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Mom Power: Preliminary Outcomes of a Group Intervention to Improve Mental Health and Parenting Among High-Risk Mothers

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Abstract

Purpose—Maternal psychopathology and traumatic life experiences may adversely impact family functioning, the quality of the parent-child relationship and the attachment bond, placing the child's early social-emotional development at risk. Attachment-based parenting interventions may be particularly useful in decreasing negative outcomes for children exposed to risk contexts, yet high risk families frequently do not engage in programs to address mental health and/or parenting needs. This study evaluated the effects of Mom Power (MP), a 13-session parenting and self-care skills group program for high-risk mothers and their young children (age <6 years old), focused on enhancing mothers' mental health, parenting competence and engagement in treatment.

Methods—Mothers were referred from community health providers for a Phase 1 trial to assess feasibility, acceptability and pilot outcomes. At baseline, many reported several identified risk factors, including trauma exposure, psychopathology, poverty and single parenthood. 99 mother-child pairs were initially recruited into the MP program with 68 women completing and providing pre- and post- self-report measures assessing demographics and trauma history (pre-assessment only), maternal mental health (depression and PTSD), parenting and intervention satisfaction.

Results—Results indicate that MP participation was associated with reduction in depression, PTSD and caregiving helplessness. A dose response relationship was evident in that, despite

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baseline equivalence, women who attended ≥70% of the 10 groups (completers; N=68) improved on parenting and mental health outcomes, in contrast to non-completers (N=12). Effects were most pronounced for women with a mental health diagnosis at baseline. The intervention was perceived as helpful and user-friendly.

Conclusions—Results indicate that MP is feasible, acceptable and holds promise for improving maternal mental health and parenting competence among high-risk dyads. Further research is warranted to evaluate the efficacy of MP using randomized controlled designs.

Keywords

parenting; mental health; maternal depression; PTSD; parent-child intervention

Maternal mental health has been shown to have significant effects on parenting quality and child outcomes (Goodman & Gotlib, 1999). Specifically, mental illnesses such as depression and post-traumatic stress disorder (PTSD) have been shown to interfere with sensitive parenting (Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Schechter et al., 2004) as mothers may be less able to interpret the infants' distress cues (Schuetze & Zeskind, 2001), be less consistently and affectively attuned to their child (Digiuseppe, Linscott, & Jilton, 1996), and more intrusive or disengaged (Field, Healy, Goldstein, & Guthertz, 1990; Lovejoy et al., 2000). Less sensitive parenting may lead to less optimal infant emotion regulation capacity (Brand, Engel, Canfield, & Yehuda, 2006; Tikotzky, Chambers, Gaylor, & Manber, 2010), and to the development of less secure mother-child attachments (Levendosky & Graham-Bermann, 2001). In combination with other risk factors such as poverty, limited access to resources, inadequate social support (Reid, 2004), exposure to childhood maltreatment, domestic violence and ongoing conflict with family of origin (Margolin & Gordis, 2004; Patel, Flisher, Hetrick, & McGorry, 2007), maternal psychopathology can critically undermine healthy child development (Shonkoff & Meisels, 2000; Tough et al., 2008), contributing to poorer outcomes for both parents and children (Sameroff & Seifer, 1990).

Interventions to support parenting among high risk, overburdened families represents a significant public health need (Aday, 2001). Interventions that focus both on enhancing sensitive parenting as well as improving maternal mental health have a greater potential for positive impact on a broader range of outcomes, including maternal, child and family system functioning (Forman et al., 2007; Nylen, Moran, Franklin, & O'Hara, 2006; van IJzendoorn, Juffer, & Duyvesteyn, 1995). For example, increasing a parent's ability to accurately perceive, interpret and respond to their infant's cues has been shown to improve attachment security (Bakermans-Kranenburg, van Ijzendoorn, & Juffer, 2003; van IJzendoorn et al., 1995), while sensitively augmenting protective factors, such as increasing access to social support and clinical care can ameliorate some of the common consequences of maternal mental illness (Crockenberg, 1987; van IJzendoorn et al., 1995). Therefore, effective support for families experiencing multiple burdens and challenges calls for a multi-faceted program aimed at enhancing parent-child attachment security by addressing multiple domains of risk (Klier, Muzik, Rosenblum, & Lenz, 2001; Smith, Cumming, & Xeros-Constantinides, 2010).

Many high-risk women are reluctant to take advantage of services even when made readily available (Flynn, Henshaw, O'Mahen, & Forman, 2010; Griffin, Cicchetti, & Leaf, 1993). Such reluctance is likely due to many reasons, ranging from lack of child care or transportation to distrust of health care professionals (Newman et al., 2000; Stenius & Veysey, 2005). Mistrust, shame and a cognitive perception that others are “hostile or unhelpful at best” are likely barriers, and the underlying source of these perceptions may be the mothers’ own trauma history (Muzik et al., 2013). Thus, successfully engaging vulnerable and high-risk mothers, particularly women with a history of interpersonal trauma, in effective treatments remains a significant challenge.

