention to follow safe sleep recommendations as advised by the American Academy of Pediatrics (Ahlers-Schmidt *et al.*, 2020). Similarly, Anderson-Reeves et al., (2017) used a House Party model to educate mothers on healthy pregnancy, family planning, and stress management. This approach provides access to care and quality health education to women during the preconception period, pregnancy, or inter-conception phase. Participants reported high satisfaction with the House Party approach.

Technology-based interventions

Technology-based MCH interventions are increasingly present in the literature. Six studies included in this review focused on virtual care (Pflugeisen *et al.*, 2016) and web-based initiatives (Sari *et al.*, 2020; Sawyer *et al.*, 2016; Puma *et al.*, 2018). These interventions can be utilized in primary healthcare settings due to their accessibility, timely information provision, and continuity of care in a convenient and flexible manner. They support various service delivery models and reach many women

(Sawyer *et al.*, 2016; Puma *et al.*, 2018). Web-based educational programs in health promotion and protection can be less costly and time-effective for public health nurses (Sawyer *et al.*, 2016).

A web-based education program for primiparous women showed positive results in breastfeeding rates and maternal self-efficacy during the first week and the first month compared to the control group (Sari *et al.*, 2020). Similarly, Sawyer *et al.* (2016) implemented an innovative 6-month nurse-moderated web-based group intervention to support mothers after childbirth. Participants accessed an online home group (e.g., chat), information on essential milestones, educational resources, and support. A trained MCH nurse moderated the group, providing credible health-related information to correct any ambiguous information. The authors measured the frequency of mothers logging in and using the web-based program in the first week postpartum, finding that early engagement was a strong predictor of long-term participation.

Technology-based interventions are also used to deliver virtual care in perinatal health. The OB Care Connect program, for instance, combines in-person visits with a physician and virtual visits from an advanced registered nurse practitioner (ARNP) for low-risk pregnant women (Pflugeisen *et al.*, 2016). This model aims to reduce prenatal care costs and improve perinatal outcomes. By offering prenatal and postpartum visits via virtual care, it achieves similar outcomes to traditional clinical care models. In Canada, Montanaro *et al.* (2019) conducted a cohort study using a technology-based intervention to identify preconception health risks and evaluated the impact of a preconception health educational intervention for women of reproductive age. Although the impact on knowledge and behavior was not established, the study provided insights into risk factors for women of reproductive age.

Strategies, policies, and models of maternal and child health care

This scoping review analyzed 12 articles on MCH postpartum programs, covering prenatal and postnatal policies or strategies (Anderson *et al.*, 2015; Storey-Kuyl, Bekemeier, and Conley, 2015; Gyllstrom *et al.*, 2021; Singleton *et al.*, 2019), healthy breastfeeding (Alliman *et al.*, 2019) and different approaches to care (Alliman *et al.*, 2019; Dodge and Goodman, 2019; Harvey *et al.*, 2018). Leruth *et al.* (2017) described a multilevel approach to breastfeeding promotion, including key elements to enhance initiation and continuity through MCH policies that facilitated changes in postpartum care delivery and access to health promotion programs. Most articles offered a descriptive approach to various aspects of optimal maternity and infant development. For instance, Anderson *et al.* (2015) discussed breastfeeding in the workplace, noting that formal policies were insufficient to encourage breastfeeding. Participants indicated that while having a formalized policy was important, it did not provide actionable details on how the workplace would foster a breastfeeding-safe environment. Many authors also reported factors to consider for optimizing the implementation of health promotion interventions and services throughout the reproductive continuum to enhance MCH (Jacobson *et al.*, 2018; Sijpkens, Steegers and Rosman, 2016; Tabb *et al.*, 2015).

Dodge and Goodman (2019) discussed the challenges of scaling subgroup interventions into a population-based approach for MCH, emphasizing the need for a broader strategy involving various key actors. They introduced the Family Connect model to identify family-specific risks and needs after birth and refer families to appropriate community service providers. Regarding perinatal mental health, Harvey *et al.*, (2018) suggested a community nurse-led model of care featuring a partnership approach, individualized treatment, and flexible service delivery. They observed better mental health outcomes in women who attended services multiple times and highlighted the value of a nurse-led intervention in the community (Harvey *et al.*, 2018).

To address health inequities, Storey-Kuyl et al., (2015) scaled up an individual-level intervention to a community-level intervention, fostering partnerships and capacity building. This led to significant organizational and community changes and increased MCH awareness. Several authors recognized the importance of multidisciplinary partnerships among healthcare professionals and stakeholders for implementing programs aimed at enhancing MCH (Jacobson *et al.*, 2018; Sijpkens, Steegers and Rosman, 2016; Tachibana *et al.*, 2019).

