Gain-loss frequency may be an important index for depression diagnosis in the Iowa gambling Task

Tzu-Juan Song¹, Ching-Hung Lin¹, ², Yao-Chu Chiu¹*

¹Department of Psychology, Soochow University, Taipei, Taiwan; ²Brain Research Center, National Yang-Ming University, Taipei, Taiwan;

Objective: Despite its extensive use recently in the frontal lobe injury, mental illness and decision-making bias, Iowa Gambling Task (IGT) (Bechara et al., 1994)(see Figure 1, Table 1) has yielded contradictory results in depression studies. While Must et al. (2006) found that depressed patients performed worse in IGT than those in the normal control group did, (see Figure 2) Smoski et al. (2008) found that depressed patients performed better on this task than those in normal control group did. (see Figure 3) Such contradictory results may be attributed to two problems related to task design and result interpretation. First, the decks should not be classified from the “good or bad deck”, the “gain-loss frequency of each deck” for categorization may be a relatively appropriate approach (Chiu et al., 2008). Second, the previous analysis that concealed deck B is too high. Therefore, in this study, four decks were selected and analyzed to understand why depressed patients and those in the normal control group differ in the IGT.

Method: This study utilized the between-subject design. An experimental group consisting depressed military servicemen (32 males) and a control group for general military servicemen (25 males). Patients experiencing a single episode of major depression were diagnosed by the hospital based on use of the Chinese version of Beck Depression Inventory-Second Edition (BDI) and Hamilton Depression Rating Scale (HAM-D).

Results: Our findings more closely resemble those of Must et al. (2006). (see Figure 4) Both analysis approach, “good or bad card” and “gain-loss frequency” were nearly significant in section five (81 to 100 trials). Moreover, the two groups significantly differ in the choice of deck C (patient group: 19.52; control group: 27.69).(see Figure 5)

Conclusion: Two interpretations with good-bad card (deck C: high long-term outcome) and gain-loss frequency (deck C: high frequency gain and draw, Chiu & Lin (2007)) can be the diagnosis index in IGT. While the original assumption, namely the original index ((C+D)-(A+B)) is inappropriate, the score of each deck (A,B,C,D) should be provided for clinical assessment.

References


