

Abstract

Home visiting is an evidence-based strategy used to deliver interventions to enhance child and family health outcomes. Such primary health care endeavours demand the full participation of individual and families. We conducted a review of the peer reviewed literature to identify approaches to planning, executing and assessing home-visiting health promotion interventions to determine how parents and children can be best engaged. A structured search of the literature describing home visiting health promotion initiatives (2000-to-2015) was undertaken using a defined search protocol. The quality of the papers was assessed using standard appraisal tools. Sixteen studies were retrieved. A content analysis of the findings sections of the papers was undertaken and guided by the eight phases of the PRECEDE-PROCEED health promotion planning framework. The analysis found that while all the PRECEDE assessment areas were represented no studies included all phases. Parents and children did not appear to be actively involved in undertaking the assessments and evaluation of the home-visiting health promotion programmes. The findings suggest there is a need to develop a consistent home visiting approach that includes comprehensive assessments as part of the planning phases and parent and child involvement at each step of programme development, implementation and evaluation. This approach enables the development of tailored and sustainable health promotion intervention in order to achieve optimal child health outcomes.

INTRODUCTION

Home visiting is a strategy widely used by health professionals to deliver interventions to enhance child and family health outcomes (Donelan-McCall et al., 2009). Importantly, the home visit provides an opportunity to identify child and family health needs in the context of their homes and facilitate early access to health support services (Brickhouse et al., 2013). Research evidence demonstrates that the preschool period is the most suitable time for parents to initiate activities to support their children to develop lifelong health behaviours (Harvard Family Research Project, 2006).

Commonly stated aims of home visiting interventions are to promote children's healthy development and reduce children's risk behaviours (Sweet and Appelbaum, 2004). These interventions provide families with the support of health professionals, especially nurses who are able to identify risk factors for early intervention (Weisner, 2002). Evidence demonstrates that there are positive effects of health education interventions where families are actively involved in promoting physical and mental health to facilitate child development (Ciliska et al., 2001). Nurse visitors are well placed to build partnerships with families to support parents develop health promoting skills (Lam et al., 2014). Such aims can be fully realised by actively engaging parents and children in planning, implementing and evaluating health interventions to ensure tailored designs that best address their children's health needs. Interactive parent-to-child health education fosters greater autonomy and reasoning capacity for participants in comparison to didactic or authoritarian approaches (Rivard and Deslandes, 2012). Besides, enabling parents to take greater

ownership in the design of health education programmes can help to ensure parents reinforce health messages in the home (Golley et al., 2011). Engaging parents and children in programmes facilitates a more comprehensive psycho-social approach to health than just focusing on the prevention of disease.

Systematic reviews in the literature are focused on the association of home visiting programmes either to child health outcome (Peacock et al., 2013) or child maltreatment (Mikton and Butchart, 2009). Despite the importance of parental involvement in developing health promotion and the need to focus on positive parent-to-child engagement for learning healthy behaviours, there are no reviews that synthesize the current evidence to identify ways to better engage parents and children in health home programme development. To address this knowledge gap, a review of the research literature was conducted to identify the health intervention approaches and contexts that can best meet the needs of families and their children, in particular those that improve parent-child teaching interactions to sustain healthy practices in the home.

METHOD

This integrative review was conducted using directed content analysis (Hsieh and Shannon, 2005). This method was chosen as the included studies had different study methodologies, interventions, sample sizes and settings that did not allow the pooling of quantitative data. Rather we aimed to identify patterns within and across the study findings that provided

insight into approaches to home visiting health promotion. The review involved a structured search of the literature using a defined search protocol and author appraisal of full text papers to ensure quality and data extraction. The PRECEDE-PROCEED (PP) health promotion planning model (Green and Kreuter, 2005) was used to analyse the literature by identifying elements relating to the planning, implementation and evaluation of health promotion interventions. In this way strategies and approaches that facilitate successful parental engagement could be identified in the research papers and principal lessons extracted that may be transferrable to other household contexts. The PP framework guides the health promotion programme planner to think logically about the required outcome and work towards the programme goal. It involves eight phases, with the first four involving the identification of health issues, followed by four phases focusing on programme application, process, impact and outcome evaluation.