Singleton et al., (2019) focused on the opioid crisis in the United States and the importance of developing effective strategies to enhance maternal and childcare. They emphasized the urgency of research and policies to address prenatal opioid exposure and the high incidence of neonatal opioid withdrawal syndrome (NOWS). The authors urged key informants and policymakers to improve early detection of NOWS, provide more training for health service providers, raise awareness, and enhance treatment for affected families.

Discussion

Evidence from this review suggests that home-visit interventions for MCH remain the primary approach for delivering primary health care and supporting health promotion and protection. Most studies focused on home-visit interventions during the pre- and post-natal periods.

While innovative programs have shown success, evidence is scarce to support moving away from home visit service delivery. Condon (2019) stated that early home visits are an essential strategy for health promotion, healthy development, and maltreatment prevention among vulnerable families, such as those with low socioeconomic status or young maternal age. This aligns with Molloy et al., (2021), who conducted a systematic review on the effects of sustained nurse home visit (SNHV) programs for disadvantaged mothers and children. They reported various positive outcomes, with at least

one significant result for each program included in their study. However, they concluded that further research is needed to identify key elements for effective SNHV programs.

A flexible approach to MCH, tailored to population, cultural, and contextual needs, may be valuable for maternal and child home visits. Altmayer and Dubransky (2019) explained that strengthening families by providing sound and needs-based care through community and intersectoral efforts is key to successful public health postpartum care. While innovative technology-based interventions have shown some improvements in maternal health and knowledge, they face challenges and often attract higher socioeconomic participants. Group-based interventions also offer benefits, promoting capacity-building initiatives among community members and reducing social isolation among maternal populations (Stone and Burgess, 2016). These interventions typically provide health assessments, education, and support, and can be delivered in various ways (Johnston *et al.*, 2017).

Public health agencies worldwide aim to build systems and strengthen public health infrastructure to ensure the health of all. Building capacity from a population health perspective is vital, along with creating accessible programs tailored to the population's needs. The prenatal period is crucial for initiating MCH promotion interventions, yielding better results and allowing mothers to develop skills for their new role (Altmayer and DuBransky, 2019; Sari and Altay, 2020). The postpartum period also offers an excellent window for education and intervention, coinciding with a period of change and motivation for health (Hussain, Smith, and Yee, 2020). Additionally, some studies emphasize the importance of an upstream approach to MCH outcomes by addressing the need for preconception health, an approach currently not part of Canada's public health model (Montanaro *et al.*, 2019; Verbiest *et al.*, 2016).

Table 1. Selected studies characteristics

HOME-BASED INTERVENTIONS				
Authors (date)	Country/Target population	Objectives	Program content	Outcomes/impact
Altmayer & DuBransky (2019)¹¹	<ul style="list-style-type: none"> • United States • Pregnant women and new parents 	<ul style="list-style-type: none"> • Describe universal home visits targeting mild to moderate at-risk families from the prenatal period to nine months following birth. 	<ul style="list-style-type: none"> • Welcome Baby model • Nine contacts before birth until a child's ninth month. • Breastfeeding practice • Learning activities related to early childhood development and children's communication • Problem-solving skills • Encouraging effective parenting 	<ul style="list-style-type: none"> • Significant positive impacts on families at 12, 24 and 36 months. • Greater impacts for families who had enrolled in the program prenatally. • Better outcomes for home learning activities, maternal stress, outdoor play, overweight and obesity, and children's problem-solving skills.
Barboza et al. (2018)²	<ul style="list-style-type: none"> • Sweden • First-time parents 	<ul style="list-style-type: none"> • Investigate the content of the meetings between families and professionals during the home visits and understand how it relates to a health equity perspective on early childhood development. 	<ul style="list-style-type: none"> • Six home visits over 15 months • Covering the care and development of the child • Strengthening roles and relations within the new family unit • Influence and support located in the broader external context around the family. 	<ul style="list-style-type: none"> • Program content covered all the domains of nurturing care as recommended by the WHO Commission on Social Determinants of Health and recent research. • Create enabling conditions for health equity effects and represent a practical example of proportionate universalism.
Barimani & Vikström (2015)³	<ul style="list-style-type: none"> • Sweden • Parents with children less than one year old. 	<ul style="list-style-type: none"> • Explore ways parents experience support from health professionals in the early postpartum period and understand how parenting support is related to management, informational, and relational continuity. 	<ul style="list-style-type: none"> • Postpartum check-ups occur 6 to 12 weeks following childbirth with the midwife • First-time home visits within a week of being discharged from hospital care • Focusing on maternal and childcare management, infant development education, and fostering greater relational bonding. 	<ul style="list-style-type: none"> • Postpartum program enhances continuity of care and increases new parents' satisfaction while building parental capacities. • Parents described support from health care professionals in the early postpartum period, • Parents talked about management, informational, and relational continuity.
Bohingamu Mudiyanse et al. (2021)¹⁸	<ul style="list-style-type: none"> • Australia • Pregnant women are prioritized for their experience of adversity 	<ul style="list-style-type: none"> • Investigate the additional program cost and cost-effectiveness of the 'right@home' Nurse Home Visiting (NHV) program in relation to improving maternal and child health outcomes for 	<ul style="list-style-type: none"> • Right@home • Nurse home visit program • 25 home visits (60–90 min each). 	<ul style="list-style-type: none"> • Probability of right@home being cost-effective is less than 20% at 3 years. • Like previous cost-effectiveness results for NHV programs, right@home is not cost-effective at 3 years.

