Making decisions under risk is a common phenomenon that often combines some level of danger and reward. It can assume various forms from choosing a retirement plan to engaging in drug abuse and compulsive gambling (Brand et al., 2006). Impulsivity is one important factor that influences the decision-making process and often elicits deleterious outcomes. The aim of the project, on which I worked this summer, was to examine decision-making impulsivity in Borderline Personality Disorder (BPD) and its relationship to childhood trauma and reward magnitude. A modified version of the Balloon Analogue Risk Task (BART) was used as a valid model to assess risk-taking behavior in combination with self-report questionnaires on impulsivity, childhood experiences, and reward and punishment sensitivity. Impulsive decision-making has been measured in the form of response time (RT) on the BART. Additionally, 2x2 design, where reward (high versus low) and explosion risk (high versus low) vary randomly across trials, was used in the BART to better evaluate the role of reward and punishment in the decision-making process. Accordingly, we hypothesized that BPD patients would make riskier decisions on BART compared to Healthy Controls (HCs). Additionally, since Roy et al (2005) supported that childhood trauma presents a determinant of impulsivity in an individual’s future life, we hypothesized that impulsivity would be intensified in BPD patients with childhood trauma. Furthermore, previous studies have shown that HCs would be significantly less willing than BPD patients to make risky decisions in high reward situations (Holt & Laury, 2002). Thereby, we also hypothesized that the difference in impulsivity between HCs and BPD would be greater in high reward situations as opposed to the low reward ones.

Overall, in the modified Balloon Analog Risk Task (BART), BPD patients did not display greater impulsivity in the form of riskier decisions than healthy controls. Nevertheless, the self-reported impulsivity of BPD patients was significantly greater than that of HCs. One possible reason for this discrepancy is that the BART focused specifically on impulsive decision-making as opposed to the self-reports that focused on a broader range of motor impulsivity, non-planning impulsivity, and cognitive impulsivity. In addition, since the BART only involved immediate rewards, the difference in impulsivity pertaining to reward sensitivity between BPD patients and healthy controls was insignificant. On the other hand, BPD patients exhibited a higher punishment sensitivity compared to HCs. In contradiction to previous studies, it was also not validated that decisional impulsivity increases due to childhood trauma, which may have resulted due to some participants’ reported depressive moods and antidepressants-intake at the time of the study. Maltreated children, who suffered additional depressive disorders, often opted for safe rather than risky options compared to HCs (Guyer et al., 2006).

For my future directions, I plan on investigating impulse control at the motivational level using decision-making tasks that include trials with immediate and trials with delayed reward to assess the preference for immediate gratification in BPD. Also, I will ensure that my future study
Christeen Samuel
Research Training Progress Report

carefully controls for age and mood in a non-medicated patient group to avoid the limitations of
the previous study.

References

Brand, M., Labudda, K., & Markowitsch, H.J. (2006). Neuropsychological correlates of
decision-making in ambiguous and risky situations. Neural Networks, 19(8), 1266-1276.

Maltreatment and Psychopathology. Journal of the American Academy of Child and
Adolescent Psychiatry, 45(9), 1059-1067.

Archives of Suicide Research, 9.

Review, 92(5), 1644-1655.