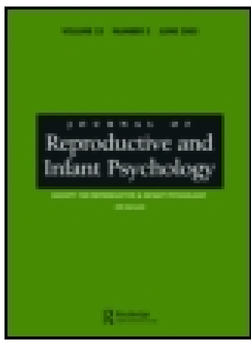

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'Make the Connection' parenting skills programme: a controlled trial of associated improvement in maternal attitudes

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ABSTRACT

Objective: Assess the effectiveness of Make the Connection (MTC), an attachment-focused parenting programme, in fostering maternal attitudes thought to underlie sensitive responding.

Background: Effective parenting programmes are likely to mitigate negative outcomes associated with insecure attachment in infancy. Negative maternal attitudes and cognitions are thought to underlie insensitive parenting behaviour, and thus constitute a promising target for intervention.

Methods: 180 mothers of young infants were assigned to experimental or waitlist control groups based on programme availability. Mothers completed questionnaires assessing parental attitudes at baseline, and again either after participating in MTC or after a 9-week waitlist period.

Results: Participants who completed MTC showed significant improvement in overall attitude with a medium effect size relative to the waitlist control group, which showed no change. A small but significant interaction with infant age was noted, such that mothers of younger infants showed slightly more attitude improvement. Relative to the control group, participation in Make the Connection was associated with significant improvement in all attitudes except for self-efficacy as a parent, which improved with time regardless of programme participation.

Conclusion: Make the Connection is effective in promoting positive parent-to-infant attachment and is a strong candidate for public health initiatives targeting parenting skills.

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KEYWORDS
Parent training; infants; parent attitudes; mothers

Introduction

Parent–child interactions early in life are critical for the construction of attachment representations, which in turn influence socioemotional competence, academic skills, occupational achievement and mental health throughout life (Dykas & Cassidy, 2011; Fraley, 2002; Lewis-Morrarty et al., 2015; Moss & St-Laurent, 2001; Schore, 2001; Sroufe, 2005). These representations are formed in large part through the primary caregiver's ability to sensitively respond to the infant's cues (e.g. providing access to a toy that has caught the infant's attention or accurately identifying the cause of distress and meeting the corresponding need). In this way, the caregiver acts as a secure base from which the infant can explore the world (Ainsworth, 1979; Bowlby, 1969; De Wolff & van IJzendoorn, 1997). According to

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attachment theory, when the caregiver is consistently sensitive and responsive, the child forms a secure attachment orientation; they are able to rely on attachment figures for co-regulation and develop self-regulatory abilities. When the child's needs are often dismissed by the caregiver, an avoidant orientation develops and the child believes that attachment figures are unlikely to provide effective co-regulation; the child tends to disengage from support and engage in unhealthy suppression of distress. When the caregiver is inconsistent in meeting the infant's needs, the child resorts to an escalating response to distress; the child struggles to use support to effectively co-regulate and maintains a high level of distress to acquire or maintain their parent's caring attention (Cassidy, 1994; Mikulincer, Shaver, & Pereg, 2003; Zimmer-Gembeck et al., 2017).

Many factors can interfere with a caregiver's ability to provide consistently sensitive responses. These factors include, but are not limited to: poverty, unresolved grief or other mental health problems, stressful life events and maladaptive beliefs about infant care or development (e.g. concerns about spoiling the infant by giving too much affection, developmentally inappropriate expectations: Coyl, Roggman, & Newland, 2002; Raikes & Thompson, 2005; Shah et al., 2011; Weinfield, Sroufe, & Egeland, 2000). External stressors tax the caregiver's emotional resources, which may undermine effective parenting behaviour, particularly for a parent with negative relational schemas and/or attributional styles. Make the Connection (MTC) is an attachment-focused parent training programme designed to foster loving relationships by empowering parents to understand their baby's cues and provide the best possible care. This paper presents results of a formal evaluation of this programme, as delivered to 'at-risk' mothers by a public health agency in a large urban area in Canada. The aim of this evaluation is to determine whether MTC participation is associated with positive change in parental attitudes towards their infant and parenting role. This evaluation will inform the ongoing provision of community-based support for new parents who are 'at-risk' for poor attachment outcomes.

