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Boy or Girl? Maternal Psychological Correlates of Knowing Fetal Sex

Letitia E. Kotila,

The Ohio State University, 1787 Neil Ave, 135 Campbell Hall

Sarah J. Schoppe-Sullivan, and

The Ohio State University, 1787 Neil Ave, 135 Campbell Hall

Claire M. Kamp Dush

The Ohio State University, 1787 Neil Ave, 135 Campbell Hall

Letitia E. Kotila: Kotila.2@osu.edu; Sarah J. Schoppe-Sullivan: Schoppe-Sullivan.1@osu.edu; Claire M. Kamp Dush: Kamp-Dush.1@osu.edu

Abstract

Ultrasound provides a reliable, convenient way to determine fetal sex, but not all expectant mothers pursue this knowledge. We used logistic regression to investigate whether maternal personality, parenting perfectionism, and gender role beliefs were associated with knowing fetal sex in a recent sample of first-time expectant mothers. We also tested whether conscientiousness and extraversion moderated the association between gender role beliefs and knowing fetal sex. Mothers who were more open to experience were less likely to know fetal sex, whereas mothers high in parenting perfectionism were more likely to know fetal sex. Conscientious mothers who espoused more egalitarian gender role beliefs were less likely to know fetal sex.

Keywords

parenting; mother; gender; personality; parenting perfectionism

1. Introduction

Ultrasound is a common method used to determine fetal sex, accurate in greater than 99% of cases in the 2nd and 3rd trimesters (Odeh, Granin, Kais, Ophir, & Bornstein, 2009). Gender-reveal parties are popular in the U.S. as expectant parents excitedly share with others their unborn child's sex. Yet, nearly half of Americans desire to wait until birth to discover whether their child is a boy or girl (Gallup, 2007). Traditional gender role socialization – likely intensified when it begins prior to the child's birth – may communicate to children the notion of separate spheres for men and women, influencing social location, employment opportunities, and romantic relationships (Davis & Greenstein, 2009). To date, no known studies have examined psychological predictors of knowing fetal sex for U.S. mothers. Using a recent, community sample of first-time expectant mothers, we tested associations between mothers' personality, parenting perfectionism, and gender role beliefs and knowing fetal sex.

1.1 Prenatal Cognitions and Postnatal Parenting

Expectant mothers experience heightened, intense emotions in preparation for parenting and develop specific mental representations of their unborn child (Zeanah, Zeanah, & Stewart, 1990). Qualitative work suggests that mothers develop gendered representations of their fetus; one mother thought of “a little boy with auburn hair” (p. 605) (Sandelowski, Black, Mercer, Bergum, & Stainton, 1994). These representations have long been posited to influence the mother-child relationship (Crockenberg & Leerkes, 2000), and – in fact – mothers with rigid, ideal, and stereotyped representations are less accepting of children's autonomous development (Dayton, Levendosky, Davidson, & Bogat, 2010). Thus, confirmation of these representations via knowledge of fetal sex may shape postnatal parenting practices.

1.2 Psychological Correlates of Parenting

Belsky (1984) identified three main determinants of parenting – psychological characteristics, child characteristics, and contextual sources of stress and support – with psychological characteristics at the center of his model.

1.2.1 Personality—Extraverted, conscientious, and neurotic mothers may be more likely to know fetal sex. Extraverts have frequent and intense interpersonal interactions. Social expectations for “intensive mothering” (Hays, 1996) including the expectation of individualized, gendered childrearing environments and gendered childrearing norms, are likely reinforced through the extraverted mother's extensive social ties (Amichai-Hamburger & Vinitzky, 2010). Sharing fetal sex can enhance social relationships by reaffirming mothering expectations and fostering shared experiences. Sex is a basic organizational tool, or frame of reference (Ridgeway, 2011), that may help conscientious mothers execute many plans for their unborn child. The anxious nature of neurotic mothers may draw them toward services that provide a sense of relief from fears of the unknown. Davies (2009) described one mother's anxiety about her fetus as an impetus to fetal sex determination. Knowing may help ease anxiety during the last months of pregnancy.

Agreeable and open mothers may be less inclined to know fetal sex. Agreeable mothers are easygoing and supportive of their children's autonomy (Prinz, Stams, Dekker, Reijntjes, & Belsky, 2009). These mothers are competent in parenting any child (De Haan, Prinz, & Dekker, 2009), thus early knowledge of fetal sex may be less of a priority for agreeable mothers. Mothers who are open to experience may embrace the natural aspect of childbirth, forgoing optional medical procedures until the day of birth (Wu & Eichmann, 1988). Handelzalts et al. (2012) found that mothers who were less fearful of natural childbirth were less likely to schedule caesarian deliveries, supporting the notion that open mothers may be more willing to let their pregnancy unfold naturally, including knowing the child's sex.

