Summary
Naturally Occurring Variations in Maternal Caregiving in Turkey and Associations with Psychological Distress: An Observational Study

Özlü Aran	Ayşe Büşra İplikçi	Emre Selçuk	Gül Günaydın
University of Denver	Akdeniz University	Sabancı University	Sabancı University

The quality of caregiving in mothers, who are usually the most common primary caregivers, is a matter of maternal behaviors in response to the signals of infants. Thus, Ainsworth et al. (1978) suggests that in order to understand whether a caregiver is sensitive or not, promptness and appropriateness of her responses to infant signals are the topic of interest.

There are various methods to examine maternal caregiving behaviors such as self-reports or short observations. However, those methods could be problematic due to social desirability bias or external validity issues. Therefore, a very promising method to reveal diverse set of caregiving behaviors is to observe mothers in naturalistic settings so that researchers can measure various behaviors and mother-infant interactions.

Great amount of the literature posits maternal caregiving sensitivity as a universal concept that is above and beyond cultural differences (Bornstein et al., 1992; van Ijzendoorn, & Sagi, 1999). However, it has been shown that there might be small differences in maternal caregiving behaviors among cultures (Broesch, Rochat, Olah, Broesch, & Henrich, 2016). Many studies use materials developed to measure Western samples, but it is highly important to test maternal caregiving behaviors across different cultural contexts, such as within Turkey, to understand potential variations in those behaviors.

In addition, psychological distress is an important predictor of sensitive caregiving in mothers. Maternal anxiety and depression are negatively correlated with sensitive caregiving. Specifically, while mothers with anxiety show less warmth towards their offspring (Pereira, Barros, & Mendonc, 2012), mothers diagnosed with depression tend to interact less with their children (Ferber, Feldman, & Makhoul, 2008). Moreover, co-occur-

rence of both anxiety and depression is also associated with low maternal responsiveness (Candelaria, Teti, & Black, 2011; Plamondon et al., 2015).

To our knowledge, there is no study that measures maternal caregiving in mothers of one-year-olds within the cultural context of Turkey by using naturalistic observation. Therefore, overarching goal of this study is to reveal naturally occurring variation in maternal caregiving behaviors in this sample by using a valid and reliable home observation method. In addition, depression and anxiety are usually reported to comorbid, especially in primary care settings (Clark & Watson, 1991). Therefore, in this study, depression and anxiety are examined as a composite score called as psychological distress. We aim to examine the associations of those naturally occurring variations in maternal caregiving with maternal psychological distress symptoms.

Method

Participants

One hundred and twelve mother-infant dyads participated in this study. All mothers were married and living with their husbands at the time of the study. The mean age of mothers was 30.14 years (*SD* = 4.07, *range* = 20-41) and infants was 10.48 months (*SD* = 1.67, *range* = 7-13). The last completed educational degree was primary or secondary school for 21 (18.74%) of mothers, high school for 17 (15.18%), community college for 15 (13.39%), and college or higher education for the rest 59 (52.68%) of the mothers. At the time of the study, 51 mothers (45.54%) reported being housemakers, 3 (2.68%) were unemployed, and 55 (49.11%) were working while 3 (2.68%) did not report informa-

---

Address for Correspondence: Özlü Aran, University of Denver, College of Arts, Humanities & Social Sciences, Department of Psychology, 2000 E. Asbury Ave. Denver, CO 80208 USA.
E-mail: ozlu.aran@du.edu

tion on work status. The mean household monthly income was 4663.43 Turkish Liras (SD = 3013.47, *range* = 600-12500).

Materials

Maternal Behavior Q-Set (Pederson & Moran, 1995; Selçuk et al., 2010). The Maternal Behavior Q-Set (MBQS) was used to assess maternal sensitivity via natural observation. It is a sorting system that includes 90 items that hold statements about caregiving behaviors in the context of caregiver-infant interactions. Two observers coded behaviors of mothers separately after home visits. Mean inter-rater reliability among observers was .85 (SD = .08).

Edinburgh Postnatal Depression Scale (Cox, Holden, & Sagovsky, 1987; Engindeniz et al., 1997). The scale aims to measure depressive symptoms of mothers. It consists of 10 items evaluated on 4-point scale. The internal consistency of the scale for this study was .75.