Trauma is an experience that by its nature threatens a person’s health or well-being. While physical trauma may visibly damage tissue or endanger life, psychological trauma may violate assumptions connected to survival as a member in a social group. Violated assumptions may relate to the availability and reliability of attachment figures, the ability to meet internal moral standards and achieve major life goals, or the existence of an orderly relation between actions and outcomes. Interpersonal trauma, in childhood or adulthood, carries risk for both physical and psychological injury. Social–cognitive (Horowitz, 1988; Janoff-Bulman & Frieze, 1983) and information-processing theories (Foa, Ehlers, Clark, Tolin, & Orsillo, 1999) discuss trauma exposure’s impact on a person’s world view (safety, relational trust) and self-efficacy. Individuals with trauma histories are more likely to experience their life circumstances as uncontrollable and unpredictable, their relationships as unreliable and hurtful, and oneself as ineffective and hopeless (Foa et al., 1999). Trauma exposure may fundamentally change ones’ cognitions and affect, in such that a person may be more prone to emotional dysregulation; that is, the tendency for persistent hypervigilance and anxiety alternating with emotional avoidance and numbing, depression and negative cognitions. This emotional dysregulation is the potential basis for an individual’s subsequent maladaptive behaviors, including depression and anxiety, low help-seeking, and, in the case of being a parent, poor parenting with risk for child abuse. Help-seeking is intrinsically influenced by a person’s problem recognition, appraisal of being worthy of seeking and receiving help, and trust that help is available. With trauma, these assumptions are often violated, and this may lead to poor follow through with help-seeking (Liang, Goodman, Tummala-Narra, & Weintraub, 2005). Interpersonal trauma impacts multiple domains of psychosocial functioning, and victims have increased risk for depression, posttraumatic anxiety (Beitchman et al., 1992; Feerick & Snow, 2005; Gladstone et al., 2004), high rates of re-traumatization (Arata & Lindman, 2002; Barnes, Noll, Putnam, & Trickett, 2009; Desai, Arias, Thompson, & Basile, 2002), increased risk for substance and/or alcohol dependence (Cohen, Hien, & Batchelder, 2008; Najavits, Weiss, & Shaw, 1997) and increased risk of single parenthood and poverty (Lipman, MacMillan, & Boyle, 2001) which may all influence parenting behaviors. Indeed, women with histories of interpersonal trauma, with or without psychopathology, are more likely to engage in parenting practices that are insensitive, harsh or overly permissive (Banyard, 1997; Cole, Woolger, Power, & Smith, 1992; Robinson, Mandleco, Olsen, & Hart, 1995). The presence of psychopathology such as depression or posttraumatic stress heightens risk for poor parenting, increases risk for child abuse, and may lead to disorganized attachment between mother and child (Lyons-Ruth & Block, 1996; Lyons-Ruth, Bronfman, & Parsons, 1999).

Despite barriers to engage in treatments, women with trauma-histories and psychopathology who are mothers of young children also express desire for support for parenting and emotional wellbeing. We have recently published on mothers' accounts of health care needs during postpartum in a sample of women with trauma histories suffering depression and PTSD (Muzik et al., 2013). Women indicated via responses to semi-structured interviews, that they wanted services that felt safe, welcoming, and informal, yet were comprehensive in terms of providing physical and mental health as well as parenting guidance (Muzik et al., 2013). Mothers also discussed internal and external barriers for successful engagement to treatment, and reported on the benefit of peer support, for example, through group interventions.

Thus, in order for an intervention to effectively reach high risk mothers, most of whom also live in poverty, the approach needs to be welcoming and strengths-based, multi-modal, and incorporate features of treatments for depression, trauma and anxiety, while at the same support parenting skills. Such intervention models are available (Erickson & Egeland, 1999; Lieberman & Van Horn, 2004; Lowell, Carter, Godoy, Paulicin, & Briggs-Gowan, 2011; Olds, 2006; Weatherston, 2000), yet are typically delivered as long-term programs and require several years of treatment commitment on the mother's side. These programs are either home-based or office-based in delivery. Examples of home-based, long-term home visiting interventions are the Nurse-Family Partnership program (NFP; (Olds, 2006, 2010), Healthy Families America (HFA; (Holton & Harding, 2007), and CHILD First (Lowell et al., 2011), all of which deliver intensive weekly home visitation over months to years with wrap-around care, counseling and parenting education to families at risk delivered by either a nurse or a social worker. An example for an office-based parenting intervention is Child-Parent-Psychotherapy (Lieberman & Van Horn, 2004), with a specific focus on trauma work for young children under 5 and their mothers affected by domestic violence or other serious trauma. Given high prevalence of maternal clinical depression among the mothers utilizing such home visiting programs, Ammerman and colleagues recently developed and tested an In-Home Cognitive Behavioral Therapy (IH-CBT) ad-on program for depressed mothers receiving home visitation, which demonstrated significant reductions in maternal clinical depression after 15 intervention sessions added to the home visitation (Ammerman et al., 2013; Ammerman et al., 2011).

Finally, there are two group intervention approaches for individuals with trauma exposure. The Trauma Affect Regulation: Guide for Education and Therapy (TARGET; (Ford & Russo, 2006)) is a trauma-focused psychotherapy for the concurrent treatment of PTSD and substance use disorders (SUDs), and has been also adapted by the developers for mothers of young children (MOMS Study; (Ford, Steinberg, Moffitt, & Zhang, 2008)). TARGET's treatment goal is to help patients suffering from PTSD and SUDs to regulate intense emotions and solve social problems while simultaneously maintaining sobriety; the emphasis is generally less on parenting but on coping and understanding PTSD. In 12 weekly counseling sessions, therapists help reframe PTSD symptoms as healthy reactions to abnormal circumstances and help clients understand that they can reset their "biological alarm" (Ford & Russo, 2006), which has not served them well in ordinary life. Therapy focuses on the client's core values and hope, resilience, and strength. In addition, the Moms' Empowerment Program (MEP, (Graham-Bermann & Miller, 2013)) is a 10-week group

intervention targeting mothers and their children exposed to intimate partner violence (IPV) during the past year. It has been recently piloted in an open trial showing improvements in mothers' PTSD symptoms. Similarly, Seng and colleagues recently published on their work for pregnant trauma-survivor women with PTSD to whom they deliver a manualized, 10-module self-study psychoeducation program aiming to improve affect regulation, interpersonal reactivity and PTSD symptoms triggered by pregnancy cues (Survivor Moms' Companion, SMC; (Seng et al., 2011).

