“Project Title: Risk Factors for Infertility and Barriers to Treatment: Examining the contributions of gonorrhea and stigma to infertility in central Tanzania”

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**Project Summary**

This study seeks to understand the role of *Neisseria gonorrhoeae* in infertility in Tanzania and to explore the role of stigma as a barrier to STI diagnosis and STI treatment and infertility treatment. As of March 16, 2020 the study team had administered surveys to 163 female participants to understand the risk factors, barriers to treatment, and role of stigma in this study. We also abstracted medical records to understand each woman’s comorbidities, pregnancy history, and other risk factors that can be detected clinically.

To determine whether or not the hypothesis that prior or current reproductive tract infection increases the risk of uterine/cervical or tubal factor infertility (compared to women with ovarian/hormonal factor infertility or whose husbands have male factor infertility or are infertile for unknown reasons), we initiated PCR testing of urine samples from participants in the study in coordination with Benjamin Mkappa Hospital in Dodoma. This testing was interrupted due to the COVID-19 pandemic, but with additional funding from the Graduate School’s Thesis Research Travel Grant and the Epidemiology and Community Health Division’s J.B. Hawley Grant, we hope to continue data collection in the fall.

Of the 163 participants surveyed, women’s ages ranged from 18-48, and the median age was 32. Almost half of the participants had education above secondary school (49.15%), and the most common form of employment was entrepreneur (34.4%), followed by teachers (17.2%). 80% of participants were married and monogamous, 13.5% were single, and 4.9% were separated or divorced, and 1.2 percent were in a marriage with multiple wives. For 14.7% of participants, the husband or partner was present for the consultation. Only 13 people experienced exposure to farm fertilizers/pesticides, and only 3 experienced this exposure on a weekly basis or more frequently. No one reported smoking, and 20.2% consumed alcohol on a monthly basis. Less than 3% drank more frequently. 72% had ever been pregnant, and the median number of pregnancies was 2 for participants. About half of all participants had sought antenatal care in their last pregnancy, and 61.5% had experienced a fetal loss. On average, participants had 1 living child. 25% of participants had a family member who had also experienced infertility, most frequently a sister (53.7%). 54% of participants had had 1-2 sexual partners, 35% had had 3-5, and 9.2% had five or more. 44% of participants were unsure what type of reproductive tract infection she had experienced in the past, and the most commonly reported prior infection was bacterial vaginosis (38.9%), followed by gonorrhea (11.1%), and syphilis (5.6%). 20% of our sample reported having experienced PID and receiving treatment. Frequency of sexual intercourse was more than once a week for most participants (65.6%), followed by monthly (14.7%), then 2-3 times a month (9.8%), and once a week (9.8%).
The most commonly reported barriers to treatment were other concerns (27%, most often long wait times), the high cost of treatment (26.5%) and the high cost of travel for treatment (25.6%). When asked to prioritize the greatest barrier, women selected the cost of treatment most often.

Among women who had had abdominal surgery, the majority experienced tubal surgery (61.3%), followed by other types of surgery (40%) and myomectomy (20%). Seven percent had been diagnosed with a health condition that could result in abnormal hormone levels, such as thyroid disease or diabetes. 13.2% had had a caesarian section. On average, participants had at least one miscarriage or stillbirth. When reviewing the medical record, 30% of women had been diagnosed and treated for PID, so there are issues with patient recall. The most common form of infertility experienced by participants was ovarian or hormonal factor infertility (75%), followed by tubal factor (35.9%), then uterine/cervical factor (24.8%), other factors (10.5%), and 3.9% of participants had trouble conceiving due to male factor infertility. We carried out serological testing for 87 participants, of which 3 tested positive for HIV.

Results

- Presented initial findings at the Clinical Staff Morning Meeting at DCMC
- Received funding from the Graduate School and the Division of Epidemiology and Community Health to finalize data collection for the project
- Plans to present a poster with findings at the School of Public Health Research Day 2021
- Plans to submit as the first part of my dissertation and to publish the resulting paper in Global Reproductive Health or another journal with a similar focus

Future project plans

- This project will form part of my dissertation, expected to be defended in December 2021.
- The work funded by the Consortium on Law and Values has facilitated this collaboration with the Dodoma Christian Medical Center. I intend to continue pursuing research with them, including future work on infertility and other sexual and reproductive health topics.