Trait Anxiety form of State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Luschene, 1970; Öner and Le Compte, 1983). In this study, only the Trait Anxiety scale of State-Trait Anxiety Inventory (STAI) was used. The scale consists of 20 items that are evaluated on a 4-point Likert scale, 1 as "almost never" and 4 as "almost always". The internal consistency of the scale for this study was .83.

Procedure

After the approval was obtained from the University Ethics Committee, 112 home visits were carried out in five cities in Turkey (Ankara, Izmir, Antalya, Mugla, Istanbul). During home visits both natural observation and survey methods were used. After mothers signed informed consents, researchers spent approximately three hours in every visit (M = 186.64 min., SD = 17.81 min.). Except 11 visits, all visits were carried out by any two observers within a total of eight observes (Due to some logistic strains, there was only one observer in six visits while the rest five visits were carried out with three observers with respect to training purposes. The results were the same when those 11 visits were discarded). Before the end of the visits, researchers asked mothers to fill the questionnaires. After the sessions ended, each observer independently coded the MBQS items to evaluate caregiving behaviors of the mother participants.

Data Analysis

In order to reveal behavior patterns of mothers, Q-factor analysis method, developed especially for q-sorted data, was used. The Q-factor analysis is a by-person factor analysis, which is used to identify groups of participants who make sense of a pool of items in comparable ways. Therefore, mothers were treated as variables whereas, the MBQS items were treated as cases. R-project, "qmethod" package was used (Zabala, 2014) for analysis of the data. To test the associations of maternal caregiving profiles with maternal psychological distress symptoms, anxiety and depression, simple regression analyses were run separately for each symptom and profile. In addition to analysing anxiety and depression independent from each other, the association between the composite score of both variables named as psychological distress and caregiving profiles was tested in order not to miss a potential covariance.

Results

Q-factor analysis revealed two different maternal caregiving profiles (Correlation between factors, r = .32). The first factor, named as *warmth/responsiveness* profile, describes mothers who were responsive to their infants' needs and demands, enjoyed intimate interactions with their infants, and followed the pace of the infants during interactions. The second profile, *indifference/aloofness*, describes mothers who were indifferent to the needs of their infants, and responded only if the infants persistently demanded attention. Further analysis revealed that when anxiety and depression were analyzed together to predict maternal caregiving profiles, their independent effects disappeared possibly due to shared variance between these two variables. Thus, maternal psychological distress, a composite score of both trait anxiety and postpartum depression, was created and it predicted the *indifference/aloofness* caregiving profile (β = .23, t = 2.46, p = .016, 95 % CI [.008, .074]), but not the *responsiveness/warmth* profile (β = -.16, t = -1.65, p = .103, 95 % CI [-.079, .007]). These results support the idea that psychological distress is related to lower responsiveness among mothers.

Discussion

The current study aimed to reveal maternal caregiving profiles in Turkey with a natural observation measure high on external validity. To our knowledge, this study is the first using this method with one year old infants in Turkey. In addition, unlike the previous studies, we tried to consider cultural differences. Hence, we did not make a comparison between our sample and Western maternal sensitivity standards. Instead, we conducted a within-sample evaluation that compared the participants in the sample with each other. For the last step, the relationship between maternal profiles and maternal psychological distress was tested.

Previous studies that focused on maternal behavior in Turkey used either self-reports or short interaction videos as measurement tools (Gölbaşı, & Eğri, 2010; Yalçın, 2013; Yağmurlu & Altan, 2010). Those which used long-term interaction measures, on the other hand, studied young children between the age two and five years (Metin-Orta, Corapci, Yagmurlu, & Aksan, 2013; Selçuk et al., 2010; Sümer, Sayıl, & Kazak-Berument, 2016). In this study, the participants were mothers who had infants between the age of seven and 13 months, an age group that the MBQS has not been used so far in Turkish cultural context.

