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## History of Pre and Perinatal (PPN) Parent Education: A literature review

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4 **History of Pre and Perinatal (PPN) Parenting**  
5 **Education**  
6 **A literature review**  
7

8 Christine McKee, Peta Stapleton, and Aileen M. Pidgeon  
9

10  
11 **Abstract:** This literature review focuses on the history of pre- and perinatal (PPN) parenting  
12 education. The topic constituted one area examined to inform four-studies included in a PhD  
13 program of research that investigated factors to consider when designing, developing, and  
14 delivering PPN parenting programs for the 21<sup>st</sup> century. This article discusses six topics that  
15 include: (a) an historical overview of PPN education in general; (b) programs and  
16 interventions that target mothers-only; (c) programs and interventions that target fathers-  
17 only; (d) programs and interventions that target couples during the transition to parenthood;  
18 and (e) opportunities for developing needs-based programs for future parents that can be  
19 empirically measured for effectiveness.  
20

21 **Keywords:** parenting, literature review, pre- and perinatal psychology  
22  
23

24 Literature discussing pre- and perinatal (PPN) parenting education dates  
25 back 800 years (Polomeno, 2009). PPN parenting education has been  
26 defined as the knowledge, skills, and instructions provided to parents on  
27 how they can most effectively achieve their role as parents (Ponzetti,  
28 2016). This includes ways to positively contribute to a preborn's and later  
29 child's emotional, cognitive, social, and physical development (Ponzetti,  
30 2016). Polomeno (2009) formulated a historical overview of PPN parenting  
31 education dating from the 1300s to early 2000s. In brief, trends regarding

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pregnancy and childbirth information dissemination have progressed from intergenerational transmission from woman-to-woman via the family unit in the 1300s to the 1800s (Lewis-Rowley, Brasher, Moss, Dunn, & Stiles, 1993), to the appearance of parenting advice books beginning in the late 1700s (Brock, Oertwein, & Coufal, 1993; Grille, 2005), to the inclusion of midwives leading up to the 1800s (Polomeno, 2009).

By the 1900s, formal PPN education gained momentum via the American Red Cross on their mission to improve maternal and infant health (Polomeno, 2009). Starting in 1910 (and continuing for more than 100 years), the Cooperative Extension Services (CES) in the USA have been leaders in the development of parenting education, specifically through the use of the National Extension Parenting Education Model (NEPEM) (DeBord, 2016). This model incorporated six content areas of parenting skills (care for self, understand, guide, nurture, motivate, and advocate) cultivated from empirical literature that were taught by trained parenting educators and focused on parenting post-birth and beyond (DeBord, 2016). A strength of this model was its design as a framework rather than a curriculum, thus allowing content to change aligning with ever evolving theories, best practices, and changes to parents' and childrens' needs (DeBord, 2016).

In the 1920s, the Child Study Association (CSA) of America conducted research by way of expert study groups. Research outcomes resulted in the following: CSA collated teaching materials for parent educators, advocacy for formal licensing of educators, and inclusion of fathers in parenting program initiatives (Lewis-Rowley et al., 1993). Due to the CSA's efforts, 75 major organizations were conducting parent education programs by the end of the 1920s (Brim, 1959). The 1920s also saw the introduction of John B. Watson's (1913) Behaviorism Theory in parenting programs, which emphasized skills in maternal nurturing to maximize child health and development (e.g., bonding and connecting with a preborn and baby once born through communication and minimizing stress) (Ponzetti, 2016).

By the late 1930s, parent education offerings were significantly reduced. Government funding for family education in the USA decreased, in part due to research outcomes that questioned the stability of families (e.g., increased divorce rates) and in response to economic difficulties during the Great Depression (Brim, 1959; Lewis-Rowley et al., 1993). However, with the economic boost in the USA post World War II (during the 1950s and 1960s), research and education money was again available for pregnancy and parenting research and teachings.

From the 1930s to the 1950s, pain management education gained popularity, including the Lamaze psychoprophylactic method for childbirth (which involved laboring mothers using breathing techniques as a form of pain relief, instead of drugs). This movement gathered

77 momentum worldwide (e.g., USA, Europe, Australia, South Africa, and  
78 Canada) in the 1950s and beyond. By mid-century, journal publications in  
79 the field of family life education, such as *Marriage and Family Living*,  
80 emerged, along with the formulation of organizations (e.g., National  
81 Council on Family Relations, NCFR, 1984) that advocated for education  
82 relating to healthy families (Arcus, 1995). In the early 1950s, concerns  
83 surrounding the certification of educators and facilitators delivering  
84 Family Education programs were predicted to minimize the growth of the  
85 field (Longworth, 1952). In the 1960s, the first certification program for  
86 childbirth educators was created by the American Society for  
87 Psychoprophylaxis in Obstetrics (ASPO) (Polomeno, 2009).

88 Parenting education research escalated through the 1970s and 1980s  
89 with Skinner's Behavior Modification Theory (1953) becoming a popular  
90 underpinning in post-birth parenting programs. Techniques for operant  
91 conditioning via reward and punishment principles were incorporated,  
92 such as Gordon's (1978) Parent Effectiveness Training (Ponzetti, 2016).  
93 The 1980s also saw the inclusion of graduate programs in Family Life  
94 Education in the tertiary education systems in the USA (Arcus, 1995).  
95 Family Life Education began in response to societal changes that directly  
96 impacted families. This included increased numbers of mothers and  
97 fathers in the workforce, as well as roles within families changing to both  
98 parents being responsible for primary caregiving (Hicks & Williams,  
99 1981).

100 Agencies such as the Committee on Education Standards and  
101 Certification for Family Life educators were generated to monitor, set and  
102 regulate standards for teaching criteria and educator qualifications  
103 (Arcus, 1995). Programs that focused on communication skills for  
104 enriching couple and family relationships were also generated (e.g., Mace  
105 & Mace, 1986).

