

Mother-Child Conversations about Susceptibility to Influenza:
The Role of Observed Anxiety

by

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ABSTRACT

Parents are the primary source for socializing children's attitudes and behaviors about adaptive concepts such as how to stay safe and reduce risk. Parent-child discussions about potential health risks have the ability to evoke anxiety in both mothers and children. This study examined the impact of observed anxiety on non-clinically anxious families, and the differences observed between anxious or non-anxious families. Sixty-one mothers engaged in naturalistic conversation with their children (aged 9-11) about their potential exposure to an anxiety-provoking situation, an Avian influenza pandemic. Conversations were video recorded and observational data were collected to examine mother and child behaviors; questionnaire data from both mothers and children supplemented this observational data. Results indicated that anxious children were more engaged in these discussions than less anxious children, and anxious mothers were less engaged than non-anxious mothers. The content of the parent-child conversations varied between non-anxious and anxious dyads; mothers were more likely to remind their children that the situation was "pretend" if they recognized that their child became anxious, and mothers that emphasized the severity of the hypothetical situation had children who self-reported higher levels of anxiety. Underlying parental beliefs about how children develop also varied among mothers; mothers of anxious children were more likely to believe that their children learn because of cognitive development that occurs through their own interactions within their environment, while there was a trend for mothers of non-

anxious children to hold stronger beliefs that children learn through modeling and the direct teaching of behaviors. Results indicate that dysfunctional behaviors previously observed in clinically anxious families may be apparent within non-clinically anxious families when anxiety levels increase, and the bi-directional influence of mother-child anxious behavior is explored. This study builds on our understanding of parent-child interactions, parent socialization behaviors, and the importance of minimizing anxiousness during parent-child threat discussions evoking child anxiety.

DEDICATION

To my amazing family, thank you for your unconditional love and support, and for reminding me: “don’t worry, be happy, every little thing is going to be alright”.

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INTRODUCTION

Background

Although Avian influenza (a.k.a. bird flu) was recognized as a threat to humans by the World Health Organization in 1997, it has only been recognized as a public health hazard since 2004, with concomitant concern for its potential to become a world-wide epidemic, similar to that of the 1918 flu pandemic (WHO, 2011). According to the World Health Organization, bird flu “remains an influenza virus with pandemic potential because it continues to circulate widely in some poultry populations, most humans likely have no immunity to it, and it can cause severe disease and death in humans (2011). There is still no known cure or full-proof preventive means available to avoid Avian influenza once exposed; discussions about the bird flu still generate some level of anxiety and uncertainty about the appropriate way to respond to such a pandemic should the need ever arise. Prevention of Avian influenza breakouts is especially relevant to families with young children since the populations most frequently and seriously affected are children and young adults (WHO, 2011).

Parent-child communication about Avian flu was chosen as the topic for the present study because bird flu has received a lot of media attention. The relative hysteria surrounding the bird flu is a comparatively recent phenomenon that peaked in 2006, and since then it is no more a source of parent worry than concern that their child may contract any other acute illnesses. However, the CDC and other institutions mandated to protect the public from such threats,

believes that Avian influenza will reoccur, perhaps in a much more virulent form and could become an epidemic (WHO, 2011; CDC, 2012).

Additionally, there were and are many unknowns surrounding Avian influenza; people are unaware of the extent to which it would or will reach the United States, how exactly the disease is contracted, or if there are effective ways to avoid contact. These unknowns provided a topic that had the potential to elicit an anxious response and thoughtful conversation in families with children.

Prevention of Avian influenza has been the focus of efforts to control a potential bird flu pandemic. Two foci have emerged: development and distribution of an effective vaccine and a public health campaign to reduce the spread of the virus through hand washing and covering the nose and mouth while sneezing and coughing. School children, in particular, have been the focus of such public health campaigns aimed at preventing flu contagion, due to the close quarters in schools, and the reality of exposed children carrying it home to their families before symptoms appear, when contagion is most likely.

Parent Socialization of Children's Health Beliefs

How do families prepare their children to protect themselves from Avian flu? To date, there is little research that has addressed how parent-child dyads communicate about this type of potential threat. Most of the existing research has emphasized a structural prevention process, involving obtaining influenza vaccinations for their children. Parents have been shown to engage in a cost-

benefit analysis of the extent to which the positive consequences of vaccinating their children outweigh the possible negative consequences (e.g., risk of life-threatening reactions to the vaccines) of the decision to vaccinate their children (Becker, Nathanson, Drachman, & Kirscht, 1977; Hughes & Wingard, 2007; Kviz, Dawkins, & Ervin 1985; Prislun, Dyer, Blakely, & Johnson.1998; Strobino, Keane, Holt, Hughart, & Guyer, 1996).

However, regardless of parents' decisions about vaccinating their children, questions remain about how parents talk with their children about the potential for illness caused by Avian flu, its potential deadly consequences, and behavioral methods for reducing the risk of contracting the disease. Thus far, research studies have not investigated the process of parent socialization of children's understanding and attitudes towards Avian flu, and the potential level of child anxiety such discussions may evoke. This is a critical, yet missing, aspect of the research literature because parents' provision of information about the contagion presented by bird flu cannot be effective without a clear understanding of how threat conversations about flu pandemics may influence the dynamic, content, and consequences of such parent-child conversations about prevention of Avian influenza.

Parent socialization of children's health beliefs and behaviors is arguably one of the most important tasks parents face in rearing their children. Planning and preparation for potential risks is critical to ensuring appropriate responses in the face of threats to health and safety; and for children, the family

is the primary source from which such information is derived. By its very nature, “the family context is a primary site for the development of planning” (Perez & Gauvain, 2005). Therefore understanding how the nuances of parent-child interactions effect communication is necessary for the socialization of children’s understanding of potential threats.

There are many potential influences that affect how a parent interacts with their child and the means by which they socialize important beliefs about child health safety and risk prevention. One such influence is parental beliefs about how children come to grow and learn. According to The Parent Beliefs About Development Scales (Less & Tinsley, 2000; Martin, 1992), there are three categories about how children learn: a learning model (e.g., children learn through modeling, obtaining direct knowledge), a cognitive-developmental model (e.g., children learn through transactions of the environment and active discovery) and a maturational/biological model (e.g., children spontaneously mature and gain information as the result of this growth). These underlying core beliefs about how children learn can influence the strategies mothers use to socialize child health beliefs and can potentially affect parent-child interactions.

Parent socialization is especially potent during particular times of children’s developmental trajectory. Specifically, during middle childhood, “key developmental advances in children’s emotional understanding, allow for increased comprehension and more sophisticated socialization opportunities” (Denham & Kochanoff, 2002). However, much of the socialization research

has focused on younger populations, including preschoolers (Lees & Tinsley, 2000; Suveg, Zeman, Flannery-Schroeder, & Cassano, 2005) and not on middle childhood. Thus the current research contributes to our understanding of a unique population in a time period in which socialization can be highly productive.

Observed Anxiety: Effects on Parent-Child Interactions

Parents use many strategies to communicate important information to their children regarding healthy behaviors and risk avoidance. Communication between mothers and their children can be affected by an array of underlying issues, including anxiety, panic disorder, emotion regulation, and previously held beliefs and attitudes (Perez & Gauvain, 2005; Kertz et al., 2008; Schneider et al., 2009; Suveg et al., 2005;). While these underlying concerns have been addressed with clinical populations, less information is available regarding how these same issues influence parent-child communication within non-clinical families. It is crucial that we understand how anxiety, both clinically significant and not, can affect the dynamics of parent-child communication about health related risk factors and threat situations for the general population. Specifically, more research is needed to ascertain how increased anxiousness produces the same patterns of maternal and child behavior in non-clinical families as it does when the mother and/or her child are clinically anxious.

In a review of the literature, a pattern emerges in studies that focus on anxiety in families with young children. The ultimate goal is to understand how

anxious arousal in non-clinically anxious families can potentially effect parent-child communication about an influenza pandemic. Furthermore, better understanding of what promotes and hinders healthy socialization of children's health beliefs and behaviors allow us to better and understand ways to develop interventions that ensure information is communicated effectively.

Maternal Anxiety as it Affects Parent-Child Interactions

As noted earlier, anxiety plays a unique role in shaping parent-child dyadic conversations and interactions. The extent to which a mother or her child is anxious during a dyadic discussion can potentially disrupt the quality of the interaction. Furthermore, it has been reported that reduced anxiety helps children effectively process parental messages and allows for the child to internalize the information (Hoffman, 1983). In a study in which mothers were asked to engage in an etch-a-sketch play activity with their child, it was revealed that mothers diagnosed with an anxiety disorder were more confrontational with their children than their non-anxious counterparts (Schneider et al., 2009). Additionally, anxious mothers exerted more verbal control, were more critical, and less sensitive to their child during the interaction (Schneider et al., 2009). Apart from conversational differences observed in anxious mothers during dyadic interactions with their child, anxious mothers display differences in their physical reactions throughout such discussions as well. Weinberg and Tronick (1998) found anxious moms to be less engaging across face, voice, and touch interactions with their child.

Together these results demonstrate the immense impact maternal anxiety can have on parent-child interactions.

The way in which parents socialize their children's beliefs and behaviors is often varied and unique dependent on the specific behavior that is being socialized. When a parent is socializing health beliefs specifically, they often use direct and controlling teaching strategies to relay such information, resulting in improved child health competence (Lees & Tinsley, 2000). While it appears some level of control is necessary to socialize behaviors, if a mother is too controlling, socialization can be impeded. This is problematic because it has been shown that if a mother or her child is anxious in conversation, the mother is more likely to exhibit over-controlling behaviors (Whaley, Pinto, & Sigman, 1999; Woodruff-Bordin, Morrow, Bowerland, & Camron, 2002). This controlling behavior in mothers may be attributable to the idea that the mother perceives the interaction as difficult and may focus more on managing the interaction with direct and controlling behavior (Perez & Gauvain, 2005). If mothers are already likely to engage in increased controlling behavior when discussing health behaviors, anxiety may over-amplify their controlling tendencies. These patterns are risky because over-controlling parental behaviors, in combination with overprotectiveness and rejecting behaviors are often considered risk and maintenance factors for child anxiety (Gonzalez, Moore, Garcia, Thienemann, & Huffman, 2011).

