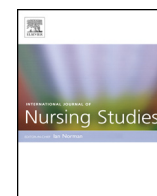


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## Parent education interventions designed to support the transition to parenthood: A realist review



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### ABSTRACT

**Background:** Public health nurses use parent education programmes to support individuals' transition to parenthood. A wide array of these programmes exists; however, the approach must be accommodated by resources available in a publicly funded system. For example, some new-parent education approaches use 1:1 home visiting (with a nurse or trained lay-home visitor) but the costs of this intensive approach can be prohibitive. Because of this limitation there is an interest in identifying effective and efficient new parent educational approaches that can realistically be provided at a universal level. Unfortunately, there is a lack of high-quality evaluation identifying programmes or educational processes that meet these criteria.

**Objectives:** To identify potentially effective new-parenting education interventions that could be implemented at a population level during the transition to parenthood period.

**Design:** Realist synthesis.

**Data sources:** Medline, CINAHL, ERIC, PsycINFO, Sociological Abstracts, grey literature.

**Review methods:** A realist review method generated a total of 72 papers that were used to inform the results. A three-pronged approach was used incorporating an initial search (6), a database search using applicable keywords and MeSH headings (58), and review of literature identified by advisory group (8 grey literature). An 'implementation chain' was developed to outline the overall logic and process behind parent education interventions and to guide the analysis.

**Results:** Seventy-two papers informed this review: 13 systematic reviews/meta-analyses, 34 intervention studies, 9 opinion papers, 8 programme reviews, and 8 grey literature reports. There was no compelling evidence to suggest that a single educational programme or delivery format was effective at a universal level. Some inherent issues were identified. For example, adult learning principles were overlooked and theories of parent-child interaction were not in evidence. No direct links between universal new-parent education programmes and child development outcomes were established. Programme reach and attrition were key challenges. Programme evaluation criteria were inconsistent, with an over-reliance on parent satisfaction or self-reported intention to change behaviour. There was evidence that effective facilitators helped increase parents' perceived satisfaction with programmes.

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**Conclusions:** It is unlikely that a single standardized format or programme will meet all the specific learning needs of parents. Multiple approaches that will allow people to access information or education at a time and in a format that suits them may be of value. The importance of the transition to parenthood and its impact on parent and child wellbeing warrant careful consideration of current programming and careful evaluation of future initiatives.

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### What is already known about the topic?

- Public health nurses use parent education programmes to support individuals' transition to parenthood.
- Many programmes exist to support parent education.
- However, examination of which programmes are most effective is required.

### What this paper adds

- A comprehensive review of the literature related to parenting education interventions.
- Discussion of the limitations of current parenting education programmes and strategies to support parent education.

## 1. Introduction

It has long been understood that transitioning to parenthood can be a stressful and difficult time for parents (Buist et al., 2003; Doss et al., 2009; Gottlieb, 1985; May and Fletcher, 2013; Redshaw and Martin, 2014). To help support parents during this challenging time, public health units have consistently used nurse facilitators to deliver parent education (prenatal and postnatal) as a primary strategy (Friedewald, 2007). Parent education is defined as "a process that involves the expansion of insights, understanding, and attitudes and the acquisition of knowledge and skills about the development of both parents and their children and the relationships between them" (Campbell and Palm, 2004, p. 18). Parent education programmes have been employed with the belief that increased knowledge will reduce parental stress, improve knowledge and awareness of healthy parenting behaviours and activities, and promote healthy parent–child relationships. The ultimate goal of this education is to improve developmental outcomes for children (McDermott, 2006). Parent education thus describes a range of activities designed to address specific learning needs that would promote the physical, psychological, and social growth and development of the child.

One major challenge for new-parent education providers is that these initiatives require considerable resources, time, and involvement of both the knowledgeable and trained public health nurses and the parents for which these programmes are designed to support. Recent analyses have started to question if parent education programmes have the reach and impact that is commensurate with the resources required to implement and maintain high quality programming (Coatsworth et al., 2006; Wilson et al., 2012).

The primary assumption of parent education, implicitly and explicitly, is that challenges with parenting and parental distress are the result of a knowledge deficit. This leads to the expectation that pre and postnatal parent education will help to resolve this knowledge deficit (e.g., by providing information to parents about breastfeeding, healthy eating strategies, or information on child development). Further, parent education is based on an assumption that when parents are equipped with this new knowledge, it will reduce their distress and promote positive changes in parental attitudes and ultimately behaviour. These positive changes in parental behaviour will then support the overall goal of helping parents create a nurturing environment for their children. Of course, parent education is also employed with the hope that there will be benefits beyond simply educating parents (e.g., developing a trusting relationship with the facilitator, connecting with other parents, and reducing isolation), but the primary focus of these initiatives is on providing a curriculum to educate people on becoming better parents (McDermott, 2006).

Prior to initiating this realist synthesis, we examined the records for systematic reviews, literature reviews, and meta-analyses on efficacious universal parenting programmes. One of the immediately apparent issues was that there are few high quality studies available to validate the efficacy of universal parent education programmes (Bryanton and Beck, 2010; Sandler et al., 2011). The majority of these reviews looked at literature that focused on targeted populations such as low-income families or teen mothers, included a component of home visiting, or focused on a very specific topic area (e.g., infant feeding or reducing infant crying). Individual or 1:1 parenting education programmes, such as home visiting, have been reviewed extensively and while most of these reviews find that well-designed home visiting programmes are efficacious across a range of child developmental outcomes, they are expensive to implement and challenge the fiscal realities of a publicly-funded system with limited resources (Barnes, 2003; Benzie et al., 2008; Olds and Kitzman, 1993; Olds et al., 2007). For example, in the Region of Peel in Ontario, Canada anticipated over 17,500 births in 2012. To conduct individual, 1:1 home-visiting programming with even a portion of parents requires considerable investment of professional or trained lay-visitor time. As such, it is not typically feasible to use intensive programming as a universal parent education programme in large centres with a high birth-rate without a large investment and a change in funding structure.

Other more fiscally manageable programmes include those that can be made available to larger, more

universal audiences. A universal new-parenting programme is one that is available and accessible (at least theoretically) to all parents in a community, rather than to a specific group (e.g., parents of children with medical issues). This is a population-level approach, where the focus is on providing education for all, rather than providing information to a specific group of parents. These universal, population-level approaches include parent education provided within a community, health clinic, or hospital setting and pamphlets and videos/DVDs, or web-based programmes. The expectation with these universal programmes is very similar to the logic underlying the more intensive 1:1 home visiting programmes. There have been many approaches described and evaluated in the literature, but there is a serious issue with synthesizing the existing evidence. The quality of the evaluations for universal new-parent programmes is not typically sufficient to include in systematic style reviews (Sandler et al., 2011).