### 107 **PPN Education Interventions for Parents: 21<sup>st</sup> Century**

108  
109 Current parenting practice still focuses parenting psychoeducation on  
110 the time closest to birth as well as the fourth trimester. This has been  
111 evidenced in parenting support options and interventions such as the  
112 Bringing Baby Home (BBH) psycho-educational, 16-hour workshop  
113 offered in Seattle, USA (Dion, 2005). This program was co-created by John  
114 and Julie Gottman, who are considered world-leading researchers in the  
115 field of marriage and family. BBH embraced the quality of the  
116 mother/father relationship as an influencing factor on a successful  
117 transition into parenthood (defined by low levels of depression and  
118 maintained relationship quality and intimacy) (Gottman, Shapiro, &  
119 Parthemer, 2004). The program was administered by birth professionals  
120 who focused on strengthening a couple's relationship; they shared basic

121 parenting tips and infant development knowledge to expecting parents  
 122 and new parents (Gottman et al., 2004). Other programs have also  
 123 targeted the time closest to birth and the first few months post-birth (e.g.,  
 124 Collins & Fetsch, 2012; Johansson, Landahl, & Adolfsson, 2011).  
 125 However, the content has often been limited by focus on prenatal markers  
 126 and how to care for a baby post-birth. Outcomes have not consistently  
 127 correlated with strong improvements in parenting capability (Petch &  
 128 Halford, 2008).

### 130 **The influence of technology on PPN parenting interventions.**

131  
 132 As technology, research capability, and media advanced towards the  
 133 end of the century, so did developments in PPN parenting education. With  
 134 today's internet superhighway and social media, there are seemingly  
 135 endless opportunities; geography is no longer a barrier to program  
 136 attendance. Technology provides enormous flexibility in content delivery  
 137 and consumer reach including: greater participant reach; diversity of  
 138 educational content; openness by both parents and birth professionals to  
 139 learn a wide array of perspectives and skills in the prenatal, birth and  
 140 postnatal arena; and a wide array of formats and delivery methods.

141 Regardless of the type of service expectant parents' access, Fukkink,  
 142 Vink, and Bosscher (2014) maintain that it needs to be delivered in a non-  
 143 judgmental, inclusive, needs-based way. Further, offerings need to be cost  
 144 effective, flexible in delivery approach and based on science (Long, 2016).  
 145 As Polomeno (2009) aptly acknowledged, we have entered a place of  
 146 advanced practice in PPN education.

### 148 **Consumer Groups for Programs**

149  
 150 Examining the history of PPN parenting programs for parents in  
 151 greater depth revealed three relevant categories of consumer groups for  
 152 programs. These included mothers only, fathers only, and couples  
 153 transitioning to parenthood.

### 155 **Mothers as the primary focus in PPN parenting interventions.**

156  
 157 There are a range of focus areas that PPN parenting programs for  
 158 mothers only have included. Three areas that have been empirically  
 159 researched and continue to be important when developing future PPN  
 160 parenting programs include: maximizing bonding and attachment,  
 161 mitigating maternal anxiety, and teenage mothers.

163 **Program focus: Maximizing bonding and attachment**

164  
 165 To maximize mother-infant bonding and attachment,  
 166 Panthuraamphorn (1998) discussed the importance of fathers in his  
 167 Prenatal Infant Stimulation program. This was in response to research  
 168 that supported the notion that fathers have a critical role in influencing a  
 169 pre-born's growth and interaction during pregnancy as well as supporting  
 170 a mother's ability to bond with her child (Cranley, 1981; Leifer, 1980).  
 171 Whilst Panthuraamphorn (1998) acknowledged the critical role a father  
 172 plays, only mothers received the program. The Prenatal Infant  
 173 Stimulation program was administered to 24 pregnant women in total  
 174 (with equal numbers in the treatment and control groups). The control  
 175 group mothers attended routine antenatal care and the treatment group  
 176 mothers attended the program that was delivered in two-hour sessions,  
 177 four times per month. The program comprised two stages whereby stage  
 178 one began in the 12<sup>th</sup> week of pregnancy and included content and skills  
 179 to enable prenatal bonding. Examples included ways to interact with the  
 180 father and the importance of abdominal touch, breathing, visualization,  
 181 and relaxation exercises in preparation for birth.

182 The second stage began in the 20<sup>th</sup> week of gestation and included  
 183 skills on how to maximize a positive environment through touch, sound,  
 184 and movement (Panthuraamphorn, 1998). Here the emphasis was on  
 185 educating participating mothers' that their thoughts and feelings may  
 186 impact emotional and intellectual growth of the pre-born  
 187 (Panthuraamphorn, 1998). This theory has been well supported (Lipton,  
 188 2002, 2008; Michaud, 2012).

189 Results from Panthuraamphorn's (1998) study were measured against  
 190 physical markers of growth post-birth. There was no statistical  
 191 significance between babies born across the two groups in terms of weight  
 192 or height. Head circumference was statistically significant at one and two  
 193 months post birth ( $p < .008$ ), but not at birth ( $p = .158$ ). Additionally, the  
 194 results showed babies born to treatment group mothers had stronger  
 195 personal-social development scores than did control group babies as  
 196 measured by the Denver Developmental Screening Test. This indicated  
 197 that the program may have influenced physical and personal-social  
 198 development of the babies. However, limitations included the small  
 199 sample size as well as the lack of direct inclusion of fathers, even though  
 200 the author stated the critical importance of their role to influence a  
 201 mother's ability to bond with her baby.

202  
 203 **Program focus: Mitigating maternal anxiety**

204  
 205 Research has widely supported that maternal pregnancy anxiety has  
 206 been linked to negative postnatal outcomes such as low birth weight,

207 premature delivery and lower than average Apgar scores, which measures  
208 various aspects of the physical condition of a newborn such as heart rate,  
209 respiration, muscle tone, reflexes, and skin coloration (Berle et al., 2005).  
210 The best possible score is ten and a score ranging from seven to nine is  
211 considered normal (e.g., Berle et al., 2005; Dragonas & Christodoulou;  
212 1998; Rondo et al., 2003). In an attempt to mitigate such outcomes,  
213 Consonni et al. (2010) conducted a non-randomized controlled trial in  
214 Brazil. Thirty-eight women participated in the ten-week Multidisciplinary  
215 Program for Childbirth and Motherhood Preparation (MPCMP). Sessions  
216 ranged between 50 minutes and three hours. Content focused on  
217 pregnancy related information and how to care for a newborn.  
218 Additionally, women were given a tour of the maternity unit and taught  
219 breathing and relaxation techniques. Women were provided with  
220 opportunities to discuss their personal pregnancy and emotional  
221 experiences (Consonni et al., 2010). The control group comprised 29  
222 pregnant women who attended routine prenatal care only at the Botucatu  
223 School of Medicine, San Paulo, Brazil.

