



Efficacy of Short Course Cognitive Behavioral Therapy on Stress Reduction Among First Year Surgical Residents

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Background

Burnout is a response to long term emotional and interpersonal stressors on the job (1). It is on the far end of chronic stress continuum.

WHO recognized it as an occupational phenomenon in 2019.

Burnout is characterized by decreased personal accomplishments, emotional exhaustion, and depersonalization.

Cognitive Behavioral Therapy (CBT) is an individual-level talking therapy used in patients with anxiety and depression. It based on the principle that our thoughts, feelings, and actions influence each other (Figure 1).

CBT was previously implemented as a wellness intervention strategy at an anesthesia residency program, but did not show significant reduction in emotional exhaustion among the residents (2).

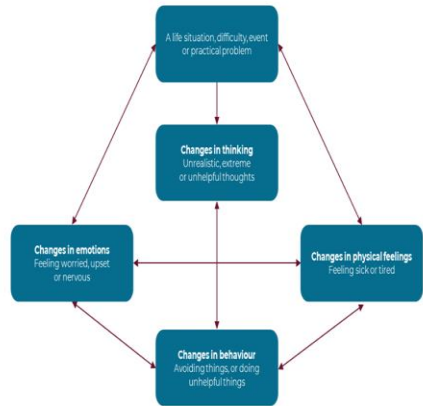


Figure 1. Cognitive Behavioral Therapy

Royal College of Psychiatrists. www.rcpsych.ac.uk. (n.d.)

Objectives

- 1) Determine the efficacy of short course group CBT on stress, anxiety, depression, burnout, and flourishing on surgery residents.
- 2) Determine the optimal timing of receiving CBT: early vs late semester of intern year.

Methods

- 1) 25 interns randomized into early or late CBT cohort (Figure 2) underwent 3 sequential group CBT sessions, each 2.5 hrs long
- 2) Surveys: BMI (burnout), GAD-7 (anxiety), PHQ-9 (depression), PSS (stress), flourishing ratio distributed at 3-time points (Figure 2)
- 3) Independent variables were compared using Fisher Exact Test, Wilcoxon Rank Sum Test, t-test ($p < 0.05$)
- 4) Sub-analysis for ethnic minorities at baseline and after CBT
- 5) Flourishing Ratio: ratio of positive to negative emotions (Flourishing: > 2.9 ; Languishing 1-2.9; Perishing < 2.9)

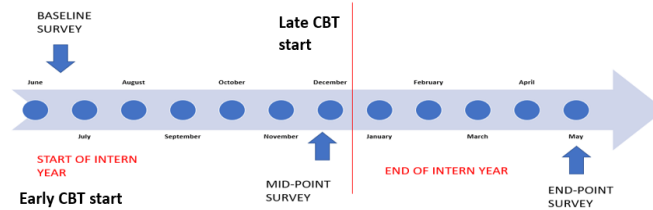


Figure 2. CBT and Survey Timeline

Resident Demographics

- Early and late cohorts were similar in age, gender, race, categorical status, and marital status (Table 1).

| Variables | EARLY n=11 | LATE n=14 | p-value |
|----------------------------|---------------|--------------|---------|
| Age(yrs) | | | 0.33 |
| 21-25 | 1 (9.1%) | 0 (0%) | |
| 26-30 | 8 (72.7%) | 13 (92.9%) | |
| 31-35 | 2 (18.2%) | 1 (7.1%) | |
| Male | 7 (63.6%) | 8 (57.1%) | 0.74 |
| Female | 4 (36.4%) | 6 (42.9%) | |
| Race/Ethnicity | | | 0.52 |
| Black non-Latinx | 1 (9.1%) | 2 (14.3%) | |
| Asian non-Latinx | 3 (27.3%) | 2 (14.3) | |
| White non-Latinx | 7 (63.6%) | 8 (57.1%) | |
| Latinx (any race) | 0 (0%) | 2 (14.3%) | |
| Relationship Status | | | 0.46 |
| Married/committed | 4 (36.3%) | 7 (50%) | |
| Single, divorced/separated | 1 (9.1%) | 0 (0%) | |
| Single, never married | 6 (54.6%) | 7 (50%) | |
| Categorical Interns | 7 (63.6%) | 8 (57.1%) | 0.97 |
| Attendance | 11 (100%) | 10 (71.4%) | 0.11 |

Table 1. Resident Demographics in Early vs Late CBT Cohort

Results

- 1) Ethnic minority residents had higher PSS score than their white counterparts ($p = 0.0344$)
- 2) CBT decreased PSS in ethnic minorities, but this effect was not sustained (Figure 3)
- 3) CBT decreased depression in early cohort (mean baseline PHQ 6.3, end-point PHQ 2.8 $p = 0.03$) and late cohort (mean baseline PHQ 5.9, end-point PHQ 2.9; $p = 0.01$)
- 4) CBT did not decrease burnout, stress, anxiety, and did not improve flourishing ratio

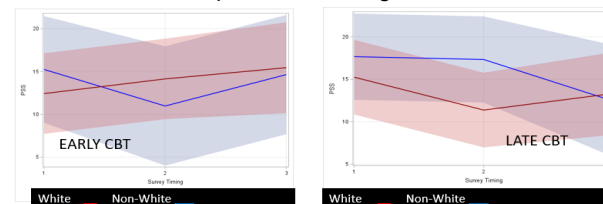


Figure 3. CBT Temporarily Decreased PSS in Ethnic Minorities in Both Cohorts. The Effect Was Not Sustained

Conclusions

- 1) Ethnic minority residents may have unique stressors that may be mitigated by CBT
- 2) CBT decreases depression in surgical residents
- 3) CBT as conducted does not improve burnout, flourishing, stress, and anxiety in surgical residents
- 4) Timing of CBT (early vs late) does not seem to affect any of the variables

Next Steps

- 1) Re-examine the implementation techniques (length of CBT, individual vs group sessions)
- 2) Culturally-tailored wellness interventions

References

1. Lheureux, Florent, et al. « The maslach burnout inventory – Human services survey (mbi-hss): factor structure, wording effect and psychometric qualities of known problematic items », *Le travail humain*, vol. 80, no. 2, 2017, pp. 161-186.
2. Lisann-Goldman L, Cowart C, Lin HM, Orlando B, Mahoney B. Well-Being in Anesthesiology Graduate Medical Education: Reconciling the Ideal with Reality. *Anesthesiol Clin*. 2022 Jun;40(2):383-397. doi: 10.1016/j.anclin.2022.01.011. Epub 2022 May 5. PMID: 35659409.