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MMPI-Related Pain Literature: Identifying Neglected Research Domains

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This study presents the results of an exploratory bibliometric 'topical' content analysis regarding primary research concerning the use of the MMPI/MMPI-2 (all versions) in pain studies published in journal articles 1992-2017. The major aim is: a) to determine important clinical domains largely neglected by researchers conducting MMPI-Pain scholarship during this time frame, and b) prompt more advanced study to map the structure of scholarship regarding the extant MMPI-Pain literature. The database PsycINFO was selected to obtain the pool of references based on 'keywords' search like MMPI and Pain. The search identified a total of 498 peer-reviewed articles; of these, 200 references were determined to be mostly 'primary' articles, for inclusive years 1992 - 2017 that served as the data-set for the analysis. The author tagged each article with a topical descriptor and maintained a scoring template based on frequency counts across categories. Based on the content analysis, topics that attracted 1% or less of the data-pool of references (<2 articles) were identified. Thus, important clinical topical areas in the general psychological literature, but not generating much primary investigatory interest by MMPI-Pain researchers are as follows: psychotherapy outcome, anxiety states, emotion regulation, individual differences (i.e., gender, racial, ethnicity), the elderly, self-image, cross-cultural, and social desirability. These findings clearly illustrate that the extant body of literature on MMPI-related pain research is highly focused on targeted investigatory domains and, concomitantly, neglects important clinical topical areas. Perhaps this scientific disinterest reflects: a) select focus on clinical areas deemed worthy of research attention by governmental and private granting agencies, b) the practical challenges of obtaining unique medical patient groups, c) the ease of using convenience samples, and d) editorial preference and related publication bias effects.

Keywords: Content Analysis, MMPI-2, Pain, Neglected Investigatory Emphasis, Research Attention.

The Minnesota Multiphasic Personality Inventory (MMPI) and subsequent successors (MMPI-2, MMPI-2-RF) has been a popular broadband assessment instrument usedin the assessment of pain patients and study of chronic pain (Gatchel, 2017; Haggard, Stowell, Bernstein & Gatchel 2008; Vendrig, 2000). Indeed, the body of literature on MMPI-related pain is rather extensive; a recent keyword search in PsycINFO produced 528 articles, 17 book chapters, and 92 dissertation studies. This literature reflects an impressive accumulation of knowledge, based largely on primary research studies.This prodigious research interest, to some extent, reflects the continued popularity of the MMPI over the decades as one of the prominent assessment techniques used in psychological practice (Frauenhoffer, Ross, Gfeller, Searight & Piotrowski,1998; Piotrowski & Lubin, 1990; Wright et al., 2016), particularly in the specialty area of pain assessment (Andrasik, Piotrowski & Packard, 1989; Gatchel & Turk, 1999; Piotrowski, 2007, 1998; Turk & Gatchel, 2002; Turk & Melzack, 2011).

Yet little is known about which clinical topics occupy the most scholarly attention and which domains are under-researched areas of investigation. Thus, the aim of the current study is to conduct a content analysis of the extant literature regarding the major 'topical' areas of investigation in MMPI-Pain research over the past 25 years (1992-2017). The analysis is intended to identify critical areas that are not the focus of primary research endeavors.

Rationale for the study

From a research perspective, obtaining a barometer on the scope of research attention and investigatory interest on specific topics seems a worthwhile scholarly endeavor. In this

context, the study of the 'sociology' of science has garnered much research interest since the 1970s, when the Institute of Scientific Information (ISI) introduced the concept of citation analysis to study the scientific impact of scholarly academic publications. Since then,bibliometric analysis has become a recognized and valid means of gaining an objective perspective on investigatory research trends evident in the extant literature (De Bellis, 2009), including research attention devoted to specific clinical tests used in mental healthassessment (see Piotrowski, 2012, 2013; Polyson, Peterson & Marshall, 1986).There has been recent research attention devoted to bibliometric study on a myriad of psychological topics in the mental health field and across applied psychology disciplines (Cascio &Aguinis, 2008; Piotrowski, 2016). Moreover, content analysis methods have been reported in personality assessment (Giegerich, 2014; Piotrowski, 2017; Piotrowski & Keller, 1993).