224 Results showed statistically significant differences in birth delivery  
225 method. Specifically, those who completed the MPCMP predominantly  
226 had vaginal deliveries (81.6%;  $p < .05$ ), whilst caesarean section births were  
227 higher for the control group (41.4%;  $p < .05$ ). Results were not significantly  
228 different however for birth weight and premature delivery between the  
229 groups. State anxiety was also significantly reduced at the end of the  
230 pregnancy for the treatment group ( $p < .05$ ). Given the increase in  
231 published research demonstrating partner support is positively linked to  
232 lower levels of maternal anxiety (e.g., Maldonado-Duran, Lartigue, &  
233 Feintuch, 2000), one of the limitations of this study was that it only  
234 included mothers.

### 236 Program focus: Teenage mothers

237  
238 Teenager mothers are an at-risk group for a wide array of negative  
239 pregnancy and birth-related outcomes including preterm births, low birth  
240 weight babies, and infant mortality (Coley & Nichols, 2016). Old's (2008)  
241 Nurse Family Partnership (NFP) program aimed to improve pregnancy  
242 outcomes (e.g., birth weight, positive parenting) by improving prenatal  
243 health in teenage mothers. The program was designed to be delivered via  
244 multiple home visits by nurses trained in the NFP program (Glover &  
245 Sutton, 2012; Landy, Jack, Wahoush, Sheehan, & MacMillan, 2012). It  
246 has been administered and evaluated within the USA (Kitzman et al.,  
247 1997; Olds, Henderson, Chamberlain, & Tatelbaum, 1986; Olds et al.,  
248 2002), Canada (Landy et al., 2012) and the United Kingdom (Robling et  
249 al., 2016). Results have yielded significant increases in healthy prenatal  
250 health behaviors such as reduced smoking and alcohol consumption,

251 increased parental care post-birth, and reductions in child abuse and  
252 neglect (Olds, 2008).

253 Not all studies utilizing the NFP program have obtained positive  
254 results however. Robling et al. (2016) conducted a non-blinded,  
255 randomized control trial in the UK. Participants were recruited from  
256 across 18 corporations licensed to deliver NFP and resulted in the  
257 inclusion of 1,645 first-time teenage mothers ( $n=823$  in the NFP group;  
258  $n=822$  in routine prenatal care group). No significant differences were  
259 observed across the main outcomes of tobacco use throughout pregnancy  
260 and birthweight.

261 While conflicting results from NFP program studies exist, they did  
262 highlight that there are vulnerable groups when pregnancy is considered  
263 (teenage expecting parents being only one). Gaining a deeper  
264 understanding of women's perceptions of the importance of attending PPN  
265 education may further guide design and delivery of future programs.

### 267 **Women's perceived importance of and access to PPN parenting** 268 **programs**

269  
270 To evaluate women's perceptions of the value of PPN parenting  
271 education, Hollins Martin and Robb (2013) conducted a qualitative  
272 (thematic analysis) study. Postnatal women ( $n=228$ ) provided verbatim  
273 feedback to questions on the Birth Satisfaction Scale (BSS; Hollins  
274 Martin, & Fleming, 2011). Results varied—some indicated no need for  
275 PPN parenting education whilst others aligned with the perception that  
276 preparation is better (Hollins Martin & Robb, 2013). While the study  
277 looked at PPN parenting education in the scope of labor and birth and  
278 included mothers only, Hollins Martin and Robb (2013) did identify the  
279 lack of inclusion of fathers as an opportunity for further research.

280 Canadian researchers have also looked at expecting mothers' use of  
281 prenatal education programs. Research has shown that two-thirds of  
282 women, pregnant for the first time, attended prenatal education programs  
283 (Public Health Agency of Canada, 2009). The cohort study of Godin et al.  
284 (2015) included 511 pregnant women in Ontario, Canada. It involved pre  
285 and post surveys of pregnancy related knowledge that focused on healthy  
286 pregnancy, healthy lifestyle and breastfeeding. The study required  
287 completion of a prenatal education program offered through seven public  
288 health units either online or in person. Results indicated significant  
289 increases in knowledge across all three content areas ( $p<.01$ ). However,  
290 only 2.3% of participants began the program in trimester one (Godin et  
291 al., 2015). Since this time period has been shown to be critical for healthy  
292 development of the pre-born, Godin et al. (2015) recommended that  
293 women access PPN parenting programs at this stage of the pregnancy. It  
294 was acknowledged that the motivation to learn about labor, birth, and



295 breastfeeding may not be perceived as a priority by expecting mothers this  
296 early in the pregnancy (Godin et al., 2015). Therefore, program developers  
297 need to critically consider timing when each curriculum topic is scheduled  
298 for delivery, to ensure it is linked to the appropriate stage of pregnancy  
299 (Godin et al., 2015). Further, before designing future PPN parenting  
300 programs, it is necessary to understand why women choose to invest in  
301 healthcare education prior to conceiving.

302 To assess why women chose parenting education pre-conception,  
303 Barrett et al.'s (2015) study involved qualitative interviews with twenty  
304 pregnant women from London, UK. Each interview was completed either  
305 by telephone or in person. Results indicated that the women who prepared  
306 and planned for pregnancy (e.g., taking folic acid, changing diet and  
307 lifestyle to support healthy pregnancy, attending classes to learn about  
308 pregnancy, birth and becoming a parent) did so to create a foundation for  
309 positive birth and parenting outcomes (Barrett et al., 2015).

