

Predictors of Self-Reported Gains in a Relationship-Based Home-Visiting Project for Mothers  
after Childbirth

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## CONFLICT OF INTEREST

The authors report no conflict of interests.

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## ABSTRACT:

We assessed mothers' self-reported gains from a postpartum home visiting (HV) project in which home visitors are volunteer mothers from the community. Hypotheses were that Gains are positively related to (1) mothers' felt-closeness with their home visitor, (2) mothers' level of socio-demographic risk, and (3) the home visitors' pre-project training in support services for families or children (Professionalism). One hundred sixty four clients returned written evaluations of the HV project. Items assessing gains were reduced to two factors: Improved Well Being ('Self') and Improved Infant Care ('Infant'). Repeated measures General Linear Models, with Gains (Self, Infant) as the repeated measure, and multiple regression analyses evaluated the hypotheses. Across the sample, gains on both factors were moderate, though gain scores were higher regarding Self than Infant. Results show that: (1) Mothers' felt-closeness with their volunteer was strongly related to mothers' gains, (2) High-risk mothers gained more from the project than mothers of lower risk, particularly in regards to Infant Care, and (3) Mothers visited by volunteers who were professionals reported more substantial gains than mothers visited by volunteers who were not professionals. Findings can help explain variance in mothers' gains from such projects and could be useful in improving their efficacy.

Keywords: Home visiting; postpartum; social support; relationship-based

## **Predictors of Self-Reported Gains in a Relationship-Based Home-Visiting Project for Mothers after Childbirth**

Parents of young infants need to cope with a multitude of stressors including lack of sleep, time pressures, and concerns about their infant and their own capacity to meet her or his needs (Belsky, 1984). These stressors are superimposed on whatever other stressors the family is coping with at present, as well as the remnants of unresolved stressors in the past. This can make the period after childbirth a particularly challenging time for many parents (Bornstein, 2012). One factor that seems to mitigate the stress associated with the postpartum period is social-emotional support in the form of encouragement, validation, active listening, and caring (herein called 'support') (e.g., Andresen, & Telleen, 1992; Green, Furrer, & McAllister, 2007), most typically offered by family and friends (Goldstein, Diener, & Mangelsdorf, 1996). Benefits of such support are predicted by attachment theory (Bowlby, 1969; Bretherton, 1991) and other relationship-based perspectives (Lakey & Orehek, 2011) that see 'quality' human connections as important for healthy socioemotional functioning. Empirical research consistently shows that adequate support reduces parental stress and the likelihood of depression (Beck, 2001), increases parental sensitivity and feelings of self-worth (Small, Taft, & Brown, 2011), and helps counteract risk for neglectful parenting (Stith et al., 2009).

For many reasons, many modern-day families do not have the benefits of sufficient, quality support by family members or close friends. This could be because such support is unavailable, undependable, or not fitting to parents' needs in timing, style, or content. For these parents, regular home visits by a (paid or volunteer) community-based mother (called a 'peer') could be beneficial. According to recent meta analyses, regular home visits by

peers can help improve mothers' emotional well being and self-esteem, maternal competence, family functioning, the parent-child relationship, and problem solving (review in: Byrne, Grace, Tredoux, & Kemp, 2016). Peer-support can also reduce the risk of accidents in the home and can be a good source of health information. However, peer-based HV projects are not uniformly advantageous (Byrne et al., 2016; Leger & Letourneau, 2015). Accounting for variations in their efficacy is a worthy research goal because peer-support, if effective, could be a low cost alternative to HV by paid professionals in communities without significant financial resources for such projects. For communities with ample resources, a peer support HV project could be included in a basket of services offered to parents to meet postpartum needs. Besides promoting health and sensitive parenting, peer support projects are a potential route for strengthening ties between families in a community and between families and their community.

In this paper, the relation between self-reported gains were examined within the context of a postpartum HV project called Mom2Mom (M2M), in which home visitors are volunteer mothers from the community ('peers').