		children three years of age compared with usual care.		
Campbell et al. (2018)¹⁵	<ul style="list-style-type: none"> • Australia • Aboriginal and Torres Strait Islander families 	<ul style="list-style-type: none"> • Determine the implementation of the Baby One Program, enablers, strategies, and formative implementation outcomes. 	<ul style="list-style-type: none"> • Baby One Program • Family-centred and Indigenous Health worker-led • Promoting family health to give children the best start to life. 	<ul style="list-style-type: none"> • Key factors for effective program implementation between Indigenous Health workers and families.
Haroz et al. (2020)⁵	<ul style="list-style-type: none"> • United States • Young Native American. Mothers and their children 	<ul style="list-style-type: none"> • Describe a participatory process for adapting an implementation strategy, using a precision approach, for evidence-based home visiting programs, Family Spirit. 	<ul style="list-style-type: none"> • Family Spirit • Address behavioural health disparities in young Native American mothers and their children • Lessons ensuring child safety and healthy development, parent-child communication, and goal setting. • Pivot points included whether the client is a first-time mother who has a substance abuse history, has a baby at risk for childhood obesity, and/or has sexual or reproductive health concerns. 	<ul style="list-style-type: none"> • Recognized as a home visiting program meeting criteria for evidence-based early childhood home visiting models.
Lutenbacher et al. (2018)¹⁷	<ul style="list-style-type: none"> • United States • Pregnant Hispanic women 	<ul style="list-style-type: none"> • Report findings from tested home visiting models by peer mentors in improving selected maternal and infant health outcomes in a sample of pregnant Hispanic women living in a large city in Tennessee. 	<ul style="list-style-type: none"> • Maternal Infant Health Outreach Worker (MIHOW) program • Peer mentors • Monthly home visits and periodic group gatherings (approx. 1h/visit) • Improve maternal health and child development, combat isolation and increase access to health care by using the outreach worker or peer mentor. 	<ul style="list-style-type: none"> • Strong effects on Breastfeeding rates and duration • Lower levels of parenting stress and higher levels of available social and emotional help • Fewer depressive symptoms • Less parenting stress • More social and emotional help • Better infant feeding and safe sleep practices.
Massi et al. (2021)¹²	<ul style="list-style-type: none"> • Australia • First-time Aboriginal and Torres Strait Islander mothers 	<ul style="list-style-type: none"> • Explore the barriers and enablers to interagency service integration for the Australian Nurse-Family Partnership Program ANFPP in an urban setting. 	<ul style="list-style-type: none"> • Australian Nurse-Family Partnership Program (ANFPP) • Health education, guidance, social and emotional support to first-time having. 	<ul style="list-style-type: none"> • Barriers: Confusion over program scope, Duplication of care, Tensions over “ownership” of clients. • Enablers: Knowledge and promotion of the program, Cultural safety, Case coordination and partnership forums.