310 While research has shown that expecting mothers value PPN  
311 parenting program outcomes, understanding expecting fathers'  
312 perception of and involvement in these programs is equally important.  
313

### 314 **Fathers as the primary focus in PPN parenting interventions**

315  
316 The inclusion of fathers in PPN parenting education has advanced in  
317 the past 50 years. Modern day fathers spend significantly more time with  
318 their children (Sayer, Bianchi, & Robinson, 2004) than their male  
319 counterparts in the 1960s and 1970s (Walsh et al., 2014). Broadly  
320 speaking, father involvement can include any activity engaged in that  
321 leads to an optimal pregnancy, birth, and beyond (Bond, Heidelbaugh,  
322 Robertson, Alio, & Parker, 2010). Inclusion of fathers in PPN parenting  
323 programs have had positive associations with attachment security  
324 (Heinowitz, 1995; Raikes, Summers, & Roggman, 2005), emotional  
325 regulation of babies post-birth (Roggman, Boyce, Cook, Christiansen, &  
326 Jones, 2004), and on the children's cognitive development (Alio, Salihu,  
327 Kornosky, Richman, & Marty, 2010; Cabrera, Shannon, & Tamis-  
328 LeMonda, 2007; Nugent, 1991).

329 As well, adverse outcomes for pregnant mothers and their pre-born  
330 have been shown to exist when fathers were not included in PPN  
331 education programs (Sahip & Turan, 2007). For example, without the  
332 support of the expecting father, a mother may be unable to use the  
333 knowledge and skills learned in prenatal classes. Therefore, fathers need  
334 to understand the value of these skills in terms of himself, his partner,  
335 and his pre-born to support them (Roth & Mbizvo, 2001; Sahip & Turan,  
336 2007).  
337

### 338 **The role of health practitioners in including fathers**

339  
 340 Since the turn of the century, pregnancy and birth health  
 341 professionals have increased their emphasis to directly encourage men to  
 342 be more involved during the PPN timeframe (Plantin, Olukoya, & Ny,  
 343 2011). Health practitioners have made progressive changes by including  
 344 fathers in PPN parenting initiatives with positive outcomes. Examples  
 345 include: (a) an equitable division of labor in the household during  
 346 pregnancy and post-birth (Roth & Mbizvo, 2001); (b) being prepared for  
 347 birth (Shefner-Rogers & Sood, 2004); (c) emotional support of the mother  
 348 (Hartmann, Gilles, Shattuck, Kerner, & Guest, 2012); (d) encouragement  
 349 and support of breastfeeding (Pisacane, Continisio, Aldinucci, D'Amora, &  
 350 Continisio, 2005); (e) enhanced communication and satisfaction in the  
 351 couple relationship (Gottman et al., 2004; Karney & Bradbury, 1995); and  
 352 (f) enhanced role identity as a father early into a pregnancy (Plantin et  
 353 al., 2011). More broadly, father involvement can include any activity  
 354 engaged in that leads to an optimal pregnancy, birth, and beyond (Bond  
 355 et al., 2010).

356 Integrating fathers into PPN parenting programs has resulted in  
 357 documented positive impacts on fathers themselves as well as on the  
 358 couple's relationship and on the pre-born, newborn, child and beyond.  
 359 However, difficulties continue to exist for health practitioners planning  
 360 PPN parenting program content and delivery.

### 361 **Difficulties health practitioners face in including fathers.**

362  
 363  
 364 One of the difficulties commonly cited, to account for a lack of male  
 365 inclusion in PPN parenting programs, is that the times sessions are  
 366 typically offered coincide with work schedules (e.g., Humphries & Nolan,  
 367 2015; Moore & Kotelchuck, 2004). To overcome this, a six-session program  
 368 designed for expecting fathers was offered in workplaces in Istanbul,  
 369 Turkey (Sahip & Turan, 2007). The program content related to the  
 370 following: health during pregnancy, pregnancy nutrition, birth,  
 371 communication techniques, infant health care and feeding, fatherhood,  
 372 and family health after birth (Sahip & Turan, 2007). Eighty expectant  
 373 fathers completed six three-hour group sessions facilitated in their  
 374 workplace by a trained in-house physician. Additionally, a control group  
 375 of 80 expectant fathers were recruited from workplaces similar to those  
 376 where the intervention group were employed.

377 Both the intervention and control group fathers participated in face-  
 378 to-face interviews at three and nine months post-birth. All were asked the  
 379 same questions that directly related to topic areas in the program (Sahip  
 380 & Turan, 2007). Results indicated that fathers from the intervention  
 381 group were significantly ( $p < .01$ ) more likely than those in the control  
 382 group to report supportive behaviors (such as attending antenatal visits

and helping with housework), support good nutrition for their partner, actively prepare for the birth and make joint decisions for infant care with their partner (such as support for breastfeeding). One challenge researchers faced was resistance by some of the employers to release the fathers to attend the program sessions. This resulted in attrition from an original intervention group sample size of 90 to 80 (Sahip & Turan, 2007).

Research has consistently posited that fathers are less involved than pregnant mothers in PPN parenting programs (Billingham, 2011; Davis, Vyankandondero, Luchters, Simon, & Holmes, 2016), which may or may not be attributed to their willingness to participate. Barriers may be defined as physical (cannot leave work to attend a program), financial (cannot afford to take time off from work), emotional (fear, insecurity, anxiety), and socio-cultural (the belief that having babies is woman's work). Socio-cultural norms appear to play a significant role in expecting fathers' PPN parenting program participation, impacting program content, accessibility and delivery.

### **The influence of socio-cultural norms on father attendance at PPN parenting programs.**

The trend of lack of male involvement in child health services and pregnancy education programs is common in the Pacific region (Davis et al., 2016). This is largely due to expecting fathers not being actively engaged by services, along with the socio-cultural norms that pregnancy, child bearing, and raising a child is a woman's role (Davis et al., 2016). This perspective is not isolated to the Pacific region; it has been consistently found to apply in the Western world (e.g., Alio et al., 2011a). There has been a perceived socio-cultural legacy of men attaining a position of power by maintaining the inequity in pregnancy and post-birth emotional and practical support to partners and their children (Alio et al., 2011a; Brotherson, Dollahite, & Hawkins, 2005). These traditional outlooks are aligned with Connell's (1995) Gender Theory that was built on the premise that the "social structure of gender is a way of structuring social practice" (p. 81); the position of power is one of the theory's core elements. Connell (1995) supported the belief that men have historically been accustomed to holding a patriarchal dominant role in society and that this is changing. Specifically, there has been more compromise and negotiation between men and women in relationships and this has led to more equal participation in family-related duties (Connell, 1995).