A realist synthesis was deemed the appropriate method to distill promising parent education practices that are associated with benefits to parents and infants (Pawson, 2006a). According to Pawson (2006a), a realist synthesis is a method by which a large and diverse selection of literature can be synthesized to inform policy and design effective interventions. Despite being a relatively new approach in health research, the realist review is gaining increased traction for the benefits it offers when summarizing complex social phenomenon (Pawson, 2006a; Wong et al., 2013). It is useful in synthesizing a large and diverse selection of literature for informing policy and in identifying and designing effective interventions. Several factors influenced the decision to utilize a realist approach in this review of parent education initiatives.

First, there are constraints associated with using a traditional systematic review for a knowledge synthesis in a dynamic and complex system (Wong et al., 2013). Pawson (2006a) argues that, in many domains of inquiry, systematic reviews target only extremely focused and controlled studies (i.e., randomized control empirical studies). For logistic or ethical reasons, such studies are not possible in some social contexts, such as when offering universal parenting classes. In evaluations of parent education, random assignment to treatment groups may not be ethical or practical, and participant attrition is commonplace as parents cannot be compelled to attend. Moreover, parents who choose to attend or continue attending are usually qualitatively different than those who do not (Cliff and Deery, 1997; Snow et al., 2002). Further, heterogeneity of outcomes measured in parent education studies may hamper the ability to compare findings across single studies. Finally, systematic reviews omit and ignore studies that are assessed to be of lower quality, but nonetheless could contain key information about “what works for whom, in what circumstances, and in what respects?” (Pawson, 2006a, p. 80). Unlike systematic reviews, realist reviews can incorporate less rigorous research studies on the grounds that even imperfect studies may contain useful information. This concept is captured succinctly as a “digging for nuggets approach” (Pawson, 2006b, p. 134).

In addition to quasi-experimental designs, correlational studies, and qualitative approaches, realist syntheses also advise the inclusion of ‘non-peer reviewed’ studies that may contain important information, including: (a) internal programme evaluations; (b) unpublished, but publicly available research reports; and (c) programme development manuals. Key to the realist approach is the need for expert judgement and insight into the identification, selection, summary, and analysis of the identified literature during the review. Unlike a systematic review, a realist synthesis is not expected to be, nor could be, replicated exactly from group to group. Rather, a realist synthesis relies on topic- and context-specific expertise and critical evaluation to guide the analysis of the literature (Greenhalgh et al., 2011; Pawson, 2006a; Pawson et al., 2005).

Thus, the goal of this review was to identify potentially effective parenting education interventions that could be implemented at a population level. The research question addressed by our study is “What are the universal population-level parent education interventions that public health nurses can implement to support children’s social, emotional, and cognitive development from the prenatal period to the end of the first year of life?” If we identified a lack of empirically validated interventions for parents, a secondary question would be “Are there aspects of interventions based on the logic of universal, population-level approach to parent education that could be used to develop an intervention to support child developmental outcomes in a community?”

## 2. Methods

### 2.1. The realist approach to synthesizing parent education interventions

This review is one of the three realist reviews conducted by the Nurturing the Next Generation Research Group on population-level interventions for people transitioning to parenthood. The two other topic areas were social connectivity and social marketing and were summarized in separate publications. For an overview of the Nurturing the Next Generation, visit [www.nurturingmatters.ca](http://www.nurturingmatters.ca).

## 3. Inclusion criteria

In order to ensure that the review focused on transition to parenthood, initiatives that target parents during pregnancy and up until the end of the first year of a child’s life were included. The initial review process also was limited to initiatives that were universal (i.e., designed to be relevant and accessible for all parents in a community) and not for parents with specific issues such as parents with high-risk pregnancies, children with special needs, parents with mental health issues, or parents involved with child protective services. This was not to negate the importance of targeted educational interventions, but to maintain the context of public health as a primary and preventative approach for supporting families. Once the initial review was completed, in keeping with the realist review process, the search was broadened

to include relevant “nuggets” of information from other domains and papers that were not included in the scope of the first iterations of the review; for example, studies that focused on target populations but contained information that could be applied to a universal approach to parenting (Pawson, 2006b, p. 134). Examples of the types of parent education programmes included: (1) group parent education provided within a community, health clinic, or hospital setting, and pamphlets and (2) videos/DVD's, or web-based programmes.

#### 4. Searching processes

A realist synthesis is not a linear, straightforward process. It requires multiple iterations and surveying papers obtained using multiple search techniques (Pawson, 2006a). The literature search began with a three-pronged approach, which is summarized in Fig. 1.

The first pathway began with a key report by the Scottish Collaboration for Public Health Research and Policy (Geddes et al., 2010). This paper came to the attention of Peel Public Health at a conference for professionals in this field. This is a report that provided an overview of all the parenting education programmes offered in Scotland at the time. The reference list for this report along with a listing of ‘as cited by’ documents referencing Geddes et al. (2010) was used to generate a list of potential papers for the synthesis. This ‘snowballing’ technique, outlined by Auerbach and Silverstein (2003), was used throughout the search process. In every case, when we found a relevant paper we would review the reference list to see if there were additional papers that could be used to inform our process. The papers were reviewed to ensure that they met the inclusion criteria of being English language (due to a lack of expertise and resources for translation), non-targeted, population-level parent education initiatives focused on the prenatal/early infancy stage of child development. This analysis generated six papers that contributed to our review (see Fig. 1).

The second search pathway involved a health science librarian who searched for citations based on key words identified in a brain-storming session with the Nurturing the Next Generation (NTNG) Core Working Group and a smaller advisory group of experts. Five data-bases were queried (Medline, CINAHL, ERIC, PsycINFO, and Sociological Abstracts) using the subject headings listed in Query 1 of Fig. 1. This query resulted in the identification of over 4000 potential papers. The NTNG Core Working Group deemed this search as impractical to review comprehensively for the synthesis. A sampling of the 4000 papers was conducted to identify more specific search terms. This list was combined with terms used in relevant papers from the first search pathway. The combination of search terms was then used for a second, more focused query (see Query 2 in Fig. 1). This search yielded 1552 potential papers. Due to the large number of published articles, the search was initially limited to recent publications (i.e., 2008 or later); earlier papers were added if they were deemed relevant at subsequent iterations of the search process. A title and abstract search involving a sub-group of the research team

was used to identify 244 papers (e.g., non-targeted, population-based parent education interventions, written in English). An abstract review was conducted and yielded 58 citations that met the criteria.

At this point, iterative process began when a list of articles was given to the advisory group of experts. The group met to review the papers and identify noticeable gaps in the list, based on their expertise. This group (6) consisted of experts in child development, public health, realist review methodology and nursing. A list of an additional 43 publications was generated and reviewed for inclusion. The group identified 19 paper or grey literature/reports that were examined for inclusion. This generated a further 8 reports for the review. The entire search process resulted in a total of 72 publications (published and grey literature) that were included in the realist synthesis (a summary of these papers can be found in Table 1).