O'Malley et al. (2021)⁶	<ul style="list-style-type: none"> • United States • Maternal substance use 	<ul style="list-style-type: none"> • Describe a model developed specifically to provide specialized support to families affected by maternal substance use and the present data on family goal attainment. 	<ul style="list-style-type: none"> • Team for Infants Exposed to Substance Abuse (TIES) Program. • Family-oriented home program. • Family support specialist visits. • Parent resource specialist visits. • Women's support group meetings. • Community connections. 	<ul style="list-style-type: none"> • Significant positive outcomes in reducing maternal substance use • Increase positive parenting, child and maternal health, family income and housing.
Robling et al. (2022)¹³	<ul style="list-style-type: none"> • United Kingdom • Pregnant women and until the child is two years old 	<ul style="list-style-type: none"> • Measure the effectiveness of family nurse partnership home-visiting program in reducing maltreatment and improving maternal health and child health, developmental and educational outcomes; explore effect moderators and mediators; describe costs. 	<ul style="list-style-type: none"> • Family Nurse Partnership (FNP) program • Nurse-led home visits (up to 64 visits) • Specially trained family • Addressing health, life course development, maternal roles, family and friends and access to health and social services. 	<ul style="list-style-type: none"> • Children in the FNP were more likely to reach a good level of development across all five areas of learning by the end of the reception year than children in the UC arm • Children in the FNP were more likely to achieve good development in all 17 early learning goals.
Rotheram-Fuller et al. (2017)¹⁶	<ul style="list-style-type: none"> • United States • Women six months postpartum 	<ul style="list-style-type: none"> • Evaluate the implementation strategies that could increase the impact of paraprofessional home visitors and their programs. 	<ul style="list-style-type: none"> • Mentor Mothers (MM) • Trained parents (paraprofessional) responsible for home visits or telephone calls. • Addressed daily habits, parenting, child development, and medical adherence. 	<ul style="list-style-type: none"> • No significant differences between the intervention and control conditions at any time.
Saade et al. (2022)¹⁴	<ul style="list-style-type: none"> • Sweden • Early postpartum period 	<ul style="list-style-type: none"> • Explore the association between breastfeeding and an early home visit and proactive telephone support intervention, as well as describe parental experiences. 	<ul style="list-style-type: none"> • Home visits on day three after birth and after that, daily • Support breastfeeding and parents' well-being early after discharge from the maternity/delivery unit compared to usual care. 	<ul style="list-style-type: none"> • No statistically significant difference in breastfeeding among all groups.
GROUP-BASED INTERVENTIONS				
Authors (date)	Country/Target population	Objectives	Program content	Outcomes/impact
Ahlers-Schmidt et al. (2020)¹⁹	<ul style="list-style-type: none"> • US • Pregnant or having recently delivered women in a non- 	Evaluate whether participation in a Safe Sleep Community Baby Shower impacted Health Belief Model constructs related to the American	<ul style="list-style-type: none"> • Baby Shower, • Guided by a trained volunteer. • Presentations on various maternal and child health topics, including a demonstration on safe-sleep-crib. 	<ul style="list-style-type: none"> • Significantly increased intention to follow the recommendation for safe sleep practices.

	Hispanic Black congregation.	Academy of Pediatrics Safe Sleep Guidelines.		
Anderson-Reeves et al. (2017)²⁵	<ul style="list-style-type: none"> • US • Parents in high-risk communities 	<ul style="list-style-type: none"> • Evaluate the impact of a community-based workshop on maternal and child health education on short-term changes in health-related outcomes. 	<ul style="list-style-type: none"> • Trained community health • 90 minutes workshops • Education to support mothers during and after pregnancy, the child's first two years of development, and throughout life • Included various interactive activities (i.e., Educational- Bingo, Jeopardy, "fun fact" sheets). 	<ul style="list-style-type: none"> • Increased knowledge of causes and signs of preterm labour, healthy pregnancy, family planning and stress.
Gabbe et al. (2017)²²	<ul style="list-style-type: none"> • US • African American pregnant women 	Describe temporal changes in maternal and child health outcomes in an impoverished urban community after implementing a community-based program.	<ul style="list-style-type: none"> • MOM2B program • Weekly two-hour sessions • focused on nutrition and increasing social and medical support programs targeting pregnancy through the infant's first year. • Provide women with needed services and serve a healthy meal. 	<ul style="list-style-type: none"> • Breastfeeding at hospital discharge nearly doubled • Decrease infant mortality rate with no deaths reported among the children of Moms2B participants (not statistically significant) • No statistically significant differences in low-birth-weight status.
Glavin et al. (2017)²⁴	<ul style="list-style-type: none"> • Norway • Mothers who participated in a maternity group 	<ul style="list-style-type: none"> • Explore mothers' experiences as participants in maternity support groups at well-child clinics. 	<ul style="list-style-type: none"> • Maternity Group • Meets two to four weeks after birth • Strengthen networks for new families, strengthen mothers' confidence in parenting, and discuss common challenges. 	<ul style="list-style-type: none"> • Maternity groups offered to parents are essential to meet parents' needs and discuss parenting experiences and challenges • Maternity groups can also create a basis for establishing a social network.
Johnston et al. (2017)²⁰	<ul style="list-style-type: none"> • Canada • First-time parents with full-term newborns who received post-partum visits from PHN 	<ul style="list-style-type: none"> • Pilot a group health service delivery model for new parents to assess its feasibility and impact on maternal and infant outcomes. 	<ul style="list-style-type: none"> • Centring Parent (CP) • Six times 2 hr group sessions • Sessions include short one-on-one assessments with a PH nurse, parent-led discussions, vaccination, education, health promotion, and referrals to resources as needed. 	<ul style="list-style-type: none"> • Better vaccination rate than All Our Babies (AOB) • Lower breastfeeding rate than AOB • No significant difference between our CP mothers and the AOB on any of the included psychosocial measures • Successful in meeting the needs of parent participants.
Stone & Burgess (2017)²³	<ul style="list-style-type: none"> • Scotland • All parents from a variety of 	<ul style="list-style-type: none"> • Evaluate the effects of group baby massage courses on 	<ul style="list-style-type: none"> • A "Good Start Web" program • five sessions of baby massage course • Session on baby development 	<ul style="list-style-type: none"> • Parents' self-assessment of increased well-being, of enhanced attunement to their babies and of increased