Despite the many currently available programs, challenges in regards to reach and uptake remain. In particular, programs that target trauma-exposed mothers with *infants or young children* are often either delivered as home-based interventions over long periods of time (e.g., NFP or HFA) or to captive or restricted audiences (e.g., mothers who experienced IPV in the past year, or TARGET MOMS study in prisons or residential placements). Particularly in regards to home-based programs, many mothers are not willing or are not emotionally able to commit to such a long-term intervention, often due to fear of stigma, mistrust of professionals or ongoing crisis from chaotic life circumstances. In order to commit to a potentially beneficial long-term intervention, many of these families may require a more "safe-soft" approach to treatment, i.e., an initial time-limited, engaging, nurturing and trust-building treatment experience, such as the program we propose.

Our comprehensive and multi-modal intervention, Mom Power (MP) (Muzik et al., 2010; Stanton et al., 2011; LePlatte, Rosenblum, Stanton, Miller & Muzik, M., 2012), strives to enhance treatment engagement in psychiatrically high-risk mothers, with an integrated focus on self-care/mental health and parenting competence, while at same time enhancing social support and access to care. Mom Power is theory-driven and incorporates principles of trauma-informed care (Substance Abuse and Mental Health Services Administration, n.d.) and attachment theory (Bowlby, 1969). Key intervention principles are appreciating the importance of safety, trust-building, enhancing self-efficacy through empowerment, and skills building around self-care/mental health, problem-solving, emotion regulation, and parenting competence. This paper introduces core elements of MP and reports on preliminary Phase 1 results examining the feasibility, acceptability, and preliminary outcomes of the intervention for high-risk mothers with mental health challenges and social risk factors.

Description of the Intervention

MP is a manualized, 13-session (3 individual and 10 group sessions) multi-family intervention targeting improvements in self-care/mental health and parenting competence in mothers with experiences of trauma or abuse and psychopathology (depression with/without PTSD). MP is a complex intervention with conceptual roots in Attachment Theory (Bowlby, 1969) and Trauma Theory (Cloitre et al., 2009; J. Herman, 1992), and blends elements from several evidenced-based modalities including child-parent psychotherapy (CPP; (Cicchetti, Rogosch, & Toth, 2006; Cicchetti, Toth, & Rogosch, 1999; Lieberman, Ghosh Ippen, & Van Horn, 2006; Toth, Rogosch, Manly, & Cicchetti, 2006), trauma-informed care (Substance Abuse and Mental Health Services Administration, n.d.), solution focused therapy (Lipchik, 2002), motivational interviewing (MI; (Miller & Rollnick, 2002), as well as elements from

cognitive–behavioral (CBT; (Dobson, 2009) and dialectical behavior therapy (DBT; (Robins, Ivanoff, & Linehan, 2001), integrated into a curriculum that aims to engage participants in a dynamic, interactive, and helpful experience.

The intervention is led by two trained co-facilitators, at least one of whom is a master's level clinician and serves as the lead facilitator. Although the model is successful with both facilitators holding master's level credentials, there is also the opportunity for co-facilitators to be a trainee in a related discipline (i.e. psychiatry, social work, psychology, early education), able to learn and practice the model with support from the lead facilitator. The model includes 10-weekly group intervention sessions and three individual sessions, specifically, one individual session mid-group and one each before and after the group. The individual sessions are designed to engage, motivate and build trust and rapport with participants. Additionally, individual sessions allow an opportunity to assess the logistics of group participation as well as the safety and tangible needs of each family. Group facilitators discuss personal goals, barriers, and attainment with each participant, and provide individualized referrals for further services as desired and indicated. The group intervention content is delivered in 10 weekly 3-hour sessions during which mothers and their children participate. The curriculum presents the theory-driven and evidence-based parenting and self-care skills concepts in a friendly, interactive, non-judgmental and accessible format.

The focus of the didactic parenting material is on promoting secure attachment between parent and child. Parents learn how to function as a secure base and a safe haven for their child (Bowlby, 1988); how to meet a child's needs while exploring and connecting with a caregiver; how to repair a disruption in the relationship; how to co-regulate a child's emotions; and how to create an atmosphere of warmth, joy and delight in which their child can learn and grow. In addition, parents explore what experiences from the past might impact their parenting and what current experiences may be affecting their children.

Through a relationship with the facilitators in which the facilitators play the role of secure base/safe haven, a participant has the *experience* of having her thoughts and feelings held in mind by the facilitators. Facilitators do this by creating a welcoming environment where all thoughts and feelings are welcomed, where the facilitators reflect and validate feelings, and where the facilitators respect the participant's pace. Facilitators not only present educational material, but also meet the participants' needs while they are exploring and when they need connection. Facilitators provide support and encouragement when participants are trying new skills and ways of interacting with their children.