In keeping with the realist review method (Pawson, 2006a, p. 106), an ‘implementation chain’ was developed outlining the overall logic and process behind parent education interventions. This included the underlying rationale for why universal educational programmes were needed, how they operated, and what impacts were expected (see Fig. 2). This implementation chain is needed to allow the reviewers to identify promising elements of approaches when the overall study is problematic. Initially, the early iterations of the search process attempted to identify papers with a minimum of two developmental outcome points (i.e., child/parent relationships and developmental measures). No studies actually did this. As per the realist review process, later iterations in the search process focused on identifying research that addressed components of the implementation chain.

To support the search process, a data extraction table was used to manage and organize later searches in the iterative process required by a realist review (Pawson, 2006a). At each stage this table was reviewed by the entire research team, consisting of experts in public health, nursing, child development, father involvement, maternal health, and realist methods. The group identified literature gaps and made recommendations about further literature to review. In many cases, this involved searches of both the published literature and grey literature. The implementation chain and data extraction table were continuously updated. Meetings with the experts were held approximately every four months in order to track ongoing developments to the entire implementation chain and table and to solicit their recommendations for later reviews.

Pawson (2006a) noted that the repetitive process of summarizing, critiquing, and reviewing is essential in a realist synthesis. Professional judgement cannot be replaced with a set of inclusion criteria, as even a highly flawed paper may contain a piece of information which could contribute to the understanding of the implementation chain. Ideally, the data extraction table becomes increasingly complex and complete so that principles can be drawn from it that clarify what works and the factors that are implicated in success. The research team also included the concept of saturation. Saturation occurs when a review of a number of new papers yields no new information (Nixon and Wild, 2014; Polit and Beck, 2012).

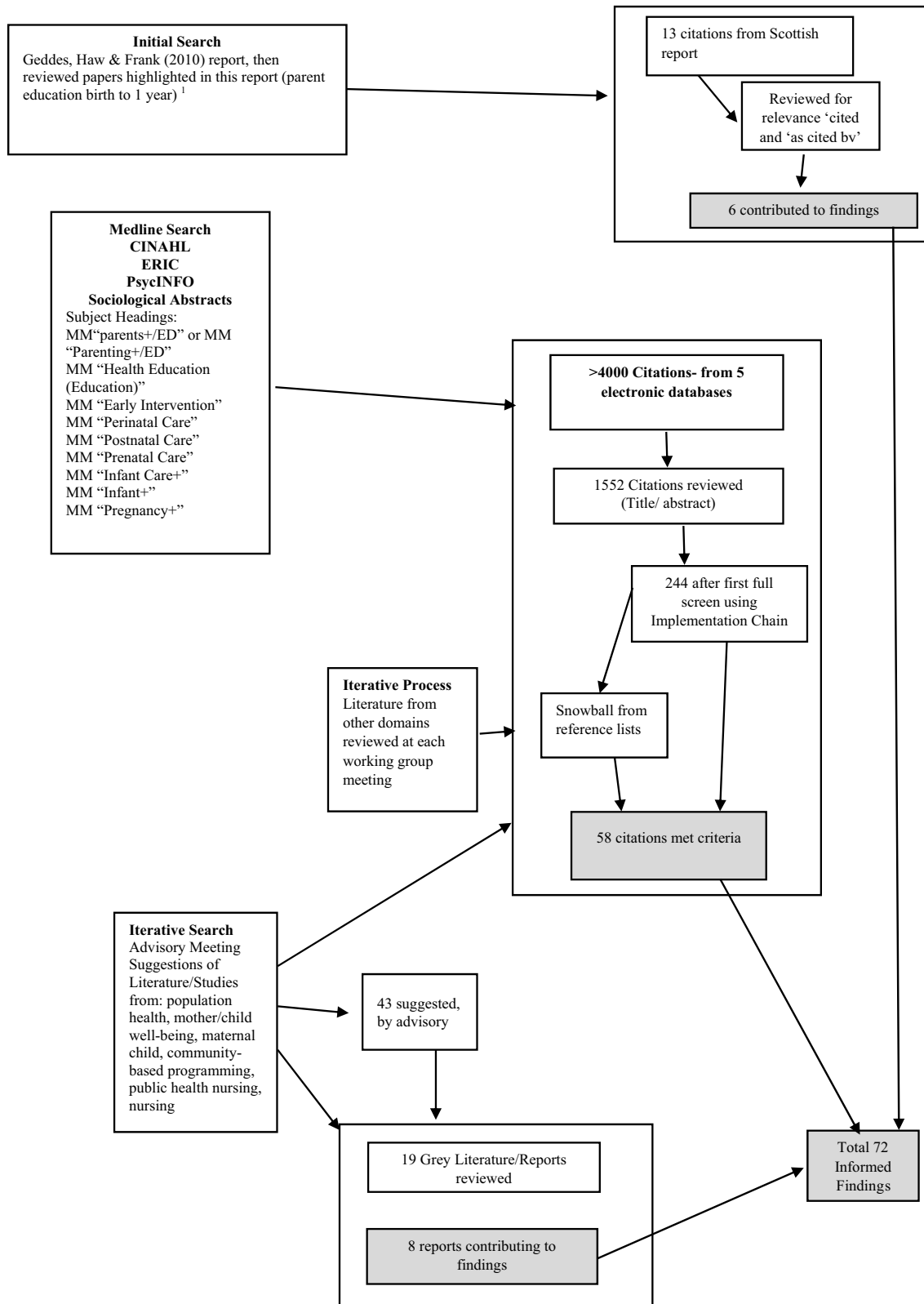


Fig. 1. Search strategy.