Despite the large volume of research on attachment representations formed in infancy (for reviews see Ainsworth, Blehar, Waters, & Wall, 2015; Benoit, 2004; Goldberg, 2013), less is known about the infant-directed attitudes and beliefs held by the parent, sometimes referred to as parent-to-infant attachment (Mason, Briggs, & Silver, 2011). It is thought that positive parent-to-infant attachment facilitates healthy infant development, parenting skills, and a 'solid, lasting, loving bond' (Goulet et al., 1998, cited in Schenk, Kelley, & Schenk, 2005). Further, positive maternal attitude predicts secure attachment behaviour by the infant (Feldstein, Hane, Morrison, & Huang, 2004). In contrast, poor parent-to-infant attachment has been identified as the mechanism through which maternal depression undermines sensitive mother–infant interactions (Mason et al., 2011). MTC aims to improve parental attitudes through activities designed to enhance the parent's ability to take the baby's perspective and understand infant communication, with the ultimate goal of establishing felt security for the infant.

As in other programmes, MTC takes a behaviour orientation, using video to focus on the interaction between parent and infant by point out communicative signals, effective responses and discussion of the infant's perspective and mental state (for a review, see Fukkink, 2008). In prior work, video-feedback has been shown to enhance sensitivity among mothers of highly reactive infants, families coping with preterm birth, behavioural disorders and parental mental health conditions such as eating disorders (Juffer, Bakermans-Kranenburg, & van Ijzendoorn, 2012; Velderman, Bakermans-Kranenburg,

Juffer, & van IJzendoorn, 2006). In MTC, mothers are encouraged to forget about the camera and focus on connecting with their baby using the theme of the day's discussion (i.e. Learning, Language, or Love). Encouragement or gentle coaching is provided by the facilitator if the parent has any difficulty engaging the baby, reading their cues, or using the messages from the discussion. The mother is videotaped while playing with her infant for approximately 3 minutes, while other parents socialise with each other and the second facilitator. Later, each tape is viewed by the group, and the facilitator and participants discuss positive aspects of the interaction. Care is taken to avoid criticism during tape-review to enhance mothers' comfort with this process. Mothers observe their infants' responses and are encouraged to speculate about what the baby is thinking or feeling at that time.

MTC augments video-feedback with other resources such as informational materials about infant development, age-appropriate games and songs, social support and guided discussions. By conveying knowledge about typical infant needs and development (e.g. night-time awakening), it is hoped that parents will form appropriate expectations and manage frustration effectively. Topics of discussion are designed to foster social support and empathic understanding among parents, and to make the infant's experiences more relatable to adults. For example:

> You and a friend are at an amusement park and your friend wants you to go with her on one of the wildest rides. You are terrified! How would you like your friend to let you know she understands and accepts how you feel? What do you NOT want your friend to do or say? How could your friend help you feel less scared and maybe even get you to go on the ride? … Now imagine it's time to give your baby a bath. As soon as he gets close to the water he starts to wriggle and then to wail. He's terrified! How would you let your baby know that you understand and accept how he feels? What would your baby NOT want you to say or do? How could you help your baby feel less scared about bath time and maybe even get to enjoy it? (Watson & MacKay Ward, 2009, pp. 84-87.)

MTC uses these varied strategies with the aim of enhancing parental empathic understanding to develop a pattern of sensitive responding and felt security for the infant.