Child Anxiety as it Affects Parent-Child Interaction

In addition to understanding the influence of maternal anxiety on parent-child interactions, it is equally as important to address how child anxiety effects communication. In a study by Suveg and colleagues (2005), mothers engaged in naturalistic conversations with their children about times in which their child had felt worried, sad, and angry. Results indicated that mothers of anxious children tended to speak less frequently, used less positive emotion words, and more frequently discouraged their child's emotional discussions, in comparison to mothers of non-anxious children (Suveg et al., 2005). These findings suggest that children's anxious behavior may elicit specific negative feedback from mothers. This is problematic because these negative maternal responses can adversely affect the socialization process by hindering communication, demonstrating a transactional relationship between mothers and children during anxiety-provoking conversations. The results above are partially supported by the notion that parents often exhibit behaviors that contribute to the child's difficulties (Suveg et al., 2005) and that children develop anxious and fearful behavior from observing their parents (Fisak & Grills-Taquechel, 2007; Maid, Smokowski, & Bacallao, 2008).

Mothers in one study were instructed to engage in a planning task with their second-grade children. Results indicated that emotional intensity (a feature of anxious behavior) has a profound effect on parent-child interaction (Perez & Gauvain, 2005). Child emotional intensity was linked to less engagement and to an increase in the mother exhibiting instructive and

regulatory behaviors (Perez & Gauvain, 2005). The pattern between child behavior and maternal response is consistent across anxious families. The idea that a child's anxiety arousal so profoundly affects how his/her mother responds, illuminates the importance of understanding what evokes such responses and the need to minimize this effect. While this sheds light on these processes in general, questions still remain as to what extent these patterns are generalizable to parent-child discussions about serious health issues.

Parent-Child Interaction in a Laboratory

While it may seem ideal with respect to validity to conduct naturalistic research in order to explore the inner-workings of mother-child dyadic interactions during threat discussions, research suggests that mother-child participants in natural conversation tasks in a laboratory, rate their lab interactions as similar to those experienced in the home (Gonzalez et al., 2011). Understanding that parent-child discussions of threat topics within a laboratory are generalizable outside of the lab is critical to increasing our understanding of normative parent-child discussions. When a mother and her child discuss an ambiguous threat situation it allows the child to think critically by interpreting the situation and responding appropriately (Gonzalez et al., 2011). Such threat conversations have the ability to evoke fearful responses, especially emotionally charged discussions which produce increased activation in mothers and children (Gonzalez et al., 2011).

Furthermore, because ambiguous threat discussions have the potential to evoke anxiety in the mother and/or child, it can “elicit dysfunctional behaviors that [...] characterize problematic interactions” (Gonzales et al., 2011). Understanding these dysfunctional behaviors is critical if we are to promote positive socialization techniques and develop a clear understanding of how mothers and children engage in discussions concerning potential threat situations. While there is literature that demonstrates this process in clinically anxious families, there is very little information regarding the relation on how “normal” anxious behavior might influence parent-child threat discussions. It is important that we have an understanding of these dynamics in non-clinical populations because it has been suggested that anxiety is a normal yet transient feature that children and adolescents are likely to experience (Last, Perrin, Hersen, and Kazdin, 1996). Additionally, children in late childhood perceive themselves to be highly vulnerable and are aware and anxious about everyday risks and the possibility of catastrophic events (Harden, 2000; Ollendick, King, & Frary, 1989; Orton, 1982). If some level of anxiety is a normal part of childhood and adolescence, then mother-child interactions within well-functioning families could potentially be affected in the same manner that is seen within anxious families.

The primary aim of the present paper is to gain an understanding of how anxious behavior affects how mothers and children interact while engaging in a naturalistic conversation about the threat of being exposed to a flu pandemic. In

light of previous research literature that demonstrates how clinically anxious families interact during similar interactions, examining how elevated anxiety levels in non-clinical families affects such interactions is a critical and neglected facet in the body of literature.

Theoretical Orientation

The Social-Cognitive Perspective of Risk Perception

The Social-Cognitive Perspective of Risk Perception (Lee & Lemyre, 2009), was actually developed to explain risk perception as it relates to terrorism. The purpose of focusing on this theory is that it appears to draw on similar processes to those of an Avian influenza pandemic. For instance, this theory suggests that much of the worry associated with risk perceptions of terrorism relates to such social features as travel decisions, changes in daily routines to avoid high-risk areas, and preparedness for such events (Lee & Lemyre, 2009). The similarities between the core worries associated with terrorism and how they relate to a potential flu pandemic are apparent, including fear of traveling to places where the bird flu is prevalent, avoiding high-risk situations that could potentially expose someone to the flu, and addressing concerns for preparations for such a pandemic should it occur.

The Social-Cognitive Perspective of Risk Perception builds on theories associated with health-risk perspectives. It acknowledges the importance of the extent to which an individual perceives a health threat as likely or serious. This perspective also takes into consideration the individual's ability to control and

cope with health threats. These key features of the theory function to predict the protective and preventative behaviors people engage in to avoid health risks (Lee & Lemyre, 2009; Rogers, 1975; Rogers, 1983; Witte & Allen, 2000).

The Social-Cognitive Perspective of Risk Perception is well-suited for this research because it acknowledges an affective component in the model. Specifically, this perspective highlights how worry independently contributes to the prediction of behavioral responses (such as preparedness) and how worry mediates the behavioral response to threat situations (Lee & Lemyre, 2009). This is relevant because of our interest in worry and anxiousness as key influencing factors on how families respond to being exposed to a health threat situation. The Social-Cognitive Perspective of Risk Perception which recognizes the importance of worry as a key determinant in risk perception, supports the scope of the current research.

Overview of the Present Study

The impact of anxiety on family interactions can clearly be problematic to parents' ability to adequately socialize their children about risk factors such as pandemics. When even one member of a mother-child dyad is anxious, it creates a "trickle down" effect throughout the interaction and the quality of engagement and discussion can be compromised. This is a reciprocal relation as it appears as though a mother's anxiety can affect her child's behavior as much as a child's anxiety can affect his/her mother's behaviors in response.

The present study examines the role of observed anxiety during threat discussions between mother-child dyads. Avian Influenza, as noted earlier, was chosen as the topic of discussion because it was predicted to have properties that could potentially evoke anxious behaviors. Mothers and their children aged 9-11 engaged in a naturalistic conversation about the possibility of an Avian flu pandemic occurring at their school. Dyadic discussions about potential threats provide a fluid transaction of information between a mother and her child, and with a combination of mother and child self-report data in conjunction with video recordings which allow for observational coding of mother and child behaviors, this study provides a comprehensive picture of the socialization process that occurs between mothers and children during health related risk discussions.

This research is critical to the body of literature concerning parent-child threat interactions because a pattern of behaviors that was thought to primarily exist only within clinically anxious families has been discovered in non-clinical populations. There is much less understood about what role heightened anxious/fearful behaviors may play in parent-child interaction in non-anxious families. Understanding that non-clinically anxious families respond to anxiety-provoking threat discussions with the same dysfunctional behaviors as anxious families do, underscores the need to find ways to minimize these fears when discussing threat topics in an effort to promote healthy socialization behaviors through proper engagement.

Research Questions

The first goal of this research was to assess the general dynamics of social interactions between mothers and children during a discussion about a flu pandemic. It was hypothesized that the more engaging the mother was in conversation, the more engaging the child would be, and vice versa. It was also hypothesized that mothers that were ranked as more engaging were more likely to ask probing questions. Finally, it was hypothesized that a positive relation would be found between the number of times the mother criticized her child and how controlling the mother was over her child's behavior.

The second hypothesis posited that if the mother and/or the child were observed as being anxious during the dyadic conversation, the level of engagement between the child and the mother will differ between anxious and non-anxious dyads. Specifically, it was hypothesized that anxious children and anxious mothers (rated separately) would be less engaging throughout the threat discussion.

The third research question addressed the way information is conveyed by the mother. The socialization process was hypothesized to differ between those children observed as anxious or non-anxious; it was hypothesized that mothers of anxious children would be more likely to tell their child that the situation is pretend in an effort to ease the child's worry.

The fourth hypothesis examined self-reported child anxiety as it relates to how the mother communicates information regarding the risks involved with

potential exposure to a flu pandemic. It was hypothesized that mothers who emphasize the severity of such an outbreak were likely to have children that self-reported increased anxiety.

The final research question was exploratory and was used to examine how parental core beliefs about how children develop and learn might differ between mothers of anxious children and mothers of non-anxious children. It was hypothesized that mothers of anxious children would believe their children learn primarily cognitively (i.e. through his/her own interactions with the environment), while mothers of non-anxious children would believe their children learn through modeling (i.e. direct teaching).

METHODS

Participants

Mothers with a child who was in either the fourth or the fifth grade were the participants in this study. Mother-child dyads were recruited from elementary schools located in the Southwestern United States. Sixty-six mothers participated in this research study; five mother-child dyads were excluded from the results due to technical difficulties. The total sample size analyzed for this report consisted of 61 mother-child dyads, but demographic information was not provided by one mother. The average age of participating mothers was 38.5 years old (range 25-49); the average age of the child's father was 40.9 years old. Children ranged in age from nine to eleven years old; the mean age for girls was 10.16 and the mean age for boys was 10.78. Total, 37

girls and 24 boys made up the final sample. The large majority of children lived in a two-parent household; mother self-reports indicated that 82.3% of mothers were married or cohabitating, 6.5% were single, and 8% were separated or divorced. The average number of years of schooling for mothers (14.6 years) and fathers (13.9 years) indicates that most of the parents in this sample had at least some schooling after high school. The number of additional children ranged from one to five, but the average family had approximately three children (2.95).