**Table 1**  
Document extraction.

Citation	Summary of findings from each article	Country	Informed findings
<i>Systematic, literature, and realist reviews and meta-analyses</i>			
Bryanton and Beck (2010)	–“the benefits of educations programmes to participants and their newborns remain unclear” (p. 2) –education on enhancing sleep potentially increases mothers knowledge –some link to improving sleep noted	Canada	<b>A</b>
DeHaven et al. (2004)	–indication that faith-based programmes can improve health outcomes	USA	<b>A, C</b>
Engle et al. (2011)	–early childhood most effective and cost effective time to support child development –studies on disadvantaged populations show some links to improving child development outcomes –home visiting programmes linked to positive outcomes for parents	USA	<b>A, C, D</b>
Gagnon and Sandall (2011)	–no evidence for efficacy of birth to one year time period parent education –no consistent effect of prenatal education on any relevant childbirth outcome –some increased knowledge only	USA	<b>F</b>
Gardner and Deatrck (2006)	–coping, role adaptation and caregiving skills increased with group intervention in high risk populations –groups held in primary care setting less effective –had no effect on maternal sense of competence, perceive social support, self-esteem or depression in high risk mothers –improve maternal knowledge of infant cues, increase maternal confidence, increase maternal sensitivity, increase mother–infant interaction skills –increase positive maternal perception of infant at 1 month	USA	<b>B, C, D</b>
Kane et al. (2007)	–reviewed programmes for parents whose children demonstrate behaviour problems	UK	<b>C, D</b>
Law et al. (2009)	–some benefit to peer to peer support for mothers with mental health issues –need of well-trained practitioners – some success with incentives i.e. transportation, child care –need for parent-centred education	UK	<b>A, C</b>
Schrader McMillan et al. (2009)	–need multipronged approach to breastfeeding group, support, media –mixed reviews of impact on antenatal classes on health promotion behaviours –massage and music therapy positively affect PPMD –transition to parenthood classes increase confidence, well-being and satisfaction relationship mom/dad/babe –men only prenatal classes help	USA	<b>A, B, C, D</b>
Mercer and Walker (2006)	–more intensive longer term interventions better; cultural sensitivity increases uptake –programmes increased knowledge but did little to increase self-definition or attachment –some reported improvement in maternal knowledge of infant cues, minimal increase maternal confidence, maternal sensitivity, increase mother–infant interaction skills –increase positive maternal perception of infant at 1 month	USA	<b>A, B, D</b>
Petch and Halford (2008)	–self-administered home programmes did show some success	Australia	<b>A, C, D</b>
Pinquart and Teubert (2010)	–6 months optimal time for intervention –importance of professional facilitation	Germany	<b>C</b>
Sandler et al. (2011)	–paucity of evidence to support that processes used in parent education programming account for effects –authors suggest that theoretical processes should be identified a priori, outcomes should be measured, and intervention should improve parenting –need to show connection between changes in outcomes	USA	<b>A, B, E</b>
Schrader-MacMillan, Barlow and Redshaw	–antenatal education on health promotion activities minimal evidence of improving –no evidence of preventing depression; evidence of improvement in high risk –transition to parenthood some evidence of well-being, confidence, satisfaction –fathers benefit men only sections	UK	<b>A, B, D</b>
Studies	Design and measures		
Adachi et al. (2009)	–expert opinion what parents need – the include understanding transition, biology, attachment, health promotion, participants questions must be starting point, flexible times, \$\$, availability, support to leaders, evaluation, dialectic pedagogy	Japan	<b>B, D</b>
Ahldén et al. (2008)	–parents questions must be starting point –parents need to want to be there –professionals perceptions of parent desires	Sweden	<b>B, C</b>
Barr et al. (2009)	–early provision of materials best – cannot say knowledge changes behaviour	USA	<b>A, D</b>
Benzies et al. (2008)	–fathers liked timing of intervention to suit their own needs-liked active participation	Canada	<b>A, B, E</b>



Table 1 (Continued)

Studies		Design and measures		
Bloomfield and Kendall (2007)	–changes in parenting efficacy not maintained over time	Non-C	UK	<b>B, D</b>
Bohr et al. (2010)	–parent education can decrease parental stress and increase parental confidence	Non-C S	Canada	<b>B, D</b>
Cliff and Deery (1997)	–lower class and young single moms do not attend parenting/prenatal classes consistently	Non-C A,S,P	UK	<b>B, C</b>
Coatsworth et al. (2006)	–three broad patterns of attenders dropouts, variable and consistent – important factors facilitator and social connections with other attenders	Non-C A	USA	<b>B, C</b>
DeStephano et al. (2010)	–video prenatal education is acceptable to Somali participants	Qualitative S,P	USA	<b>C</b>
Doherty et al. (2006)	–community based, couple intervention about parenting can improve father skills–some suggestion that work days are better	S, Non-C A	USA	<b>B, C, D, E</b>
Duncan and Bardacke (2010)	–use of mindfulness as strategy in pregnancy to decrease anxiety–pilot	Mixed methods S, A,P	USA	<b>B, D</b>
Fabian et al. (2005)	–prenatal classes more helpful for pregnancy and labour than parenting – did not affect labour but did improve social connectivity–low SES women least likely to attend	Survey S,P, A	Sweden	<b>C, D</b>
Fagan (2008)	–no clear behavioural impact for mothers, some indication fathers more engaged after classes	RCT, Non-C, S, P,	USA	<b>D</b>
Freda et al. (1993)	–obstetric history influences interest/choice of topics–great difference in what parents are interested in and what professionals think they are	Survey S	USA	<b>B</b>
Friedwald, (2007)	–content for fathers needed –attributes of facilitators important	Qualitative A	Australia	<b>C</b>
Gao et al. (2010)	–classes with clear theoretical base more successful	RCT, Non-C, S	China	<b>B</b>
Goto et al. (2010)	–Nobody's Perfect – increase in reported self-efficacy by Japanese mothers	Non-C, A,S	Japan	<b>C, D</b>
Guest and Keatinge (2009)	–targeted group – low SES –high attrition rates	Case study S,P	Australia	<b>C, D</b>
Hallgren et al. (1995)	–social connectivity with other moms important –more focus on male preparation for labour and delivery needed	Qualitative P	Sweden	<b>C</b>
Hartung and Hahlweg (2010)	–classes decreased stress–targeted group – workplace – high attrition	C P, S, A	Germany	<b>C</b>
Heinrichs and Jensen-Doss (2010)	–paying for participation increases participation but not outcomes	Qualitative *paid	Switzerland	<b>C</b>
Hiscock et al. (2008)	–high uptake on classes held in a primary care centre–modest improvement in parenting factors that predict problem behaviours in kids–did not reduce externalizing behavioural problems or affect maternal mental health	Non-C, P, A	Australia	<b>C, D</b>
Kuo et al. (2009)	–Internet programme increased maternal knowledge–some suggestion of increase in self-efficacy – not directly linked to Internet – could be professional contact	C	Taiwan	<b>C, D</b>
Leff (1988)	–video parenting classes worked as well as live classes for infant care content	Non-C S	USA	<b>B, C, D</b>
Matsumoto et al. (2009)	–parents need a convenient place for classes –programme needs to have cultural competence –parents need to have a perceived benefit to continue	Survey S	Japan	<b>A, B, C, D</b>
McKellar et al. (2008)	–use of postcards to give information geared to fathers–some success	Action research S, P	Australia	<b>A, B</b>
Miller and Sambell (2003)	–intention of participants is important – leaders need to know what parents want from education	Qualitative S	UK	<b>B, D</b>
Niccols (2008)	–classes compared to home visiting for Right from the Start – similar results – small improvement in attachment	RCT, C, A	Canada	<b>D</b>
Rahman et al. (2009)	–Learning Through Play – increased maternal knowledge and better attitude – no links to change in behaviour	RCT, Non- C S,C	UK	<b>D</b>
Salonen et al. (2008)	–parent satisfaction with Internet parent education – improved self-efficacy	S, Non-C	Finland	<b>A, B, D</b>
Sink (2009)	–both information from professionals and from social contacts important for new moms	Descriptive P	USA	<b>B, D</b>
Svensson et al. (2006)	–use of adult learning principles helpful – social connections between parents important – knowledge did increase	Survey S,P,A	Australia	<b>B, D</b>
Svensson et al. (2008)	–menu of services–support/social from others in group	Survey S,P	Australia	<b>B</b>
Tighe (2008)	–good facilitator important – support from other participants important	Qualitative S	Ireland	<b>B, C</b>
<i>Opinion papers</i>				
Barnes (2003)	–developmental approaches to education likely have more impact–parents need to want to come		UK	<b>B</b>
Corwin (1998)	–include parenting in prenatal		USA	<b>A, B</b>