1.2.2 Parenting Perfectionism—Perfectionistic mothers strive to reach excessively high personal or social standards that are unrealistic or create barriers to healthy personal functioning (Hamachek, 1978). The culture of “intensive-mothering” in the U.S. may pressure first-time mothers to do “everything right”, including preparing sex-specific nurseries or purchasing sex-specific clothing (Paoletti, 2012). Expectant mothers who are

perfectionistic – particularly with regard to parenting (Snell, Overbey, & Brewer, 2005) – may be more likely to seek fetal sex determination to help them fulfill personal and cultural expectations.

1.2.3 Gender Role Beliefs—Gender role beliefs represent agreement or disagreement with divisions of market and nonmarket work that are consistent with the notion of separate spheres for men and women (Davis & Greenstein, 2009). Mothers who hold traditional beliefs may be more inclined to know fetal sex; to believe in a strong distinction between the sexes suggests that sex matters. On the contrary, knowing fetal sex may be less important for mothers who value gender equality and strive to create childrearing environments that reflect and reinforce those values.

Gender role beliefs may interact with personality characteristics. A conscientious, egalitarian expectant mother may eschew fetal sex determination in an effort to delay or avoid the construction of gendered childrearing environments. Conscientious individuals strive to reach high standards, set goals, and are achievement-oriented (Barrick, Mount, & Strauss, 1993). Waiting may reflect the strong commitment of these mothers to their egalitarian ideology. In contrast, extraverted, traditional mothers may be more likely to know fetal sex because their belief in the importance of separate spheres for men and women is compounded by their strong desire to share parenting experiences with others to enhance social ties.

1.3 The Present Study

We examined links between mothers' personality, parenting perfectionism, and gender role beliefs and knowing fetal sex in a sample of first-time expectant mothers. We also tested interactions between personality characteristics and egalitarian gender role beliefs in relation to knowing fetal sex.

We expected that extraversion, conscientiousness, neuroticism, and parenting perfectionism would be associated with a greater likelihood of knowing fetal sex, whereas agreeableness, openness to experience, and egalitarian gender role beliefs would be associated with a lower likelihood of knowing fetal sex. We further anticipated that egalitarian, conscientious mothers would be less likely and traditional, extraverted mothers more likely, to know fetal sex.

2. Method

2.1 Participants and Procedure

Expectant mothers ($N = 182$) from a large, Midwestern city participated in a study designed to examine parenting experiences and behaviors across the transition to parenthood. Participants were married or cohabiting, expecting their first biological child, and planning to return to work shortly after birth. Parents were primarily White (85%), married (86%), college educated (70%), and families earned \$81,000/year. This study used surveys completed by mothers in the third trimester of pregnancy. Mothers with missing data were excluded ($n = 5$).

2.2 Instruments

Knowledge of fetal sex was a dichotomous indicator where 1 = *Knew* and 0 = *Did not know*.

Personality was measured using the 60-item NEO Five-Factor Inventory (Costa & McCrae, 1992). Reliabilities were high; *extraversion* $\alpha = .79$, *agreeableness* $\alpha = .80$, *conscientiousness* $\alpha = .85$, *neuroticism* $\alpha = .87$, and *openness to experience* $\alpha = .74$.

Gender role beliefs were measured using the 28-item Beliefs Concerning the Parental Role Scale (Bonney & Kelley, 1996). Items assessed traditional (i.e., mothers are naturally more sensitive to baby's feelings than fathers) and egalitarian (i.e., men should share with child care such as bathing, feeding, and dressing the baby) gender role ideologies. Responses ranged from 1 = *Disagree strongly* to 5 = *Agree strongly*. Items assessing traditional beliefs were reversed-coded prior to averaging. Higher values indicated more egalitarian beliefs; $\alpha = .80$.

Parenting perfectionism was measured using 6 items from the Multidimensional Parenting Perfectionism Questionnaire (Snell et al., 2005), including items like "I set very high standards for myself as a parent." Responses ranged from 1 = *Not at all characteristic* to 5 = *Very characteristic* and higher values indicated greater parenting perfectionism; $\alpha = .81$.

Controls—We included the following controls: mothers' education (*No College/College*), household income, and marital status (*Married/Cohabiting*).

2.3 Statistical Analyses

Separate logistic regressions predicted the odds of knowing fetal sex from personality, gender role beliefs, and parenting perfectionism. Odds ratios lower than 1 indicated lower odds of knowing fetal sex, and odds ratios greater than 1 indicated greater odds of knowing fetal sex.

3. Results

Mothers who knew fetal sex were less educated, had lower household incomes, and were less likely to be married than mothers who did not know fetal sex. Personality dimensions were included together in one model (maximum $r = -0.36$). Openness to experience was associated with lower odds of knowing fetal sex (Table 1); a one point increase in openness was associated with 56% lower odds of knowing fetal sex. Parenting perfectionism was associated with the odds of knowing fetal sex (Table 1); a one point increase was associated with 13% greater odds of knowing fetal sex. Gender role beliefs were not associated with the odds of knowing fetal sex.