	socio-economic backgrounds	bonding and relational skills for parents.	<ul style="list-style-type: none"> Weekly sessions of 1.5–2 h. for ten weeks 	awareness of services and confidence in becoming involved with them.
Ussher et al. (2016) ²¹	<ul style="list-style-type: none"> Australia Aboriginal mothers with a child aged 0 to 5 years old. 	<ul style="list-style-type: none"> Evaluate the effect of an early intervention program for First Nation (FN) mothers and young children and examine health practitioners' perspectives on motherhood and the intervention program. 	<ul style="list-style-type: none"> Early intervention programs Weekly meeting facilitated by a therapist Program provided support, discussion, baby watching, art, video making, cooking and nutrition discussion Focused on attachment and mother-child relationship. 	<ul style="list-style-type: none"> Mothers saw the intervention as supportive and time-out Mothers constructed themselves as both traumatized and resilient/good mothers Mothers saw the program as focusing on peer support, time out, and enjoyment of activities like art.
TECHNOLOGICAL-BASED INTERVENTIONS				
Authors (date)	Country/Target population	Objectives	Program content	Outcomes/impact
Montanaro et al. (2019) ³⁰	<ul style="list-style-type: none"> Canada Women of reproductive age 	<ol style="list-style-type: none"> Identify the prevalence of preconception health (PCH) risks among women of reproductive age. Determine the impact of the PCH intervention on knowledge and behaviour. Assess the implementation of the intervention. 	<ul style="list-style-type: none"> Initiated during regular pregnancy medical visits Participants completing the PCH risk assessment tool on a tablet Results were discussed at the scheduled appointment Customized handout to take home. 	<ul style="list-style-type: none"> Increased knowledge of PCH risk Increased motivation to learn more about PCH risk and their health.
Pflugeisen et al. (2016) ²⁶	<ul style="list-style-type: none"> US Low-risk pregnant women 	<ul style="list-style-type: none"> Implement and evaluate a novel model of prenatal care for low-risk pregnant women during in-person physician visits with nurse practitioner visits conducted via videoconference. 	<ul style="list-style-type: none"> OB Care connect: Connect™ Offers virtual visits with an advanced registered nurse practitioner (ARNP). 	<ul style="list-style-type: none"> No differences in the incidence of GDM between groups Incidence of preeclampsia was higher (8.5% vs. 3.4%) among Virtual Visit patients. No differences between groups in mean birthweight, NICU admissions, preterm birth, gestational age at birth, and caesareans.
Puma et al. (2018) ²⁹	<ul style="list-style-type: none"> US Women and children in the postpartum period 	<ul style="list-style-type: none"> Assess the feasibility of making a WIC (Women, Infants, and Children) systems-level change that added measurement of maternal weight and discussion of maternal health 	<ul style="list-style-type: none"> HeartSmartMom (HSM) Electronic kiosk and decision support system Give the mother and provider feedback regarding weight status/BMI, weight and BMI trends, and relevant health risks Provide tailored recommendations. 	<ul style="list-style-type: none"> Significant decrease in sugar-sweetened beverage consumption No other significant improvements in eating/drinking or physical activity behaviours Improve weight status.