## **LITERATURE REVIEW AND HYPOTHESES**

### ***Relationship Closeness***

An underlying tenet of most postpartum HV projects is that effective support depends on the forging of a trusting and close relationship between parents and their home-visitor (e.g., Gomby, 2005). This presumption is based on the theoretical position that felt-security with another can enhance a person's confidence, mood, and sensitivity to others (e.g., Bretherton, 1991; Small et al., 2011). Yet despite the assumed importance of a close relationship between client and home visitor, there are few empirical data to

substantiate the claim (for exception: Heinicke et al, 2000; Korfmacher, Kitzman, & Olds, 1998; Korfmacher, Green, Spellmann, & Thornburg, 2007; Roggman, Boyce, Cook, & Jump, 2001) and no evidence of the kind regarding postpartum HV by peers. Rather, till now, relevant support from those kinds of projects comes from qualitative, narrative accounts of mothers' or home visitors' feelings and experiences. Uniformly, these accounts reflect the centrality of the home visitor-client 'bond' for gains within postpartum HV projects by peers (e.g., Lovett, Munsell, McNamara, & Doyle, 2016; MacPherson, Barnes, Nichols, & Dixon, 2010; McLeish, & Redshaw, 2015; Paris & Dubus, 2005; Small et al., 2011; Taggart, Short, & Barclay, 2000). On these bases, our hypothesis was:

*Ho1: The perceived closeness of the mother-home visitor relationship is positively associated with mothers' reported gains from home visits by a peer.*

### **Psychosocial Risk**

In an effort to identify sectors of the population that may especially benefit from postpartum HV support, several studies have compared the gains derived by mothers classified as being of high or low risk for poor outcomes in regards to parenting or child development. The results of most of these studies support the conclusion that parents at high risk benefit more from postpartum HV projects than women at lower risk (e.g., Olds & Kitzman, 1993; reviews in Shaw, Levitt, Wong, Kaczrorowski, 2006), perhaps because women at high risk have more to gain from such projects. However, results are not uniform, and some suggest that women at low risk derive greater benefits from HV support (e.g., Bakermans-Kranenburg, van Ijzendoorn, & Bradley, 2005). These findings could reflect the

difficulties of finding time and energy to forge a relationship with an ‘outsider’ for support in the face of substantial life challenges (e.g., Bakermans-Kranenburg et al., 2005; Holland, Christensen, Shown, Kearney, & Kitzman, 2014). Another possible option is that postpartum HV projects are most beneficial to parents who are between the least and most advantaged because they have the best mix for improvement and the ability to capitalize on program services (Holland et al., 2014). Finally, it could be argued that emotional support offered within secure and trustworthy interpersonal relationships is beneficial to all persons who are open to such a relationship, regardless of their stress level and socio-demographic risk (Bakermans-Kranenburg, van Ijzendoorn, & Juffer, 2003; Green et al., 2007). Despite these multiple options, our hypothesis leaned toward the most common finding:

*Ho2: Mothers classified as high risk report more gains from HV by peers than women at lower risk.*

### **Professionalism**

To learn about predictors of HV success, the efficacy of home visitors who are professionals and those who are not professionals has been compared in studies of HV projects using salaried home visitors. In those studies, professionals are persons who have specialized training in human support services- nursing, social work, psychology, child development, early childhood education- that equip them to promote positive emotional and behavioral change. Nonprofessionals (sometimes referred to as paraprofessionals) are persons whose primary competence in HV comes from life experiences and their ability to work with families rather than from specialized training. Results of the relevant studies rather consistently show greater benefits of postpartum home visits carried out by

professionals than by nonprofessionals (e.g., Olds, Sadler, & Kitzman, 2007, but see Nievar, Van Egeren, & Pollard, 2010). In those projects, professional training of the home visitor seemed to be particularly important for mothers' gains in areas that would seem to require expertise such as maternal and infant health (Olds et al., 2002) and infant cognition (Sweet & Applebaum, 2004). There also is evidence that attrition is lower amongst mothers visited by professionals than those visited by nonprofessionals (Korfmacher, O'Brien, Hiatt, & Olds, 1999).

Whether these findings generalize to HV projects by volunteer-peers is not known because the efficacy of HV by volunteers who are professionals (by training and/or in their 'day jobs') vs. volunteers who are not has not been compared in the context of those kinds of projects. On one hand, Professionalism may predict greater efficacy of HV, regardless of whether home visitors are salaried or not, because professionals have tools and skills acquired from academics, field experience, and life experiences, often including being a mother. As a result, they may be more knowledgeable about issues that may be raised in the course of HV and less anxious about 'leaning in' to form a close relationship with clients. On the other hand, home visitors' success at fostering such a relationship may depend more on personality and social skills than on learned competencies and professional skills. In fact, some professionals may find it difficult to slough off their professional stance and take on the role of a volunteer peer and confidante during home visits, and this could have negative effects on the relationship between them and the mother whom they are visiting and reduce the potential benefits of home visits (Paris, Gemborys, Kauffman, & Whitehill, 2007). Finally, an alternative that has not been considered previously is that the association between Professionalism and Gains depends on parents' risk level. For example, women at

high risk may benefit more from home visitors who are professional because they are more practiced and skilled at helping parents with challenges; whereas being a professional may not be as advantageous in supporting women at lower risk. Alternatively, women at high risk may find it easier to share with a 'regular' mom (a nonprofessional) if they feel that they have more in common with her (e.g., in education, life experiences; see description of Curtis, 1955 cited in Nievar et al, 2010), whereas this may not be the case for women at low risk. Of these options, we based our hypotheses on the results of most studies on salaried visitors:

*Ho3: Mothers visited by professionals derive more benefits from home visits than mothers visited by women who are not professionals.*

In sum, this study aimed at elucidating the association between maternal gains in a peer HV project and several factors that may explain substantial variance across clients. We hoped that findings would be informative to persons planning, directing, or working in such projects.

## METHODS

### ***Setting: Mom2Mom (M2M)***

M2M was founded in Jerusalem, Israel in 1999-2000, modeled after Visiting Moms, Jewish Family & Children Services in Boston, MA, USA. Details of the project have been described elsewhere (Kaitz, Chriki, Tessler, Levy, & Burstin, 2017; Kaitz, Tessler, & Chriki, 2012). In brief, home visitors are volunteer mothers from the community, trained and supervised by professionals in the field of social work or early child development. Women



are eligible for participation in the project if they are pregnant or mothers of an infant under the age of one year old. They are not eligible if there is known violence or drug use in their home. The primary aims of the project are to enhance mothers' feelings of well being/lower stress and improve infant care. Emotional support within a close client-home visitor relationship is seen as the mediator of change. All services are provided free of charge.

Women are referred to the project by professionals or self-refer. At first contact with the project, usually by telephone, mothers receive a short description of the project. If they are interested in hearing more about the project, one of four coordinators visits them in their home ('intake') to explain the project in detail and learn about the mothers' background and their reasons for reaching out to M2M.

Volunteers must be mothers and attend project-training sessions. Training is focused on skills related to home visiting (e.g., active listening) and relevant issues (e.g., culture and parenting, attachment, self-other borders, nonverbal cues) and are highly interactive. Practically speaking, training is 8 hours long, scheduled 2 hours per session, on four consecutive weeks, with the participation of 6-8 volunteers in each group.

After training, volunteers are matched with a mother who signed on to the project and then HV begins. 'Matching' is based on many factors including place of residence, preferred languages, personality, life experiences, core issues, and the mother's requests. Visits are weekly, usually 1 – 2 hours in duration, and take place in the family home. Visits are unstructured and tuned to the mother's needs. Mostly, mothers and home-visitors spend their time together talking and playing or caring for the baby. During these activities, home visitors listen, express empathy, and help mothers to focus on central issues of concern. Alternative perspectives and new strategies are explored and solutions are

evaluated. Shared observations of the child and volunteers' input based on life-experiences and information learned during project-training and supervision are important for advancing mothers' understanding of their child's development and the mother-child relationship. Home visits continue until the infant is approximately one year of age, unless discontinued before then. The usual reasons for early curtailment of visits were that the mother's need for support had dissipated; the family moved residence to outside the city or country; scheduling of visits became difficult after mother returned to work; or volunteer could not continue for personal reasons. In a few cases, visiting was extended for a few months beyond the infant's first birthday. Reasons for this included the need to support the mother through an impending transition (e.g., divorce, returning to work outside of the home) or a family crisis.

During the course of their home-visits, volunteers are supervised by project-coordinators monthly or more frequently, if needed. Supervision is reflective (Gilkerson, 2004) and aimed at helping volunteers digest their experiences and plan strategies for future visits.

At present there are approximately 40 branches of M2M in Israel. The data for this study come from the Jerusalem branch, which is the national hub of M2M. From its opening in 2000 to 2016, 676 intake assessments were made by project coordinators, and 601 women were matched with a volunteer. Of those, 162 (27.0%) discontinued participation after 0-2 visits ('false start'), and 439 (73.0 %) continued for more. Of the latter, infants' median age at the time of the first visit was 1 month old and the median duration of HV was 8 months. In all, 316 volunteers have been trained within the Jerusalem branch. Volunteers visit one mother at a time, although approximately 50% take on more

than one mother (sequentially). Volunteers visit an average of 2.17 (SD = 1.85; range 1 -11) mothers during the time that they volunteer in M2M.

### **Participants**

Of the 439 women who were visited more than twice by a home visitor, 354 (n = 354/439, 80.6%) were sent an evaluation questionnaire after their last home visit. The other 85 women were not sent evaluations for the following reasons: the women had relocated and were not responsive to inquiries as to new address; were unwell or coping with death or illness within the family; or did not speak Hebrew, English, or French well enough to answer questions reliably. Twenty three women were not sent evaluations due to administrative error.

