Impact of Flavors and Design Features on Patterns of Waterpipe Use and Toxicity in Pregnant Mothers
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Abstract:

This proposal is responsive to RFA-OD-15-005, Chemistry, Toxicology, and Addiction Research on Waterpipe Tobacco (R01), by proposing research to address Research Objective #4, the impact of waterpipe tobacco characteristics on use behaviors, and Research Objective #3, impact of waterpipe tobacco characteristics on toxicity of waterpipe tobacco smoke. Waterpipe tobacco use is a growing public health problem in the U.S., with serious health risks similar to those found in cigarette smoking. Increased use of waterpipe tobacco in reproductive-age women is especially problematic as international studies highlight the in- creased risk of infertility, obstetrical complications, low birth weight, and respiratory problems following maternal waterpipe use during pregnancy. However, there are no published data regarding rates and patterns of use of waterpipe tobacco use in pregnant women in the U.S. Preliminary data from our ongoing prenatal cohorts reveal high rates of waterpipe tobacco use among low income pregnant women, with 20% endorsing waterpipe tobacco smoking in the perinatal period. Sweetened flavored waterpipe tobacco (maassel) and novel design features have contributed to the widespread use of waterpipe tobacco smoking. However, the impact of flavors and design features on patterns of waterpipe tobacco use and biomarkers of nicotine and toxicant exposure in pregnant mothers is unknown. The impact of flavors and design features on waterpipe tobacco use and biomarkers among pregnant women is especially important due to the potential for maternal and fetal toxicity from flavors as well as the increased exposure to nicotine and combustion products. The proposed study will be the first to investigate the impact of flavors and design features on patterns of use, dependence, and biomarkers of toxicant exposure in pregnant waterpipe users utilizing a prospective, longitudinal design. Pregnant waterpipe tobacco users (N = 100) will complete detailed interviews regarding (a) use, perceptions, and preferences for waterpipe flavors and design features, and (b) patterns of waterpipe and du- al/poly waterpipe tobacco use and dependence at 3 assessment points (1st and 3rd trimesters, 3-months post- partum). Design features will also be investigated through personal photographs of waterpipes and waterpipe tobacco use (e.g., owned waterpipes, waterpipe smoking in lounge/bar settings) throughout pregnancy and postpartum. Urine, breath, and saliva samples will be collected to assess maternal/fetal exposure to nicotine, carbon monoxide, and state-of-the-art markers of volatile organic compounds (VOCs). Our proposed study will provide critical scientific data on the impact of waterpipe tobacco flavors and design features on pat- terns of use in vulnerable populations. Results will provide critical data to the FDA to inform the development of product standards for waterpipe tobacco devices and constituents with the goal of protecting the health of women and children.