Moreover, when we focus on *self-care*, we are signaling to the mothers that we care about them as individuals and that their well-being is important. We not only want them to focus on the feelings and needs of their children, but we want t9 hem to know that focusing on their own feelings and needs is important as well. We believe that women can be better mothers when they make taking care of themselves a priority. The self-care skills utilize skills derived from DBT and mindfulness, and guided imagery to improve affect regulation and decrease symptoms associated with depression, anxiety, and PTSD. There is a growing body of evidence that mind-body skills such as these are effective for preventing and treating stress, depression and anxiety, post-traumatic stress disorder, traumatic brain injury,

and pain syndromes (Hofmann, Sawyer, Witt, & Oh, 2010; Kimbrough, Magyari, Langenberg, Chesney, & Berman, 2010; Moore, Brown, Money, & Bates, 2011). When mental health symptoms are under control and mothers are not distracted by these symptoms, they have increased capacity to attend to their children's feeling and needs, and are more capable of self-reflection. The focus on parenting and self-care is inter-woven throughout the manual and each session.

While manualized, the curriculum is also highly personalized and interactive, and meant to create a welcoming, trust-building atmosphere, in order to plant the seed that relationships, both with peers and professionals, can be "safe and satisfying" for the mothers. As outlined above the MP intervention curriculum blends therapeutic elements consistent with several evidence–based practices (e.g., CPP, MI and others), yet the group delivery also adds practices informed by social learning theory (Grusec, 1992). As the group process evolves over time, the psychoeducational component decreases and gives way for more "therapeutic reflection" and insight generating processes. MP intervention goals are to "create buy in" for treatment, provide mental health and parenting psychoeducation, enhance self-care and stress coping skills (thereby reducing depression and anxiety), and finally, to enhance mothers' reflective capacity, so that they can utilize these reflections to enhance sensitive parenting.

Group session structure

Mothers are invited to bring all children under the age of 6 to the MP group; group size is typically 6–8 mothers and their children. Each group session begins with a shared meal, providing an opportunity for informal connection among participating families and facilitators. During mealtime, children either join the mothers' table or play with each other and child care providers ("Child Team") in a nearby space. The MP Child Team is led by a master's level clinician and staffed by trained community volunteers, psychology undergraduates, and social work graduate students. The Child Team aims to provide a safe, predictable and welcoming environment for children with 1:1 attention. With the support of the Child Team leader and the MP supervisor, the Child Team members work closely and thoughtfully with each child, engage the child in developmentally appropriate activities, and support the mother-child dyad while mothers are present. After mealtime, mothers attend an approximately 90–105-minute Mom Group. Mom and Child Groups are held in adjacent, yet separate spaces, leading to a natural mother-child separation. This separation and subsequent reunion are used as valuable assessment and therapeutic opportunities (described in more detail as follows). Each Mom Group session follows a structured format and has a specific theme related to education regarding child development, attachment needs, and effective parenting; coping with past or ongoing trauma and emotional distress; and improved self-care using mind-body techniques. For Child Group sessions, a play-based written manual is provided to Child Team Leaders that offers a menu of options for weekly activities. The amount of structure is flexible with Child Team leaders gauging what each group of children needs in order to feel the environment is predictable and comfortable. The therapeutic goals of the Child Team are to create a safe, nurturing and play-based environment for the infants / toddlers and preschoolers while their mothers are in their group. In addition, we strive to learn about the children's behavioral and emotional coping with separation and peer play,

carefully observe and assess the children's developmental functioning, and actively assist children in practicing safe and predictable separation and reunion routines with their mothers. Sessions end with a facilitated 10–15-minute mother-child activity ("Circle Time"), that includes activities such as singing, finger-play or physical activity (e.g., mother-child yoga) meant to promote fun family time and end the session on a positive note.

Reflective consultation

Mom Group facilitators and the Child Team leader meet weekly for face-to-face consultation with a MP supervisor to process aspects of the group sessions. This opportunity to reflect on observations and plan for tailored interventions is a critical part of the model, providing therapists with an opportunity to reflect on their own experiences, plan for the session, and think together strategically regarding how to best support each mother and child. In addition, following each group session, the entire MP staff participate in a 20–30 minute debrief session, sharing observations of that day. The Child Team's observations of child play and peer interactions are shared with Mom Group facilitators. Child Team members are updated about relevant challenges faced by the family that may have surfaced during the Mom's Group and may impact the child's behavior. This debrief session was introduced to facilitate information flow across both the Mom and Child teams, and to empower the whole team to share one common therapeutic stance towards each family.