Interactions of gender role beliefs with conscientiousness and extraversion were tested in separate models (not shown). Egalitarian, conscientious mothers were 87% less likely to know fetal sex ($OR = 0.13, p < .05$). The interaction between gender role beliefs and extraversion was not significant.

4. Discussion

We tested expectant mothers' personality, parenting perfectionism, and gender role beliefs as correlates of knowing fetal sex using data from a recent sample of first-time U.S. mothers. Expectant mothers high in openness and conscientious, egalitarian mothers were less likely to know fetal sex. Perfectionistic mothers were more likely to know fetal sex.

Consistent with our expectations, mothers who were open to experience were less likely than other mothers to know fetal sex. These women may have embraced the natural aspect of childbirth, forgoing optional medical procedures (i.e., ultrasound) in favor of letting their pregnancy and parenting experience unfold naturally (Wu & Eichmann, 1988). Open mothers are more flexible in their world views and social attitudes (Jokela, Alvergne, Pollet, & Lummaa, 2011) and may seek to build families that are not necessarily shaped by the gender of the children within them.

We also found that egalitarian, conscientious expectant mothers were less likely to know fetal sex. Conscientious individuals strive to reach high standards, set goals, and are achievement-oriented (Barrick et al., 1993), and gender equality is a central tenet of egalitarian ideology. Waiting may demonstrate these mothers' personal ideological commitments. We expected extraverted, traditional mothers to be more likely to know fetal sex, but this was not the case. Rather, these mothers may prepare for motherhood in many ways, ranging from embracing their own transition into the much valued mothering role, or actively preparing for a gendered child. Future research may seek to disentangle mothers' orientations to parenting preparation, which may range from mother-centered preparations (i.e., prenatal workouts, relaxation/spa treatments) to more child-centered preparations (i.e., parenting classes, extensive research).

Perfectionistic mothers were more likely to know fetal sex; however, the magnitude of this association was small. Perfectionists have a strong desire for order, fear making parenting mistakes (Frost, Marten, Lahart, & Rosenblate, 1990), and suffer increased worry and physical anxiety (Flett, Endler, Tassone, & Hewitt, 1994). For perfectionistic mothers, identifying fetal sex may relieve anxiety during the uncertain pregnancy process, but future research should directly test this assertion.

4.1 Study Limitations

Ideally, our measure of knowing fetal sex would have included the decision-making process, which may have been joint (with the father), planned, spontaneous, or passive (accidentally revealed). We also did not know whether the mother desired a child of a particular sex, or what her motivations were for fetal sex determination, which have been shown to be relevant in other populations (Ekele, Maaji, Bello, & Morhason-Bello, 2008). Our measure did not account for inconclusive ultrasounds due to timing, technological limitations, or fetal positioning (Mazza et al., 1999). Finally, we were unable to determine whether mothers were deterred from sex determination by the potential for mis-identification, which may carry emotional and financial ramifications for mothers.

4.2 Conclusion

Expectant mothers who are open, and egalitarian, conscientious expectant mothers, may be more likely to eschew fetal sex determination, whereas perfectionistic expectant mothers may be more likely to seek it. Future investigations should directly test the implications of knowing fetal sex for the gendered nature of the rearing environments that parents provide for children.

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Highlights

- Mothers open to experience were less likely to know fetal sex.
- Perfectionists were more likely to know fetal sex.
- Egalitarian, conscientious mothers were less likely to know fetal sex.

Table 1
Mothers' Characteristics Associated with Knowing Fetal Sex

	Personality ¹ Odds Ratio (SE)	Parenting Perfectionism ² Odds Ratio (SE)	Gender Role Beliefs ³ Odds Ratio (SE)
Personality (<i>n</i> = 177)			
Extraversion	0.72 (0.25)	-	-
Agreeableness	0.75 (0.21)	-	-
Conscientiousness	1.06 (0.28)	-	-
Neuroticism	1.18 (0.30)	-	-
Openness to Experience	0.44* (0.16)	-	-
<i>Education</i>	1.28 (0.61)	-	-
<i>Income</i>	0.99 (0.00)	-	-
<i>Marital Status</i>	0.39 (0.28)	-	-
Parenting Perfectionism (<i>n</i> = 180)			
	-	1.13* (0.06)	-
<i>Education</i>	-	1.75 (0.82)	-
<i>Income</i>	-	0.99 (0.00)	-
<i>Marital Status</i>	-	0.44 (0.31)	-
Gender Role Beliefs (<i>n</i> = 178)			
	-	-	1.03 (0.40)
<i>Education</i>	-	-	1.44 (0.66)
<i>Income</i>	-	-	0.99 (0.00)
<i>Marital Status</i>	-	-	0.38 (0.26)

Note.

* $p < 0.05$.

¹ $\chi^2_{(8)} 17.78^*$.

² $\chi^2_{(4)} 14.41^*$.

³ $\chi^2_{(4)} 8.31^*$.

College Education measured as 0 = College, 1 = No College. Marital Status measured as 1 = Married and 0 = Cohabiting.