In a semi-structured, in-depth interview study conducted in the Pacific region in 2011/2012, mental and child health policymakers and practitioners ( $n=18$ ) responded to a series of interview questions (Davis et al., 2016). The aim was to learn more about perceived benefits, challenges, and risks to increasing fathers' involvement in pregnancy and child-related services and programs offered in the region (Davis et al., 2016).

428 Thematic analysis revealed that across respondents there was agreement  
429 that increasing the engagement of men is important; culturally they are  
430 the decision makers for family health matters. Therefore, if they became  
431 informed about risks and problems mothers and babies can face during  
432 pregnancy and beyond, fathers could make pro-health decisions (such as  
433 enabling the mother to attend programs and antenatal care) (Davis et al.,  
434 2016).

435 Davis et al. (2016) suggested one barrier to success of engaging fathers  
436 is that prenatal health care centers are typically under-resourced;  
437 reaching out to fathers is a low priority given the cultural trend that it is  
438 women's business. This has been coupled with health worker attitudes in  
439 support for the cultural stereotype (Davis et al., 2016). Additional barriers  
440 cited included inflexible clinic hours (clashed with times that fathers were  
441 at work), and content that did not focus on the fathers' perspective or their  
442 needs (Davis et al., 2016).

443 Davis et al. (2016) proposed five recommendations for consideration  
444 when designing future maternal and child health services and PPN  
445 parenting programs. They included: (a) offering sessions for fathers only  
446 during work breaks; (b) holding classes at times fathers would be open to  
447 coming to (e.g., "grog" sessions where fathers can talk together in a social  
448 environment whilst drinking a few beers); (c) instigating group talks  
449 among fathers so they can share their experiences, fears, and needs, and  
450 seek support; (d) incorporating fathers in discussions when both mothers  
451 and fathers attend a session, by contextualizing how concepts being  
452 spoken about relate to him as a father; and (e) having male facilitators.

453 Sweden is one country where the cultural norm has been to focus on  
454 active and equal parenting, thereby actively reducing barriers expecting  
455 fathers face. Social policy on parental leave was amended in the 1970s so  
456 that men received equal rights to stay at home with their children  
457 (Plantin, Mansson, & Kearney, 2003). In a qualitative interview study  
458 involving 30 Swedish couples, all men were pro-gender equality and  
459 stated a desire to have shared responsibility in the context of family duties  
460 and wanted to be "tender," "open", "fair," and "supportive" of their partner  
461 and child/ren (Plantin et al., 2003). This suggested that when considering  
462 Gender Theory, social practice can be amended as an outcome of males  
463 being aligned with equality. Swedish social policy—having fathers equally  
464 involved in family care— is evidence of this. Such equality is not  
465 consistent amongst all Western cultures, with only 13% of employers in  
466 the USA providing extended paternity leave (more than the 12 weeks  
467 unpaid leave available as a standard) (Bond, Galinsky, Kim, &  
468 Brownfield, 2005).

469 PPN parenting programs designed for fathers only have included two  
470 focus areas: paternal anxiety and young fathers (aged between 15 and 25  
471 years at the time of the baby's birth).  
472

**Program Focus: Paternal anxiety**

The need for father involvement in PPN parenting programs has been the focus of research in an attempt to mitigate paternal anxiety (e.g., Condon, 2006). The literature postulated that it is common for fathers to feel anxiety and apprehension during the transition to parenthood (Condon, 2006). If prolonged, it can negatively affect a father's ability to bond with his baby (Bogels & Phares, 2008). A repeated measure, randomized cohort study was undertaken in Perth, Western Australia and aimed to identify the impact of fathers' participating in a PPN parenting program (Tohotoa et al., 2012). The study addressed subsequent levels of anxiety in the postnatal time and anxiety was measured using Hospital Anxiety and Depression Scale (HADS) (Tohotoa et al., 2012). The intervention group (n=289) received routine antenatal classes along with one-hour sessions for fathers only (that were facilitated by male educators at each antenatal class). Program content focused on the role of the father, breastfeeding and managing expectations for infant care (Tohotoa et al., 2012). The control group (n=244) attended the routine antenatal classes only. At six weeks post-birth, results showed a statistically significant reduction in self-reported anxiety by fathers from the intervention group. Qualitative feedback revealed that 96% of fathers in the intervention group perceived the father only sessions as positive (e.g., "practical information of what to do," "great to talk to other fathers") (Tohotoa et al., 2012). The authors concluded that postnatal anxiety for fathers could be reduced as an outcome of timely and relevant pregnancy and post-birth information being shared (Tohotoa et al., 2012).

The control group from Tohotoa et al.'s (2012) study, experienced a marginally significant reduction in anxiety ( $p < .04$ ) between baseline and six weeks post-birth. This result was not consistent with previous literature where HADS had been utilized to measure fathers' anxiety pre- and post-birth (e.g., Liber et al., 2008). Future research could repeat the study targeting a larger cohort, to determine if greater effect sizes between treatment and control groups become evident when measuring change in paternal anxiety.

***Program Focus: Young fathers.***

The inclusion of young fathers (aged between 15 and 25 years at the time of the baby's birth) in PPN parenting programs has received attention in Canada. This was primarily in response to social stigmas that suggested attending PPN programs and services was seen as a sign of failure and neediness (Deslauriers, Devault, Groulx, & Sevigny, 2012). Specifically, the Perinatal and Infancy Program (Ministere de la Sante et des Services Sociaux, 2004, as cited in Deslauriers et al., 2012) was designed to target the needs of young fathers. Program delivery was

518 creative, flexible and informal to ensure young men were engaged and felt  
 519 comfortable to attend. These modifications included the following:  
 520 arranging informal gatherings of young men in their homes and at  
 521 sporting venues; having sport and outdoor activities as a part of the  
 522 program to build trust, social connections, and comraderie; and having  
 523 group discussions and an experiential focus to discuss the content (e.g.,  
 524 views of fatherhood, goals as fathers, parenting skills, role identity, child  
 525 development principles, how to support the mother) (Kiselica, 2008).