MP core components (displayed in Figure 1)

1. *Enhancing peer/social support* is accomplished by creating a shared group experience, with opportunities for informal relationship building, as well as by inviting mothers to bring a guest (i.e., a parenting partner or support person) to one of the sessions, thus also enhancing "buy-in" from critical "others" in the mothers world. Mothers are also encouraged to share contact information if they feel comfortable and socialize outside the intervention context.
2. Given the importance of "safe" separations and reunions in the lives of trauma-exposed mothers, the *attachment-based parenting education* curriculum emphasizes responsiveness and sensitivity to young children's separation experiences. We introduce key topics in parenting and child development, engage in activities designed to practice skills, and reflect on interaction, while emphasizing attachment concepts, helping mothers identify and address children's emotional needs. Facilitators encourage "Balanced Parenting," an authoritative parenting style that reflects a capacity for both warmth and control, being both strong and in-charge, as well as warm and kind, in their everyday interactions with their children, including "balanced" approaches to discipline.
3. The *Self-Care Practice* teaches mothers how to reduce their own distress, thus allowing them to implement concepts like Balanced Parenting during emotionally-evocative parenting moments. Parents who experience depression, anxiety, or symptoms of post-traumatic stress disorder can become so preoccupied with their symptoms that they find it difficult to focus on the needs of their child. Mom Power teaches parents how to manage their stress and symptoms so that they can be more

grounded and present for their children *in the moment*. These mind-body skills help increase distress tolerance and affect regulation. By helping parents regulate their own feelings, we help them to increase their capacity for co-regulating with their children. The 'self-care toolkit' includes deep breathing, progressive relaxation, visualizing a safe place, positive coping thoughts, containing distressing emotions, strengthening the witness/observer part of oneself, using the senses to soothe, making a gratitude list, and a grounding resource. Each group session ends with hands-on practice of a self-care skill and individualized coaching.

4. *Guided parent-child interactions* emphasize creating safe and predictable routines for both mother and child. When mothers leave for their Mom Group sessions, "goodbyes" are acknowledged and reunions anticipated using songs or games. Children learn that it is "safe to be left behind" because their mothers will come back if they need comfort. At reunion, facilitators are able to observe and support reunions in "real-time," helping mothers recognize and respond to their child(ren)'s emotional needs in that moment. Mothers are encouraged to anticipate, observe, and reflect upon these separations and reunions, as well as identify ways they might want to "try something new" to address their children's feelings during separation/reunion.

5. *Connecting to care* by identifying and connecting women to ongoing services beyond the group is a critical component of the model. Individual meetings provide individualized, tailored opportunities for connecting women to services available in their communities. We elicit each mother's thoughts regarding areas of growth and continued challenges, give tailored feedback on parenting, self-care skills and her child's wellbeing, and offer individualized referrals to relevant community resources. Group leaders also provide support in helping women connect to these services, for example, making initial phone calls with the mother, or identifying and addressing other potential barriers.

Methods

Overall Design and Recruitment

Participant recruitment was between summer 2008 and fall 2010. Participants were recruited through fliers posted in low-income community locations (e.g., child care facilities, teen school billboard, women's shelters), primary care clinics (family medicine, pediatrics, and OB/GYN) and community mental health centers, describing a research study that offered and evaluated a free, group-based parenting and self-care program for mothers ≥ 15-years-old, English-speaking and with children under the age of 6 years. Women could self-refer or be referred by their providers. The majority of women (88%) entered the study referred by their providers who expressed concerns about the mothers' emotional wellbeing and/or their parenting skills.

Self- or provider-referred mothers were asked to call a local phone number, and the study coordinator (Master's level social worker) conducted a brief screening interview for eligibility. As this was a feasibility study, we purposefully did not employ stringent

inclusion criteria for eligibility regarding psychiatric, parenting or socio-demographic risk. We wanted to also explore whether women with varied risk would either self-refer or be referred by their providers to such a program, and to identify who would benefit from such a program. Exclusion criteria for eligibility were illicit substance use (excluding recreational marijuana use), acute suicidality or psychosis. Women were provided with a brief study overview on the phone, and if they met eligibility criteria and gave verbal consent, the home-based initial session was arranged. During this first session eligible participants were again provided with a verbal and written study description and gave written consent. Once consented, women filled out self-ratings on demographic, mental health and parenting helplessness scale and underwent an hour-long standard interview about their representations of parenting and their child. The home visit ended with detailed description of logistics for the 10-week group participation. Following the group women were visited for the exit home-based session and in this context underwent the same assessment battery with minor variations, specifically, excluding demographic and trauma history information previously collected, and including discussion of referral needs and their experience of the group.

The study was reviewed and approved by the local Medical Institutional Review Board. Participants received nominal monetary compensation for completing assessments during the home visits ($20 each time). Childcare, transportation incentives ($5 per session), and a family-style meal during the group time were provided to enable group attendance and are considered part of the MP group intervention model, not as compensation for involvement in the study. Participants with full group attendance (all 10 sessions) received a $15 incentive at the final group session.

Participants

One hundred fourteen mothers made the initial screening phone call, of which 99 women were agreeable and eligible. These women underwent the initial home visit and provided baseline demographic and mental health data (see Table 1). Overall the participants were young women, with on average 2 children, and the age range of the target child for whom they sought parenting counseling ranging from infants only a few days old to 5 years. On average mothers had limited educational attainment, were low-income and were single household providers. Women reported high rates of direct interpersonal trauma (73%) defined as at least one experience of emotional, physical, or sexual abuse, neglect, harassment or rape. Women also presented with high levels of other potentially traumatic adversities, with 98% reporting at least one environmental stressor including serious money problems, becoming separated or divorced, enduring serious illness or taking care of someone who is seriously sick, experiencing the death of someone close, witnessing a robbery, having themselves or a family member been sent to jail and witnessing a serious accident or natural disaster.

Measures

Intervention Engagement—Engagement was coded as frequency of participants attending the first group session following the initial home-based session (“engaged”), and as number of participants attending at least 7 or more of the group sessions (“completers”).