Other demographic data revealed that the majority (82%) of the mothers in this sample were of White non-Latino ethnicity; 13% of participants reported their ethnicity as Latino, and 5% African American. These ethnicity demographics differed slightly from the population seen in the school district from which participants were recruited, where 69% of families are non-Latino Whites, and 19% are Latino and 3% are African American (Arizona-Department-of-Education, 2006). More than half of mothers self-reported their religion as Christian (57.6%); the remaining mothers reported their religion as Catholicism (22%), Judaism (1.7%), Protestant (6.8%), or other (11.9%).

Procedures

These data were collected with the approval of both the Committee for the Protection of Human Subjects at the university and by the local school district from which families were recruited (Appendices A & B). Recruitment letters (Appendix C) were sent to 788 mothers identified by the district from

four different elementary schools via district mailing labels. Of the 788 letters, 13% (106) returned their response card (Appendix D) specifying their interest to participate in the study.

A phone script was provided to trained research assistants who phoned the mothers that had returned the response card indicating their interest in more information about study participation. In this phone call, the research assistants explained the procedures and the purpose for the research study (Appendix E). All 106 mothers who responded were contacted and 79% (84) agreed to participate in the 90 minute research session. Of the 84 mothers who were scheduled to participate, 66 attended their scheduled appointment with their child; because of technical difficulties 5 dyads were excluded and 61 mother-child pairs were included in the present study.

When the mother and her child arrived to the lab they were taken into a video room that resembled a living room, complete with a comfortable couch and coffee table. The video cameras were quite inconspicuous and a two way mirror was covered with draperies. After introductions were made, a trained individual explained the procedures of the study to the mother and child. Families were assured the conversations that would take place would remain confidential. Mothers and children were then asked to sign an assent to agree to participate (Appendices F & G).

Once assented, mothers would engage in three naturalistic conversations, each lasting no more than five minutes, and each introduced

separately by a trained research assistant. The order was counterbalanced so that the discussion that occurred first, second, or third, was varied across subjects. To begin each conversation, the mother was given a short vignette to introduce the topic (Appendix H); she was then asked to have a natural discussion on the topic for up to five minutes with her child. Two of the topics involved discussing exposure to a risky situation, either encountering a stranger or being exposed to the bird flu at the child's school. The third conversation was a planning task where the child would discuss the planning of the family's next vacation. For the purpose of this paper, the only vignette that was examined was the threat situation regarding a bird flu pandemic at the child's school.

When all three discussions were complete, the mother and child were taken into separate rooms in the lab where questionnaires were administered. The mother filled out the questionnaire on her own; children's questionnaires were administered per protocol by a trained research assistant who would read the first three questions to the child. The child had the option of completing the survey with the research assistant or on his/her own. For children that appeared to need, or requested, more assistance, the research assistant would use predetermined wording to further explain questions and answers to the child. Children were allowed to work alone after being asked the meaning of difficult words (e.g., criticize, inflexible) and phrases (e.g., blow off steam, one-up, or out-do each other), and those children who could not provide an accurate

definition were given a brief definition and the word was used in a sentence. Children were also instructed to skip a question if they did not know its meaning. This procedure was repeated for all five sections of the questionnaire.

After the completion of the questionnaires, dyads were debriefed and any questions were answered (Appendix I). Mothers were then compensated with a gift card to a restaurant (e.g., Peter Piper Pizza) or a movie theatre. Additionally, mothers had the option of being placed into a raffle for a \$100 gift card that would be raffled at the end of the research study once all data collection was complete. The dyads were then thanked for their participation in the study to mark the end of the research session.

Measures

For the purpose of the present study, a subset of the measures that were collected during the entire study, were analyzed. Additionally, though each mother-child dyad discussed three topics, only the flu discussion was examined for this paper.

Demographics (Tables 2 & 3). Mothers provided standard demographic information including age of mother and child, ethnic and religious background of mother and child, marital status, number of children in the household, education level, and family income level. This information was gathered to assess the composition of the sample.

Revised Children's Manifest Anxiety Scale (RCMAS). Chronic anxiety was measured using the RCMAS (Reynolds & Richmond, 1978), a 36-item self-

report measure for children in grades 1 through 12. Responses require the child to answer yes or no. Scores were summed where higher scores indicate greater anxiety. Coefficient alpha reliability for the anxiety scale is .82 (Reynolds, Bradley, & Steele, 1980). The construct validity for the RCMAS has a zero-order correlation of .85 with the State-Trait Anxiety Inventory for Children trait scale (Reynolds, 1980). For the present study, the overall anxiety score was included in the analyses, and the coefficient alpha reliability for this scale was .84.

Parent Beliefs about Development Scale. The Parent Beliefs about Development Scale is a 48-item measure adapted from Martin (1992) and Lees (2000) that assesses parents' general beliefs about children's development and specific beliefs about children's developing ability to be safe and avoid risk. For each question, three answers were provided, and mothers were asked to choose the answer that best reflected how they felt about how 9- to 11-year-old children learned certain concepts and gain specific abilities. This scale identifies three categories of parent beliefs about how children learn: a learning model (e.g., children learn through modeling, obtaining direct knowledge), a cognitive-developmental model (e.g., children learn through transactions of the environment and active discovery) and a maturational/biological model (e.g., children spontaneously mature and gain information as the result of this growth). Scores were summed for each model where higher scores reflected stronger beliefs for the ideas associated with that model.

Observational Coding of Mother and Child Behaviors (Table 1)

All three mother-child conversations were coded using a coding system that was developed by the authors and colleagues, but for the purpose of the present exploratory study, only the flu conversations were examined. The coding system consisted of 18 codes that were adapted from the Health Belief model (Rosenstock, 1966), family systems perspective (Steinglass, 1987), and Baumrind's parenting model (Baumrind, 1971). During the development of the coding system, specific criteria were established to ensure accuracy and reliability between coders. Twenty percent of finished cases were recoded to ensure the accuracy of coding. The coders were trained on the observational coding scheme and inter-rater reliabilities were established by applying the coding system to approximately 20% of the observational data. Cohen's Kappa was calculated for each code, and most values were acceptable, ranging from 0.67 to 1.00.

The present paper only examined observational codes as they related to the hypotheses. Some of the codes that were measured were not analyzed.

Engagement

Engagement was measured in both mothers and children. This was a global code that assessed the extent to which mothers positively reinforce their child's participation in the discussion. The rating ranged from 1 (no engagement) where the mother is observed as dominating the conversation and doesn't attempt to elicit engagement from her child, to 4 (fully engaged) in

which the conversation flows easily and the mother asks the child if he/she has any questions. Engaging children also ranged from 1 (no engagement) in which the child does not speak but instead may shake his or head to respond, to 4 (fully engaged) in which the child asks at least three questions and provides long, thoughtful responses to the mother.

Perceived Susceptibility and Severity

The language the mother used to discuss the child's susceptibility to the bird flu was measured by examining whether the mother described the situation as real or pretend. Using a dichotomous code, mothers were scored as either 0, in which the mother does not mention that the vignette is pretend, or 1 in which the mother explicitly says the conversation is pretend. Additionally, we examined mothers' perceived severity of the situation. On a scale ranging from 1 (no mention of severity) to 3 (the mother elaborates on the seriousness of the event) each mother was given one score.

Mother Controlling Behavior and Criticism

Two observational codes were created to look at specific parenting techniques utilized when talking about threat situations. Mother's controlling behavior examined the extent to which she actively tried to control her child's behavior. One score was given to each mother ranging from 1 (does not try to control child's behavior) to 3 (mother corrects the child's behavior by saying things like, "stop", or "don't do that", at least two times throughout the discussion. Criticism was a frequency scale and the number of times the mother

criticized her child throughout the flu discussion, was her criticism score.

Criticism scores during the flu discussion ranged from 0 (no critiques of the child's behavior) to 6 (quite frequent criticisms of the child's behavior).

Observed Mother and Child Anxiety/Worry

Discussing threat situations such as one's exposure to a deadly flu virus is likely to evoke anxiety in some people. In order to assess the anxiety observed in mothers and children, one score was given to the mother and one score was given to the child. Using a dichotomous scoring system, mothers and their children each received a score of 1 or 2. A score of 1 indicated that the mother or child did not display any anxious behaviors and/or did not make any mention of feeling anxious about the topic. A score of 2 indicated that the mother/child either explicitly alluded to their anxiety about the flu or displayed worrisome behaviors such as fidgeting or appearing frightful.

RESULTS

General Characteristics of Mother-Child Interactions

Emotional engagement was measured in order to understand the characteristics of engaged dyads and the underlying attributes of mothers and/or their children affecting engagement. Correlational analyses revealed that mothers who are more engaged in conversation with their children ask significantly more questions, $r=.38$, $p<.05$. Additionally, the more engaging the mother is in conversation, the more engaging her child is, $r= .44$, $p<.001$. Another dynamic in how mothers discuss a flu pandemic is how critical the

mother is of her child; critical mothers were significantly more controlling over their child's behavior than less critical mothers, $r=.39$, $p<.05$. These findings suggest a profile of behaviors that may encourage or discourage productive conversations about threat exposures.

