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Understanding Substance Abuse from Scientific and Human Perspectives

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The problematic use of opioid drugs is a serious public health issue that affects people and families across generations. In my keynote, I will share my experiences as a behavioral neuroscientist and substance abuse counselor and how they have inspired my personal growth and research.

For my PhD research, I used a rodent model to study the effects of paternal morphine exposure on addiction-like and pain-related outcomes in offspring. My findings showed that male offspring of morphine-exposed fathers had heightened reinforcing effects of morphine, and there was greater binding of mu-opioid receptors in the ventral tegmental area, at baseline. In a separate study, I found that male offspring of morphine-exposed fathers did not show any difference in baseline pain, but were more sensitive to the pain-relieving effects of morphine. These findings suggest that there may be an epigenetic transfer of information from father to offspring through the germline that influences addiction vulnerability.

I will also discuss my insights as a counselor and how they have informed my understanding of addiction. I will share how mother - a now retired social worker - and my eldest brother - a PhD level chemical engineer - influenced my career path towards behavioral neuroscience research. Finally, I will highlight two mentors who have played a pivotal role in my research focus.

Overall, my keynote will emphasize the need to approach substance abuse from both scientific and human perspectives and encourage continuous efforts to improve prevention, treatment and recovery.