Table 1 (Continued)

Studies	Design and measures		
Craig and Dietsch (2010)	–prenatal classes beneficial for first time mothers – do not decrease anxiety or foster self-confidence	Australia	<b>B, E</b>
Friedewald (2007)	–higher SES parents are those that attend prenatal classes – male facilitators needed for male groups	Australia	<b>C</b>
Jackson and Dickinson (2009)	–experiential learning opportunities are key to learning for parent education	USA	<b>C</b>
Jaddoe (2010)	–virtually no evidence about the cost-effectiveness of antenatal education programmes worldwide	Netherlands	<b>A</b>
Patrick et al. (2008)	–consider partnering between professionals and clergy-faith based education partnered with professionals	USA	<b>B, C</b>
Sanders et al. (2002)	–Triple P helpful at an universal level-programme reviewed	Australia	<b>A, B, C, D</b>
Spoth et al. (2002)	–rigorously evaluate more Theory-Based Universal and Selected Family-Centred Interventions Further address cultural diversity and cultural sensitivity –develop better strategies for recruiting, retaining, and fully engaging families	USA	<b>C</b>
<i>Programme reviews</i>			
Billingham (2011)	–Preparing for Pregnancy Birth and Beyond – review suggests the programme increases satisfaction, decreases anxiety, decreases LBW, increases breastfeeding	UK	<b>D</b>
Borden et al. (2010)	–group dynamics enhance curriculum concepts – benefits implied	USA	<b>B, D</b>
Brown (2006)	–continuum of services work well-shared entrepreneurial and public with shared record	USA	<b>B, D</b>
DeStephano et al. (2010)	–prenatal videos were helpful for parent education – translated for Somali women	USA	<b>A, D</b>
Feil et al. (2008)	–Playing and Learning Strategies Programme (PALS) was effectively delivered via Internet – increased knowledge – patient satisfaction	USA	<b>A, D</b>
Potter and Carpenter (2010)	–increased engagement of fathers improves relationship with children – increased social support is important	UK	<b>A, C, D</b>
Rowe and Fisher (2010)	–focus on maternal and infant health rather than depression-involve partner, be interactive	Australia	<b>B, C, D</b>
Tedder (2008)	–to be confident parents need to: understand a newborn's state, read infant's cues, appreciate baby's capabilities improve maternal knowledge of infant cues, increase maternal confidence, increase maternal sensitivity, increase mother–infant interaction skills; language clarity, concreteness, association of new ideas with familiar ideas	USA	<b>B, D</b>
<i>Grey literature</i>			
Adamson et al. (2010)	–making connections within the community needed as well as education	Canada	<b>B, C</b>
Love et al. (2013)	–importance of early intervention to impact child development parents need education	USA	<b>A, B</b>
NCAST	–series of parent education programmes i.e. Keys to Caring –suggest benefits of doing group education for support of parents	USA	<b>A, B</b>
Public Health Agency of Canada	–combination of sessions and videos effective –summative Evaluation of CAPC children at greatest risk are not reaching their potential	Canada	<b>A</b>
Government UK	Every Child Matters –well-trained facilitators important to success Multi-point focus	UK	<b>A, B, C</b>
Sanders et al. (2005)	–need for early intervention –need for parenting education in a well-planned structured way –increased parental confidence	Australia	<b>A, B, C</b>
Shaw (2012)	–importance of early child development and support for parents	Canada	<b>A, B</b>
University of Wisconsin (1994)	–community based parent education works well –more than just education needed – need social support –more than one choice for parents	USA	<b>B, C</b>

**Key:** Design and measures: C, control group; Non-C, no control group; O, outcome measures; S, satisfaction measures; A, attrition reported; P, parent report intent to change. *Informed findings:* The Letters indicate which section of the major findings the paper informed. **A**, parents' lack of knowledge and need for education; **B**, design of programme (underlying theory, who decides on information included); **C**, delivery of the programme (reach, access, attrition challenges); **D**, fidelity and efficacy of the programme (knowledge increases, evaluation, satisfaction); **E**, parents' use of new knowledge; **F**, evidence that child development is effected.



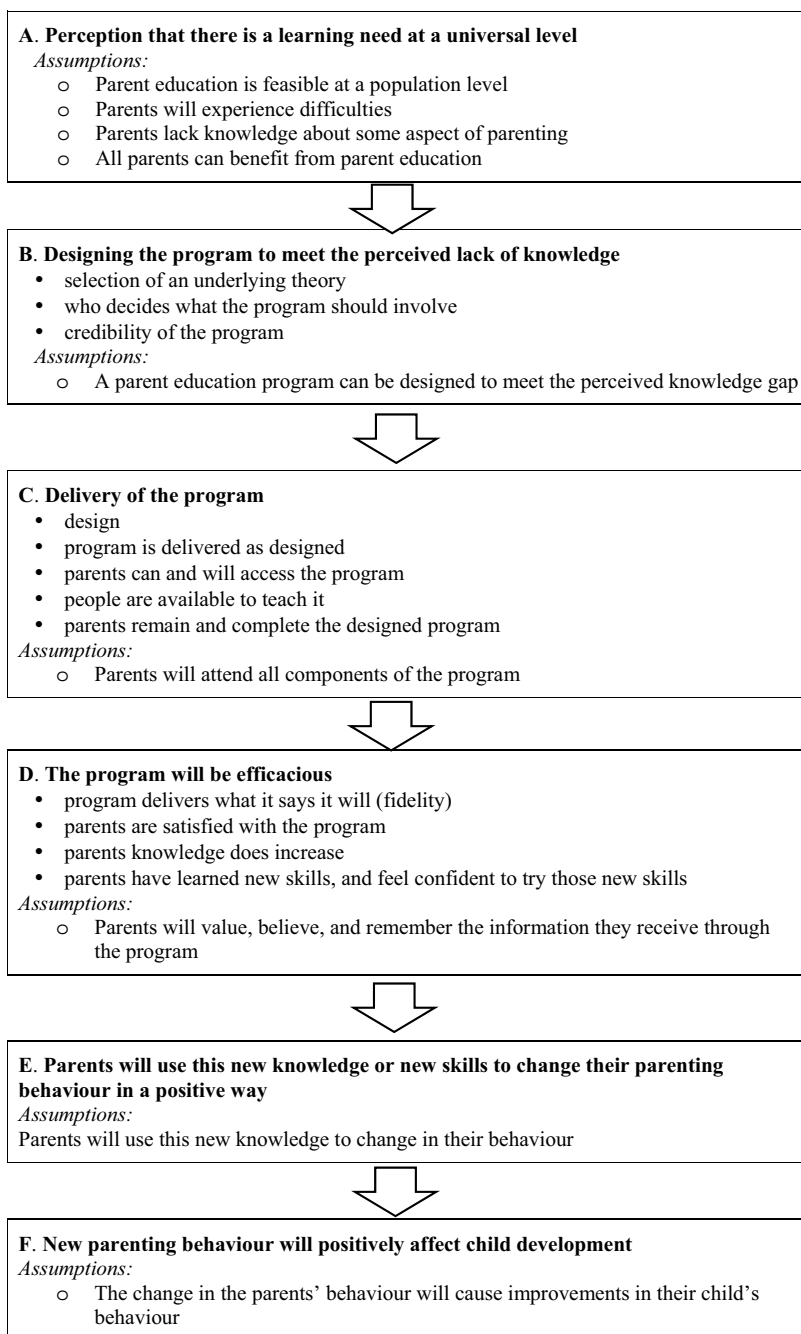


Fig. 2. Parent education implementation chain.