		habits into each postpartum maternal and offspring visit in rural clinics in Colorado and assess the impacts of the intervention on maternal diet, physical activity, and weight status.		
Sari & Altay (2020) ²⁷	<ul style="list-style-type: none"> Turkey Primiparous women 	<ul style="list-style-type: none"> Examine the efficacy of a web-based program on the growth and development of the infant, infants' health, and women's self-efficacy level. 	<ul style="list-style-type: none"> Web-based education program Explain the benefits of breastfeeding, bathing and care, safe sleep, and communication with the baby. 	<ul style="list-style-type: none"> Mean LATCH scores of the intervention group were higher than the control Higher breastfeeding rates in the intervention group compared to the Turkish and world averages Parental Self-efficacy (PSS) scores in the intervention group were higher compared to the control group.
Sawyer et al. (2016) ²⁸	<ul style="list-style-type: none"> Australia Mothers of infants aged 0-6 months 	<ul style="list-style-type: none"> Identify factors predicting use, adherence, and attrition with a nurse-moderated web-based group intervention designed to support mothers of infants aged 0-6 months. 	<ul style="list-style-type: none"> Web-based interventions 8 to 26 weeks intervention 3 phases of intervention, including 1) introduction to the website during a home visit; 2) mothers followed a 6-week web course; 3) participating in an extended web-based program of their choosing. 	<ul style="list-style-type: none"> 89.6% of participants completed the 9-month follow-up assessment Frequency of logins during the first week strongly predicted engagement with the intervention.
STRATEGIES, POLICIES, AND MODELS OF MATERNAL AND CHILD HEALTH CARE				
Authors (date)	Country/Target population	Objectives	Policies, strategies, and models content	Outcomes/impact
Alliman, et al. (2019) ³⁵	<ul style="list-style-type: none"> USA Women who received prenatal care at AABC Strong Start site 	<ul style="list-style-type: none"> Explore the medical and social risk factors, care processes, and quality outcomes of Medicaid beneficiaries in the American Association of Birth Center (AABC). 	<ul style="list-style-type: none"> Birthing center for mothers and parents Midwifery service delivery model of maternity care Favor an integrated approach within the US perinatal care system. 	<ul style="list-style-type: none"> Data from 6424 maternal and infant program beneficiaries Preterm birth and low-birthweight rates were less than half those in national data Total cesarian birth rate was less than half the national rate Most of the beneficiaries experienced midwifery-led prenatal care, and a little over half midwife-attended birth

				<ul style="list-style-type: none"> • Program had lower rates of preterm birth, low birthweight, and caesarean delivery for non-Hispanic black and Hispanic women.
Anderson et al. (2015) ³¹	<ul style="list-style-type: none"> • USA • 23 business representatives from a rural city in the Midwest United States 	<ul style="list-style-type: none"> • Describe interpersonal communication related to workplace breastfeeding support. 	<ul style="list-style-type: none"> • Companies often encounter challenges to support employees in their breastfeeding efforts • Community-based effort to increase workplace breastfeeding support in rural regions. 	<ul style="list-style-type: none"> • Increasing interpersonal communication about breastfeeding would enhance the business position on breastfeeding • Increase awareness that certain socio-demographic factors can complicate interpersonal communication in the workplace • Formalize interpersonal communication on breastfeeding.
Dodge & Goodman (2019) ³⁶	<ul style="list-style-type: none"> • USA • 16 Family Connects sites in the United States • Families giving birth 	<ul style="list-style-type: none"> • Describe the Family Connects program, designed to reach every family giving birth. 	<ul style="list-style-type: none"> • The Family Connects • Three pillars program • Includes nurse-home visits, community alignment, data, and monitoring. 	<ul style="list-style-type: none"> • Increase the population health impact among children • Enhance a risk factor assessment scoring in nursing home visits • Align community agencies • Facilitate an integrated data system approach • Require training, supervision, and evaluation.
Gyllstrom et al. (2021) ³³	<ul style="list-style-type: none"> • USA • All infants who were first served by a WIC agency 	<ul style="list-style-type: none"> • Assess whether breastfeeding initiation among participants in the nutritional program for Women, Infants and Children (WIC) agencies changed with the addition of a trained breastfeeding specialist funded by cross-jurisdictional integration. 	<ul style="list-style-type: none"> • Efforts to improve the effectiveness and efficiency of public health efforts. 	<ul style="list-style-type: none"> • Apply a cross-jurisdictional sharing agreement • Integrate all financial and human resources administration and records into a single system • Coordinate integrated breastfeeding in five counties.
Harvey et al. (2018) ³⁷	<ul style="list-style-type: none"> • Australia • Prenatal and postnatal adult women 	<ul style="list-style-type: none"> • Describe the development and evaluation of the Perinatal Wellbeing Service program for perinatal mental health. 	<ul style="list-style-type: none"> • The community model aims to improve mental health (MH) outcomes for prenatal and postnatal adult women at risk of/or with mild to moderate mental health problems. • Clinical nurse consultant and a nurse practitioner (NP) with perinatal expertise 	<ul style="list-style-type: none"> • Most women had a primary diagnosis of MH disorder • Pharmacotherapy reviews and prescriptions were completed • Nurse-led clinics improve patient access to required care, better patient understanding of the illness, enhance