Observed Child Anxiety and Engagement

To test the hypothesis that observed anxiousness affects how mother-child dyads engage in threat discussions about the flu, Independent-Samples T-Tests were performed. The measure of anxiety was a dichotomous code in which children were rated by trained research assistants as displaying anxious characteristics (e.g., mentions they are scared or displays nervousness), or not anxious/worried (e.g. does not mention they are afraid and does not appear fearful). Results indicated that children who appeared more anxious throughout the discussion, were significantly more engaged ($M= 3.53$, $SD=.64$) in the conversation than non-anxious children ($M=2.98$, $SD=.69$), $t(58)=-2.746$, $p<.05$. These results may indicate the importance of such discussions and the opportunity to reduce the child's anxiety and worry about this topic.

Observed Maternal Anxiety and Engagement

Mothers were rated by trained research assistants on the same dichotomous anxiety scale that children were; mothers were either labeled as anxious or not anxious. More anxiety in mothers revealed an inverse relation of that which was observed in children who appeared anxious. Anxious mothers were less engaging ($M=2.20$, $SD=.78$) throughout the conversation than non-anxious

mothers ($M=3.25$, $SD=.45$), $t(58)=4.67$, $p<.05$. These results may suggest that anxious mothers are less comfortable discussing anxiety provoking topics such as threats to their children's well-being.

Anxiety and Content of Discussion

The way in which mothers discussed the exposure to a flu pandemic also varied with the level of observed child anxiety. Children who expressed more worry and anxiety ($M=.33$, $SD=.49$) were more likely to have mothers who indicated that the scenario was "pretend" compared to non-anxious children ($M=.11$, $SD=.32$), $t(58) = -2.035$, $p<.05$. This may indicate that mothers are aware of their children's worry and possibly are attempting to reduce such anxiousness by reassuring the child that the scenario is not real.

Mothers engage in threat scenario discussions in many ways. Some mothers are more likely to mention the severity of these events and emphasize to the child the seriousness of such occurrences. Correlational analyses indicated that mothers who emphasized more severity about the influenza situation, had children that self-reported higher anxiety levels, $R=.27$, $p<.05$. These results suggest that children were indeed listening to what their mothers were saying and that anxiety may be evoked in children when mothers discuss threat situations too severely.

Maternal Beliefs and Child Anxiety

Understanding mothers' core beliefs about how their children come to learn new threat information within their environment, allows us to understand

the actual techniques they use when discussing important health topics. Independent Samples T-Tests revealed that mothers of children observed as more anxious, believed their children learn and develop cognitively, through active discovery and interactions within their environment ($M=21.33$, $SD=5.89$) significantly more so than mothers of non-anxious children ($M=16.33$, $SD=5.897$), $t(58) = -2.70$, $p < .05$. While the result was not statistically significant ($p > .05$), as hypothesized mothers of non-anxious children held stronger beliefs that children learn through direct teaching and modeling ($M=24.04$, $SD=6.79$) compared to mothers of observed anxious children ($M=20.87$, $SD=6.68$). The above results may indicate that mothers of anxious children, who believed their children primarily learn through interactions within the environment, may raise child anxiety levels because the mothers may not be engaging in these types of threat conversations outside of the laboratory so the information is new to the child and more anxiety provoking.

DISCUSSION

The goal of this research was to gain a better understanding about how parents and children discuss possible exposures to health risks such as Avian influenza. Parents are the primary source from which children gain an understanding about how to be safe from health risks. It is important to understand how individual differences such as anxiety and worry, can impact the dynamics of such conversations. Specifically, anxiety and worry appear to unfavorably affect both engagement levels and the actual content of discussion

during conversations about exposure to a deadly flu. This research is significant for the extant research literature because it demonstrates that even within psychologically healthy families, when anxiety levels rise, dysfunctional behaviors can be elicited from both mothers and children and can potentially affect mother-child interactions.

Engagement and Observed Anxiousness

In order to socialize children's health beliefs and behaviors regarding potential threats to children's health and safety, it is necessary for parents to engage in discussion about the appropriate ways in which children should respond if the need arises. There are specific qualities of interaction that may enhance these discussions such as increased engagement. The above results indicate that when mothers were more engaged in the discussion children reciprocated and were also more engaged. Additionally, mothers who were more engaged in conversation asked their children more questions, perhaps allowing the child to critically interpret the situation and respond appropriately (Gonzalez et al., 2011). These findings highlight the importance of asking questions and the reciprocal nature of mother-child interactions. Understanding how mothers and children influence one another's experience during dyadic interactions reveals the importance of promoting healthy behaviors in both mothers and children because negative transactions can potentially have this same reciprocal effect.

Contrary to what was hypothesized, children who were observed as

anxious were more engaging throughout the mother-child discussion than non-anxious children. This is an important feature of this research as it may suggest that when anxious feelings arise in young children, they attempt to learn more information by engaging in thoughtful discussions with their mothers in an effort to minimize their worry. This anxious behavior observed in children can have a profound impact on parental response which can potentially hinder parental socialization efforts and change the techniques the mother uses to engage in risk discussions.

Content of Discussion and Child Anxiety

When discussing a possible exposure to a deadly pandemic such as Avian influenza, there are many pieces of information that are important to understanding how such risks are interpreted. Some of the considerations that are made by mothers in approaching such a conversation with their child may include, the perceived seriousness, severity, and actuality of such an event occurring (Prati, Pietrantonil, & Zani, 2011). These were observed in our study and the language mothers used to discuss this potential threat with their children differed between mothers of anxious children and mothers of non-anxious children. Specifically mothers of children observed as anxious were significantly more likely to downplay the seriousness of the potential threat by assuring their child the discussion they were engaging in was “pretend”. This may suggest that mothers of anxious children can recognize their children’s discomfort and in an effort to minimize such angst, they do not discuss the

reality of such events occurring. While this may be beneficial in the short-term and perhaps in the context of a laboratory experiment, it may not allow for appropriate socialization of preventive behaviors and the mother may be downplaying the fact that such an event could occur leaving the child potentially inadequately prepared if the actual risk should ever be encountered.

Contrary to the above finding, children that self-reported higher levels of anxiety received a message from their mothers that differed quite significantly from children that were observationally anxious. Mothers of children who self-reported more anxiety emphasized the severity of the situation at hand. Specifically, these mothers discussed the severity of the consequences (e.g. death) imposed by an influenza pandemic. This may demonstrate that children really are listening and absorbing the information presented by their mothers during such discussions and that when mothers use fear tactics to socialize children's health beliefs and behaviors they may be inadvertently increasing their child's internalized anxiety.

Maternal Beliefs and Child Anxiety

There are many potential influences that affect how a parent interacts with their child and the means by which they socialize important beliefs about child health safety and risk prevention. One such influence is parental beliefs about how children come to grow and learn. The results of this study indicate that mothers' core beliefs about how children learn vary between mothers of children observed as anxious or non-anxious. Mothers of anxious children were

significantly more likely to believe their children learn cognitively, via active transactions within the child's environment, than non-anxious children. It is possible that these parental beliefs contribute to parental behaviors that place too much reliance on the child to gain his/her own experiences within the environment as opposed to actively engaging in teaching behaviors to explicitly relay important information to the child. These results may be partially explained by the idea that children are not gaining adequate information during interactions with their mothers and therefore unknowns remain, increasing anxiety levels.

As noted earlier, maternal behavior has profound effects on mother-child dyadic interactions. Negative parental behaviors may contribute to anxious children's difficulties (Wood, McLeod, Sigman, Hwang, & Chu, 2003).

While it may be common practice for mothers to be controlling when socializing child health beliefs and behaviors regarding potential health threats, over-controlling parenting techniques can be problematic, and appear to be characterized by other negative factors. Specifically, this study demonstrated that mothers that are critical of their children throughout discussions are also more controlling of their child's behaviors during communication. It has been shown that parenting that is gentle and not over-powering results in optimal anxiety levels, and this minimized anxiety helps children internalize parental messages (Kochanska & Aksan, 2007; Hoffman, 1983) particularly for fearful children. This is critical because these threat discussions are health- and safety-

enhancing and the effectiveness of parents' communication to their children about these issues may be dependent on how their responses can promote/hinder their children's internalizing of these messages, and the promotion of effective parental socialization of children's health beliefs.

Engagement and Maternal Observed Anxiety

Previous research has demonstrated the potential negative effects of maternal anxiety on the effectiveness of parenting behaviors throughout parent-child socialization interactions. Consistent with some of these findings, the current study demonstrated that mothers who were observed as more anxious were less engaging throughout the dyadic discussions in comparison to that of non-anxious mothers. This is problematic because of the transactional nature of the mother-child relationship and the propensity for the mother's negative behaviors to evoke a reciprocal response from their child resulting in decreased engagement from both mothers and children.

Questions remain about how mothers and children independently influence interactions with one another in the present context; it is unclear if the behavior of the child elicits particular responses from the mother, and/or if parental behavior is at the root of how the child ultimately responds. These results support the notion that this relation is bi-directional and supports both the idea that maternal attitudes and beliefs (how children come to learn, perceived severity, and downplaying the seriousness) influence socialization behavior (Baker, Fenning, & Crnic 2010), in addition to the idea that child

anxiousness has the ability to influence how mothers react.

This research helps illuminate the importance of minimizing anxiety not only within anxious families, but throughout conversations in healthy families when the topic is anxiety-provoking. By understanding how fundamentally influential parents and children are during health discussions we can begin to inform parental health socialization strategies that both minimize anxiousness and increase children's receptiveness to these important messages.

Limitations

It has been suggested that observational methodologies are superior to other means of assessing dysfunctional parent and child behaviors that maintain and trigger anxiety (Gonzalez et al., 2011). However, because there is not a standardized observational coding schema across studies that examine this population in the contexts utilized, the coding used to measure observational behaviors in mothers and children was created specifically for this study. This approach can lead to discrepancies when generalizing the results of this study to other studies that may have measured behaviors in slightly variant ways. Additionally, measuring behaviors is a difficult task and it is unclear at times if we can say that what we believe we are measuring is definitively measuring such constructs. This will continue to be problematic in research until coding observational behaviors is standardized and the unique nuances of behaviors are fully understood.

