

Depression and Decision Making: A Double-Down or Bust



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Introduction / Background

Depression is known affect reward processing (Admon & Pizzagalli, 2015), a key component of learning and decision-making. However, previous studies have shown that depressed individuals perform well in decision making tasks (Iowa Gambling Task, Smoski et al., 2008), suggesting that task type and additional factors indicate may contribute to dysregulation.

Goal: Measure whether level of depression, rumination and decision-making styles were related to performance in a naturalistic computerized blackjack game.

Methods

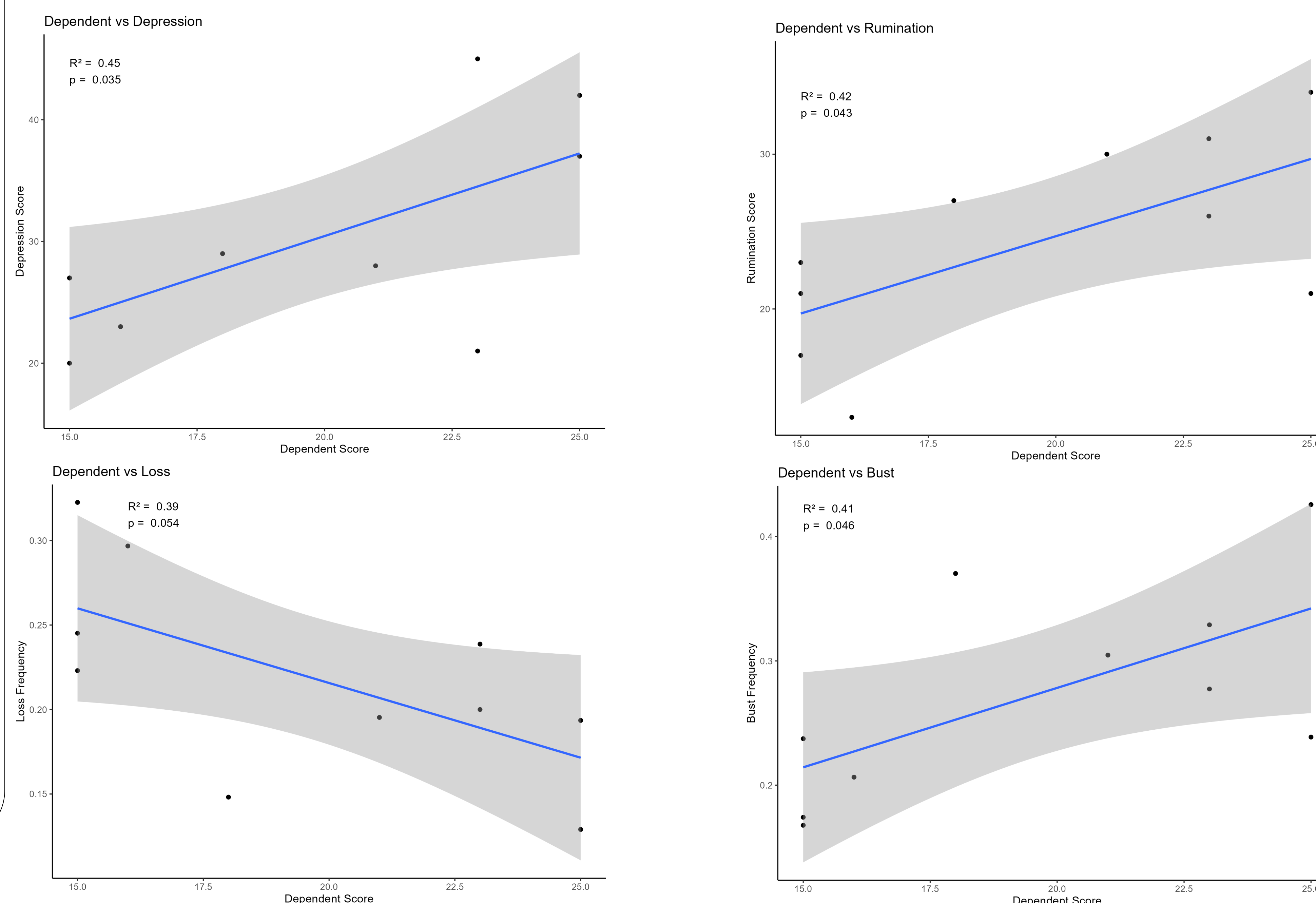
Participants
n=40, age range 18-38



Means, standard deviations, and correlations

Variable	M	SD	Win	Tie	Lost	Bust	Total Loss
BDI	31.15	9.93	-0.25	0.51**	-0.34*	0.34*	-0.03
RRS (Total)	22.71	5.89	-0.15	0.47**	-0.30	0.23	-0.10
Brooding	11.24	3.44	-0.12	0.44**	-0.23	0.16	-0.11
Reflection	11.47	3.13	-0.14	0.40*	-0.30	0.26	-0.07

* indicates $p \leq .05$. ** indicates $p < .01$



Discussion

Higher levels of depression were associated with less frequent losses from being outscored by the dealer (lost) and more likely to lose by busting relative to low depression. This suggests that individuals with more depressive symptoms may engage in riskier decision-making. Increased Tie's associated with depression and rumination may also indicate a tendency to have higher hand totals. Preliminary results highlight potential individual differences in task strategy that may be related to mixed findings in the depression literature.

Future Directions

We will use EEG data to further examine task strategy and reactivity using event-related potentials. We will explore the association of reactivity to errors using the Feedback Related Negativity ERP (ERN) component. If depression and rumination are sensitive to errors, the ERN could be associated with their levels and at individuals with more depressive symptoms may engage in riskier decision-making.

References

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- West, R., Bailey, K., Anderson, S., & Kieffaber, P. D. (2014). Beyond the FN: A spatio-temporal analysis of the neural correlates of feedback processing in a virtual Blackjack game. *Brain and Cognition*, 86, 104–115. <https://doi.org/10.1016/j.bandc.2014.02.003>