MTC groups of 8–10 parents are led by two public health nurses and are comprised of nine 90-minute weekly sessions. Each session includes three segments: 'Parent and Baby Time', during which parents interact with their infant through guided activities and reflect on their responses; 'Parent Discussion', during which the facilitator leads a discussion which draws parallels between parents' own experiences and those of their infant; and 'Videotaping/Refreshments', during which parents are videotaped with their infants and socialise. Participants also have the opportunity for individual discussions with facilitators at the end of each session. Activities are structured around the themes of 'Making the Connection' through learning, language and love (Watson & MacKay-Ward, 2005).

An internal evaluation examined the demographic profile and perceptions of parents attending MTC (Swigger, O'Neill, & Kuhlmeier, 2017). Participants were 98% mothers, the majority of whom were married and first-time parents. Parents reported that they continued attending MTC each week because they liked the facilitator, felt connected to other parents, and found the topics interesting. The majority of participants (82%) indicated they were more frequently singing, playing, talking and/or taking the baby's lead. Approximately half of parents declined to participate in videotaping, but among those who did participate, 92% reported the experience was 'very useful' or 'somewhat useful'. Almost all participants (96%) indicated they would recommend MTC to a friend (Swigger et al., 2017). The present study

sought to expand on these qualitative findings using validated measures of parental attitudes. Additionally, a waitlist control group was included to account for the effects of time, such as additional experience with the infant and the parenting role. Specifically, the present study examined whether participation in Make the Connection is associated with improvement in maternal attitude towards her infant and the parenting role.

Method

Participants

This study was approved by the Queen's University General Research Ethics Board and the Toronto Public Health Research Ethics Board. The evaluation used a pseudo-randomised waitlist control design, with data collected between 2013 and 2016. Parents were referred to the programme by various sources, including other public health programmes, partner agencies within the community and local family resource centres. Those who consented to participate in the study were assigned by the intake nurse to the intervention or waitlist control conditions based on the availability of a group within the family's geographic region before the infant's first birthday.

Under this procedure, parents of older infants were disproportionately assigned to the experimental group so that they could attend MTC before their infant became too old to participate. Therefore, a sex- and age-matched (to the nearest month) subsample was randomly selected from this larger pool to create equivalent intervention and waitlist control groups. Random selection was completed by the first author by grouping participant numbers by age and sex, then blindly drawing an experimental participant number corresponding to the age and sex of each control group infant. To be included in the experimental group, parents must have attended at least five MTC sessions and have completed both videotaping activities (thus, those parents who declined videotaping were not included in this study). Regular attendance and videotaping are potentially important features of the programme (Fukkink, 2008; Velderman et al., 2006), and therefore these criteria were adopted to ensure that experimental group participants had in fact completed the majority of the Make the Connection programme (see attrition analysis below).

This procedure resulted in a final sample of 180 mothers with infants ranging from 3 to 8 months of age, with identical infant age and sex distributions for both control and experimental groups (*M*: 5.7 months, *SD* = 1.6 months, 66% male). Infants 1–2 and 9–12 months of age were excluded due to insufficient sample size in these age brackets across both conditions. All participants were considered to be 'at-risk' for poor attachment based on fulfilment of at least two eligibility criteria described in Table 1 based on logistical constraints, existing programmes in the community and empirically identified risk factors (Toronto Public Health, 2005). Screening to determine fulfilment of eligibility criteria was completed by a public health nurse over the phone. Demographics related to other children in the home, maternal age, marital status and household income are provided in Table 2.

Procedure and measures

At the time of referral, parents were assured that participation in the study did not affect their opportunity to attend the programme. Participants completed questionnaires at

Table 1. Eligibility criteria and screening interview items.