Search strategy

A search of the literature was undertaken using eight databases: CINAHL[®], Cochrane library, Medline[®], Ovid, PsycINFO, PubMed, Scopus and Web of Science. Google Scholar (advance) was also searched for publications related to the research topic not located in any of the aforementioned databases. The reference lists of relevant journal articles were searched to locate additional materials. The review question was “what health interventions and contextual approaches have been found to better engage the parent and child in a home visiting programme?” The searches were carried out using the key words: child health

nurse/maternal and child nurses/public health nurse/community nurse/primary care nurse/health visitor and health promotion or education home visit programme/home visiting programme/home care service. Table 1 provides the review inclusion/exclusion criterion applied to the initial screening of the papers

[refer to table 1 in supplementary file]

From the initial search of eight databases, 2582 quantitative and qualitative studies were identified. Duplicate articles and those not relevant to the review question or did not comply with the inclusion criteria were excluded. A total of 74 articles were selected for further examination, of these 59 articles were further discarded as not meeting the selection criteria or addressing the review question. One article was found through hand searching from the reference list of an included paper (Allen, 2007). Figure 1 outlines the number of papers initially retrieved and the screening process according to the PRISMA guidelines (Moher et al., 2009).

[refer to Figure 1 in supplementary file]

Appraisal of paper quality

The methodological rigour of 16 papers was assessed using standard tools. The quantitative studies were appraised using the Critical Review Form (Law et al., 1998) and Pluye et al. (2009) scoring system was used to assess the mixed method studies. All authors were involved in the appraisal of the papers.

Data extraction and synthesis

A content analysis was undertaken of the findings sections of all papers using the key stages outlined in the PP framework into content-related categories (Cavanagh, 1997). For the 16 eligible articles, key characteristics were identified including geographic location, study aims, study design, sample size, contextual approaches of intervention and significant findings (Evans and FitzGerald, 2002). The findings section of the papers was further examined using a template to identify key factors related to health promotion planning. The authors moved beyond identifying, listing and tabulating the intervention characteristics and training details to explore relationships within and across the selected studies. This provided a narrative summary of the data and the identification of patterns across and within the findings of the research papers demonstrating insight into the planning, implementation and evaluation of home visiting interventions.

[refer to figure 2 in supplementary file]

FINDINGS

Sixteen papers were included in the review. Fifteen studies employed quantitative research methods. One paper was a mixed methods study. Seven papers focused on asthma prevention. Three studies investigated child injury prevention. Two papers examined child learning and development. One paper examined the relationship between case management and the level of family needs and one focused on fruit and vegetables consumption.

Another study identified the effect of home visits on dental service registration while nine papers focused on environmental tobacco smoke.

[refer to table 2 in supplementary file]

The findings sections of the papers were examined for their attention to the three main areas that represented the eight phases of the PP framework. These are health promotion intervention assessment components, the implementation of health promotion strategies and evaluation approaches.

Assessment components

There are four phases of assessment in the Precede phase of the PP model. Figure 2 indicates the assessment phases included in the studies in the review. Six studies involved social assessments including examinations of social, emotional support for caregivers, parenting and family support (Allen, 2007), as well as parent and child psychosocial (Allen, 2007; Bracken et al., 2009) and quality of life assessments (Brown et al., 2002; Krieger et al., 2009; Primomo et al., 2006; Sweet et al., 2014)..

All studies adopted epidemiological, behavioural and environmental assessments. Studies assessed language delay (King et al., 2005; Olds et al., 2004), family resources (Allen, 2007) and teaching materials (Haire-Joshu et al., 2008) and undertook skin prick allergy tests (Bracken et al., 2009; Krieger et al., 2002), and urine tests for cotinine (Yucel et al.,

2014) . Eleven studies undertook environmental assessments to identify: asthma triggers (Bracken et al., 2009; Brown et al., 2002; Butz et al., 2005; Krieger et al., 2002; Krieger et al., 2009; Primomo et al., 2006; Sweet et al., 2014), the presence of ipecac (Johnston et al., 2000), and home safety inspections for injury prevention (Corrarino et al., 2001), (Johnston et al., 2000; King et al., 2001) (Johnston et al., 2000). Nine studies conducted behavioural assessment including measuring child: dental registration rates (Yuan et al., 2007), health service use (Brown et al., 2002; Krieger et al., 2002; Krieger et al., 2009; Primomo et al., 2006; Sweet et al., 2014), car safety restrains (Johnston et al., 2000), fruit and vegetable intake (Haire-Joshu et al., 2008), injury rates (King et al., 2001) and days of school and parental work absence (Sweet et al., 2014).

