

# Family Interactions in Schizophrenia: The Effect of Oxytocin

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## Background

- Family environments high in **criticism, hostility, and intrusiveness** are a risk factor for **poor outcome in schizophrenia** and are an important intervention target.
- While family psychosocial interventions have shown promise, to date **no studies have examined drug interventions** targeting the family environment.
- The exogenous administration of **oxytocin** —a hormone associated with attachment, social bonding, cooperation — **may improve the quality of social interactions**.

### Current Study

- We investigated whether exogenous oxytocin administration to parents of young adults with schizophrenia improves the quality of their in-lab interactions with their child.
  - Hypothesis:** *Oxytocin administration to parents would increase positive and decrease negative communication during in-lab conversations with their child with schizophrenia.*
- We explored whether symptoms, attachment, and parenting style moderated the effect of oxytocin on conversation quality.

## Method

### Participants

- Parent/young adult dyads (N = 22)
- All young adults had diagnosis of a schizophrenia spectrum disorder.
- Parents were considered “significant caregivers” by young adult and had at least 4 hours of contact with them a week.

### Procedure

- Clinical interview with trained research assistant confirmed diagnosis and measured **symptom severity** (Positive and Negative Syndrome Scale; PANSS) in young adult participants.
- Dyads attended **two study sessions** one week apart.
- Parents** were randomized to receive either **intranasal oxytocin or placebo** at the first study session and received the other drug at second session.
- The dyads were videotaped having three conversations:
  - 5-minute conversation about a **neutral** video
  - 5-minute conversation about shared **positive** memory
  - 10-minute conversation about a point of **conflict**
- Young adult participants completed self-report questionnaires measuring:
  - Parental caring and overprotection** (Parental Bonding Instrument; PBI)
  - Anxious or avoidant attachment** (Experiences in Close Relationships Scale; ECR)
- Trained research assistants blind to condition coded participant utterances during the conversation on two main dimensions:
  - Positive communication** (e.g., expressing warmth and moving the conversation forward)
  - Negative communication** (e.g., expressing criticism and withdrawing from the conversation)

### Preliminary Analyses/Assumption Testing

- Due to technical difficulties, **only 16 dyads had codeable video data from both study days**.
- Proportions of **positive and negative utterances out of total utterances were calculated**.
- The large majority of utterances (90-97%) in the neutral and positive conversations were coded as positive with little variability for either parent or young adult participants (see Figure 1).
- Ratings of conflict conversation utterances had significantly more variability compared to the ratings of the other conversations. Because of limited variability and the violation of the assumption of sphericity (Mauchly's tests  $p$ 's  $< .05$ ), **inferential statistics were computed for the conflict conversation only**.

Table 1. Demographic and Self-Report Means and Frequencies

	Parents	Young Adults
Mean Age (SD)	53.25 (11.27)	22.62 (3.81)
% Male	18.8	75
% White	62.5	50
PANSS Positive Symptoms (SD)	--	14.46 (5.72)
PANSS Negative Symptoms (SD)	--	17.85 (4.65)
PANSS General Psychiatric Symptoms (SD)	--	31.16 (7.16)
PBI - Caring	--	25.87 (6.62)
PBI - Overprotection	--	13.27 (6.92)
ECR - Avoidant	--	2.72 (1.15)
ECR - Anxious	--	2.34 (1.16)

Figure 1. Proportion Positive Utterances

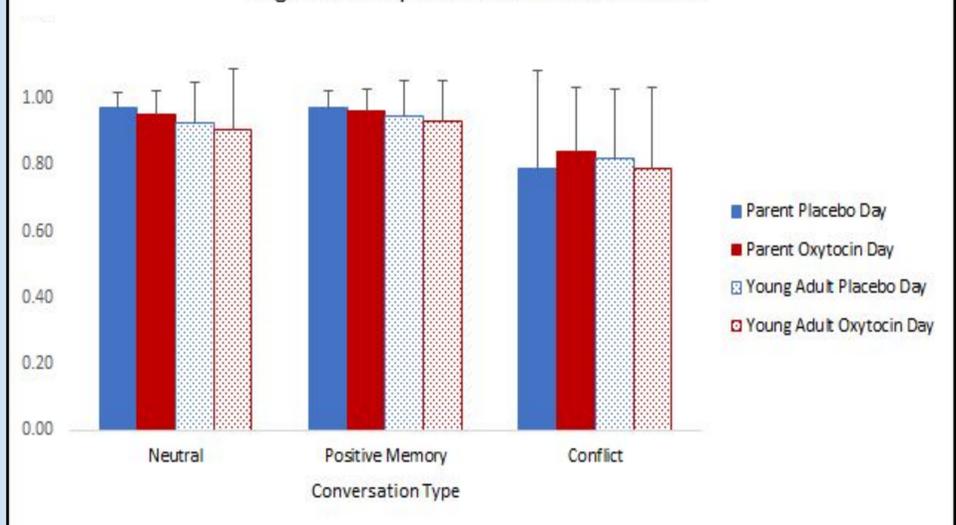
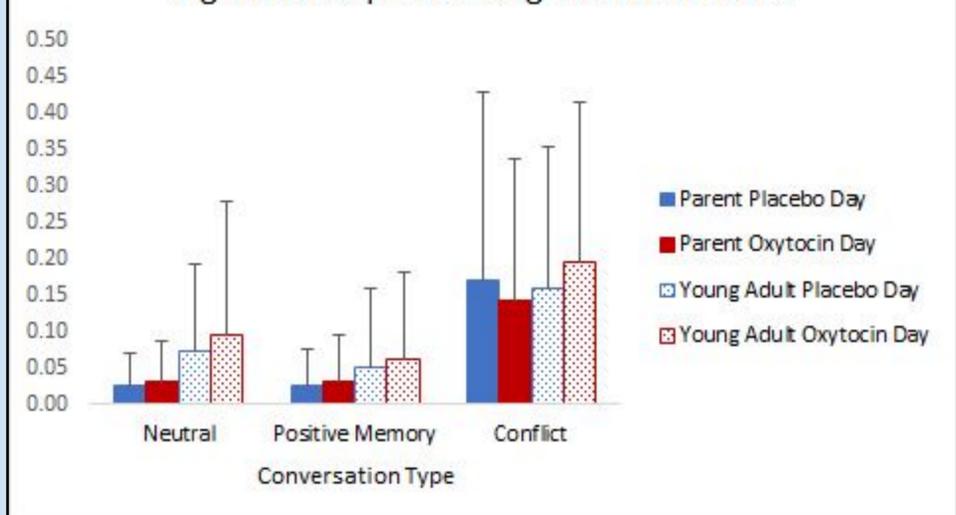


Figure 2. Proportion Negative Utterances



## Results and Discussion

- Repeated-measures ANOVAs controlling for study day **did not find an effect of oxytocin on proportion of positive or negative utterances** during conflict conversations (all  $p$ 's  $> .05$ ).
- Repeated-measures ANOVAs including **symptoms, parenting style, and attachment** found that these covariates **did not moderate the effect of oxytocin** on interaction quality (all  $p$ 's  $> .05$ ).
- Our preliminary findings **do not support acute effects of oxytocin** administration to parents of those with schizophrenia on interaction quality during conflict.
- Strengths of the study include **double-blind placebo-controlled design** and **novel application of pharmacological intervention** to the family environment.
- Small sample size with mostly mother-son dyads** limits generalizability. Limited range of utterance type in positive and neutral interactions limited our ability to detect drug effects in positive contexts.
- Future studies may investigate effects of repeated oxytocin administration and could use ecological momentary assessment to examine the effects of oxytocin in family interactions in daily life.