Eligibility criteria	Screening questions
First-time parent	Is this your first child or is it at least 7 years since your previous child was born?
Socially isolated	Does client speak English? If not, what is the primary language? Have you been in Canada less than 4 years? Have you moved in the past 6 months? Are you new to the city? Do you have family or friends nearby who help you feel safe and happy?
Low education	Did you graduate from high school? If not, how many years of formal education did you receive?
Less than 25 years of age	Are you less than 25 years of age?
Parenting alone	Are you parenting alone (e.g. widowed, divorced, separated, or single)?
Lacks confidence and/or self-efficacy	Being a parent can often be stressful and make you feel worried/anxious. Thinking about your own experience as a parent, would you say being a parent makes you feel tense and anxious: (a) most of the time, (b) some of the time, (c) almost never. How confident are you as a parent? (A) Not confident at all, (B) somewhat confident, (C) confident, (D) very confident.
At risk for poor infant sensitivity	Thinking about your relationship with your baby, which of the following choices describes how you usually feel: I feel that I am able to understand what my baby wants and needs … (A) most of the time, (B) some of the time, (C) almost never. How often do you play, sing, read, rock, coo, or talk to your baby for 5 minutes or more? (A) Once a week or less, (B) a few times a week, (C) 1 or 2 times per day, (D) many times daily.
At risk for postpartum depression	Do you have a history of depression or anxiety? At any time after the first two weeks since the birth of your baby have you felt depressed (i.e. sad, crying, irritable, alone)?

Time 1 (online after intake) and again at Time 2 after completing MTC (intervention group) or following a nine-week waiting period (waitlist control). Two measures of maternal attitudes are described below. For a description of each subscale, see Table 3. As part of a separate study, mothers also answered various questions about their demographic profile, perceptions of the programme, services accessed in the community and other infant and parent characteristics.

Maternal postnatal attachment scale (MPAS; Condon & Corkindale, 1998)

This 19-item questionnaire assesses mothers' relational attitudes towards their infant. Refinements to the original questionnaire have yielded three robust subscales: Quality of Attachment, Pleasure in Interaction and Absence of Hostility (see Table 4), with strong test–retest reliability and convergent validity in community samples (e.g. Feldstein et al., 2004; Mason et al., 2011; Van Bussel, Spitz, & Demyttenaere, 2010).

Parent sense of competence questionnaire (PSOC; Gilmore & Cuskelly, 2009)

This 14-item questionnaire assesses participants' own experience of the parenting role. Based on an earlier version of this instrument (Johnston & Mash, 1989), Gilmore and Cuskelly (2009) identified three subscales: Interest, Efficacy and Satisfaction (see Table 3). This questionnaire is among the most widely used tools to assess parental attitude; however, reliability and validity findings are mixed (e.g. Gilmore & Cuskelly, 2009; Ohan, Leung, & Johnston, 2000; Rogers & Matthews, 2004).

Table 2. Sample demographics.

		Experimental	Control	Full sample
First child	Yes	77	82	159
	No	13	8	21
Marital status	Married or living with partner	80	82	162
	Single	7	8	15
	Separated, divorced, or widowed	3	0	3
Age group	20–25 years	0	1	1
	26–35 years	53	64	117
	36 years or older	37	24	61
Annual income	$0–$29,999	8	10	18
	$30,000–$59,999	11	10	21
	$60,000–$89,999	15	18	33
	$90,000–$119,999	12	10	22
	$120,000–$149,999	10	9	19
	$150,000 or more	17	15	32

Table 3. Subscale items and descriptions.

Subscale	Description	Example item
Maternal Postnatal Attachment Scale		
Quality of Attachment	Positive, fulfilling connectedness to the infant	When I am with the baby and other people are present, I feel proud of the baby
Pleasure in Interaction	Desire for closeness and enjoyment of interaction	I try to involve myself as much as I possibly can playing with the baby
Absence of Hostility	Lack of hostile attitude and action toward the infant	When I am caring for the baby I get feelings that the child is deliberately being difficult or trying to upset me (reverse-scored)
Parent Sense of Competence Scale		
Interest	Engagement with the parenting role	My talents and interests are in other areas, not in being a parent (reverse-scored)
Efficacy	Perceived success in parenting activities	Being a parent is manageable, and any problems are easily solved
Satisfaction	Fulfilment from parenting	Even though being a parent could be rewarding, I am frustrated now while my child is at his/her present age

Data analysis

A single Global Attitude measure was created by equally weighting all six subscales and calculating the mean score. A repeated measures analysis of variance was used to detect changes in this Global Attitude score associated with MTC participation. A multivariate analysis of covariance examined this pattern in further detail by examining changes at the subscale level.