MP is run as a closed day-time group and women who miss the first 2 group sessions, or miss more than 3 group sessions later in the process, are asked to withdraw and participate at a later stage, or are offered alternative resource referrals that fit better their immediate needs.

Demographics—Demographic information on relationship/marital status, race/ethnicity, education level, annual household income, personal age, and number, age, gender, and race/ethnicity of child(ren) were assessed during the initial home visit prior to the intervention (baseline only). We derived a composite variable of risk by summing across 5 individual dichotomized risk variables, including: age less than 22 years, education less than high school graduation, single, annual household income less than $15.000, and belonging to a racial/ethnic minority. Possible scores ranged from 0–5, and maternal demographic risk was defined as 2 or more risk factors. Table 1 shows frequency count for each risk variable.

Life stress exposure—Exposure to interpersonal trauma and environmental stressors in the past (“ever”) or recent (“past year prior to the intervention”) was obtained at baseline using a modified version of the Life Stressor Checklist (Wolfe & Kimerling, 1997). Items include interpersonal trauma experiences (e.g., childhood physical or sexual abuse), or environmental stressors (e.g., being robbed, having family member jailed, someone close dying etc.). Table 1 details frequency counts for exposure to various trauma events and stressors. Items pertaining to interpersonal trauma (neglect, rape, physical abuse, emotional abuse, or sexual abuse) were summed and a single dichotomous variable was computed indicating presence or absence of at least one interpersonal trauma exposure across the mother’s lifetime.

Maternal mental health—Symptoms of depression and PTSD were assessed twice: at the initial baseline home visit and again after the intervention period at the exit home visit. Mothers reported on depressive symptoms using the Postpartum Depression Screening Scale (PDSS; (Beck & Gable, 2001). The PPDS includes 35 items that are rated using a 5-point Likert scale (1=strongly disagree to 5=strongly agree). Scores are summed to yield a total symptom score, and a score of 80 or higher denotes clinical major depression. This scale has a sensitivity of 0.78, a specificity of 0.99 and a positive predictive value of 0.93 when compared to a structured-interview (SCID) depression diagnosis (Beck & Gable, 2001). Over half of women in this sample met clinical depression diagnosis at baseline (Table 1).

Mothers reported on their PTSD symptoms using the National Women’s Study PTSD Module (NWS-PTSD; (Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993). This 26-item instrument is a version of the Diagnostic Interview Schedule (DIS) that was modified for use in large epidemiological studies. The NWS-PTSD yields a dichotomous diagnosis based on DSM-IV criteria, and a dimensional symptom count on a scale of 0 to 17. The scale items assess all 3 PTSD domains (intrusion, avoidance and hyperarousal), and an algorithm follows DSM-IV criteria to derive a PTSD diagnosis (must meet at least 1 intrusion, 3 avoidance, and 2 hyperarousal symptoms). External validity is good, as shown by adequate agreement (kappa = .77) with a clinician-administered structured interview (SCID), high sensitivity of 0.99 and adequate specificity of 0.79, as compared with the SCID (Resnick et al., 1993). To indicate the presence or absence of a mental health diagnosis a dichotomous

mental health variable was computed, indicating no diagnosis or meeting criteria for a clinical major depression or PTSD diagnosis or both.

Maternal Parenting: Helplessness and Reflectivity—Parenting outcomes of interest were assessed using both self-report and more objective interview-based indices of change in feelings of helplessness and reflective functioning. Self-report and interview data were collected twice, at the initial baseline home visit and again after the intervention period during the exit home visit, to assess mothers' parenting attitudes, in particular their parenting helplessness and reflective capacity. Maternal self-reported helplessness was measured with the Caregiving Helplessness Questionnaire (CHQ; (Solomon & George, 2008). The CHQ yields three scales and has demonstrated good psychometric properties (Solomon & George, 2011). In the present study, given our conceptual interest in reducing feelings of helplessness and enhancing caregiver efficacy, we utilized the 6-item Caregiver Helpless subscale that directly measures feelings of helplessness versus efficacy in providing care.

Mothers' representations of parenting and the relationship with their child were measured using a standard semi-structured interview, the Working Model of the Child Interview (WMCI; (Zeanah, Benoit, Hirshberg, Barton, & Regan, 1994). For the evaluation of the MP intervention, we applied two scales that were developed and validated by the current study authors for use with the WMCI as they reflect critical targets for the MP parenting intervention: the Parenting Reflectivity and Parenting Helplessness scales (Rosenblum, Dayton, & McDonough, 2006; Rosenblum, McDonough, Sameroff, & Muzik, 2008). The Parenting Helplessness Scale is a 5-point scale coded to reflect responses across the entire WMCI and designed to assess the degree to which the parent experiences herself as vulnerable or helpless in regards to parenting, in contrast to feelings of efficacy. The Parenting Reflectivity Scale is a 5-point scale coded to reflect responses across the entire WMCI and designed to assess the caregiver's ability to recognize various psychological processes (mental states), such as thoughts, beliefs, desires, intentions, and feelings both in the self and child, and has been validated against maternal behavior during interaction with her child (Rosenblum et al., 2008). The interviews were on average 45 minutes long and were audio recorded and transcribed verbatim. Coders were blind to the study hypotheses and to whether this was a pre- or post- interview. One author (KR) trained an additional coder on a set of 30 reliability interviews to 80% agreement within one scale point for both scales. Thereafter, the study set was coded independently by both coders with blind double coding of 25% of the interviews, randomly selected, to monitor rater drift; intra-class correlation coefficients were 0.91 for Parenting Reflectivity and 0.62 for Parenting Helplessness.

