



	SUBMISSIVES <i>n</i> = 9	NON-SUBMISSIVES <i>n</i> = 33
OLDER BROTHERS (OB)	8	12
OLDER SISTERS	4	7
YOUNGER BROTHERS	2	18
YOUNGER SISTERS	2	16
OB RATIO	1.0	.29
MEAN # OF OB	.89	.36
PATICIPANTS WITH AT LEAST ONE OB	78%	24%

Table 1. Sibship Composition

Variable	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>	<i>Exp (B)</i>
# OLDER BROTHERS	1.70	.80	4.44	1	.035	5.45
# OLDER SISTERS	1.11	.85	1.72	1	.189	3.04
# YOUNGER BROTHERS	.07	.85	.01	1	.935	1.07
# YOUNGER SISTERS	-1.10	1.00	1.21	1	.271	.33

Table 2: Binary Logistic Regression—Predictors of Submissiveness

## REFERENCES

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## BACKGROUND & HYPOTHESIS

- Homosexual men, on average, have a greater number of older brothers than do heterosexual men.<sup>1</sup> This well-established phenomenon is known as the *fraternal birth order effect* (FBOE).
- Two recent studies concluded that, among homosexual men, the FBOE may apply only to “bottoms” (men who mostly take the receptive anal intercourse role).<sup>2,3</sup>
- Late fraternal birth order is also associated with sexual interest in bondage, discipline, dominance, submission, sadism or masochism (BDSM behaviors) among heterosexual men.<sup>4</sup>
- No published study (to the authors’ knowledge) has explored whether there is an association between late fraternal birth order and the erotic roles of heterosexual men who engage in BDSM behaviors.
- HYPOTHESIS: Among BDSM practitioners, sexually submissive heterosexual cisgender men have a greater number of older brothers than do sexually dominant heterosexual cisgender men.**

## METHODS

- Participants were recruited July 6-8, 2018 at TESFest, an event that provides educational and recreational opportunities for members of BDSM/Kink/Fetish communities.
- The anonymous survey included questions about family composition, sexual orientation, BDSM behaviors and fantasies, erotic role preferences, gender identity, and assigned gender at birth.
- Participants were divided into submissive and non-submissive cohorts, which were compared (using Fisher’s Exact Test) to determine the extent to which each cohort consisted of men with older brothers and the extent to which the Older Brothers Ratio (OBR) of each cohort differed (OBR = Total Older Brothers/Total Other Siblings.) OBR is a preferred statistic for detecting the FBOE because OBR corrects for family-size differences between cohorts.<sup>1</sup>
- Binary logistic regression analysis was employed to test whether or not number of older brothers or any other sibling category predicted submissiveness.

## RESULTS/FINDINGS

- 150 individuals consented to take the survey. 42 self-identified as heterosexual cisgender males who had engaged in BDSM behaviors in the preceding year. Nine reported that their BDSM behaviors during the year were always or mostly submissive; 32 were always or mostly dominant, and one was equally dominant and submissive.
- While seven of the nine submissive participants (78%) had at least one older brother, only eight of the 33 non-submissive participants (24%) had an older brother. The difference was significant ( $p = .005$ ).
- Submissives, on average, came from slightly larger families ( $M = 1.78$  siblings;  $Mdn = 2$  siblings) than did non-submissives ( $M = 1.61$  siblings;  $Mdn = 1$  sibling), but the difference was not statistically significant. Nonetheless, OBR were calculated in order to correct for any family size differences.
- As shown in Table 1, non-submissives had an OBR of .29, while submissives had an OBR of 1.0. The difference was significant (one-tailed,  $p = .039$ ).
- As Table 2 shows, binary logistic regression analysis evidences a significant and positive association between submissive sexuality and number of older brothers. No sibling category other than older brothers predicted submissive or non-submissive sexuality.

## CONCLUSION/DISCUSSION

- The results support the hypothesis that, among self-identified cisgender heterosexual males who engage in BDSM behaviors, men who take mostly the submissive erotic role have a significantly greater number of older brothers than do men who do not take mostly the submissive erotic role.
- Given that the FBOE likely relates to a prenatal biological phenomenon,<sup>5</sup> the results suggest that an individual’s erotic role orientation may be affected, if not determined, by prenatal biological factors.
- This suggestion is consistent with ethological data on non-humans that shows that the end of the critical prenatal period for the development of sexual motor programs typically precedes the end of the critical period for the development of sexual attractions.
- This was a small pilot study. Thus, despite the statistically significant results, it would be premature at this stage to discount the possibility of the validity of the null hypothesis. However, the results of this pilot study at least suggest that the research hypothesis is plausible and that a further and larger-scale study of the hypothesis is justified.