One of the biggest strengths of natural observation is high external validity. It also enables observers to see a large repertoire of daily behaviors between mother and infant. In that sense, the MBQS offers a valid measure of natural observation. Because the MBQS procedure requires two independent observers at every visit, it promotes high reliability. The classic MBQS analysis is a comparison between averaged ratings given to a mother by two observers and ideal mother criterion constituted by experts. However, the difference of the current study is that instead of using ideal maternal behavior criteria, which reflects Western standards, averaged ratings given to the mothers were compared with each other. The method used in the current study enables us to see variations in caregiving behavior clearly. Indeed, the method revealed that mothers in our sample were distributed in two different behavioral profiles rather than one global dimension. The first profile, named as *warmth/responsiveness*, describes mothers who were engaged, animated during interactions with their infants, and available to infant needs. Those mothers responded frequently to both negative and positive signals of the infants, had close contact, and enjoyed the interactions. On the other hand, the mothers in the second profile, *indifference/aloofness,* interacted with the infants only when the infants consistently sought support. In other words, those mothers were low in emotional availability as they were only available when the infant signals were prolonged. Except for essential needs, those mothers tended to miss many signals from the infants, did not frequently engage in spontaneous interaction, and usually used an object or food as a medium of interaction. Behaviors defined in the *indifference/aloofness* profile might be due to insufficient awareness of infant emotional needs.

The current study also investigated whether maternal anxiety and depression were related to maternal caregiving behavior profiles exhibited by the sample. Although anxiety and depression share common symptoms, general assumption is that they differ from each other (Beurs, Hollander-Gijsman, Helmich, & Zitman, 2007; Brown, Chorpita, & Barlow, 1998; Joiner, Catan-

zaro, & Laurent, 1996). Similar to this view, the Tripartite Model of Anxiety and Depression (Clark & Watson, 1991) suggests that anxiety and depression reveal a three factorial structure. The first two factors are constituted by unique symptoms of the two variables and the third involves common symptoms of anxiety and depression. They argue that those common symptoms are the reason for anxiety and depression showing a high correlation and sharing variance in measurements. Similarly, in the current study the correlation between anxiety and depression was .69. Their independent effects in maternal caregiving were disappeared when they were analyzed simultaneously in the same model. Therefore, in the current study we created a maternal distress variable as a composite of anxiety and depression and tested the link between maternal psychological distress and maternal caregiving profiles. It was only related with the *indifference/aloofness* profile. This finding is consistent with the literature documenting a negative association between psychological distress and maternal responsiveness (Kertz, Smith, Chapman, & Woodruff-Borden, 2008; Tester-Jones, Mahen, Watkins, & Karl, 2015). In addition, there are many studies that show no relationship between maternal distress and maternal responsiveness (Ciciolla, Crnic, & West, 2013; Logsdon et al., 2014; Tarabulsy et al., 2005). Similarly, maternal distress in this study was not significantly associated with the *responsiveness/warmth* profile that is very similar in quality to maternal responsiveness depicted in studies using one-dimensional behavioral description. *Indifference/aloofness* profile, which was significantly related to distress, demonstrated more negative set of behaviors than *responsiveness/warmth*. This may give rise to questions of why distress predicted the second profile only. Before having an answer to this question, it should be noted that these two profiles are not the opposites of each other. For example, both mothers in the two profiles responded to infants' needs a certain amount. What differs is that the mothers in the second profile might take more time to see those demands signaled by the infants. Therefore, we cannot conclude that those profiles have a bidirectional fashion; instead, interactions of mothers in the *responsiveness/warmth* profile can be said to create a more positive atmosphere. This is consistent with the finding that while maternal distress (especially depression) has a very weak relation with positive caregiving behaviors, it predicts negative caregiving behaviors (Lovejoy, Graczyk, O'hare, & Neuman, 2000).

This study showed that the concept of maternal responsiveness at the age of one year is observable in Turkey just like in Western populations with probably culture-dependent differences. The MBQS also can be used as a reliable measure of caregiving behavior at the

age of one and younger in Turkey. However, it is recommended for future research that aims to use the MBQS in a classic fashion to form a culturally-specific responsiveness criteria. Comparing the sample with culturally ideal standards will reveal more reliable results.

The results of this study may be important for intervention programs focusing on caregiving behaviors. Intervention programs usually measure maternal caregiving depending on one dimension and deliver the intervention to mothers who show low responsiveness. However, this study shows caregiving behaviors are manifested in more than one dimension in Turkey. Therefore, treating the data as it has only one dimension may prevent us to see naturally occurring caregiving profiles in the population. Lack of knowledge about the population might lead to decreases in efficiency of intervention programs. This study showed that those who needed support both for psychological stress and caregiving are the only mothers who were in the second caregiving profile (*indifference/aloofness*). Interventions focusing only on those mothers would be both cost saving and time efficient. Implementing the most efficient intervention is highly important especially during the first year of life, a sensitive period for emotional development.