Of the 354 who received evaluations at the end of the visiting period, 46.3% (n =164) returned and completed the questionnaires within 3 months of the final visit. These women comprise the final sample. The others (54%, n = 190) returned the questionnaire 'late', incomplete, or not at all and were not part of the sample. Table 1 shows personal information, collected at intake, of the women in those two subgroups.

### **Procedure**

Clients' demographic information was obtained during an intake visit by a project-coordinator, usually within two weeks of referral. During intakes, the coordinator also made notes on the order/disorder and state (dark, damp) of the client's home, and this information was used in the rating of Risk (see below).

Within one or two weeks of the final visit, the evaluation questionnaire (in English, Hebrew, or French) was sent to the mothers, usually via email (n = 142), or the questionnaire was answered on the phone if preferred (N = 22). The phone interviews were

carried out by a project-coordinator whom the mothers had never met. Instructions included a strong statement about the importance of candor in answering the questions in order for us to improve our service. Clients also were told that their responses were confidential.

### ***Tools and Measures***

*Intake Interview.* Clients' demographic information was obtained during intakes. The women also were asked about their reproductive history, the most recent birth and delivery, general health/health problems, available social support and services, reasons for wanting to join M2M, and preferences regarding a volunteer (e.g., time of day for visits, age, religiosity). Intakes are usually about two hours long.

*Evaluation Questionnaire.* The questionnaire was designed specifically for evaluating M2M. Questions were formulated in accordance with the specific aims of the intervention project, as defined during the design of the project and stated in our outreach-tools (e.g., flyers, posters). Questions were worded so that they would be easy to read and comprehend. Self-report assessment of home visits is routine amongst HV projects (Deković et al., 2010).

The questionnaire is comprised of three parts (see Table 2). In part 1, questions refer to the frequency, duration, and content of home visits. Part 2 consists of 12 items describing the potential gains from the project. Part 3 consists of four questions regarding the clients' feelings of (emotional) closeness toward their volunteer (feelings of closeness, degree of attachment/intimacy, difficulty in separating from the volunteer at the end of the visiting period, fittingness of mother-volunteer match; see Table 2). Items in section 2 and 3 were rated on a 5 point Likert scale: 1- not at all to 5- very much so.

Volunteers filled out a similar questionnaire at the end of the home visits. These data, have not been analyzed in full and therefore are not presented here, with the exception of the ratings on the Closeness Scale (n = 120), which we use as some measure of reliability for clients' ratings.

*Risk inventory.* The inventory is comprised of a list of nine risk factors that have been associated with detriments in mothers' attunement and sensitivity to their infant, increased likelihood of depression and/or anxiety, and/or delayed or skewed infant development (Table 3). The items have been included in other Risk Assessment tools (e.g., Gray, Spurway, & McClatchey, 2001). Each item was scored 0 (no) or 1 (yes) by project coordinators based on information provided by the mothers and the referring agent (if there was one), as well as from the coordinators' observations of the home environment during intake. Notably, support by government social services (e.g., welfare) was considered a consequence of risk and not as a risk factor in and of itself.

#### **Data Reduction and Final Measures**

*Closeness.* This measure was derived by averaging ratings across the four items on the evaluation questionnaire, regarding mothers' feelings of closeness towards their volunteer (listed above, Table 2). Alpha Cronbach across the items was .86. The correlation between the Closeness reported by clients and volunteers was .44,  $p = .001$ , based on 120 pairs.

*Risk.* The risk status of each client was defined as the count of risk factors that applied to her or to her family. Across the sample, the range of counts was zero to 5. The counts were categorized into three levels: low (0 risk factors, n = 83, 50.6%), medium (1 risk, n = 59, 36.0%), and high (2+risk, n = 22, 13.4%) due to the relatively low frequency of

women with two or more risk factors (number of risk factors: 2 (n = 12, 7.3% ); 3 (n = 5, 3% ), 4 (n = 3, 1.8% ), 5 (n = 2, 1.2%)). The concurrence of risk scores and families' use of social services provides a measure of reliability for our assessment of Risk. These data show that 9% of women classified as low risk, 33.9% of women classified as moderate risk, and 68.2% of women classified as high risk were receiving social services at the time of the intake ( $\chi^2(2,164) = 33.59, p = .001$ ).

*Professionalism.* Home-visitors classified as professionals had academic or professional training and field experience as social workers, pediatricians, kindergarten teachers, preschool teachers, child or developmental psychologists, pediatric occupational therapists, or pediatric physiotherapists (n = 87). Nonprofessionals (n = 77) were volunteers without academic or formal experience in those fields.