Results

Attrition analysis

All participants who completed the programme (N = 275) were compared to all participants who did not complete (N = 135) due to having attended less than five classes or completing less than two videotaping activities. Parents who did not complete the programme had infants who were slightly older than those who did complete (F(1,408) = 5.66, p = .02, η^2 = .014, M_{exp} = 6.29 months, $M_{non\text{-}completer}$ = 6.85 months). These groups, however, did not differ on parent's age group (F(1,408) = 1.0, p = .31),

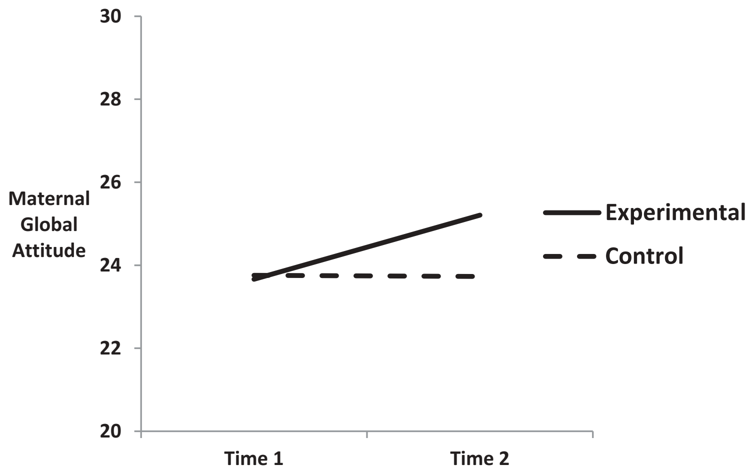

Figure 1. Global Attitude change over time across experimental and control conditions.

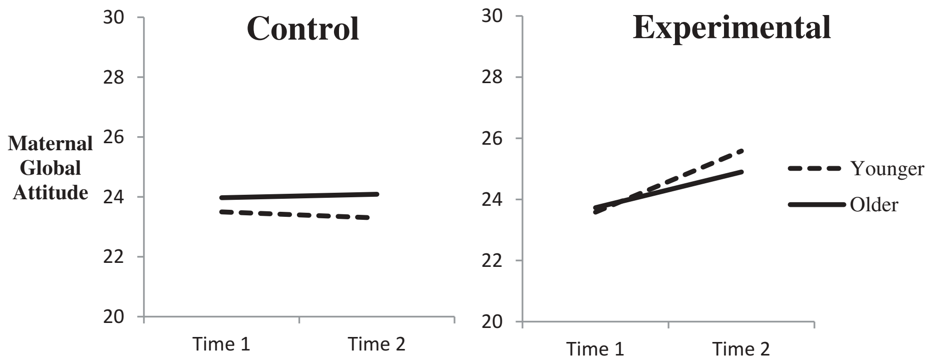

Figure 2. Global Attitude change over time across condition and infant age group.

infant gender (51% female in non-completer group, 52% female in experimental group, $p = .53$, Fisher's exact test), firstborn infants (88% firstborn infants in both groups, $p = .87$, Fisher's exact test), or Global Attitude at time 1 ($t(409) = 0.84$, $p = .40$). Cronbach's alpha indicated that the Global Attitude scale had strong inter-item reliability at both time points ($\alpha_{pre} = .831$, $\alpha_{post} = .828$).

