

Correlations between responses of the Brief Pain Inventory and the Patient Health Questionnaire-9 in a Pain Management Setting: A Retrospective Review

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Introduction

- Patients in pain management clinics are tasked to fill out many questionnaires, including the Brief Pain Inventory (BPI) and the Patient Health Questionnaire-9 (PHQ-9).
- Both questionnaires have similar questions and themes.
- Respondent burden can occur when patients are "overloaded" with questions.

Objectives

- Goal was to see correlations existed between the PHQ-9 and BPI that would allow for questionnaire simplification and risk reduction of response burden.

Methods

- This analysis used an existing data set from a clinic, collected from 228 patients on their primary appointment at a pain clinic. (Table 1: Baseline Demographics).
- Total scores of the PHQ-9, BPI Pain Interference, and BPI Pain Severity were compared in the opioid tolerant to the opioid naïve using T-tests.
- The scores for each of the 9 questions in the PHQ-9 were compared to each category of the BPI Interference section to get a Pearson's coefficient r.

Results

- The percentage of patients who were opioid tolerant and opioid naïve were similar (47.2% vs 46.3%)
- There were no significant differences between groups for scoring on the BPI and PHQ-9 (p=0.454 and p=0.370, respectively)
- The most highly correlated was Sleep Interference (BPI) with Item 3 (PHQ-9) (r=0.585).
- Mood, Relationship, and Enjoyment had significant correlations across the board.
- Item 9 (PHQ-9) and Walking/Working Interference (BPI) had the lowest correlation to BPI and PHQ-9 items, respectively.

Table 1: Baseline Demographics

		Mean	SD	Count	% of Total
Age		47	10.978		
Sex	N/A			15	6.6
	Female			128	55.9
	Male			86	37.6
Ethnicity	N/A			20	8.7
	American Indian			1	0.4
	Arab			1	0.4
	Asian			1	0.4
	Black			39	17
	Spanish American Indian			1	0.4
	White			166	72.5
Opioid Exposure	N/A			15	6.6
	Yes			108	47.2
	No			106	46.3
BPI Severity		25.66	7.79		
BPI Interference		50.27	16.75		
BPI Total		75.91	21.70		
PHQ-9 Total		12.24	7.17		

Table 2: Correlation Coefficients

	Activity	Mood	Walking	Work	Relationships	Sleep	Enjoyment
Interest	0.336	0.474	0.168	0.353	0.407	0.344	0.513
Feeling down, depressed, hopeless	0.245	0.419	0.203	0.249	0.370	0.317	0.436
Trouble falling or staying asleep/sleeping too much	0.299	0.346	0.136	0.257	0.284	0.585	0.393
Feeling tired/no energy	0.271	0.354	0.139	0.266	0.365	0.324	0.472
Poor appetite/overeating	0.241	0.302	-0.019	0.194	0.414	0.307	0.36
Feelings of failure	0.183	0.332	-0.007	0.187	0.354	0.275	0.396
Concentration	0.237	0.380	0.151	0.224	0.388	0.269	0.352
Lethargy/restlessness	0.164	0.268	-0.004	0.119	0.340	0.218	0.373
Self-harm	0.036	0.163	-0.038	0.04	0.198	0.039	0.195

Legend

	Statistically Significant, "Fair" rating (0.300-0.599)
	Statistically Significant, "Poor" rating (<=0.299)
	Not Statistically Significant, "Poor" rating

Conclusions

- The fact that opioid tolerance did not make a difference in the totals of PHQ-9 and BPI Pain Interference shows that these tests can be used no matter where a patient is on that spectrum.
- Additionally, it was a small sample size (n=228). questionnaires are used nation and worldwide. A study that showed the validity of the PHQ-9 had roughly 6,000 participants. The BPI has been validated in populations worldwide.
- While we still saw significant correlations, we may not be able to generalize this to the entire world population. Opioid tolerance level did show significance in BPI Pain Severity, so potentially future studies in this area should have results stratified by tolerance level, as well as together.

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Disclosures

- Ms. Lindquist reports no financial conflicts of interest.
- Dr. Herndon discloses the following: consulting fees (US Dept of Justice), speaking honoraria (ASHP, ICHP, PTCE), stock ownership of private company (Spouse – LiveLife Natural Products)

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