This study was a cross-sectional study in which parents engaged in the

threat discussions with their children on one occasion. We would benefit from a longitudinal study to assess the salience of observed anxiousness observed during threat discussions in middle childhood to better understand how it effects parent-child discussions across time and throughout later childhood and early adolescence.

We cannot conclusively infer the causal influence that observed anxiety has on parent-child discussions of potential risks to children's health safety. The correlational nature of this study means that the results should be interpreted as such and additional research is needed in order to determine causality. In light of the lack of manipulation or comparison group in the present study, the results should be considered a starting point to be further developed in future studies with additional control.

An additional limitation of this study was the relatively small sample size, which may have resulted in an underestimation of the relations measured in the study. Other sample limitations are the lack of inclusion of fathers, which reduces its generalizability to parents in general, and the narrow range of participants' ethnicities assessed.

Future Directions

This study possessed many strengths including feedback from both parents and children; many studies in the past have primarily focused on parental self-report. Additionally, by including a behavioral component to the analysis of parent-child interactions, the discrepancy between self-reported

information and observed behaviors is apparent. Finally, the developmental stage of the children in this sample allowed for exploration of an under-studied population.

These results were based on observational measures of observed behaviors that were indicative of anxiety and worry; in order to ensure that the topic (i.e. an Avian influenza pandemic) actually evokes anxiety and worry, a single-item question should be included in future studies that asks how worried parents and children felt during the discussion. This information would further confirm that the behavior being measured is indeed that of anxiety and worry.

The observational construct of anxiety could be further expanded to increase our understanding of how specific behaviors influence mother-child dyadic conversations about threat. Instead of labeling individuals as “anxious” or “non-anxious” it might prove helpful to use a scaled measure that assesses the level of anxiousness (i.e. no anxious behavior, some anxious behavior, extremely anxious behavior) and separate different behavioral components of anxiety (i.e. fidgeting, mentioning they are scared, and facial expressions).

We assessed non-clinical families, and therefore these results are not necessarily directly comparable to anxious families. While the patterns of behavior observed within our sample appear to be consistent with some of the patterns of behaviors in clinically anxious families, without this comparison group we cannot conclusively state that these findings are comparable. Future research should include within the sample, both non-clinically anxious dyads

and dyads in which the mother and/or the child is clinically anxious.

CONCLUSION

Parent-child discussions about potential health risks are an important aspect of parental socialization of children's health and safety behaviors. While additional research is needed to support these exploratory findings, understanding that non-clinically anxious families respond to anxiety-provoking threat discussions with the same dysfunctional behaviors that anxious families do, illuminates the need to find ways to minimize these fears when discussing threat topics in an effort to promote healthy socialization behaviors through proper engagement.

REFERENCES

- Arizona-Department-of-Education. (2006). Arizona school report card academic year 2006-2007. Phoenix Arizona Department of Education.
- Baker, J.K., Fenning, R.M., & Crnic, K.A. (2010). Emotion socialization by mothers and fathers: coherence among behaviors and association with parent attitudes and children's social competence. *Social Development, 20*:2, 412-430.
- Becker, M.H., Nathanson, C.A., Drachman, R.H., & Kirscht, J.P. (1977). Mothers' health beliefs and children's clinic visits: a prospective study. *Journal of Community Health, 3*, 125-35.
- Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology, 4*, 1-103.
- Center for Disease Control and Prevention (2012). *Highly pathogenic avian influenza a (H5N1) in people*. <http://www.cdc.gov/flu/avianflu/h5n1-people.htm>
- Denham, S.A. & Kochanoff, A.T. (2002). Parental contributions to preschoolers' understanding of emotion. *Marriage & Family Review, 34*, 311-343.
- Fisak, B., Jr. & Grills-Taquechel, A.E. (2007). Parental modeling, reinforcement, and information transfer: Risk factors in the development of child anxiety? *Clinical Child and Family Psychology Review, 10*, 213-231.
- Gonzalez, A., Moore, P.S., Garcia, A.M., Thienemann, M., & Huffman, L. (2011). Activation during observational parent-child interactions with anxious youths: a pilot study. *Journal of Psychopathology Behavioral Assessment, 33*, 159-170.
- Harden, J. (2000). There's no place like home: The public/private distinction in children's theorizing of risk and safety. *Childhood: A Global Journal of Child Research, 7*:1, 43-59.
- Hoffman, M.L. (1983). Affective and cognitive processes in moral internalization. In E. T. Higgins, D. Ruble, & W. W. Hartup (Eds.), *Social cognition and social development* (pp. 236-274). New York: Cambridge University Press.

- Hughes, S.C. & Wingard, D. L. (2007). Parental beliefs and children's receipt of preventive care: another piece of the puzzle? *Health Services Research, 43:1*, 287-299
- Kertz, S.J., Smith, C.L., Chapman, L.K., & Woodruff-Borden, J. (2008). Maternal sensitivity and anxiety: impacts on child outcome. *Child and Family Behavior Therapy, 30:2*, 153-171.
- Kochanska, G., Aksan, N., & Joy, M.E. (2007). Children's fearfulness as a moderator of parenting in early socialization: two longitudinal studies. *Development Psychology, 43:1*, 222-237.
- Kviz, F.J., Dawkins, C.E. & Ervin, N.E. (1985). Mothers' health beliefs and use of well-baby services among a high-risk population. *Research in Nursing and Health, 8*, 381-387.
- Last, C.G., Perrin, S., Hersen, M. & Kazdin, A.E. (1996). A prospective study of childhood anxiety disorders. *Journal of the American Academy of Child and Adolescence Psychiatry, 35*, 1502-1510.
- Lee, J. & Lemyre L. (2009). A social-cognitive perspective of terrorism risk perception and individual response in Canada. *Risk Analysis, 29*, 1265-1280.
- Lees, N.B. & Tinsley, B.J. (2000). Maternal socialization of children's health behavior: The role of maternal affect and teaching strategies. *Merrill Palmer Quarterly, 46*, 652-696.
- Maid, R., Smokowski, P., & Bacallao, M. (2008). Family treatment of childhood anxiety. *Child and Family Social Work, 13*, 433-442.
- Martin, C.A., Johnson, J.E., Sigel, I.E., McGillicuddy-DeLisi, A.V., & Goodnow, J.J. (1992). Children's self-perceptions and mothers' beliefs about development and competencies. *Parental belief systems: The psychological consequences for children* (pp 95-113). Hillsdale, NJ, England: Lawrence Erlbaum Associates, Inc.
- Ollendick, T.H., King, N.J., Frary, R.B. (1989). Fears in children and adolescents: Reliability and generalizability across gender, age and nationality. *Behaviour Research and Therapy, 27:1*, 19-26.
- Orton, G.L. (1982). A comparative study of children's worries. *Journal of Psychology: Interdisciplinary and Applied, 110:2*, 153-162.

- Perez S. & Gauvain M. (2005). The Role of Child Emotionality in Child Behavior and Maternal instruction on Planning Tasks. *Social Development, 14:2*, 250-272.
- Prati, G., Pietrantonil, L., & Zani, B. (2011). A social cognitive model of pandemic influenza HINI risk perception and recommended behaviors in Italy. *Risk Analysis, 31:4*, 645-656.
- Prislin, R., Dyer, J.A., Blakely, C.H., & Johnson, C.D. (1998). Immunization status and sociodemographic characteristics: the mediating role of beliefs, attitudes, and perceived control. *American Journal of Public Health, 88:12*, 1821-1826.
- Reynolds, C.R. (1980). Concurrent validity of what I think and feel: The Revised Children's Manifest Anxiety Scale. *Journal of Consulting and Clinical Psychology, 48*, 774-775.
- Reynolds, C.R., Bradley, M., & Steele, C. (1980). Preliminary norms and technical data for use of the Revised-Children's Manifest Anxiety Scale with kindergarten children. *Psychology in the Schools, 17*, 163-167.
- Reynolds, C.R. & Richmond, B.O. (1978). What I think and feel: A revised measure of children's manifest anxiety. *Journal of Abnormal Child Psychology, 6*, 271-280.
- Rogers, R.W. (1975). A protection motivation theory of fear appeals and attitude change. *Journal of Psychology, 91*, 93-114.
- Rogers, R.W. (1983). Cognitive and physiological processes in fear appeals and attitude change: A revised theory of protection motivation. In Cacioppo JR, Petty RE (eds). *Social Psychophysiology: A Source Book* (pp. 153-176). New York: Guilford Press.
- Rosenstock, I.M. (1966). Why people use health services. *Milbank Memorial Fund Quarterly, 44*, 91-124.
- Schneider, S., Houweling, J.E.G., Gommlich-Schneider, S., Klein, C., Nundel, B., & Wolke, D. (2009). Effect of maternal panic disorder on mother-child interaction and relation to child anxiety and child self-efficacy. *Women's Mental Health, 12*, 251-259.
- Steinglass, P. (1987). A systems view of family interaction and psychopathology. In T. Jacob (Ed.), *Family interaction and psychopathology: Theories, methods, and findings*. (pp. 25-65). New York: Plenum Press.