RM ANOVA results: global attitude

Repeated measures ANOVA indicated a significant time by condition interaction with a medium effect size ($F(1,176) = 29.894$, $p < .001$, $\eta^2 = .145$). Mothers who completed MTC demonstrated a positive change in Global Attitude, whereas control group mothers remained stable across the nine-week period (Figure 1). A small but significant interaction with infant age was also noted ($F(1,176) = 3.748$, $p = .054$, $\eta^2 = .021$). Parents of younger infants (3–5 months) showed slightly greater attitude improvement compared to parents of older infants (6–8 months), although both groups showed significant improvement following MTC. Control group parent attitudes did not differ as a function of infant age.

Table 4. RM MANCOVA results. Effect of MTC across subscales.

Source	Measure	Statistic
Time × Condition	Absence of Hostility	$F(1, 143) = 23.47$, $p < .001$, $\eta^2 = .142$
	Pleasure in Interaction	$F(1, 143) = 6.39$, $p = .013$, $\eta^2 = .043$
	Attachment Quality	$F(1, 143) = 10.60$, $p = .001$, $\eta^2 = .069$
	Interest	$F(1, 143) = 12.77$, $p = .001$, $\eta^2 = .082$
	Satisfaction	$F(1, 143) = 5.55$, $p = .020$, $\eta^2 = .038$
	Efficacy	$F(1, 143) = 2.46$, $p = .119$, $\eta^2 = .017$
Time	Absence of Hostility	$F(1, 143) = 0.06$, $p = .804$, $\eta^2 = .000$
	Pleasure in Interaction	$F(1, 143) = 0.13$, $p = .724$, $\eta^2 = .001$
	Attachment Quality	$F(1, 143) = 0.19$, $p = .665$, $\eta^2 = .001$
	Interest	$F(1, 143) = 0.70$, $p = .404$, $\eta^2 = .035$
	Satisfaction	$F(1, 143) = 0.38$, $p = .540$, $\eta^2 = .003$
	Efficacy	$F(1, 143) = 5.07$, $p = .026$, $\eta^2 = .035$

Table 5. Estimated marginal mean differences over time across condition.

Condition	Measure	Mean difference: Time 2 – Time 1	St. error	*p*	95% C.I. (LSD adjusted)
Experimental	Absence of Hostility	2.24	.36	<.01	1.52–2.95
	Pleasure in Interaction	.80	.33	.02	.15–1.45
	Attachment Quality	.91	.26	<.01	.39–1.42
	Interest	1.07	.31	<.01	.455–1.69
	Satisfaction	1.4	.41	<.01	.60–2.22
	Efficacy	1.90	.40	<.01	1.10–2.70
Control	Absence of Hostility	−.19	.34	.59	−.87–.50
	Pleasure in Interaction	−.35	.31	.27	−.97–.27
	Attachment Quality	−.27	.25	.27	−.77–.22
	Interest	−.47	.30	.12	−1.05–.12
	Satisfaction	.08	.39	.84	−.69–.85
	Efficacy	1.02	.39	.01	.26–1.79

RM MANCOVA results: subscale analysis

A repeated measures MANCOVA was used to assess the effect of MTC across the six subscales, controlling for infant age. Significant time-by-condition interactions were observed for five of the six subscales (Table 4). A medium effect size was noted for Absence of Hostility, and small effect sizes for Pleasure in Interaction, Attachment Quality, Interest and Satisfaction (Table 5). Changes in Efficacy did not significantly differ across experimental and control conditions. The main effects of time were observed for Absence of Hostility, Satisfaction and Efficacy, with small to medium effect sizes (Table 5).

Discussion

Attachment representations formed in infancy exert an enduring and widespread influence across the lifespan (Fraley, 2002). Accordingly, great emphasis is placed on promoting healthy interactions between mother and infant early in life, particularly among populations at risk for insecure attachment. Parental attitudes and cognitions are thought to be one mechanism through which various stressors may compromise effective parenting (Mason et al., 2011). For example, a mother who believes that her infant should be 'seen and not heard' is likely to experience significant frustration and may respond to infant distress in a manner that is critical, ineffective, and ultimately harmful. Accordingly, the present study provides evidence that an attachment-focused parent-training programme is

effective in developing positive maternal attitudes thought to underlie sensitive responding. It is hoped that development of positive maternal attitudes and behaviour will ultimately result in felt-security and secure attachment for the infant.