526 To learn more about young fathers' needs and experiences with  
 527 pregnancy-related services, Deslauriers et al. (2012) devised a qualitative  
 528 study that was undertaken in the provinces of Ontario and British  
 529 Columbia, Canada. The study involved interviews ( $n=15$ ) and five focus  
 530 groups ( $n=28$ ) of young fathers (mean age = 24.8 years). Upon completion  
 531 of thematic analysis, results revealed that young fathers: (a) felt  
 532 negatively judged by support services aimed at pregnancy care and that  
 533 they were not taken seriously, (b) had a need to have somebody to talk  
 534 with for guidance as a father and also to receive positive reinforcement  
 535 when they did a good job (consistent with behavior modification theory),  
 536 (c) had a desire to meet regularly with other fathers and a facilitator to  
 537 discuss challenges, and (d) did not feel as though their emotions were  
 538 taken into account during a pregnancy and beyond (Deslauriers et al.,  
 539 2012). The authors suggested future programs that target young fathers  
 540 ought to take their needs and emotions into account and be delivered by  
 541 facilitators and services that can remain judgment free.

### 543 **Couples as the Primary Focus in PPN Parenting Interventions**

544  
 545 Research focusing on the transition to parenthood for mothers and  
 546 fathers as a couple did not emerge until the late 1950s. LeMasters (1957)  
 547 initially claimed that "83% of new parents have experienced moderate to  
 548 severe crisis in their marital and family life in the first year following the  
 549 birth of their first child" (Cowan & Cowan, 1995, p. 412). Laycock (1967)  
 550 also argued that crisis is common as human beings are the only species  
 551 who do not have innate knowledge of human development or of what is  
 552 required to successfully transition into the role of a parent. To evaluate  
 553 the rigor of LeMaster's (1957) claim, a range of studies were completed  
 554 during the 1960s to 1980s with inconclusive results. Findings varied  
 555 between the assertion that whilst the transition to parenthood is stressful,  
 556 it is also manageable (e.g., Hobbs & Cole, 1976) and that no difference was  
 557 found in the decline in marital satisfaction between couples with and  
 558 without children (e.g., MacDermid, Huston, & McHale, 1990; White &  
 559 Booth, 1985).

560 Much research has been conducted with consistent and  
 561 comprehensive findings over the past 25 years. Examples include: (a) the  
 562 transition to parenthood, as a developmental life change, can reduce

resources a parent has (i.e., time to access valued support people like family and friends) (Crawford & Huston, 1993). This can amplify pre-existing challenges such as marital discord (Hinde & Stevenson-Hinde, 1988); (b) a baby's growth and development may be less than optimal if stress and distress is present in the couple's relationship during the pregnancy and beyond (Cowan, 1992); (c) less quality and intimate time shared by couples (LaRossa & LaRossa, 1981; Osofsky & Osofsky, 1984); (d) the tendency for couples to move into more traditional gender roles (Katz-Wise, Priess, & Hyde, 2010). This is associated with the perception of unfairness in how parenting and household duties are distributed, leading to decline in relationship satisfaction (Goldberg & Perry-Jenkins, 2004); and (e) increased risk of depression in both males and females (Cutrona & Troutman, 1986).

Evidenced by the growth in the current literature, potential challenges can and do accompany a couple's transition to parenthood. Two prominent studies have looked at evidence-based programs targeted to pregnant couples.

### **Evidence-Based Couple Focused Interventions**

Pinquart and Teubert (2010) completed a meta-analysis of 21 couple focused interventions ( $N=1230$  for parent intervention group participants;  $N=1109$  for control group participants). Each utilized expecting and new parent samples and examined effects of randomized controlled trials that focused on advocating effective parenting in the transition to parenthood. To be included in the meta-analysis five criteria needed to be met:

1. The study incorporated a control group,
2. Intervention had to have couple focused components,
3. The intervention had to be delivered either during pregnancy or up to six months post-birth,
4. Effect sizes needed to be able to be compared, and
5. There had to be at least one publication about the study available (Pinquart & Teubert, 2010).

One initial study that focused on couples during the PPN timeframe was undertaken in the early 1970s (Leibenberg, 1973). At the time of publication, studies were included up until 2010. Interestingly, only 14 of the programs investigated (67%) included both mothers and fathers. A further six utilized mothers only (29%), and one (4%) used a father sample exclusively. Programs were equally distributed between their delivery being undertaken before birth, post-birth only, and spanning both time periods. On average, programs involved 11.4 sessions. Results consistently revealed very small effects being observed for couple

607 adjustment ( $d=.09$ ) and communication between couples ( $d=.28$ ) (Pinquart  
608 & Teubert, 2010). This suggested that an opportunity may exist to  
609 improve the effectiveness of programs for couples transitioning to  
610 parenthood. The low effect sizes observed were consistent with previous  
611 universal prevention-based programs that were designed to reach large  
612 populations (Burig, 2002). Overall, couples had greater improvements  
613 when the program met the following three criteria. Firstly, the program  
614 had more than five sessions. Secondly, content focused on education and  
615 skills for both pre- and postnatal times. Thirdly, delivery of the program  
616 was led by a professional trained in PPN parenting education and  
617 facilitation, as opposed to a semi-professional (Pinquart & Teubert, 2010).

618 Results from these studies bring to light positive shifts during the past  
619 20 years in content and delivery of PPN parenting programs. More  
620 emphasis has been made to include both mothers and fathers in parenting  
621 programs as well as adding skills to enhance the couple relationship to  
622 enrich the mother, father, and baby relationship during the transition to  
623 parenthood (Nolan, 1997). Along with these changes, two consistent areas  
624 of focus in current PPN parenting programs that target both mothers and  
625 fathers as a couple, include relationship adjustment post-birth and couple  
626 psychoeducation.