Seven studies undertook educational and ecological assessments. Six studies assessed predisposing factors including asthma management (Brown et al., 2002; Butz et al., 2005; Primomo et al., 2006; Sweet et al., 2014), poisoning prevention knowledge (Johnston et al., 2000) and parental injury knowledge (King et al., 2001). Two studies examined reinforcing factors including parental perceptions of child health status (Primomo et al., 2006; Yucel et al., 2014).

One study examined the alignment of teaching materials to the needs of parents and children through the use of focus group interviews and questionnaires (Haire-Joshu et al., 2008).

[refer to figure 2 in supplementary file]

Health promotion strategies implemented

Four main health promotion strategies were identified in the interventions included in this review: the involvement of parents and their children in health education; increasing caregiver self-efficacy; parental education; and essential material supply such as smoke detectors. The study by Brown et al. (2002) aimed to increase parent and child knowledge and skills in asthma management to reduce asthma associated morbidity and enhance caregiver quality of life. The study by Haire-Joshu et al. (2008) involved parent and child nutrition education and the modelling of healthy eating that resulted in increased fruit and vegetable servings and availability within the home. In Primomo et al. (2006) study the focus of the intervention was on increasing the caregivers' self-efficacy to manage asthma through education. Another health promotion strategy employed in various studies was parental participation in an educational talk or workshop (Bracken et al., 2009; Brown et al., 2002; Butz et al., 2005; Krieger et al., 2002; Krieger et al., 2009; Sweet et al., 2014; Corrarino et al., 2001; Johnston et al., 2000; Yuan et al., 2007; Yucel et al., 2014) to increase knowledge and skills, and parent-child interaction (Haire-Joshu et al., 2008; King et al., 2005; Olds et al., 2004). Material supply such as provision of smoke detectors to ensure home safety (Johnston et al., 2000) and the provision of vacuum cleaners and cleaning kits to reduce exposure to allergens (Krieger et al., 2002) were employed as key strategies in two studies.

Evaluation approaches

Various outcome measurements were applied in the studies to evaluate the effectiveness of the home visiting programmes. The findings of two studies suggest that the programmes may reduce overall health care costs (King et al., 2001; Primomo et al., 2006). Child health outcomes measured included asthma symptoms (Brown et al., 2002; Krieger et al., 2009; Krieger et al., 2002; Sweet et al., 2014), language development (King et al., 2005; Olds et al., 2004), injury reduction (King et al., 2001) and emotional regulation (Olds et al., 2004). The number of symptom-free days, medical visits (Brown et al., 2002; Krieger et al., 2002; Krieger et al., 2009), and school and work day absenteeism (Sweet et al., 2014) were used as measurements of intervention effect on the severity of asthma attack and comments from caretakers on service quality (Krieger et al., 2002). Measurements of caregiver quality of life (Brown et al., 2002; Krieger et al., 2009; Primomo et al., 2006; Sweet et al., 2014) were also included in programme evaluations that found significantly higher quality of life at follow-up. Other measures included medication compliance (Bracken et al., 2009; Brown et al., 2002; Butz et al., 2005; Krieger et al., 2009; Krieger et al., 2002; Primomo et al., 2006; Sweet et al., 2014), tobacco smoke exposure (Krieger et al., 2002; Primomo et al., 2006; Yucel et al., 2014), home safety (Corrarino et al., 2001; Johnston et al., 2000; King et al., 2001), dental registration rate (Yuan et al., 2007) and changing eating habits (Haire-Joshu et al., 2008). For these 11 studies significant positive results were observed. In the study by Allen et al. (2007) the parent-home visitor relationship was the most important predictor of the intensity of interventions than the amount of contact. Mother-child

interaction was observed in the study by Olds et al., (2004) that identified improvements in responsive mother-child interaction and learning.

