**The Feasibility of using videos to assess maternal sensitivity in low income urban settings in India – the researcher’s perspective**

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Abstract

Maternal sensitivity is one of the parenting dimensions associated with optimal child outcomes. Video-recording mother-child interactions is an objective and methodologically accurate way to assess maternal sensitivity. This research method is widely used in Western settings, but data is lacking in low-and-middle-income countries. We present findings drawn from the Bangalore Child Health and Development Study on the feasibility of video-recording interactions in low income home settings in India. Cultural, personal and practical advantages reported by researchers and strategies implemented to overcome barriers are described in the present letter to inform researchers who intend to use this method in non-Western populations.

Keywords: maternal sensitivity, mother-infant interaction, video observational method, LMIC, cohorts

Declaration of interest: None declared

Dear Editor,

Sensitive caregiving, defined as the ability to notice and respond to a child’s signals in a way that fits with the child’s needs (Ainsworth et al., 1974), has been associated with optimal emotional and behavioural outcomes (Deans, 2020). One of the most reliable and widely used methods to assess sensitivity is through video-recording of their interactions and subsequent coding by trained observers.

To better understand the influence of early parenting on child development, longitudinal assessment from infancy onwards is particularly valuable. The ability to video-record caregiver-infant interactions at home, where mothers might feel more comfortable is fundamental for this type of research especially in some Low and Middle Income Countries (LMICs) like India: culturally decision-making often rests with elders and spouse who can have a decisive impact on mothers’ ability to give consent. Most studies using video-recordings of mother-infant interactions have so far been conducted in Western countries with limited data from LMIC Asian countries and other non-Western low-income contexts (Mesman, 2020). The few available studies suggest this is a reliable research method as long as issues related to wariness of the camera and the cultural validity of the task are addressed (e.g. Abels et al., 2017; Mesman et al., 2016; Rahma et al., 2018, Rasheed and Yousafzai, 2015). However, these have typically included small samples (except Rahma et al., 2018) or have been conducted in rural settings. None describe challenges in home recording in low income Asian urban settings. We describe here the assessors’ perspective and experience of the feasibility of using this research method in a non-Western setting (India), reporting advantages, challenges and methods used to overcome difficulties.

Our findings are from the Bangalore Child Health and Development Study, a longitudinal cohort-study involving 825 mother-child dyads followed from pregnancy to two years, being conducted at the National Institute of Mental Health and Neurosciences, Bangalore. Families living in low-income urban areas were assessed for maternal mental health, infant development and psychosocial risk and protective factors. Mothers’ education level and SES was comparable to that of women of similar age in Karnataka; 69.7% of mothers were literate and 11.2% were living below the poverty line. The majority (83.3%) were Hindu (15.7% Muslim, 1% Christian) in line with the Indian national average. Caregiver sensitivity was assessed using the National Institute of Child Health and Human Development (NICHD) procedure: mothers (and alternative caregivers when present) and their 6 months/1 year infants were asked to play with familiar (child’s favourite toy) and non-familiar toys together for 15 minutes while being video-recorded (Cox & Crnic, 2003). The feasibility of filming infants is more widely culturally acceptable from around six months of age in this part of South Asia. Prior to this six months stage, filming may be prohibited due to cultural taboos linked to fear of inviting the evil eye and hence bad luck to the child. However, globalisation and the use of smart phones has also changed the attitudes towards filming and photos considerably. Trained researchers coded the observed behaviours for sensitivity on a 5 point-scale adapted from the original 4-point NICHD SECCYD scales (Owen, 1992) by Cox & Crnic (2003) from the 646 recorded videos. Prior to assessment, participants were asked their preference regarding the location and 379 (58.7%) preferred home to laboratory. Researchers completed all home assessments in pairs. To assess feasibility of home video-recording, seven Indian research assistants (with Masters Degree) with minimum one year experience who had conducted a minimum of 24 (max.169) video-recordings completed a survey assessing: researchers’ level of comfort in video-recording interactions; their perception of maternal levels of comfort in being filmed (each rated from 0 to 10); levels of agreement with a list of possible advantages and challenges of home recording. Finally, researchers endorsed which strategies they used to overcome these challenges.

Table 1 shows that researchers showed high levels of agreement (median >=7) with all the possible advantages of home video-recordings presented. These included parent and infant feeling more comfortable in a familiar and informal environment, and practical convenience. Common challenges in filming (applicable at home or elsewhere) included initial fear about the misuse of the film footage, initial difficulty in understanding the purpose of the research, and for a minority of families cultural restrictions about showing faces for video-recording. Practical barriers included securing husband’s permission ahead of gaining maternal consent, crowded and not optimally organised environment for filming (e.g., little space, poor lighting, high noise level), interruptions and distractions by neighbours or other relatives. Many of these challenges and barriers have previously been highlighted in other non-western low resource settings (e.g., Arsarhi et al 2020). In addition to working in pairs, researchers implemented various strategies to overcome these individual and cultural challenges including building a relationship of trust with families, securing permission by phone from fathers or elders prior to visit, taking the time to explain to mothers and other family members reasons and aims of the video-recording and reassuring them after listening to their concerns. Flexible scheduling of appointments to accommodate maternal and infant’s needs and financial recompense to cover wage loss were also effective ways to enable families to take part in the research. Finally, research assistants took extra measures to ensure good video-quality and an optimal environment in which to film interactions. Overall, researchers reported perceiving high levels of maternal comfort with home recording, whilst researcher’s own comfort levels were slightly lower possibly due to the challenges they needed to overcome.