This concept was essential given the vast literature in this field.

## 5. Results

### 5.1. Systematic reviews and meta-analyses

Thirteen systematic reviews or meta-analyses were included in this realist synthesis. Six of the 13 reviews focused on targeted populations, but these populations

were identified by the research team as containing elements pertaining to the realist process. These reviews focused on topics such as: low-income families transitioning to parenthood, new parents whose children have behavioural problems, faith-based programmes supporting new parents, new parent programmes using novel video or audio presentation formats, or new parent programmes targeting specific problems or subpopulations (e.g., infant sleep or children with behavioural challenges). Table 1 contains a summary of the major

contributions of these reviews to the current realist process. The general consensus of these reviews is that there was a dearth of good evidence based on programme evaluation and that further research was required.

### 5.2. Single studies

One major observation that was immediately apparent was that the quality of the evidence in the reviewed papers was difficult to assess due to reporting gaps (e.g., missing detail describing the intervention design, content, implementation, and outcome measures) and the wide range of intervention formats and designs. Of the 34 studies reviewed, 22 were based on the concept of parents attending a complete series of classes (typically 5–8). The number, length and frequency of these educational sessions differed considerably across interventions.

The design of the evaluative components of many of the studies was often highly flawed, reflecting compromises required when researching voluntary programming in real-world settings. For example, only 4 of the 14 studies identified as randomized control studies had a control group (e.g., wait-list control, service as usual) (Kuo et al., 2009). Most of the studies reviewed measured only parent satisfaction with programming rather than outcome measures. Sixteen of the studies reported measures of parent intentions to incorporate curriculum content into their parenting or assessed parent perceptions of the utility of the information. One study reported changes in parent knowledge using a pre/post study design (i.e., Kuo et al., 2009). Only three of the studies incorporated objective assessments of parent behaviours, parent behavioural change, or any outcome measures of child or family development (i.e., Benzies et al., 2008; Doherty et al., 2006; Niccols, 2008). These three studies included observations made by the researchers in subsequent sessions or following videotaped interactions between parents and their child. Two of these studies included observations of fathers interacting with their infants (Benzies et al., 2008; Doherty et al., 2006).

Much of the research was based on convenience sampling of the parents who attended and in many cases only those who attended the final class. Twelve of the 34 studies discussed the challenges of parent attrition. Of those studies that reported attrition rates, the range was 42–95%. Problematic and/or missing control conditions and participant attrition limited the conclusions that could be directly drawn from the studies; however, each of the 34 intervention studies that were included in the analysis provided some useful information. See Table 1 for a summary of the design and measures used in the chosen studies and how the various papers informed this review.

### 5.3. Opinion papers, programme reviews, and grey literature

Nine published opinion papers and eight published programme reviews were included in the realist review. In addition, eight unpublished programme evaluations and government reports were extracted from the grey literature for review. In most cases, these papers were designed to inform policy and programme development or provide a very general report outlining public programming for

parents. Table 1 outlines the information they contributed to the overall realist process.

## 6. Main findings using the implementation chain

### 6.1. Perception that there is a learning need at a universal level

The implementation chain identified that the foundation for parent learning in this field is based on the assumption that parents lack knowledge about parenting. This lack of knowledge leads to uncertainty about how to address the infant's needs and, potentially, distress for the parent and child. By providing information about parenting and infant care, this cycle of uncertainty and distress will be reduced by increasing parenting knowledge and skill. Based on this assumption, it was expected that programme designers would have explored the extent of parent knowledge and knowledge gaps prior to designing the programme. The papers we reviewed offered little evidence of having assessed parents' level of knowledge or identified their concerns prior to beginning the programme. Instead, programme leaders' perspectives were more likely to guide the progression, goals, objectives, and evaluation of the programme. Content that was deemed to be important to parents was introduced without evidence to show that parents had been consulted about what content they wished to cover. Very few programmes discussed the provision of father-oriented content. While the need to provide father-specific information or programme delivery considerations in prenatal and early parenting classes was sometimes identified, this focus was usually missing from the design (s.f. Doherty et al., 2006; Potter and Carpenter, 2010; Schrader McMillan et al., 2009). There were also a few programmes designed around stress reduction, psychoeducational principles, or intimate partner relationship building (Duncan and Bardacke, 2010; Halford and Petch, 2010; Hartung and Hahlweg, 2010; Petch and Halford, 2008; Rowe and Fisher, 2010).

The programmes designed around a theoretical approach were frequently associated with research groups who developed a programme based on their hypothesis and then had this programme delivered by practitioners (e.g., Triple P Parenting, Nobody's Perfect, and The Incredible Years).

Other studies reviewed programmes that were based on well-known developmental theories such as Attachment Theory (Benzies et al., 2008; Bohr et al., 2010; Corwin, 1998; Niccols, 2008), Maternal Role Attainment (Gardner and Deatrick, 2006; Mercer and Walker, 2006), and Self-Efficacy (Bloomfield and Kendall, 2007; Kuo et al., 2009; Salonen et al., 2008; Svensson et al., 2006). Many programmes appeared to be atheoretical or else chose not to discuss their theoretical underpinnings.

### 6.2. Programme delivery

#### 6.2.1. Design

Typically parenting education involved a series of classes covering a broad range of topics. Parents were expected to attend the entire series of classes (typically 5–8). Other designs included booklet or printed material

(Adachi et al., 2009; Jackson and Dickinson, 2009; McKellar et al., 2008), DVD or film-based (Brown, 2006) and Internet-based sessions (Brown, 2006; Feil et al., 2008; Kuo et al., 2009; Salonen et al., 2008). There was little evidence to suggest that alternate forms of parent education were any more or less effective than traditional face-to-face methods (Salonen et al., 2008). Many of the alternative design programmers specified that the flexibility in delivery would enhance the opportunities for parents to engage with the material; however, there was no evidence provided that parents were more likely to view, participate, engage, or incorporate information received in these alternative formats. In fact, if the information was not focused on parents' interests and needs, it was unlikely that the parents would engage regardless of the delivery format (Fabian et al., 2005; Law et al., 2009; Svensson et al., 2006).