*Gains.* Factor analysis of the 12 items of Gains (with varimax rotation) revealed two factors across items that accounted for 75.40% of the variance. One factor reflected improved infant care (32.05% of the variance) and the other, enhanced well being /reduced stress (43.35% of the variance). We refer to these factors ('domains') as 'Infant' and 'Self', respectively. Items within each factor were coherent (Alpha Cronbach of Infant: .93; of Self .93). The final measure of gains was the average rating across items within each factor. Correlation between the factors was .70.

### **Statistical Analysis**

All 164 subjects provided information on all outcome measures. Skewness and Kurtosis of Self and Infant- related Gains and Closeness were within acceptable range and treated as continuous variables.

The data were analyzed with SPSS for Windows, Version 17.0 (SPSS, Chicago, IL). In preliminary analyses, we tested for predictors of noncompliance (non-return of the questionnaire) to test for a random/biased distribution of missing scores. Similarly, we tested for a concordance between Risk and Professionalism to ascertain the random distribution of mothers of high and low risk to volunteers who were professionals/nonprofessionals. Additionally, we tested for differences in the duration of visiting (in months) between Risk subgroups and between home visitors classified as professional vs. nonprofessional because visiting-duration could be associated with Gains (Bakermans-Kranenburg et al., 2003). In this study, visiting-duration was not considered a focal predictor or outcome measure of efficacy because home visits were curtailed prior to their infant's first birthday for many reasons, some of which were circumstantial and not related to the project per se. Finally, we calculated means and standard deviations of Gains across the sample.

Hypothesis 1 regarding the association between Closeness and Gains (Self, Infant) was tested by Pearson correlations and by a regression analysis in which Closeness served as the dependent variable and both Gains regarding Self and Gains regarding Infant were entered as predictors. Parameter estimates of the individual predictors assessed the variance in Closeness explained by each one.

Hypothesis 2 regarding the association between Risk and Gains was tested by a repeated measures General Linear Models (GLM), in which Gains (Infant, Self) was entered as the within-subject factor and Risk was the between-group factor. Both linear and polynomial trends were examined. In a second stage of the analyses, we examined the

contribution of Professionalism as a potential covariate in the model in order to parcel out the effect of that measure from Risk.

Hypothesis 3, regarding the association between Professionalism and Gains, was tested by two GLM repeated measures models with Professionalism (Professional, Nonprofessional) as the between- group measure and Gains (Self/Infant) as the repeated measure. One model was uncorrected, and one included Risk as a covariate (dummy coded, with low risk as the reference group). Finally, using a repeated measures model, we tested for main effects and an interaction between Risk and Gains, both with and without Risk as the covariate.

## RESULTS

### *Preliminary analyses*

Noncompliance was not associated with mothers' age, education, number of children, family status, religiosity, or source of referral (Table 1). In addition, we found no association between noncompliance and mothers' Risk or Total duration of visits (in months). Importantly, we found no evidence of a concordance between Risk and Professionalism ( $X^2(1, N = 164) 2.47, p > .10$ ). Also, duration of visiting (in months) did not differ between women classified as low ( $M = 7.72, SD = 3.67, \text{range } 1-18$ ), medium ( $M = 7.87, SD = 4.17, \text{range } 1-17$ ) and high risk ( $M = 7.70, SD = 4.13, \text{range } 1-14$ ); nor between women visited by professionals ( $M = 8.05, SD = 3.94, \text{range } 1-17$ ) vs. nonprofessionals ( $M = 7.45, SD = 4.03, \text{range } 1-18$ ).

Across the sample, the average gain score (across domains) was 3.42 ( $SD = 1.11$ ). The mean Self-related Gain scores and Infant-related Gain scores were 3.64 ( $SD = 1.14, \text{range } 1-5$ ) and 3.06 ( $SD = 1.37, \text{range } 1-5$ ), respectively, which reflect moderate gains (scale 1-5).



Across the sample, mean scores regarding Self were higher than those regarding Infant (paired t-test ( $t(163) = 7.47$ , 95% CI [.43, .74],  $p < .001$ ).