- Strobino, D., Keane, V., Holt, E., Hughart, N., & Guyer, B. (1996). Parental attitudes do not explain underimmunization. *Pediatrics*, 98, 1076–1083.
- Suveg, C., Zeman, J., Flannery-Schroeder, E., & Cassano, M. (2005). Emotion socialization in families of children with an anxiety disorder. *Journal of Abnormal Child Psychology*, 33:2, 145-155.
- Weinberg, K.M., & Tronick, E.Z. (1998). The impact of maternal psychiatric illness on infant development. *Journal of Clinical Psychiatry*, 59(2), 53–61.
- Whaley, S.E., Pinto, A. & Sigman, M. (1999). Characterizing interactions between anxious mothers and their children. *Journal of Consulting and Clinical Psychology*, 67, 826–836.
- Witte, K & Allen, M. (2000). A meta-analysis of fear appeals: Implications for effective public health programs. *Health Education and Behavior*, 27, 591–615.
- Wood, J.J., McLeod, B.D., Sigman, M., Hwang, W., & Chu, B.C. (2003). Parenting and childhood anxiety: Theory, empirical findings, and future directions. *Journal of Child Psychology and Psychiatry*, 44, 134–151.
- Woodruff-Borden, J., Morrow, C., Bourland, S. & Cambron, S. (2002). The behavior of anxious parents: Examining mechanisms of transmission of anxiety from parent to child. *Journal of Clinical Child and Adolescent Psychology*, 31, 364–374.
- World Health Organization (2011). *Weekly epidemiological record*. 86, 161-172. <http://www.who.int/wer/2011/wer8617/en/index.html>

Table 1

Definition, scoring, and inter-rater reliabilities of observational codes

Observation Code	Who	Definition	Scoring
Engaging Mom	Mom	To what extent does the mother engage her child during the discussions	Scale 1 – 4; 1 = none (i.e. mother dominates conversation), 2 = low (i.e. mother answers her own questions), 3 = partial (i.e., dyadic conversation but pauses in conversation exist), 4 = full (conversation flows, mother asks the child lots of questions)
Engaging Child	Child	To what extent does the child participate during the discussions.	Scale 1 – 4; 1 = none (i.e. child does not talk), 2 = low (i.e., child speaks a little), 3 = partial (i.e., child provides average responses to mother’s questions), 4 = full (i.e. child provides long response to mother’s questions, and may ask the mother questions)
Criticism*	Mom	How many times is the mother critical of her child’s responses to her questions?	Frequency count
Control Behavior	Mom	To what extent does the mother attempt to control the child’s behavior during the conversation.	Scale 0 – 2; 0 = no control, 1 = low control (e.g., mother tells child “Stop playing with that.”), 2 = high control (i.e. mother corrects child’s behavior 3 or more times)

Mom Anxiety	Mom	Does mother appear worried, scared, or fearful?	Dichotomous: 0 = no, 1 = yes
Child Anxiety	Child	Does child appear worried, scared, or fearful?	Dichotomous: 0 = no, 1 = yes
Perceived Severity	Mom	To what extent does the mother discuss the seriousness of the topic. Does the mothers discuss with her child that the topic is severe or dangerous?	Scale 0 – 3; 0 = no mention, 1 = not dangerous, 2 = moderately dangerous (e.g., mother tells child, “There are bad people out there.”), 3 = very dangerous (i.e., mother discusses in <i>detail</i> the dangerous outcomes of the situation), N/A = not discussed
Pretend	Mom	Does the mother mention the vignette is pretend?	Dichotomous: 0= no mention it is pretend, 1= mother mentions it is pretend
Frequency of Mother Questions*	Mom	How many times does the mother ask the child open ended questions?	Frequency count

Note: All codes are global resulting in one score per family per code for each vignette, except for codes with * indicating event codes.

Table 2

Minimums, maximums, means, and standard deviations of family dynamics demographics.

		Family Dynamics			
		Minimum	Maximum	Mean	Std. Deviation
	N				
Total	61	1.00	9.00	2.9508	1.33
number of children					
Age of mom in years	60	25.00	49.00	38.50	5.89
Age of dad in years	59	25.00	60.00	40.89	7.09
Mother Education	60	12.00	20.00	14.58	2.16
Father Education	60	10.00	18.00	13.91	2.15

Table 3

Frequencies and percentages of demographic variables.

Demographics		
Variable	Frequency	Percent
Gender		
Female	37	60.7
Male	24	39.3
Total	61	100
Religion		
Christian	34	57.6
Catholic	13	22.0
Judaism	1	1.7
Protestant	4	6.8
Other	7	11.9
Total	59	100.0
Ethnicity		
Anglo White	49	81.7
African American	3	5.0
Latino Hispanic	8	13.3
Total	60	100.0
Marital Status		
Single	4	6.7
Married	51	85.0
Separated/Divorced	5	8.3
Total	60	100.0

Table 4

Intercorrelations between observational measures analyzed in this study.

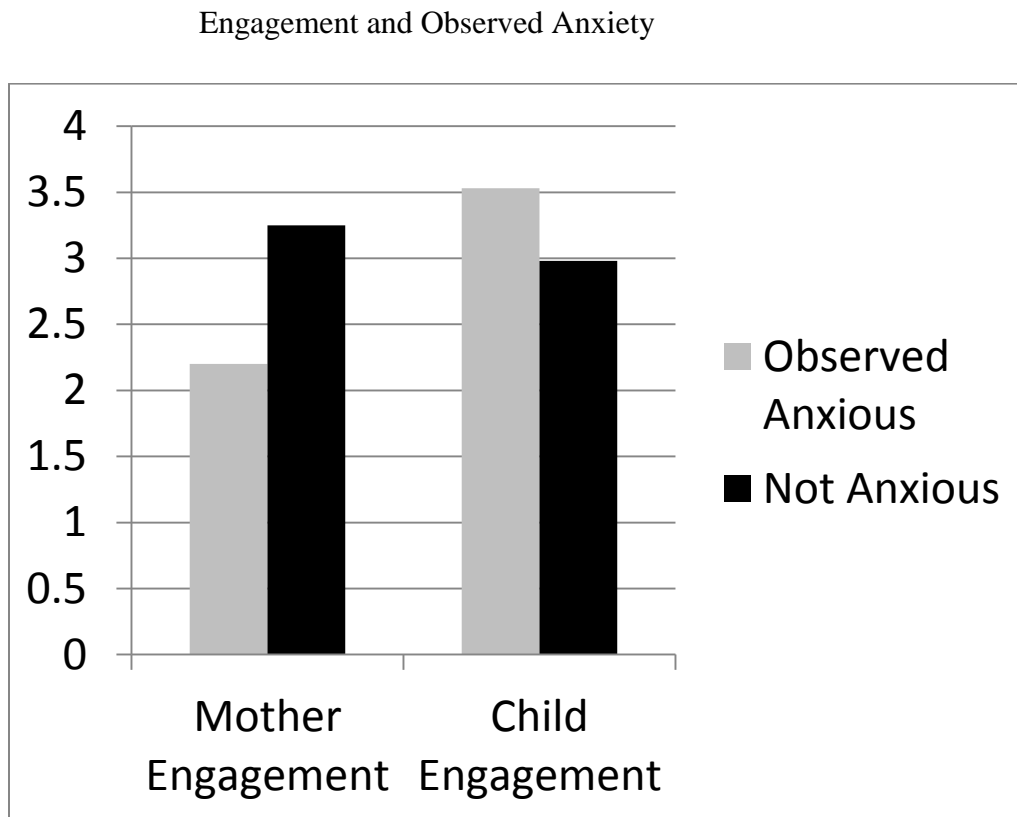
Correlations	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Mother Engagement	-								
2. Child Engagement	.436**	-							
3. Severity	-.019	-.018	-						
4. Pretend	-.037	.116	-.041	-					
5. Mom Controlling	.021	-.107	-.245	.179	-				
6. Observed Mother Anxiety	-.365**	-.050	.137	.189	-.015	-			
7. Observed Child Anxiety	.169	.339**	.095	.258*	-.086	.244	-		
8. Criticism	.156	.178	.120	.037	.328*	-.075	.048	-	
9. Questions	.378**	.117	.249	-.070	.010	-.121	.058	.063	-

** . Correlation is significant at the 0.01 level (2-tailed)

* . Correlation is significant at the 0.05 level (2-tailed).

Figure 1

Engagement levels in mothers and children observed as anxious or not anxious.



APPENDIX A
IRB APPROVAL LETTER

To: Barbara Tinsley
FABN

From: Mark Roosa, Chair
Soc Beh IRB

Date: 04/25/2008

Committee Action: Amendment to Approved Protocol

Approval Date: 04/25/2008

Review Type: Expedited F12

IRB Protocol #: 0611001293

Study Title: Parents Communication with Elementary School Children about Risk and Safety

Expiration Date: 01/09/2009

The amendment to the above-referenced protocol has been APPROVED following Expedited Review by the Institutional Review Board. This approval does not replace any departmental or other approvals that may be required. It is the Principal Investigator's responsibility to obtain review and continued approval of ongoing research before the expiration noted above. Please allow sufficient time for reapproval. Research activity of any sort may not continue beyond the expiration date without committee approval. Failure to receive approval for continuation before the expiration date will result in the automatic suspension of the approval of this protocol on the expiration date. Information collected following suspension is unapproved research and cannot be reported or published as research data. If you do not wish continued approval, please notify the Committee of the study termination.

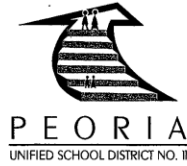
This approval by the Soc Beh IRB does not replace or supersede any departmental or oversight committee review that may be required by institutional policy.

Adverse Reactions: If any untoward incidents or severe reactions should develop as a result of this study, you are required to notify the Soc Beh IRB immediately. If necessary a member of the IRB will be assigned to look into the matter. If the problem is serious, approval may be withdrawn pending IRB review.

Amendments: If you wish to change any aspect of this study, such as the procedures, the consent forms, or the investigators, please communicate your requested changes to the Soc Beh IRB. The new procedure is not to be initiated

until the IRB approval has been given. Please retain a copy of this letter with your approved protocol.