627

### 628 ***Program Focus: Couple Relationship Adjustment Post-Birth***

629

630 Adjustment within a couple's relationship as they transition to  
631 parenthood has been explored over the past few decades. One recent study  
632 measured couple relationship adjustment post-birth and involved  
633 Australian parents expecting their first child (Halford, Petch, & Creedy,  
634 2010). In this two-group intervention study participating parents were  
635 randomly assigned to either the Couple Care for Parents (CCP) program  
636 or the Becoming a Parent (BAP) program. Thirty-five couples completed  
637 the CCP program, which involved six units that incorporated an antenatal  
638 workshop facilitated by the lead author in a clinic. Participants also  
639 completed five self-directed units in their home. The entire program  
640 required 17 hours of time starting at the 32<sup>nd</sup> week of gestation to three  
641 months post-birth (Halford et al., 2010). The BAP program involved  
642 mothers only ( $n=36$ ). Content was derived from literature and did not  
643 include material that focused on couple relationships. It did deliver the  
644 same content on antenatal aspects as in CCP; however, it was completed  
645 via one home visit and five telephone calls. The entire program took five  
646 hours to complete. Respondents in both groups completed a battery of pre,  
647 post and 12-month follow-up intervention surveys measuring adjustment,  
648 couple communication, and consumer satisfaction (Halford et al., 2010).

649 Results indicated that CCP reduced negative couple communication  
650 and, for women only, prevented negative relationship adjustment. No  
651 differences were found for parenting adjustment between CCP and BAP.



The authors concluded that CCP showed promise for couple relationship education during pregnancy (Halford et al., 2010). However, limitations included the absence of a control group and delivery of all sessions by the lead author only, which may have biased results due to therapist expectations.

The Department of Health in the UK recently commissioned a study that utilized expert opinions from a reference group that included a cross-section of mothers, fathers, and professionals (Billingham, 2011). The goal of the study was to generate recommendations for future programs and services that targeted pregnancy, birth and beyond (Billingham, 2011). A summary of the expert group's perception of key points to consider when creating a program for preparation for parenthood included the following: addressing emotional, psychological and biological changes for the mother; providing information on developmental milestones of the growing pre-born; empowering parents to feel in control of their pregnancy and birth; and addressing the needs of the father as well as recognizing his needs may be different to the mother (Billingham, 2011).

Based on the participating experts' feedback, a framework for intervention was proposed and comprised six core themes:

1. The development of my/our baby,
2. Changes for me and us,
3. Our/my health and wellbeing,
4. Giving birth and meeting my/our baby,
5. Caring for my/our baby, and
6. Who is there for us; people and services (Billingham, 2011).

Each of the themes incorporated a menu of topics that participants selected from that best met their needs and unique circumstances. Billingham (2011) stated that the study was the first step in creating prenatal education that had relevance to expecting parents.

Partner relationship satisfaction as a result of the transition to parenthood has been researched as another aspect of couple relationship adjustment. Specifically, Mortensen, Torsheim, Melkevik, and Thuen (2012) conducted a Norwegian based mother and child cohort study that spanned a decade (1999-2009). The study involved 71,504 pregnant women. Results revealed that mothers who had given birth for the first time whilst involved in the study, reported statistically significant higher levels of relationship satisfaction at the time of childbirth ( $p < .001$ ) than mothers who had previously birthed. Further, having a planned versus unplanned pregnancy resulted in higher relationship satisfaction at the time of childbirth ( $p < .001$ ). Lastly, married mothers reported higher levels of relationship satisfaction after transitioning to parenthood at the time of childbirth than did mothers who were in de facto relationships ( $p < .001$ ) (Mortensen et al., 2012).

697           Regardless of the differences between groups, there was a statistically  
 698 significant decline in relationship satisfaction post-birth ( $p < .001$ ) for all  
 699 participants (Mortensen, et al., 2012). This result was consistent with  
 700 earlier literature (Hanson, 1985; Simbar, Nahidi, Tehran, &  
 701 Ramezankhani, 2010). The authors recommended future interventions  
 702 also include fathers for two reasons. First, to learn more about fathers'  
 703 needs during the transition to parenthood. Second, to ensure content is  
 704 included that focuses on ways couples can harness relationship  
 705 satisfaction throughout a pregnancy and beyond (Mortensen et al., 2012).  
 706

### 707 ***Program Focus: Couple Psychoeducation***

708  
 709           Halford and Petch (2010) championed the concept of Couple  
 710 Psychoeducation (CP) during the transition to parenthood and found that  
 711 responsiveness of parenting is linked to the extent to which a couple can  
 712 be supportive of one another. CP has been defined as “any educational  
 713 attempt to enhance couple relationship functioning or parenting or to  
 714 prevent relationship deterioration, after the birth of a first child” (p. 164).  
 715 Another term used in the literature closely associated to CP is Couple  
 716 Relationship Education (CRE). The focus is similar regarding sharing  
 717 knowledge, attitudes and skills that aim to help couples sustain their  
 718 relationship post-birth in a healthy way (Petch, Halford, Creedy, &  
 719 Gamble, 2012).

720           The essence of CP (and CRE) can be linked to Attachment Theory. CP  
 721 (and CRE) was based, in part, on building the skills of sensitive-  
 722 responsiveness, defined as the caretaker’s ability (traditionally the  
 723 mother) to accurately interpret the infant’s needs and respond  
 724 appropriately and in a prompt timeframe (Ainsworth, Blehar, Waters, &  
 725 Wall, 1978). The literature has consistently supported the belief that the  
 726 mother’s ability to be sensitive-responsive to her infant is linked to  
 727 positive outcomes involving: cognitive and language development (Brooks-  
 728 Gunn, Han, & Waldfogel, 2002); emotional self-regulation ability (Belsky,  
 729 Youngblade, Rovine, & Volling, 1991; Blasco, 2003); healthy neurological  
 730 networks due to oxytocin and serotonin being released (Bavolek, 2016);  
 731 heightened self-worth (Bavolek, 2016); and enhanced secure attachment  
 732 that extends to future adult relationships (Cassidy & Shaver, 1999; van  
 733 Bussell, Spitz, & Demyttenaere, 2010; Young, 2013).

734           In mother only samples, sensitive-responsiveness has been shown in  
 735 meta-analyses to be significantly correlated with secure attachment when  
 736 effect sizes are considered ( $r = .24-.32$ ) (e.g., Atkinson et al., 2000). Further,  
 737 significantly enhanced secure attachment by infants aged birth to four  
 738 years ( $p < .01$ ) has been found in controlled trials where parental  
 739 responsiveness to the infant increased as an outcome of engagement in  
 740 behavioral-based parenting interventions ( $p < .001$ ; Bakermans-  
 741 Kranenberg, van IJzendoorn, & Juffer, 2003). Whilst research conducted

742 in the past decade has started to recognize that a father's ability to be a  
743 sensitive-responsive parent is also an important influencing factor for  
744 infant development (Elliston, McHale, Talbot, Parmley, & Kuersten-  
745 Hogan, 2008), the literature is limited.