Results demonstrated that mothers who completed MTC showed significant improvement in maternal attitudes thought to underlie sensitivity relative to the control group. When subscales were examined individually, significant improvements were observed for five of the six subscales (i.e. Quality of Attachment, Pleasure in Interaction, Absence of Hostility, Satisfaction and Interest). Although experimental and control groups did not significantly differ on change in Efficacy, this subscale showed the most improvement with time regardless of MTC participation. This pattern indicates that mothers tend to feel more capable with respect to the parenting role over time even without intervention. Absence of Hostility showed the greatest improvement following MTC participation, suggesting that MTC is successful in reducing maternal resentment and negative attributions about infant behaviour. Effect sizes across subscales ranged from small to medium, and a small but significant interaction with infant age showed that the programme was slightly more effective for parents of younger infants. Together, these results are consistent with qualitative findings that most parents found the programme useful and enjoyable (Swigger et al., 2017).

MTC utilises a number of strategies aimed to enhance the loving bond between mother and infant, and the relative importance of each strategy is unknown at present. Guided discussions are designed to make the infant's experience more relatable to an adult caregiver, with the aim of encouraging empathic perspective-taking. Social support is emphasised, with the hope that mothers will benefit from encouragement, validation, and 'normalising' frustrations and setbacks. Facilitators provide psychoeducation about infant development throughout the sessions. Age-appropriate activities (i.e. games, songs) are taught so that parents have specific strategies for interaction, which may be particularly helpful to parents with limited experience or comfort with infants. Finally, video-taping is known to be an important component of similar interventions (Velderman et al., 2006), and is thought to encourage parents to reflect on their own non-verbal behaviour, take their infant's perspective and identify communicative cues by the infant.

This analysis supports the ongoing use of MTC as a programme to support new parents; however, several limitations necessitate further study. Approximately half of mothers declined to participate in videotaping (Swigger et al., 2017), and were therefore excluded from this study. Attrition results indicated no significant difference in maternal attitude between the experimental group and those who were excluded due to low attendance or non-completion of videotaping. The high rate of refusal for videotaping represents an important challenge in implementation of the programme and possible target for further programme development; MTC facilitators reported that lack of quiet space, fussy babies and lack of comfort with the process were factors that interfered with videotaping (Swigger et al., 2017). Given findings suggesting that brief parenting interventions may be most effective (e.g. Fukkink, 2008), a dose–response analysis investigating the number of sessions required for positive change in attitude could inform programme delivery.

Further, although all mothers in the programme were considered to be at risk based on fulfilment of eligibility criteria, low-income mothers were under-represented in the

sample. Provision of tangible resources such as offering a meal at MTC meetings may improve attendance for this demographic. All participants in the present sample were mothers, so other caregivers were excluded from analysis. Investigation of the utility of MTC for fathers, grandparents, foster parents and other caregivers would determine whether MTC is effective across diverse family contexts. Finally, reliance on questionnaire-report rather than observational data allows for the possibility that demand characteristics may have influenced results. Future research may endeavour to evaluate infant attachment directly via observational means (e.g. the Strange Situation procedure: Ainsworth et al., 2015; Infant CARE-Index: Crittenden, 1981), examine other potential effects such as maternal mental health or infant sleep and feeding patterns and evaluate the effect of other MTC programmes targeting older infants, aged 1–2 years and 2–3 years.

In summary, Make the Connection, as delivered to at-risk mothers by a large public health agency in Canada, is effective in improving maternal attitudes thought to underlie sensitive responding. This programme is a strong candidate for future and ongoing public health initiatives seeking to invest in the socioemotional development of at-risk infants.

Disclosure statement

No potential conflict of interest was reported by the authors.

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