Intervention Satisfaction—Participants rated acceptance and helpfulness of the intervention in a 28-item survey (Muzik & Stanton, 2009) that was rated using a 5-point Likert scale (1=strongly disagree to 5=strongly agree). The questionnaire was composed of statements about their experience with the program, group format, facilitators, other group attendees and knowledge gained.

Data Analysis & Hypotheses

All analyses were completed with SPSS v.19. Demographic and baseline characteristics were first evaluated using Chi-square and independent *t*-tests to ensure equality of comparison groups. Paired *t*-tests and McNemar's tests were utilized in all analysis assessing change from pre- to post-intervention. We hypothesized that participants in MP would show reductions in mental health symptoms and improvements in parenting measures, including both the self-report and objectively derived indicators from the interview codes. Although we hypothesized directionality of effects after the intervention, we used 2-tailed statistics as a more conservative test. Satisfaction with the MP program was evaluated using frequency counts on self-report evaluation responses.

Results

Intervention Engagement

Of the 99 women who underwent initial individual session and baseline assessments, 86 women (87%) came to the first group session, and of those a total of 71 women (72% of total 99) were completers, whereas 28 women (28% of 99) were non-completers. Non-completers attended on average 2 sessions (*SD* = 2.0); reasons for non-completion were typically time constraints (e.g., mother started a day-time job or went back to school) or relocation. Completers and non-completers did not differ on baseline demographic variables (i.e., mother's age, income, marital status, race/ethnicity, history of interpersonal trauma, or child age), mental health risk status, or demographic risk status. Active efforts were made to engage non-completers in post-intervention assessments.

Maternal Mental Health and Parenting Outcomes

Valid pre-post data on mental health were available on 80 participants (81% of total 99). There were no baseline group differences between those who provided exit data and those unable to be reached. Overall, we found for the total sample significant reductions in symptoms of depression ($p = .003$) and PTSD ($p = .006$), as well as reduction in clinical diagnoses for depression ($p = .029$) and PTSD ($p = .013$) (Table 2).

For self-reported parenting outcome (i.e., Caregiver Helplessness) a total of 75 women provided valid pre-post data (76% of total 99), and interview data for objective coding of Parenting Helplessness and Parenting Reflectivity was provided by 58 mothers (59% of 99). At baseline both of the two indicators of helplessness, that is self-reported Caregiver Helplessness and interview derived Parenting Helplessness, were correlated $r = .26$ ($p = .038$); the correlation between the two interview-based parenting indicators, that is Parenting Reflectivity and Parenting Helplessness, was $r = -.58$ ($p < .001$). For the entire sample we found significant reductions in both maternal self-rated Caregiver Helplessness on the CHQ ($p = .029$) and the interview-rated Parenting Helplessness scale ($p = .040$), whereas improvements in interview-rated Parenting Reflectivity were trend-level only ($p = .085$) (Table 2).

To evaluate intervention effects by group completion, we reanalyzed our data by completers (> 7 sessions) versus non-completers (<7 sessions). We found significant improvements in

self-rated mental health (symptoms and diagnosis) and Caregiver Helplessness for group completers only, whereas non-completers did not show significant results for either mental health or parenting on exit measures (Table 3). In addition, only completers improved from baseline to exit assessment on objectively interview-rated Parenting Helplessness ($p = .023$) and Parenting Reflectivity ($p = .021$) (Table 3).

Finally, to test MP's intervention effects on the most vulnerable mothers, we reanalyzed our data on intervention completers by presence or absence of baseline (pre-intervention) maternal mental health or demographic risk (not shown as table). In regards to mental health we note that exposure to interpersonal trauma was equally highly correlated with baseline PTSD or depression diagnosis ($p < .001$); thus, we conceptualized baseline maternal mental health risk as having either PTSD or depression diagnosis. Using again paired-t tests, we found that completers with mental health risk at baseline had significant reductions from pre-to post-assessment in depression ($M_{diff} = 18.74$, $t(44) = 4.23$, $p < .001$) and PTSD symptoms ($M_{diff} = 2.74$, $t(45) = 4.71$, $p < .001$), self-rated Caregiver Helplessness ($M_{diff} = 1.96$, $t(40) = 2.34$, $p = .025$), interview-rated Parenting Helplessness ($M_{diff} = .74$, $t(30) = 3.34$, $p = .002$), and interview-rated Parenting Reflectivity ($M_{diff} = -.39$, $t(30) = -2.26$, $p = .031$). In contrast, completers without baseline mental health risk did not have significant pre-to post intervention score changes. Similarly, in regards to social risk factors, we repeated outcomes analyses based on presence/absence of demographic risk (defined as 2+ risk factors). Maternal baseline demographic and mental health risk was unrelated. Paralleling prior analyses we found that completers with demographic risk had significant improvements in depression ($M_{diff} = 13.15$, $t(47) = 3.09$, $p = .003$), PTSD ($M_{diff} = 1.94$, $t(47) = 3.18$, $p = .003$), self-rated Caregiver Helplessness ($M_{diff} = 2.19$, $t(43) = 3.09$, $p = .003$), interview-rated Parenting Helplessness ($M_{diff} = .65$, $t(30) = 2.48$, $p = .019$), and Parenting Reflectivity ($M_{diff} = -.32$, $t(30) = -2.06$, $p = .048$). Completers with low demographic risk (0 or 1 risk factors) did not evidence significant changes.