APPENDIX B
SCHOOL DISTRICT APPROVAL LETTER



Dr. Barbara Tinsley
Department of Social and Behavioral Sciences
Arizona State University, West Campus
4701 W. Thunderbird Road
Glendale, AZ 85306

Re: External Research Request with Peoria Unified School District #11

Dear Dr. Tinsley,

I am pleased to inform you that your external research request titled: *Parents Communication with Elementary School Children about Risk and Safety* has been approved by our District Governing Board on January 22, 2008.

Our next steps would be for staff within our department to contact potential principals of schools within proximity to ASU West in addition to Sky View Elementary. If the principal is interested or requires further information, we will forward your contact information. When the respective principals have agreed to include their schools in your study the informational letter can be sent out to the families. At this time, please send me all your completed materials so the parents can be contacted directly by mail from our district office. Please remember that schools or the district cannot release any confidential student information.

We are delighted to continue our collaborative efforts with Arizona State University. Please let me know if I can be of assistance to you or your researchers at any stage during the research process.

Sincerely,

Maria Kitchen
Office of Research, Planning and Assessment
Peoria Unified School District #11

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APPENDIX C
PARENT LETTER

Dear Parent:

With permission from the **principal at your child's elementary school**, I am writing to tell you about a research project being conducted at Arizona State University (ASU) for families with children in 4th and 5th grades and to invite you and your child to participate.

We are interested in learning more about how mothers talk to their children about staying safe. We know that at times it can be overwhelming for parents to decide when and how to talk with their children about danger and safety. We are interested in hearing your ideas about risks in your child's environment and how you teach your children to stay safe or plan for emergency events. With input from you and other families, we will be able to identify the best ways to help parents deal with these important issues.

If you choose to participate, your family will receive **free movie tickets or a gift card to a local food eatery** (e.g., Dairy Queen, Jamba Juice, Peter Piper pizza) as a small compensation for your time and effort. You will also be entered in a raffle where **4 gift cards (up to \$100) will be raffled off**. Participation is voluntary and requires no classroom time.

Participating in this study involves having you and your child visit our project center at ASU's West campus (located at 47th Ave and Thunderbird), for a one-hour session. During this session, you will fill out questionnaires and have discussions with one another about danger and safety.

To learn more, **please fill out and mail the return card** (postage has already been paid). Returning the postcard does not obligate you to participate. If you do agree to participate, then we would schedule a time for you and your child to visit our project center at a day and time that is convenient for you. All information you provide will be completely confidential, and your child's school will not have access to any information.

If you have any questions, please call **Angela Zamora** at **602-543-7308**. You can also call us directly if that is easier than sending in the postcard.

This type of important research is not possible without the participation of families like yours, and we greatly appreciate your consideration of this request. We look forward to hearing from you and to having the opportunity to talk with you and your child.

Sincerely,
Barbara Tinsley, Ph.D.

Angela Zamora

Professor
Department of Social &
Behavioral Sciences
asufamily2@yahoo.com

Project Coordinator
Phone #602-543-7308
Email:

APPENDIX D
RETURN CARD



Name: _____

Phone Number: _____

Email: _____

Best Times for Contact: _____

If you have questions or want to contact us directly, please call

Angela Zamora in the Family Interaction Lab at: **602-543-7308**

Returning this card does not obligate you to participate and you are free to withdraw your participation at any time.

****All of the information you provide here is kept confidential.****

APPENDIX E
PHONE SCRIPT AND RA GUIDELINES

Phone Script and RA Guidelines

Steps:

1. Dial number and have mother and child name and information.

IF NO answer:

Indicate date/time of call in record.

IF answering machine:

Leave message “Hello, this is _____ from ASU. I will try to reach you again at another time.”

Indicate date/time of call in record.

IF phone answered: GO TO Step 2.

2. “Hello, may I speak with Ms. _____ [*mother’s name*]?”

IF mother on record NOT available:

Leave message with person who answered phone

Message

“Hello, my name is _____, calling on behalf of the Healthy Families Project at Arizona State University at the West campus. Is there a convenient time in which I may contact _____ [*mother’s name*]?”

Indicate date/time of call in record.

Indicate **RETURN CALL TIME** in record.

IF person listed on record is available: GO TO Step 3

3. “Hello, my name is _____, calling on behalf of the Healthy Families Project at Arizona State University at the West campus. We recently received your post card indicating you were interested in participating in our project, which is focused on learning about ways in which moms prepare children for risky or unsafe situations. Do you have a minute now for me to tell you a little bit more about the study? (**If yes**, continue. **If no**, identify a good time to call back.) The purpose of this research is to learn more about how parents and children talk to each other about harmful and unsafe events. We are excited that you expressed interest in the study.

Your involvement in this study will involve filling out a survey and participating in some discussions with your child about danger and safety at our research project center at the ASU West campus. Discussions with your child will be videotaped, and heart rate, pulse rates, and skin temperature will be monitored with sensors during the session for both you and your child, using band-aid like sensors attached to you. No one but you and your child, and members of our research team will know what you have said during this discussion. Your visit will last no more than one hour and in appreciation of your participation, your family will receive free movie tickets or a gift card to a local food eatery (e.g., Dairy Queen, Jamba Juice, Peter Piper pizza) as a small compensation for your time and effort. You will also be entered in a raffle where 4 gift cards (up to \$100) will be raffled off. “Do you have any questions about the study?”

**IF NO:
GO TO Step 4.**

IF YES: Refer to Frequently Asked Questions Below

What if I feel uncomfortable with survey questions?

If you feel uncomfortable answering any question, you are free to skip those questions.

How do you measure [heart rate, pulse rate, skin temperature]?

Let me describe what is involved with the sensors. Before you have your conversations, physiological sensors will be attached to you and your child. Both of you will wear the same sensors. These have been used in previous research with children as well as adults. You and your child will be asked to wear these sensors for approximately one hour while having conversations and completing some short questionnaires. Small sensors will be attached to your fingers to measure pulse rate, sweat on the skin, and finger temperature. Adhesive-backed disposable sensors (“EKG” sensors) will be placed on your chest, back, and fingers to measure heart rate by a trained research assistant. Wearing these sensors may feel similar to wearing stickers or band-aids. The sensors produce minimal discomfort. They are attached and removed quickly and easily. After the sensors are attached, you and your child will be asked if you are experiencing any

discomfort. If you are uncomfortable for any reason, the sensors are readjusted until you are more comfortable.

What if I feel uncomfortable with the sensors?

If, at any time, you feel uncomfortable with the sensors you can request to have them readjusted or removed and end your participation.

When will I get the gift cards?

You will get free movie tickets or a gift card to a local food eatery of your choice immediately after your's and your child's voluntary participation.

How do you get to the campus and where is the laboratory?

The campus is located in Glendale, AZ. Along with sending the survey, which will be mailed to you within a week, we will send you directions to the campus and a map of where the Healthy Families Project is located.

Do I have to pay for parking while on campus?

We will give you a sticker that will free you of any parking payment for the day of your visit.

Can I bring my other child(ren) with me during the lab visit?

If your child(ren) are old enough, they can wait for you in the waiting room. We have some toys they can play with and a mini TV where they can watch Disney movies. However, if you have a really young child, then we advise that you do not bring him/her with you during the study visit.

Will there be someone to watch my 2 year old?

No, unfortunately there will not be anyone available to watch young children.

IF you cannot answer their question, ask if it is permissible to call them back with the information at a later date and time.

4. “Are you and your child, _____ [*child name*] interested in participating in the study?”

Response NO, then say “Thank you very much for your time.”

Response YES, then go to Step 5.

5. “Great. We really appreciate your willingness to participate in the Healthy Families Project. What is the gender and grade level of your child?”

*Record gender and grade level of child (or confirm information listed in record) and WRITE DOWN all the following information asked below.

8. “We have the following appointment times available for your visit to the ASU West campus:”

Time 1: _____

Time 2: _____

Time 3: _____

“Can you and your child make any of these appointment times?”

If UNAVAILABLE for any of the suggested times, ask “What times might you be available?”

Record appointment time

8. “We will be calling you the day before your scheduled appointment to remind you of your appointment. What is a good time to call?”

Indicate **REMINDER CALL TIME** in the record.

9. “Also, the day of your session, we ask 2 things: (1) that you not have alcohol or caffeine at least four hours before coming in, since we’ll be measuring your heart rate. (2) we ask that you and your child wear two-piece loose clothing, because we’ll be attaching sensors to you and it’s more difficult if you’re wearing a one-piece outfit, such as overalls or a dress.

10. “Let me confirm your information

Name _____
Phone # _____
Child name _____
Grade level _____
Appt. date _____
Remind Call _____

10. “Thank you for your time and willingness to participate in our study, and we look forward to seeing you _____ [*repeat appointment time scheduled*].”

“Let me make sure you have our phone number, so that if you think of any questions or need to reach us for any reason you can give us a call: **602-543-7308.**”

Goodbye.

APPENDIX F

PARENT VOLUNTARY CONSENT STATEMENT

Parent Voluntary Consent Statement
Arizona State University
Social and Behavioral Sciences

INTRODUCTION

The purposes of this form are to provide information that may affect decisions regarding your child's and your own participation and to record the consent of those who are willing for their child and themselves to participate in this study.

RESEARCHERS

Dr. Barbara Tinsley, Professor and Chair of the Department of Social & Behavioral Sciences at ASU at the West campus, and three other professors in the Department of Social & Behavioral Sciences: Dr. Mary Burleson, Dr. Paul Miller, and Dr. Nicole Roberts, have invited you and minor child to participate in a research study at ASU.

DESCRIPTION OF RESEARCH STUDY

If you decide that you and your child will participate in this study, both of you will **be asked to participate in three, 5-minute discussions, one about planning an event and two about danger and safety.** This study is interested in learning about ways in which families prepare children for risky or unsafe situations. After each discussion, you and your child will fill out a brief rating sheet about how you felt during your conversation. The discussion plus filling out rating sheets will take approximately 20 minutes to complete.