### **Hypothesis 1: Closeness and Gains**

Mean Closeness, across the sample, was 3.73 (SD = 1.06; range 1-5). The measure was strongly related to Self- ( $r = .77$ ,  $p < .0001$ ) and Infant-related Gains ( $r = .70$ ,  $p < .0001$ ), when taken separately. The regression model in which Gains in both domains were entered simultaneously was robust ( $R = .77$ , Adjusted  $R^2 = .59$ ,  $F(2, 161) = 115.75$ ,  $p < .0001$ ). However, parameter estimates revealed that of the two predictors, Closeness was related to Gains regarding Self ( $B = .69$ ,  $SE = .07$ ,  $Beta = .73$ ,  $t = 10.41$ ,  $p < .001$ , 95% CI [.56, .82]), but not to Gains regarding Infant ( $B = .04$ ,  $SE = .06$ ,  $Beta = .05$ ,  $t = 0.70$ ,  $p > .10$ ; 95% CI [-.07, .15]).

### **Hypothesis 2: Risk and Gains**

The uncorrected repeated measures analyses evaluating the association between Risk (low, Moderate, High) and Gains (Self, Infant) showed a significant between-subject effect ( $F(2, 161) = 4.07$ ,  $p = .02$ ,  $\eta^2_{\text{partial}} = .05$ ), reflecting higher Gain scores across domains (Self/Infant) of the high risk group compared to the low (Means 3.96 SD= 0.71 vs. 3.20, SD= 1.09; contrast estimate [CE] = -0.78, standard error [SE] = .27,  $p = .005$ , 95% CI [-1.31, -.24]) and moderate risk groups (Means 3.96 SD= 0.71 vs. 3.39, SD= 1.21; CE = -0.61, SE = .28,  $p = .032$ , 95% CI [-1.17, -.05]). In addition, the analysis revealed a Risk x Gains interaction ( $F(2, 161) = 5.66$ ,  $p = .004$ ,  $\eta^2_{\text{partial}} = .07$ ), reflecting significantly higher infant-related gains among mothers in the high risk group compared to those in the low ( $B = -1.15$ ,  $SE = .32$ ,  $t = -3.62$ ,  $p < .0001$ ; 95% CI [-1.78, -0.52],  $\eta^2_{\text{partial}} = .08$ ) and moderate risk groups ( $B = -0.83$ ,  $SE = .33$ ,  $t = -2.51$ ,  $p = .013$ ; 95% CI [-1.48, -.18],  $\eta^2_{\text{partial}} = .04$ ). No differences were shown

between risk subgroups on Self-related Gains ( $p > .05$ ). Contrasts indicated a strong linear trend of Gains across levels of Risk ( $CE = .55$ ,  $SE = .19$ ,  $p = .006$ ,  $95\%CI [.17, .93]$ ). There was no evidence of a polynomial trend ( $CE = .18$ ,  $SE = .16$ ,  $p = > .10$ ,  $95\%CI [-.14, .50]$ ). These results are illustrated in Figure 1.

The corrected model, with Professionalism entered as a covariate, showed no evidence that the variable contributed to the model either by discerning between groups ( $F(1, 160) = 2.65$ ,  $p > .10$ ) or in interaction with Gains (i.e., Gains x Professionalism;  $F(1, 160) = .035$ ,  $p > 1.0$ ). Therefore, main effects and interactions of the corrected model are not reported.

In a supplemental test, we added Parity to the model (primipare vs. multiparae) as a between-group variable, along with Risk, in order to see whether infant gains among the high risk mothers was specific to first-time mothers. Results showed no main effect of parity; nor an interaction between parity and Risk ( $ps > .10$ ).

### ***Hypothesis 3: Professionalism and Gains***

Examination of the association between Professionalism and Gains (Self, Infant) revealed a significant between-group effect, ( $F(1, 162) = 3.75$ ,  $p = .05$ ), reflecting higher overall Gains amongst women who were visited by professionals compared to those who were visited by nonprofessionals (Means 3.58,  $SD = 1.03$  vs. 3.23,  $SD = 1.18$ ; Figure 2). With this, neither the association between Professionalism and Gains regarding Infant nor Gains regarding Self reach alpha level (Self:  $B = .30$ ,  $SE = .18$ ,  $T = 1.72$ ,  $p = .087$ ,  $95\%CI [-.045, .65]$ ,  $\eta^2_{\text{partial}} = .018$ ), Infant:  $B = .39$ ,  $SE = .21$ ,  $t = 1.83$ ,  $p = .07$ ,  $95\%[-.03, .81]$ ,  $\eta^2_{\text{partial}} = .02$ ), and there was no evidence of a Domain x Professionalism interaction ( $F(1, 62) = 0.31$ ,  $p > .10$ ). Using the same model, with the addition of Risk as a covariate, the between-group effect

of Professionalism was weaker, but still notable ( $F(1, 160) = 2.65, p = .10, \eta^2_{\text{partial}} = .016$ ).

