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### Impact of Behavioral Health Consultant Intervention on Health Outcomes in an Integrated Primary Care Setting

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# Impact of Behavioral Health Consultant Intervention on Health Outcomes in an Integrated Primary Care Setting

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## INTRODUCTION

Integrated Primary Care Models are fast gaining popularity, and often being advocated as an important step in enhancing patient care within a primary care setting. Several studies have shown a positive impact of Behavioral Health Consultant (BHC) intervention in terms of patient satisfaction, improvement in patient symptom scores and global mental functioning. However, additional studies are needed to assess if integrated behavioral health consultations can demonstrate measurable outcome improvements to quantify the benefits of this approach, related to some of the most commonly seen and treated medical diseases in a primary care setting. This study aims to measure three outcomes: change in HbA1c levels, PHQ-9 scores (validated clinical scale for depression), and compliance rates for follow-up of patients in a primary care setting before and after BHC intervention and to determine if there is a statistically significant change related to these health outcomes.

## METHODS

A retrospective electronic medical record (EMR) review of 105 patient charts, seen at St. Joseph's Family medicine at Clifton. The studied population included both genders, ages 18 and above, who were seen over a period of one year from January 2020 to December 2020 and evaluated by BHC in the office at least once.

Patient's PHQ-9 scores, HbA1C levels prior to and after BHC intervention were obtained from the EMR. No-show rates for the general clinic visits and BHC visits, specifically, were compiled using EMR and office records. The data was analyzed to monitor improvement in diabetes, as demonstrated by the reduction in hemoglobin A1C (Hba1c) levels, improvement in depression as measured by a decrease in PHQ-9 (validated clinical scale) scores, and comparing BHC appointment compliance with the overall compliance rate of all patients being seen at this clinic. The data was analyzed using validated statistical methods (paired t-test).

## RESULTS

The study had a total of 105 patients, 72 females and 33 males, with an average age of 50.36 years. The mean pre and post-BHC intervention PHQ-9 scores was 8.59 and 2.07, respectively. The mean pre and post HbA1C scores were 7.89 and 7.29, respectively. The paired sample statistics (t-test) for the above population and measured variables are indicated below:

		Paired Differences					Significance			
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	One-Sided p	Two-Sided p
					Lower	Upper				
Pair 1	PHQ9PRE PHQ9 (PRE) - PHQ9POST PHQ9 (POST)	6.527	5.515	0.641	5.249	7.805	10.181	73	0.000	0.000
Pair 2	HbA1cPre HbA1c (Pre) - HbA1cPost HbA1c ( Post)	0.6500	2.5551	0.5216	-0.4289	1.7289	1.246	23	0.113	0.225

		Paired Samples Effect Sizes	
		Standardized	Point Estimate
PHQ9PRE PHQ9 (PRE) - PHQ9POST PHQ9 (POST)	Cohen's d	5.515	1.183
	Hedges' correction	5.544	1.177

There was a highly significant ( $p < .001$ ) decrease in self-reported depression over time, but none for HbA1C. The Cohen's d statistic, which estimates the effect size of the mean difference, was 1.18 indicating a large effect size, i.e., the decrease was clinically meaningful.

Appointment compliance was calculated using the no-show rate which was a ratio of the number of no-show appointments, to the number of total scheduled appointment visits. The no-show rate for patients following up with BHC was 10.4% compared to 21.6% for patients in the clinic who were not followed by BHC. The difference between the respective no-show rates was found to be significant;  $Z = 19.49$ ,  $p < .001$ .

## CONCLUSION & DISCUSSION

Integrated primary care models with BHC intervention can contribute to improved mental health outcomes of patients as demonstrated by this study.

- 1). BHC intervention showed improvement in depression over time as demonstrated by decreasing PHQ-9 scores and this change was both statistically significant and clinically meaningful.
- 2). Patient appointment compliance, measured by the no-show rates showed that the no-show rate for the clinic was approximately twice the rate of the BHC patients and this difference was statistically significant. Further studies may help understand if this improvement is also demonstrated with medication compliance rates which might help in management of patients with multiple comorbid conditions and polypharmacy.
- 3). There was a decrease in HbA1C levels but this difference was not found to be statistically significant after BHC intervention. Some limitations to this can be attributable to the fact that 40% of the patients in this study had no insurance and limited access to medicines.

Despite the limitations to the study, an integrated approach to patient care may still play a vital role in management of other medical comorbidities, although more research is needed. However, it definitely helps to overcome barriers to mental health services, especially during the initial year of the COVID-19 pandemic, during which time the data has been collected.

## REFERENCES

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