The physical reactions of both you and your child will be monitored during the study visit. First, physiological sensors will be attached to each of you. Both of you will wear the same sensors. These have been used in previous research with children as well as adults. You and your child will be asked to wear these sensors for approximately one hour while sitting quietly, and while having conversations and completing questionnaires. Small sensors will be attached to your fingers to measure pulse rate, sweat on the skin, and finger temperature. Adhesive-backed disposable sensors ("EKG" sensors) will be placed on your chest and back to measure heart rate. Wearing these sensors may feel similar to wearing stickers or band-aids. The sensors produce minimal discomfort. They are attached and removed quickly and easily. After the sensors are attached, you and your child will be asked if you are experiencing any discomfort. If you are uncomfortable for any reason, the sensors are readjusted until you are more comfortable. You have been asked to wear two-piece loose clothing when you come for your visit so that it is easier to attach the sensors.

Conversations with your child will be video-recorded for research purposes. During your conversations, we will be recording your face and your

child's face with a small digital video camera. You will be given a separate form that asks you to indicate how you will allow the video to be used, if at all (e.g., for this study only, for other studies, for use in classrooms).

You and your **child will also complete several questionnaires**. After all of your conversations, the physiology sensors will be removed, and then your child will complete several questionnaires, either on paper or using a laptop computer that we will provide you. This will take about 20 minutes. You and your child will be told that neither of you has to answer questions that you do not want to answer.

The total expected duration of participation in this study will be approximately one hour. If you agree to participate in this study, you and your child may experience discomfort because you will be sitting for approximately 20 minutes with sensors attached, because you may experience different feelings, and because you will be talking about potentially negative events that can happen. We do not anticipate any other risks will result from your participation.

EXCLUSIONARY CRITERIA

In order for you and your child to participate in this study, your child must be in 4th or 5th grade, and no younger than 9 years of age, and not older than 12 years of age.

RISKS

If you decide that you and your child will participate in this study, both of you may face some risks. These risks include that you and your child will be talking about topics that may bring up different feelings or that may be uncomfortable for some mothers and children. Also, you and your child may experience discomfort because you will be sitting for approximately 20 minutes with sensors attached. Lastly, we will be asking your child some sensitive questions such as "If I catch bird flu, serious harm will occur to me, including death."

Your child can refuse to answer any questions that make him/her uncomfortable or frightened.

BENEFITS

The direct benefit to you and your child for participating in this research is receiving free movie tickets or a gift card to a local food eatery of your choice immediately after your's and your child's voluntary participation. If you would like, we will enter your name in a raffle where four gift cards will be raffled off. The possible indirect benefits of your child's and your own participation in the research are that the information that you and your child provide in this study will help parents, teachers, and others who interact with children to better communicate with children about risk and safety issues.

NEW INFORMATION

You will be contacted if new information is discovered that would reasonably change your decision about the participation of you and your child in this study.

CONFIDENTIALITY

The results of the research study may be published but your child's identity and your own identity will not be revealed. In order to maintain confidentiality of your records, your name nor your child's name will not be associated with any of the information you provide, because you will both be assigned a "subject number" at the beginning of the study, and your data will be labeled with this subject number. Your names will PNLy appear on this consent form and on one additional consent form (the video consent form). Your video recordings will be stored separately from your questionnaire responses and physiological data, and each will be kept in separate locked cabinets in a locked room. Only the investigators and select members of the research team will have access to this office. The data are kept on file for no more than eight years, at which time all of the questionnaire data are shredded and all electronic data files (video and physiological recordings) are destroyed by erasing them.

When the findings from this study are presented at scientific meetings, they will be presented in group form. In other words, no one will be able to identify your individual responses. *Please note that if you give explicit permission on the video consent form to allow your video recording to be shown, identifying information (i.e., your face) linking you with your participation in this research would be revealed, and so in this case your identity would not be protected.*

WITHDRAWAL PRIVILEGE

If you choose not to have your child participate or to participate yourself, or if either of you wish to withdraw from the study at any time, there will be no penalty. It will not affect your child's grades, and you will still receive free movie tickets or a gift card.

COSTS AND PAYMENTS

You will receive free movie tickets or a gift card to a local food eatery of your choice immediately after your's and your child's voluntary participation. If you would like, we will enter your name in a raffle where four gift cards (up to \$100) will be raffled off. You will not have to pay for parking at ASU at the West campus during your participation.

COMPENSATION FOR ILLNESS AND INJURY

If you agree to participate in the study, then your consent does not waive any of your legal rights. However, no funds have been set aside to compensate you in the event of injury.

VOLUNTARY CONSENT

By signing this form, you are saying (1) that you have read this form or have had it read to you, and (2) that you are satisfied you understand this form, the research study, and its risks and benefits. The researchers will be happy to answer any questions you have about the research. If you have any questions, please feel free to contact Dr. Barbara Tinsley at (602) 543-7308.

Note: By signing below, you are telling the researchers Yes, that you will allow your child and yourself to participate in this study. Please keep one copy of this form for your records.

Your child's name (please print): _____

Your name (please print): _____

Your Signature: _____

Date: _____

INVESTIGATOR'S STATEMENT:

I certify that this form includes all information concerning the study relevant to the protection of the rights of the participants, including the nature and purpose of this research, benefits, risks, costs, and any experimental procedures.

I have described the rights and protections afforded to human research participants and have done nothing to pressure, coerce, or falsely entice the parent to allowing this child and mother to participate. I am available to answer the mother's questions and have encouraged her to ask additional questions at any time during the course of the study.

Investigator's Signature: _____

Date: _____

APPENDIX G
CHILD VOLUNTARY ASSENT STATEMENT

Child Voluntary Assent Statement

Parents Communication with Elementary School Children about Risk and Safety

I have been told that my mom has given permission (said it's okay) for me to take part in a project about safety and risk.

I will be asked to wear some stickers with wires attached while I talk with my mom for a few minutes and answer some questions. The talk that I have with my mom will be videotaped.

I am taking part because I want to. I know that I can stop at any time if I want to and it will be okay if I want to stop.

Sign Your Name Here

Print Your Name Here

Date

Your signature

Date

Please print your name here

APPENDIX H
VIGNETTE SCRIPT

Flu Vignette

We live in an increasingly complex world that challenges us every day with a wide range of disturbing issues that are difficult for children to understand and for adults to explain. We would like you to initiate a conversation with your child about one of these issues. Specifically, we would like you to talk to your child about the potential dangers of the possibility of a serious contagious flu outbreak, like bird flu or other types of very dangerous flu.

Please read the following paragraph, using it as a starting point for a conversation with your child. Then continue this conversation for the next few minutes. You are free to discuss anything about the topic that comes to mind. We would like you to have as natural a conversation as possible, much like one you would normally have with your child at home.

The mother stood in front of her house, and watched her son/daughter reach the end of the block, about to turn the corner on his/her walk to school. As her child approached the corner, the mother went back into her house and heard a news broadcast on the television about a case of bird flu or other type of very dangerous flu being reported at her son/daughter's school.

APPENDIX I
DEBRIEFING LETTER

We would like to thank you for your participation in the Healthy Families Project. Your participation in this study will help improve the information about children's health and safety that is available to parents, health providers, and community workers. Specifically, your participation will aid in increasing our knowledge of helpful parent communication with children about harmful and unsafe events. All of the information you provided us today will be kept strictly confidential in locked cabinets behind locked doors. No one but you and your child, and members of our research team will know what you have said during your discussion, or the content of your answers on the surveys.

If any questions or concerns arise, then one of our clinical licensed psychologists will meet with you and/or your child to address any questions and concerns. If you should have any concerns or questions regarding your participation, or the information you have provided to us, you can reach Dr. Tinsley during normal business hours at (602) 543-7306.

FOR ASSISTANCE WITH THIS REFERRAL LIST OR FOR ADDITIONAL INFORMATION. PLEASE CALL 480-994-4407 (Se habla Español)

MARICOPA COUNTY EMERGENCY SERVICES

ValueOptions Crisis	602-222-9444
ValueOptions Customer Service (ACCESS)	800-564-5465
Banner Health System 24 Hours Crisis and Referral	602-254-4357
AHCCCS	602-417-4000
EMPACT Suicide Hotline	480-784-1500
Community Bridges Medical Detox	602-273-9999
META Urgent Care— Vest side	602-650-1212
St. Luke's Medical Center	800-821-4193
TERROS 24 Hour Crisis line	602-222-9444

COMMUNITY BASED AGENCIES PHOENIX

Area Agency on Aging	602-264-4357
Arizona Children Association	602-234-3733
Black Family and Children's Services	602-243-1773
Catholic Social Services	602-997-6105
Center Against Sexual Abuse	602-254-9000
Domestic Violence—Phoenix	602-279-2900
Empact Counseling (also Spanish)	480-784-1514
Family Service Agency	602-264-9891
Golden Gate Community Center	602-233-0017
El 89% es Coinunidad Flispana	
Indian Rehabilitation	602-254-3247

NATIONAL AGENCIES

Depressive Manic Depressive Association	800-826-3632
Domestic Violence Hotline	800-782-6400
National Foundation for Depressive Illness	800-248-4344
NIMH Anxiety Disorders	888-ANXIETY ADVOCATES
Office of Human Rights	602-364-4558
WARM LINE — Triple R Behavioral Health Inc. 6:00 pm— 10:00 p.m.	602-347-1100
Jewish Family and Children Services	602-256-0528
Maricopa Media Center, Psychiatric Annex	602-344-5747
Phoenix Interfaith Counseling	602-992-7521
Prehab of Arizona Counseling	480-969-4024
Sexual Assault Recovery Institute	602-235-9345
Teen Lifeline (Peer counseling) 3-9pm	602-248-8336
Terros, Inc. (also Spanish)	602-685-6000