As before, the interaction between Gains and Professionalism did not reach alpha level ( $F(1, 160) = .04, p = .85, \eta^2_{\text{partial}} = .0001$ ).

The final analysis tested for a Risk x Professionalism interaction in addition to main effects of Risk and Professionalism. Results showed a significant main effects of Risk ( $F(1, 158) = 3.22, p = .04, \eta^2_{\text{partial}} = .039$ ), and null results regarding Professionalism ( $F(1, 158) = 1.89, p > .10$ ). The interaction between Risk and Professionalism across repeated measures ( $F(1, 158) = .29, p > 1.0$ ) was not significant across domains, nor in relation to Self-related or Infant-related Gains, taken separately ( $ps > .10$ ).

## DISCUSSION

There is little empirical research on postpartum support HV projects in which home visitors are volunteers peers from the community. In this study, we examined the association between three predictors and mothers' reported gains from such a project (M2M). One predictor, the closeness of the home visitor-client relationship, was selected because it relates to the relationship-based core of the project; the other two, prior training (Professionalism) of the home visitor and the risk status of the mother, were chosen because they relate to two questions relevant to most HV projects: 'What makes for an effective home visitor?' and 'Which segments of the population benefit most?', respectively.

Before addressing the study questions, we note that, according to our data, the study sample derived moderate benefits from M2M. The data also show that mothers gained more in regards to Self than in regards to Infant. This finding may reflect a greater focus of home visits on mothers' feelings or the relative ease with which many women can

access information on infant care. Another reason could be that nearly 40% of the sample was multiparae, and experienced mothers are probably less in need of support regarding Infant than in coping with issues related to Self that often occur in the wake of having a new baby, regardless of parity.

As for the answers to the primary study questions: the robust correlation between mothers' feelings of closeness toward their volunteer and Gains supports the guiding principle of relationship-based interventions. This principle states that the relationship between home visitor and client forms the foundation upon which project-related benefits are derived (Edelman, 2004; Lakey & Orehek, 2011). Other perspectives define core tools in terms of information/advice or clinical treatment/intervention, though it is probably the case that most support projects, whether or not tagged as 'relationship-based', consider a quality relationship between home visitor and client important to service delivery, whatever its mode (e.g., Landy, Jack, Wahoush, Sheehan, & McMillan, 2012). The correlation between Closeness and Gains that we report here reinforces that conviction.

Practically speaking, this information seems highly relevant to home visitors since it provides some guidance as to the kinds of behavior and interactions with clients during visits that may be most effective. The finding also supports calls for visits to be frequent and long enough in duration so that a close client-home visitor relationship can evolve over time (Peacock, Konrad, Watson, Nickel, & Muhajarine, 2013).

Interestingly, our results show the closeness of the client-home visitor relationship contributed more to Gains regarding Self than Gains regarding Infant. One explanation for this is that information in the Infant domain is often technical (e.g., breastfeeding, infant care) and can be discussed freely between individuals even if their relationship is not a

very close one. In contrast, issues regarding Self are usually more personal and can be discussed most openly with persons whom we trust and feel close to. This finding showing that the contribution of Closeness varies with 'domain' is a novel one and provides some support for customizing training and other HV processes so that they are appropriate for project-goals (Ammerman, 2016; Holland et al., 2014).

Regarding the second hypothesis, results show that women classified as high risk benefitted more from M2M than did participants classified as lower risk, particularly in regards to infant-related issues. In contrast, there was no group difference in Gains regarding Self. Explanations for this disparity could be that mothers with multiple challenges (i.e., those at high risk) have fewer resources, including friends and relatives, or less energy and time to seek out information regarding issues related to infant care compared to women at lower risk. Either or both of these issues could make care giving tips, advice, and modeling by the home visitor particularly valuable for these mothers.

Finally, as predicted, results show a significant association between Professionalism and Gains, such that women visited by home visitors who were classified as 'professionals' reported more substantial gains than women visited by 'nonprofessionals'. Further, the advantage of being a professional seemed to generalize across risk status. These results may suggest that mothers, in general, have greater confidence in home visitors who have extensive training. We find this result of particular interest in the context of a relationship-based project like M2M, because it suggests that Professionalism predicts project-efficacy even when the transmittance of information is not a primary aim of the home visits. Practically, these results may be useful in guiding outreach and recruitment of volunteers

in peer HV projects and speaks to the importance of training of home visitors in such projects.