The use of the NICHD play-based task with toys appeared to be culturally acceptable to women in urban Bangalore. The presence of local Government Anganwadi Centres which encourage use of play may have increased their exposure to play with toys. However, this might prove different in more rural settings where ‘play with toys’ may be less familiar and the cultural validity of the task may therefore be more questionable. Future work might also include naturalistic observations of parent-infant interactions during household activities (See Mesman 2020 for a detailed discussion of this issue), which may provide a measure with greater ecological validity, to examine whether or not sensitivity levels might differ, and predict child outcomes differentially, in this context.

In conclusion, assessment of caregivers’ sensitivity using video-recordings is feasible and acceptable to families in LMICs in South Asia at home in infancy from age 6 months even though researchers might find it somewhat challenging. A careful assessment of potential personal, cultural and practical advantages and challenges within different study populations, and detailed training on mitigating challenges can help researchers to feel confident about video-recording interactions at home. A critical next step will be to examine whether or not the sensitivity construct, assessed in this way in this culture, indexes meaningful variation in parenting with demonstrable predictive validity to later child outcomes in line with theory.

Table 1. Researcher perspectives on advantages and challenges of home video-recording, own and maternal comfort levels, and methods to overcome barriers or challenges.

|  |  |
| --- | --- |
| **Please indicate to what extent you agree with the following statements about video assessment at home (0=not at all, 10=A lot).** | Median  Score |
| 1. Comfortable for the participants | 7 | |
| 1. Easy access to familiar toys at 6 months which was one of the requirements | 9 | |
| 1. Infant’s familiar environment and so had less need to adjust to a new place (*such as the lab*). | 8 | |
| 1. No necessity for the mother to depend on someone else to travel with her for an assessment | 9 | |
| 1. Mothers were more willing as the place was informal | 7 | |
| 1. Easy availability of Alternative Caregivers | 8 | |
| 1. Good audio clarity since the room was cushioned (typically full of furniture preventing echo of voices) | 7 | |
| 1. Behaving more naturally during the recording (*as compared to lab interactions*) | 7 | |
| **Please indicate to what extent you faced the following challenges (0=not at all, 10= A lot).** | Median  Score | |
| 1. Mothers’ initial fears about films being misused | 5 | |
| 1. Rescheduling of appointment by the mothers after reaching participants’ home | 6 | |
| 1. Difficulty in managing time by the mothers *(e.g. carrying on with chores upon researchers’ arrival).* | 6 | |
| 1. Initial lack of awareness or difficulty in comprehending the aim of the research due to their educational background *(requiring extra explanation)*. | 6 | |
| 1. Unavailability of father to take consent. | 6 | |
| 1. Camera shyness. | 6 | |
| 1. Restriction in certain communities for the mothers to show their faces (for filming). | 4 | |
| 1. Difficulty in ensuring that the child was alert and awake for the video-recording. | 7 | |
| 1. More distraction for the baby due to easy availability of other objects inside the room | 7 | |
| 1. Infant’s high activity level (moving out of picture). | 5 | |
| 1. Interruptions caused by neighbours leading to lack of privacy. | 6 | |
| 1. Distraction by outsiders, other family members and siblings while the recording was in progress | 7 | |
| 1. Poor lighting inside the room. | 8 | |
| 1. Lack of space to set up the camera which caused poor camera angle. | 8 | |
| 1. Mothers not comfortable to be recorded at home due to poor infrastructure *(so chose lab assessment instead).* | 7 | |
| 1. Increased noise level due to various reasons such as vehicular noise and phone calls | 7 | |
| 1. Enquiry about the study by the neighbours (*E.g. “Why are you not involving us?”)* | 8 | |
| 1. Mothers feeling uncomfortable to be video-recorded at home if they belonged to a joint family *(so chose lab assessment instead)* | 7 | |
| **Comfort levels** | | |
| 1. How comfortable did you feel while doing the filming at home?   (0= Least comfortable to 10=Extremely comfortable) | 5 | |
| 1. Overall, how comfortable were the mothers with this assessment at home? (0= Least comfortable to 10=Extremely comfortable) | 7 | |
| **How did you overcome the challenges?**  *Please mark more than one option if applicable.* | **Yes, used or did it** (n/7) | |
| 1. Explaining the need and importance of recording interactions. | 5 | |
| 1. Giving extra reassurance about confidentiality | 6 | |
| 1. Arranging alternative place to do the assessment such as Anganwadi centre or the lab at an urban community mental health centre | 6 | |
| 1. Asking details about infant’s sleep and feeding patterns (and organizing the home visit accordingly) | 5 | |
| 1. Taking consent from the father over phone prior to the home visit | 5 | |
| 1. Building good rapport and developing a relationship with the participants | 7 | |
| 1. Carefully instructing mothers and other family members on procedures for optimal video-recording (e.g. to avoid interruptions if they are not necessary) | 4 | |
| 1. Providing recompense to the participants (e.g. reimbursement for lost wages, giving a small bag to mother and a toy to the child) | 7 | |
| 1. Trying different camera angles (*before starting to record*) to get the best view of both mother and child | 4 | |
| 1. Choosing, when possible, the best ventilated room at home (*to ensure mothers and infants are as comfortable as possible*) | 4 | |
| 1. Making sure that the camera is not against light which results in a dark image of the dyad | 4 | |
| 1. Arranging for the video-recording to be done when mother is alone and has privacy | 3 | |

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