			<ul style="list-style-type: none"> • Provide perinatal mental health assessment and brief intervention and treatment services. 	<p>quality of life, and improve clinical outcomes and medication adherence.</p>
Jacobson et al. (2018) ⁴¹	<ul style="list-style-type: none"> • USA • Underserved English- and Spanish-speaking pregnant and postpartum rural women 	<ul style="list-style-type: none"> • Gain in-depth information from participants on what they would value in a health promotion program. 	<ul style="list-style-type: none"> • Research activity included open-ended questions: <ul style="list-style-type: none"> • Physical activity • Dietary habits • Fetal movement/kick counts • Breastfeeding • Other support resources 	<ul style="list-style-type: none"> • Five overarching themes were observed across domains: <ul style="list-style-type: none"> ○ Conscientiousness ○ Improve health communication ○ Use of technology ○ Identification of barriers ○ Self-education, peer education, and the importance of social support and its continuity.
Leruth et al. (2017) ³⁸	<ul style="list-style-type: none"> • USA • Pregnant women to 6 months postpartum 	<ul style="list-style-type: none"> • Address breastfeeding disparities among a target population and fulfill the national program mission by developing and implementing the WHS program to promote breastfeeding initiation and duration. 	<p>Assessment:</p> <ul style="list-style-type: none"> • Prenatal breastfeeding beliefs and intentions • Breastfeeding initiation • Breastfeeding duration 	<ul style="list-style-type: none"> • Evidence-informed breastfeeding support model is a combination of ongoing individual support and a systems-level approach to promote breastfeeding initiation and duration, serving the women continuously from pregnancy through the postpartum period.
Sijpkens et al. (2016) ⁴⁰	<ul style="list-style-type: none"> • Netherlands • Physicians, nurses, related health care professionals and policymakers 	<ul style="list-style-type: none"> • Identify facilitators and barriers to implementing inter-conception care in Preventive Child Health Care (PCH) services for children older than 5 years of age. 	<ul style="list-style-type: none"> • Regulated by the Public Health Act 2008 • Monitor growth and development • Detect health and social problems (or risk factors) early • Screen for metabolic conditions and hearing in the newborn • Deliver the national vaccination program • Provide advice and information on health, growing up safely, and parental concerns about raising children 	<ul style="list-style-type: none"> • Screening and vaccinations for prevention • Pediatricians and child healthcare for prenatal and postpartum care • Organization of child healthcare services for easy access.
Singleton et al. (2019) ³⁴	<ul style="list-style-type: none"> • USA • Infants and children affected by maternal opioid use in Alaska 	<ul style="list-style-type: none"> • Summarize the main themes of a symposium that focused on identifying emerging challenges, trends, and potential solutions to address the increasing number of infants and children affected by maternal opioid use. 	<p>Current trends:</p> <ul style="list-style-type: none"> • Rising rates of opioid misuse in pregnancy leading to an increased number of infants with neonatal opioid withdrawal syndrome (NOWS) • Polysubstance abuse is a significant problem for children and families. 	<ul style="list-style-type: none"> • Five main priorities for research and policy activities: <ul style="list-style-type: none"> ○ Routine screening for maternal opioid use and early detection of NOWS ○ Train health care provider and increase awareness of NOWS ○ Appropriate treatment for families