### **Limitations**

There are a number of limitations of this study. First, the project has not yet been tested in a random controlled trial (RCT) so we cannot know whether its efficacy is 'significant'. However, the data do offer insight into the feelings of women in M2M, as to what they 'took away' from the project and identified some factors that seem to predict stronger self-reported gains. We note again that items on the evaluation questionnaire were formulated so that mothers would answer specifically about benefits that they attributed to their HV experience, and we stressed the importance of answering the questions candidly so that our service could be improved in the future. Second, our measure of Closeness could be suspect because it was based on a few questions that have not been tested psychometrically. In response, we note that the items have substantial face validity and the moderate concordance between home visitors' and mothers' reports of felt-closeness provide some evidence of reliability. Previously used tools to assess Closeness (e.g., Working Alliance Inventory; Horvath & Greenberg, 1989) were not employed because they were too long and/or because many of the items were not appropriate to the context of this study. A final limitation of the study is the significant proportion of mothers who did not complete and return the evaluation questionnaire, which is an issue that seems to generalize across studies of HV projects (e.g., Landy et al., 2012). In this study, in the absence of any found-association between noncompliance and either demographics or project-variables, we tentatively assume that missing scores were randomly distributed across the sample.

## **Conclusion**

In sum, the present findings add to the literature on HV by identifying some predictors of mothers' gains within a volunteer peer support HV postpartum project. The information is relevant to the literature because few studies have gone beyond qualitative descriptions of such projects, and even fewer have tested for specific features or processes that predict clients' Gains. While further research into the nature, qualities, and limitations of peer postpartum support programs is clearly warranted; the present study provides additional evidence that such projects can be an effective means of supporting mothers during the first postpartum year.

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TABLE 1. Demographics and other personal information regarding final sample (n = 164) and regarding the women who had more than two visits and did not return evaluations (n= 190).

	Final sample (% sample)	Non returns (% sample)	$\chi^2$
<b>Age</b>			ns
<20	0	0.5	
20-29	37.0	34.1	
30-39	45.2	48.4	
40-49	17.8	17.0	
<b>Family Status</b>			ns
Married	79.4	71.0	
Single	17.5	23.0	
Divorced/Widowed	3.1	6.0	
<b>N children<sup>1</sup></b>			ns
1	62.6	59.9	
2-3	32.3	34.5	
4-5	4.5	4.6	
6+	0.6	1.0	

<b>Education</b>				ns
< 12 grade	1.4		1.0	
High school	17.5		17.8	
Prof. training	15.5		15.5	
BA	41.1		37.0	
MA/PhD	24.5		28.7	
<b>Religiosity</b>				ns
Secular	32.2		30.8	
Traditional/religious	50.7		50.7	
Ultra orthodox	17.1		18.5	
<b>Referred by</b>				
professional	29.3		30.1	ns
Self	70.7		69.9	

<sup>1</sup> N children – number of children

TABLE 2. Sections of the Evaluation Questionnaire that include items assessing Gains from the project (Self- or Infant-related) and the degree of felt- closeness between mother and home visitor

Evaluation Questionnaire <sup>1</sup>		
Item	Domain	To what extent do you think that your volunteer helped you to:
1	Infant	Learn to care for your infant?
2	Self	Become self-confident?
3	Self	Take on a more positive outlook?
4	Self	Feel less isolated?
5	Self	Become less anxious?
6	Infant	Become more responsive to your infant?
7	Infant	Meet your infant's needs?
8	Self	Appreciate yourself more?
9	Self	Gain trust in others?
10	Self	Resolve issues?
11	Self	Feel comfortable with your own feelings?

12	Infant	Understand your infant?
<b>Closeness</b>		
1		How close did you feel toward your home visitor?
2		Was the match between you and your volunteer a good one?
3		How attached are you to your volunteer?
4		How difficult was it separate from your volunteer?

<sup>1</sup>All items were rated on a 5 point Likert scale: 1- not at all to 5- very much so,

<sup>1</sup>N = 164; women can have more than one risk factor.

TABLE 3. Risk Factors rated as ‘yes’ or ‘no’ by project coordinators based on their ‘intake’ with the client and the referring agent if there was one.

Risk Factor	Definition of Risk	% sample <sup>1</sup>
Social support	no support by family or friends; only organizational support	12.3
Mother’s Mental health	diagnosed disorder or high levels of symptoms	14.3
Mother’s physical health	serious illness or handicap	5.0
Birth complications	> 2 weeks in hospital beyond regular discharge	5.3

Infant's health	serious developmental difficulties or sensory handicaps	1.3
Socio-economic status	low SES, difficulty meeting basic needs (food, home)	8.1
Home-environment	detrimental to health of infant and/or mother	6.5
Relationships within the family	serious problems	5.9
Marital status	single, without partner	16.6

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