Results: Subjective sleep disturbance was found to impact subjective well-being through three significant mediation pathways: (1) loneliness (B=-0.024, 95% CI=-0.055, -0.004), which accounted for 25.72% of the total effect, (2) depression (B=-0.020, 95% CI=-0.044, -0.001), which accounted for 20.94% of the total effect, and (3) loneliness and depression (B=-0.008, 95% CI=-0.019, -0.001), accounting for 8.93% of the total effect. The total mediating effect was 55.58%. As for the objective sleep disturbance, the wake after sleep onset can indirectly impact subjective well-being through loneliness (B=0.005, 95% CI=0.001, 0.010), depression (B=-0.005, 95% CI=-0.011, -0.001), and both (B=0.002, 95% CI=0.001, 0.004); the number of awakenings can indirectly impact subjective well-being through loneliness (B=0.041, 95% CI= 0.012, 0.085), depression (B=-0.034, 95% CI=-0.076, -0.002), and both (B=0.018, 95% CI=0.005, 0.036); the average activity during sleep can also indirectly impact subjective well- being through loneliness (B=0.137, 95% CI=0.034, 0.275), depression (B=-0.128, 95% CI=- 0.282, -0.010), and both (B=0.055, 95% CI=0.011, 0.118).

Conclusion: These findings provided new insights into possible avenues for improving subjective well- being among older people through sleep-based interventions with a multi-faceted approach to mental health.

P201: Effect of Virtual Reality-based Biofeedback in Highly Stressed People

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Objective: Virtual Reality (VR)-based Biofeedback (BF), a relatively new intervention, is rapidly increasing for the treatment of mood disorders. However, research on whether VR-based BF is more effective than traditional BF is still lacking.

Methods: A total of 131 adults from the community enrolled in the study. Participants scored ≥10 on Patient Health Questionnaire-9 (PHQ-9) or ≥9 on Panic Disorder Severity Scale (PDSS) were randomly assigned to VR or BF group. Those who have not met the criteria of PHQ-9 and PDSS were classified as the control group. All participants visited three times across 3 months and received either VR-based or conventional BF intervention. The control group received the same treatment as the VR group. Also, on each visit, the participants completed Montgomery-Asberg Depression Rating Scale (MADRS), State-Trait Anxiety Inventory (STAI), and Visual Analogue Scale (VAS).

Results: The analysis included 118 participants in total (VR: 40, BF: 38, Control: 40). There was no significant difference in demographic variables among the 3 groups. After the treatment, VR and BF groups exhibited significant decreases in MADRS, PHQ-9, STAI, and VAS compared to the baseline within each group (p<0.005). Importantly, compared to the BF group, the VR group showed a significantly greater decrease in STAI (p<0.05). Further analyses revealed that scores of MADRD, PHQ-9, STAI, and VAS also significantly decreased in highly stressed group compared to the control group.

Conclusion: Findings suggest that the application of VR-based BF was effective in reducing anxiety and depressive symptoms in highly stressed people. Compared to conventional BF, VR-based BF can be a cost-effective treatment option especially for relieving anxiety.

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