746 As previously discussed, a decline in relationship satisfaction during  
747 the transition to parenthood is common. One consequence is that the  
748 decline is associated with negative parenting practices such as low  
749 sensitivity-responsiveness to the infant (Halford & Petch, 2010). For  
750 couples who have the skills to communicate positively, to collaborate as a  
751 team when parenting (Gordon & Feldman, 2009), and to individually  
752 make an effort to sustain the relationship (Halford, Markman, Kline, &  
753 Stanley, 2003), research has shown a positive association with reduced  
754 stress, secure infant attachment and positive co-parenting built on the  
755 premise of both parents being sensitive-responsive to the infant  
756 (Florsheim et al., 2003).

757 Halford and Petch's (2010) meta-analysis of CP programs offered to  
758 pregnant couples, examined the effects CP programs have on couple  
759 relationship and adjustment to parenting. Only seven randomized trial  
760 studies that reported on couple satisfaction were included (for a full  
761 summary of studies included see Halford & Petch, 2010). Results showed  
762 that programs varied between five to 10 sessions and ranged from one to  
763 two hours duration each. Content varied from infant care by fathers  
764 (Doherty, Erickson, & LaRossa, 2006) to the couple relationship and  
765 parenting (Cowan & Cowan, 1995; Halford et al., 2010). Five of the seven  
766 studies found positive change in couple relationship satisfaction pre and  
767 post, when measured via scales (e.g., Children and Parenting subscale of  
768 PREPARE Inventory). In all instances the majority of program content  
769 focused on the couple relationship during the transition to parenthood  
770 (Halford et al., 2010; Kermeen, 1995; Midmer, Wilson, & Cummings, 1995;  
771 Schultz, Cowan, & Cowan, 2006; Shapiro & Gottman, 2005). Halford and  
772 Petch (2010) concluded that CP programs can enhance the experience of  
773 transitioning to parenthood. However, to be of optimal effect, the authors  
774 argued that future programs need to include content that is focused on the  
775 following: infant care; parenting expectations; communication and conflict  
776 management skills; maintaining affection and intimacy post-birth; and  
777 mutual emotional and practical support and increased social support.  
778 Halford and Petch (2010) observed that timing the delivery of existing CP  
779 programs in the fourth trimester was a limitation; attendance was often  
780 low given time limitations for new parents (Petch & Halford, 2008).

781 Future research that trials CP programs during the prenatal time  
782 may be warranted; the literature has supported that this can be an  
783 impactful time for the mother, father, and pre-born alike. Four key  
784 examples of possible impacts have been identified: (a) neural development  
785 of the pre-born (Castillo, Welch, & Sarver, 2011; Schore, 2000); (b)  
786 attachment predisposition between parents and baby (Eichhorn, 2012;

787 Martin, 2003); (c) genetic engineering (Janov, 2009; Lipton, 2008;  
 788 Weinhold, 2012); and (d) the couple relationship as expecting parents  
 789 prepare to transition away from a partner relationship to a parenting one  
 790 (Billingham, 2011; Schulz et al., 2006).

## 791 792 **Summary** 793

794 PPN parenting education has evolved to meet the needs of expecting  
 795 parents and to ensure best outcomes for families. In the earliest examples,  
 796 teachings were transmuted from woman-to-woman via the family unit  
 797 across generations. Over time, programs progressed to include midwives  
 798 and parenting advice books. More formalized childbirth education was  
 799 then offered with curricula, certification and licensing being required to  
 800 deliver education to parents. Focus expanded to incorporate natural pain  
 801 management exercises (i.e., Lamaze) as a part of education for navigating  
 802 the labor and birthing process.

803 A natural progression for PPN parenting programs was the call to  
 804 incorporate solid theoretical underpinnings. The intention was to include  
 805 sound methodology in the design and delivery of programs and to ensure  
 806 factors of interest could be consistently and reliably measured.

807 A tendency across time has been for PPN parenting programs to be  
 808 offered in the final trimester of pregnancy. Technology has enabled the  
 809 ability to be flexible in timing as well as the mediums for delivery of  
 810 education allowing for widespread accessibility at any time during a  
 811 pregnancy. Exploring the most effective times throughout a pregnancy to  
 812 share information provides an opportunity for investigation.

813 Three categories of consumer groups have been consistently discussed  
 814 in the literature. They included mothers-only, fathers-only, and expecting  
 815 couples.  
 816

## 817 **Opportunities for Developing Needs-Based Programs for Future** 818 **Parents** 819

820 Challenges were identified in the studies discussed that could be  
 821 addressed by future research. These included:  
 822

- 823 – the inclusion of the father in PPN programs to become the “norm,”
- 824 – targeting PPN programs to focus on strengthening the couple  
 825 relationship in preparation for the transition to parenthood (e.g.,  
 826 the inclusion of CP programs),
- 827 – incorporating knowledge and skills on how couples can create a  
 828 sustainably healthy lifestyle for themselves and the pre-born from  
 829 conception onwards,

- 830 – increasing the sample sizes utilized in studies to enable greater
- 831 generalizability,
- 832 – strengthening methodological procedures to include control
- 833 groups,
- 834 – understanding and exploring evolving theories that are relevant
- 835 in explaining influencing factors on the pre-born during the PPN
- 836 time to birth educators and parents,
- 837 – exploring factors that parents and birth professionals deem as
- 838 essential for inclusion (or exclusion) in PPN parenting programs
- 839 moving forward. This could ensure the foundation for positive
- 840 transition into parenthood is solid and relevant to modern times,
- 841 – determining the most effective ways to disseminate PPN
- 842 parenting programs to disadvantaged groups,
- 843 – educating people wanting to conceive and already expecting
- 844 parents of the value in PPN parenting programs as well as where
- 845 to access programs, interventions, information and resources, and
- 846 – understanding the most appropriate timing of a pregnancy to
- 847 engage expecting parents in PPN parenting programs.
- 848
- 849

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