There was evidence suggesting that programmes delivered in partnership with organizations where parents were already engaged or receiving services could successfully attract parents to educational programmes, mainly because the parents were already there. This included programmes operating in parental workplaces (Hartung and Hahlweg, 2010), in faith-based systems (i.e., DeHaven et al., 2004; Patrick et al., 2008), in culturally-based venues (i.e., DeStephano et al., 2010; Matsumoto et al., 2009; Rahman et al., 2009), or in primary care organizations (i.e., Gao et al., 2010; Hiscock et al., 2008).

### 6.3. Participant/parent engagement, attrition, and reach

Although all the research studies mentioned basic techniques employed to recruit parent participants, the majority of these universal programmes did not identify an engagement strategy. The most common approach was to recruit using existing services, brochures, and other convenient sources. None of the documents discussed programme reach, defined as the size of the target population (e.g., the number of first time parents in the recruitment area eligible for the programme) relative to the number of parents who actually attended. Based on the small sample sizes, it was apparent that only a small percentage of eligible parents in a community actually attended classes or were included in studies.

A few authors discussed incentives used to encourage participation. These approaches included providing food, or locating the programme in a location the parents were familiar with such as a community centre, hospital or clinic (i.e., Hiscock et al., 2008; Matsumoto et al., 2009). One programme offered participants financial incentives in the form of a small stipend and still reported an attrition rate of 20% (Heinrichs and Jensen-Doss, 2010). Many articles discussed the important role that the facilitator played in the success of the programme, with several authors specifically identifying that male facilitators increased the engagement and ongoing participation of fathers (Barnes, 2003; Doherty et al., 2006; Fagan, 2008; Friedewald, 2007; McMillan et al., 2009; Potter and Carpenter, 2010).

Participant attrition was a problem in parent education. In many of the research papers, the authors did not discuss the degree of attrition or the impact that such 'self-selection' bias may have had on the results. Eleven

studies mentioned this issue as a consideration or limitation (Doherty et al., 2006; Duncan and Bardacke, 2010; Fabian et al., 2005; Fagan, 2008; Goto et al., 2010; Hartung and Hahlweg, 2010; Heinrichs and Jensen-Doss, 2010; Hiscock et al., 2008; Niccols, 2008; Patrick et al., 2008; Svensson et al., 2009). The combination of participant attrition and reach issues indicate that many programmes may be failing to engage parents and meet the goals of universality.

Parents' perspectives of relevance and timeliness of topics increased the likelihood that parents would engage with the programming. For example, classes on infant sleep were very popular with parents who were experiencing sleepless nights (Adachi et al., 2009). Not surprisingly, prenatal classes on how to cope with labour and delivery were popular with first-time parents who were approaching the birth of their child (Fabian et al., 2005; McMillan et al., 2009). However, this is not typically the design of most parenting classes, where it is more usual for the facilitator to cover a comprehensive list of topics delivered over a number of weeks that may or may not pertain to issues actually being experienced by the parents at the time. In fact, in the interest of maintaining fidelity, programmes frequently dissuaded facilitators from modifying content (e.g., Feil et al., 2008; Hiscock et al., 2008; Rowe and Fisher, 2010; Sanders et al., 2002). In contrast, Svensson et al. (2006) proposed that parents may engage in educational initiatives when they can choose topics that they find relevant.

### 6.4. Efficacy of the programme

An interesting challenge with parenting programmes was the trade-off between programme fidelity concerns and the need to adapt programming to suit the audience needs. Many of the parenting programmes were developed by experts and designed to be delivered by trained facilitators. Evaluations of efficacy were based on expectations that programmes were delivered as designed. This remained an assumption in most papers, as there was typically no evaluation of programme fidelity provided even when the authors discussed the training and facilitator development as part of their analysis. For example, Bohr et al. (2010) identified failure to provide programme fidelity as an issue in the field.

Programme fidelity also related to the issue of training for programme facilitators. Training was mentioned in 22 papers. Fifteen of these authors indicated that they considered the training requirements for the programme they were evaluating to be extensive. In some reports, there was also a discussion of the challenge of turn-over in staff (McLennan et al., 2009; Rowe and Fisher, 2010). High turn-over rates resulted in recurring costs of training that were not sustainable.

Many of the reports of programme efficacy provided assessments of parent ratings of the course materials and satisfaction data (see Table 1). It was quite evident that parent reports of satisfaction with course content and delivery were usually high; however, there are a few issues with these reports:

1. The data included only parents attending the final class in a series when the survey was administered. Given the

issue of substantial attrition in most programmes, this becomes problematic due to selection biases (Peck and Camillo, 2010).

2. The data were frequently collected by the facilitator while the participants were attending class, thus social desirability may be a bias.
3. Satisfaction was used as a measure of programme efficacy with no other measures of parent knowledge or behaviour change was included.
4. When parent knowledge was assessed, only two reviewed studies used a pre/post design (Bloomfield and Kendall, 2007; DeStephano et al., 2010). The other 30 assumed that performance on the test at the end reflected knowledge and attitude change due to the programme.
5. Even if parents were to incorporate the programme knowledge and skills into their parenting practice, there is no actual evidence indicating that it had an impact on child development outcomes.

The observation that very few studies actually went beyond measures of parent intention to use information, satisfaction with programming, or assessments of 'how useful' they deemed the content is extremely problematic. While a very small ( $n=3$ ) number of studies reported actual parent behaviour change (Benzies et al., 2008; Doherty et al., 2006), the measures were almost exclusively based on parent self-report (Benzies et al., 2008; Doherty et al., 2006; Petch and Halford, 2008).

#### 6.5. Parents will use the information and change their behaviour to be more optimal for child outcomes

In summary, the assumption that parent education has the capacity for producing a positive impact on parent attitudes and behaviours, which then supports optimal child development and improved child outcomes, was not supported. Evidence to support the view that universal, population-level education programmes are effective at either changing or improving parent behaviours or impact child outcomes was not identified. In nearly all studies, there was no attempt to measure either parent behaviour change or child outcomes. When measured, control conditions were not employed, thus changes could not be attributed to the programme. For example, in one study by Adachi et al. (2009), due to a lack of control group, improvements in infant sleep patterns after parent education on this topic may have been attributable at least in part to infant maturation and not to the programme efficacy.

## 7. Discussion: what works for whom, under what conditions?

In keeping with the realist review method and despite the problems with the documents reviewed and the limitations of individual study findings, there were important nuggets gleaned which can help inform public health nursing practice to develop more effective future programming for parents. First, according to our analysis, there are no pre-existing parent education programmes that have been demonstrated to meet the needs of parents

on a universal level. This observation is consistent with previous reviews, such as by Eisner et al. (2012) and Wilson et al. (2012). As noted by Svensson et al. (2006), one major issue with the parent education programmes we reviewed is that the programme content was not based on a community-level analysis of participants' needs. We conclude, as did Svensson et al., that there is little use of adult learning principals in this field. The need to assess both existing learner knowledge and the learner's goals for an educational experience has been well documented and evidenced in the adult learning literature (Brookfield, 2014; Knowles et al., 2011; Merriam, 2007). However, as noted by Svensson et al. (2006), there is little evidence of either an assessment of the level of parent knowledge or an identification of the source or extent of parent concerns that could be overcome by providing information. The failure to incorporate parent concerns and needs has also been identified as a factor for expectant and new fathers (Doherty et al., 2006). Another consistency with other studies in our observations is that there is limited use of theoretical underpinning for studies. Sandler et al. (2011) identified the lack of a theoretical base to many parenting programmes as one area of concern in current practices. Sandler et al. (2011) noted that a theoretical base is needed to identify the mechanisms of behavioural change and to guide learning objectives.