Intervention Satisfaction

Group completers reported satisfaction with the intervention at the exit interview (85% "strongly agreed" and 15% "agreed"). Ninety-eight percent of completers reported improved (strongly agree or agree) understanding of how to handle their children's behaviors when upset, and 84% felt that they had learned useful coping strategies for themselves. Women also reported that they had felt supported by the group facilitators during the group (90% strongly agreed and 9% agreed), and that they had made social connections with the other group participants (68% strongly agreed and 28% agreed).

Discussion

The results from this pilot uncontrolled open trial suggest that MP is a promising intervention for high-risk mothers with depression and trauma histories and their children. The intervention is associated with reductions in self-reported symptoms of depression, PTSD and caregiving helplessness, and also improvements in coder rated measures of parenting helplessness and parenting reflectivity. Despite the very high risk nature of the participants, the intervention successfully engaged over 70% of participating mothers who

attended the full program. Treatment completers reported high satisfaction with the intervention.

Mothers with young children who have trauma histories, suffer psychopathology and are poor, have low likelihood of engaging in behavioral health. Engaging high-risk families into ongoing services is a known challenge (Azzi-Lessing, 2013; Gopalan et al., 2010) and barriers are multi-fold, ranging from practical (e.g., transportation, child care), to general life stress or chaos, to psychological, trauma-related barriers such as mistrust or negative preconceptions about professional providers (Gopalan et al., 2010). Trauma-theory (Herman, 1992) proposes that trauma interferes with a person's sense of control, connection, and meaning, causing relationships and the world at large to be experienced as unsafe (relational mistrust), and the self as ineffective and lost, all of which interferes with treatment engagement. Prior work has suggested that engaging high risk individuals into longer-term therapeutic programs may require a therapeutic process, and may not be achievable through a one-time encounter (Gopalan et al., 2010; Scott & Dadds, 2009). Our treatment engagement of 70% and low attrition of less that 30%, is remarkable in this context, and is driven by the intensive engagement strategies built into the model. The family meals, toys, on-site childcare and transportation assistance provided by the MP model offer practical assistance to mothers with few resources, thus encouraging attendance, and increasing the likelihood of intervention benefits. Starting with a shared meal is also a powerful way for co-facilitators to build connections with the mothers in a relaxed atmosphere, as well as allowing mothers to socialize with each other. This warm and nurturing routine allows for peer support to be created, and helps to shed the cares and worries of the mothers so they can focus on the material. In addition, the curriculum is trauma-informed and counteracts engagement hesitancy and mistrust based on trauma-related help-seeking avoidance. MP's key intervention principles are appreciating the importance of safety, trust-building, enhancing self-efficacy through empowerment, and skills building around self-care/mental health, problem-solving, emotion regulation, and parenting competence. We speculate that MP's supportive, non-judgmental approach, coupled with relationship-focused parenting psychoeducation and support for real-life in-vivo experiences, such as practicing separations and reunions with personalized guidance, provide a unique safe space to develop and practice new parenting skills. As mothers progress through the curriculum, they practice stress-reduction and self-care strategies, which help them to feel more safe, and improves mental health and parenting. Attending to parents' needs for support creates a space where their needs are welcomed and valued, and ultimately, helps mothers manage their own feelings so that they can respond to their children's feelings and needs with greater attunement and sensitivity. Ending Mom Group sessions by practicing a new self-care technique soothes mothers' anxieties that may have been aroused during group discussions and helps promote reunions with children during which the mothers are in a more calm, relaxed state. The self-care skills also give mothers practical tools to manage symptoms of depression and anxiety, especially during stressful situations. Finally, increased social support, both from other group members and co-facilitators during group and individual sessions, may help create new 'templates' of relationships that reflect the possibility of both giving and receiving support from safe, respectful 'others', which may help trauma-exposed women learn how to identify and trust

safe people in their community. Through establishment of safe and trusting relationships, our hope is that MP can establish a new stance to help-seeking—one where mothers can feel more comfortable reaching out for help and are more confident that they can be helped.

Strengths of this project include relatively high retention of a population that is often difficult to engage and effectively delivering a multi-modal intervention. There are several limitations in this pilot study. First, the absence of objectively coded mother-child interactions are a limitation and need to be incorporated in future studies on Mom Power. Other limitations include a small sample and the absence of a control condition. The absence of a balanced control group cautions our interpretations of the results. Our controls in this open pilot are women who did not complete the intervention, and these women had higher baseline functioning. Thus, we interpret our findings with caution as promising and suggestive of treatment effects in engaging vulnerable high-risk families and for improving mental health and parenting outcomes.

Conclusion

Participation in Mom Power is associated with decreased symptoms of psychopathology and caregiving helplessness while providing a safe, welcoming place for at-risk mothers to find support in parenting. Moreover, our findings suggest that this group intervention may be most indicated for at-risk mothers who specifically report difficulties with depression or PTSD symptoms or experience higher levels of socio-demographic risk. Future research should incorporate a randomized controlled design to rigorously evaluate intervention efficacy. Current data indicate that through attention to parent needs for social support, parenting education, stress-reduction and self-care, as well as through connecting families to community resources, Mom Power has the potential to positively impact the crucial relationship that develops between mother and child, and ultimately, enhance both parent and child wellbeing.

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