				<ul style="list-style-type: none"> ○ Evaluate new and existing approaches ○ Build on existing networks and resources.
Storey-Kuyl et al. (2015)³²	<ul style="list-style-type: none"> ● USA ● Pregnant women, infants and children ● Communities with high rates of maternal smoking, child abuse and neglect, births to single women, and low-income families 	<ul style="list-style-type: none"> ● Describe the transition process of moving the Maternal and Child Health (MCH) services from an individual-focused (mother-child dyads/family) home visiting model to a population-focused, place-based model. 	<ul style="list-style-type: none"> ● Reach and effectiveness of some individual-level MCH approaches were not adequately improving these indicators in these communities ● Population-based approach that addressed policy factors as well as social, organizational, and behavioral change. 	<ul style="list-style-type: none"> ● Early findings show local and state system-level changes in MCH programming, as well as effective community-level efforts to reduce health inequities by: <ul style="list-style-type: none"> ○ Establishing a new goal for MCH ○ Selecting pilot neighbourhoods ○ Developing the workforce ○ Developing and prioritizing population-based interventions ○ Developing evaluation methods.
Tabb et al. (2015)³⁹	<ul style="list-style-type: none"> ● USA ● Public health clinic staff from the Women, Infants, and Children (WIC) programs 	<ul style="list-style-type: none"> ● Analyze findings from focus groups to examine multidisciplinary staff perceptions on the acceptability and feasibility of universal screening for depressive symptoms in a WIC program located in a public health clinic. 	<ul style="list-style-type: none"> ● Clinics are moving toward models of integrated behavioral healthcare, and utilization of screening instruments for depression is important to understand best practices for screening and their benefits. 	<ul style="list-style-type: none"> ● Five main areas related to the acceptability and feasibility of screening for perinatal depression scale: <ul style="list-style-type: none"> ○ Literacy barriers ○ Need for referrals and follow-up with outside services ○ Training and capacity needs ○ Stigma of depression ○ Location and privacy of screening.
Tachibana et al. (2019)⁴²	<ul style="list-style-type: none"> ● Japan ● Prenatal women and 3 months postpartum 	<ul style="list-style-type: none"> ● Examine the effects of the program with respect to making women's mental health better in the postpartum period and improving the state of care for women and their children in the perinatal period. 	<ul style="list-style-type: none"> ● The Suzaka Program ● Provide continuous care and support to the mother and child from the start of pregnancy and after childbirth. 	<ul style="list-style-type: none"> ● Continuity of care is important ● Assessing women's mental health conditions using de EPDS in postpartum ● Providing support through a community's multidisciplinary maternal and child health service can enhance women's mental health and access to health services from public health nurses.

Although there have been advancements in certain areas of MCH, many authors argue that more needs to be done, as women's health has experienced some setbacks. Advocacy organizations highlight a significant lack of improvement in care to reduce disparities and enhance MCH outcomes (World Health Organization, 2025). Advocating for change, better access, improved healthcare, and enhanced MCH outcomes is crucial. Lu (2019) identified issues that need to be addressed to improve the future of MCH, suggesting opportunities such as a transdisciplinary approach to care and technological innovations in healthcare. There is a need for greater discussion on creating appropriate technological initiatives, integrating big data in MCH, and building innovative infrastructure for population health service delivery models to enhance access (Lu, 2019).

Promoting optimal health and development for the population is vital, especially as we undergo significant transformations in our health system. Public health program planners should embrace innovative, community-focused service delivery models. Improving health and access to educational initiatives is crucial for fostering better choices, care, and development among maternal and child populations. The WHO and Public Health Agency of Canada emphasize building capacity through a determinant-based approach within a health-related and regional context, offering unique venues for health, community, and system care. Strengthening collaboration across municipalities and regions will dismantle silos, reduce costs, and cultivate a strong sense of belonging among the people.

Limitations: This review has some limitations. Firstly, it only included peer-reviewed articles from selected databases, excluding MCH grey literature such as program-related reports and policies. Additionally, the studies reviewed were conducted in high-income countries like Canada, which should be considered by decision-makers in lower to middle-income countries when implementing best practices for MCH. Secondly, the broad eligibility criteria of this scoping review required extensive

discussion among the four researchers to ensure proper study selection and intercoder consistency. Despite these limitations, the review provides valuable insights for managing MCH initiatives to improve health outcomes and promote optimal development.

Conclusion: Following this scoping review on various approaches to MCH, we have gathered a range of perspectives on different policies, strategies, and innovative interventions implemented across high-income countries. While most MCH studies did not yield statistically significant results or randomized controlled trials, they highlighted the need for further research and evaluation. This would deepen our understanding of nursing practice in public health and community health, along with its ability to deliver innovative and cost-effective care, ultimately enhancing healthy pregnancies, birthing, and postpartum programs for mothers and children.

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