Using the realist approach, we were able to identify parent education facilitators' key roles in improving the efficacy of a parent education approach. There are a number of studies that highlighted that a well-educated and prepared educator was rated positively by programme participants. There is evidence that, for fathers, a male facilitator was perceived as more effective than a female one. The characteristics and skill of the facilitator was consistently reported as a key factor in parent's perceptions of the quality of the programme.

One major issue we identified is the lack of consideration given to programme reach and attrition rates in universal parent education initiatives. For example, programme designers should evaluate the reach (e.g., the number of potential participants in a given community vs. the number who actually attend) as an important gauge of programme efficacy. As well, programme attrition, particularly in a series of workshops is a key concern. If a universal programme is not appealing to a significant portion of the potential population of participants and/or attendance significantly drops across a series, the efficacy of the approach is undermined. This information needs to be considered as part of the evaluation.

### 7.1. Strengths of the review

The implementation chain developed to guide our realist synthesis allowed us to identify key assumptions and describe how parent education was presumed to work. The chain allowed us to assess the empirical support for aspects that could be used to inform the development of effective parenting programmes. For example, the implementation chain identified that there was an assumption that there is a lack of parenting knowledge. We found that assessments of parent knowledge before designing the

content of parent education was rarely reported (McKellar et al., 2008; Svensson et al., 2008). Most programmes were developed from an assessment by experts about what should be included. This was problematic given the large body of evidence surrounding the importance of designing effective adult learning programmes based on adult learning principles (Knowles et al., 2011) and the fact that the parent voice was missing.

Other areas of the implementation chain spoke to the importance of a programme delivery model that engaged the learner and a programme that delivered what the learner wanted or expected. Many of the programmes reported low programme reach and high attrition. Even an otherwise effective programme is ineffective at a population level if it has no reach. The programmes reviewed appeared to appeal to a small, select group of parents who enjoy a classroom setting or a structured learning format. Low levels of reach suggest that the programmes may not be perceived by parents as being valuable, do not have the capacity to engage large numbers of parents, or do not have the resources to advertise and effectively promote the programmes. High levels of participant attrition suggest that the programme has not met the parents' expectations nor satisfied their needs.

An emerging issue is the use of technology and the way in which today's parents want to access and receive information. At the time of this synthesis there were no papers available that reviewed specific parent education programmes formatted using on-line or Internet delivery that met the generous inclusion criteria for this study. Internet-based programmes may have the potential for greater reach as they are highly accessible; however, it should be noted that the rapid pace of technological advances in on-line and social media can quickly render a format obsolete. Today's parents are comfortable with technology, they want information right away, and they know what they want. Further research in this area will be required to address the efficacy of technological platforms for parent education.

### 7.2. Limitations of the review

Issues hindering the quality of evidence in the studies included the wide range of heterogeneous interventions, poor quality evaluations and a lack of programme descriptions. Other major limitations included problems with study design, the consistent lack of outcome measures, and the overabundant use of parent satisfaction and parent self-report as measures to evaluate programme outcomes. This does not necessarily mean that there were no benefits, but rather that there was a lack of empirical support for a direct link to child or family development outcomes.

One limitation of the realist review method is the difficulty in replicating the results. According to Pawson (2006a) this departure from reproducing the results lies in the nature of the complex judgments needed to draw the conclusions from the complexity of the different methods, objectives, hypothesis and contexts inherent in the heterogenic nature of the literature under review (p. 181). In addition, there was a possible selection bias due to the use of English only papers.

### 7.3. Recommendations

In the absence of quantitative empirical evidence, promising practices were identified by the NTNG Core Working Group and endorsed by the expert advisory group. These recommendations, described below, should be explored, utilized, and evaluated in the future.

1. Public health nurses considering parent education delivery design should start by determining what parents want in an education programme:
  - Do they want information?
  - Do they want education?
  - Do they want to connect with other new parents?

The design of a universal, population-level education intervention should incorporate adult learning principles including a respect for parents' current knowledge and skill and an appreciation of parent choice and autonomy. Some consideration should be given to convenience for the parents and flexibility of programming, which may be a major factor influencing programme attendance. Parents may respond more positively to a menu of services that they can choose to attend as opposed to a more comprehensive series of classes. In addition, consideration should be given to the specific needs of participants. For example, a programme geared for fathers, led by a dynamic and knowledgeable male facilitator may be more effective at engaging dads and may foster positive social connections.

2. Public Health Nurses should make specific resources available more frequently allowing parents to access the services or resources when they need them in more of a 'just in time' model.

The heightened importance of certain topics, given the developmental stage of their baby, may positively impact attendance. For example, parents experiencing sleepless nights may enthusiastically choose to attend a class on getting their baby to sleep. These programmes should then be evaluated with rigorous designs.

3. Public Health Nurses should challenge assumptions underlying parent education and incorporate evidence into the design and delivery of programmes.

Public health nurses need to understand that parent satisfaction with services is important but it does not serve as a proxy measure for impact on child development and family outcomes. As well, if these programmes are to be considered population level interventions, measures of reach and attrition need to be incorporated as indicators of programme efficacy.

## 8. Conclusion

Public health nurses have the knowledge and skill to support parents during the transition to parenthood using evidence-informed principles and practices while being sensitive to the unique needs of parents in their communities. A wide array of programmes is available to support new parents with a variety of different situations and needs. Based on this review, it is highly



unlikely that a single, standardized format or programme could be sufficiently flexible to actually meet the needs of a wide array parents. Public health units need to develop approaches that will allow people to access information or education at a time and in a format that suits them. The importance of the transition to parenthood and its impact on parent and child wellbeing warrant careful consideration of current programming. Public health nurses should be challenged to think critically, question the status quo, actively collaborate with community-based organizations and the research community, and influence future programming to truly reflect what will work, for whom, under what conditions (Pawson, 2006a). To meet these challenges, we can begin by asking: What do parents already know? Are today's parents interested in traditional models of acquiring education? Who can best deliver the programme? Do today's parents desire education or simply information? Do professionals really know what parents want? This realist synthesis has provided an insight into potentially efficacious approaches for meeting the needs of parents; however, this does not negate the importance of future studies including methods of assessing the efficacy of the approach used.

### Conflict of interest

The authors declare that they have no competing interests.

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None.

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