DISCUSSION

This review has identified examples of key phases of the PP framework across 16 studies indicating the important logical sequence of assessment, implementation and evaluation in the development of quality child home visiting programmes (Segal et al., 2012).

Participatory comprehensive assessment and evaluation to address children's needs

The analysis found that while all the PRECEDE assessment areas were represented, no one study included all four phases. Five studies employed only one assessment approach which has been described as an inadequate to develop age-appropriate health promotion interventions and monitor the health issues of children (Allen, 2007). Parents and children did not appear to be actively involved in undertaking the assessments and evaluation of the reviewed home- visiting health promotion programmes.

Home visiting programmes provide significant opportunities to conduct participatory comprehensive assessment and evaluations of child health activities to address the complex needs of children and families (Munroe et al., 2013). Involving parents and their children in conducting such assessments across all the first four PRECEDE phases could potentially strengthen parents' capacity to prevent and promote child health embracing both physical and psychosocial issues (Shonkoff et al., 2009). This holistic approach may also assist in

improving parents' and children's access to required health services (Vuorenmaa et al., 2015).

Parent-child engagement to better sustain child health practices

No studies in the review were found to assess parent-child interaction as part of the PRECEDE assessment phases. Three studies included strategies to enhance interaction but only one evaluated this showing considerable benefit from parent-child interaction. Thus lack of focus on parent-child engagement is problematic and indicates a considerable gap in health promotion research for home-visiting programmes despite being identified as the basis for child positive health practice establishment and sustains (Carr-Hill and Currie, 2013). Greater focus is therefore needed to ensure that parent-child interaction is consistently included as a crucial element of all aspects of child health promotion.

Family-centred home visiting approach

The review identified two studies that highlighted the importance of a strong parent-health professional relationship to actively engage parents and children in health education. This points to the relevance of a family-centred home visiting approach for all phases of health promotion programme design, implementation and evaluation including the development of a positive therapeutic parent-nurse relationship (Gomby et al., 1999). The parent-nurse relationship has also been identified as an important indicator of programme effectiveness (Allen, 2007). Besides, collaboratively working together with parents such improved relationships will increase a nurse's ability to assist parents identify their needs and include

parents together with their children in developing and designing health interventions. Through parent-child-nurse partnerships, collective suggestions are used to identify culturally specific home interventions that correspond with families and their children's actual needs (Lam et al., 2014). The nurse's role is to provide mentoring while observing parent-child interaction and parental teaching skills (Fowler et al., 2012). Enhancing parent-child interactions will provide opportunities for the nurse to mentor parents in assessment of their child's health knowledge and to modify their health practices. Using a reflective discussion at the end of the programme may also assist in providing feedback regarding parent-child communication, appropriate child developmental tasks, learning health knowledge and practices.

Limitations

The review was limited to contemporary English language studies that due to resource implications denied insights from non-English language research. The recommendations in this paper therefore may not be applicable to non-English speaking settings. Content analysis was used to summarise and interpret the findings of the research papers which is susceptible to the reviewers' own subjective interpretations. However, the analysis was undertaken by a team so that judgements could be made using the assessment of more than one reviewer. We also acknowledge the influence of our professional backgrounds from nursing, public health and the social sciences on the analysis and interpretation phases. This team process enabled us to build a collective understanding of the data regarding the

factors that may improve the engagement of parents and children in health home visiting programmes, rather than definitive causal links. A further limitation of this approach is that reproducibility is not possible; rather we aimed to achieve transparency of the process framework through which our findings were derived and explore the transferability of the findings.

CONCLUSION

Studies examined in this review lacked comprehensive participatory assessments as well as the assessment of parent-child interaction in programme development implementation and evaluation. Comprehensive assessment involving the active engagement of and interaction between parents, their children and health professionals is crucial to enable the development of tailored, sustainable health promotion interventions that will be implemented by the family.

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