Investigatory Approach

Content analysis is a valid qualitative methodology employed when attempting to identify research trends evident in established literature (Hill, 2012). One major outcome is obtaining an objective snapshot of both emphasized and deemphasized areas of research attention (Piotrowski, 2012). The scientific repository of published research that served as the data pool for the current analysis was the database PsycINFO since extant research on the topics MMPI/Pain tends to be cross-disciplinary. Moreover, PsycINFO coverage is international in scope (Garcia-Perez, 2010; Piotrowski, Perdue & Armstrong, 2005).

An online (any field) search, utilizing Boolean logic procedures, imputed the search term: MMPI and Pain. The total yield identified 647 total references; of these, 498 were peer-reviewed articles. To target mainly 'primary' research, references reporting corrections, commentaries/ replies, editorial remarks, book and software reviews, and erratum were excluded. Then a final iteration, which restricted output for references for years 1992-2017, produced a pool of 200 articles. Thus, the final dataset of references for the current bibliometric analysis comprised these 200 articles. Based on extensive experience conducting bibliometric analyses on various research topics and individual journals, the author reviewed each study and determined the main aim or focus of the article. The designation of topical area was based on the major issue emphasized by the investigator(s) of each study, not on methodology used. A categorical template, delineating topical areas, was maintained. Each article was labeled with only 1 topical designation. A running-tab based on frequency counts across categories was maintained until all 200 articles were reviewed. Frequency distribution was then displayed, producing a systematic ranking of topical areas. Then, the author culled all unique topics that showed sparse (1% or less) research attention.

Major Findings

This analysis illustrates the degree of research inattention across key topical domains in the MMPI-Pain related literature. Table-1 displays under-represented topical areas that were the primary focus of research. Only those topics that represented 1% or less of the dataset of 200 articles are presented.—The findings identified several salient areas of psychological study largely neglected by researchers. Most noteworthy of them are: psychotherapy outcome, anxiety states, race/ethnic/gender differences, special populations (e.g., the aged, disabled), emotional regulation, self-image/self-esteem, cross-cultural differences, and social desirability.

Table 1: Under-Researched Topics in MMPI-Pain Scholarship

Psychotherapy outcome
Anxiety
Elderly populations
Gender differences
Cross-Cultural
Anger
Disabled
Ethnicity
Emotion regulation
Self-esteem
Racial differences
Catastrophizing
Social desirability

There is a myriad of reasons that may account for the limited focus across these generally well-researched psychosocial mental health domains. Foremost is the fact that these

highly salient issues can be: a) a 'secondary' aspect of individual research investigation, b) a specific topical focus in a study addressing a more general expository framework, c) one of several independent variables under study, and d) an artifact of participant selection based on the availability of convenience samples. Furthermore, a cursory review of the MMPI-Pain literature indicates sparse attention regarding the evaluation of cognitive distortion (e.g., irrational beliefs or exaggeration) involved in the mental health aspect of the pain experience; hence, 'pain catastrophizing' (see Gatchel, 2017) appears to be a rather neglected investigatory topic.

Limitations

These findings have some limitations. The results are based on determining the main research focus of each article which, at times, was a difficult decision. Thus, codification may be impacted by rater bias. Second, research studies have different rationales from researchers' perspective (e.g., clinical outcome, psychometric, theoretical framework, individual differences, and qualitative factors) which impact the reliability of external review. Moreover, this study reports a somewhat basic 'topical' content analysis of the psychological literature, from the perspective ofone examiner. Thus, a multi-rater design would enhance scoring reliability. By design, only 1 designation was permitted. A weighted scoring scheme would have produced a more refined, accurate ranking. Furthermore, in order to further our understanding of the structure and influence of scholarship regarding the role of the MMPI in pain research, more advanced bibliometric methods(i.e., citation analysis, citation mapping, co-citation analysis) are required (see Hjorland, 2013; Krampen, Von Eye & Schui, 2011; Piotrowski, 2013), particularly as the intellectual structure and volume of published literatureon the topic of pain expands exponentially over time (see Adair & Vohra, 2003, for a discussion).

Conclusion

The current analysis a) provides a tentative snapshot of majorclinical areas of investigatory disinterest in the domain of MMPI/pain-related research, and b) prompts a discussion regarding the factors that may influence the comprehensiveness (and under-researched areas) of the extant literature in the MMPI-Pain domain. These findings have some implications. Foremost, both researchers and practitioners have a clinical interest on the topics noted in Table-1 related to pain issues, particularly about psychosocial assessment. Thus, the current analysis indicates that scholars and clinicians need to search the mental health literature on other assessment methods, in additionto the MMPI-2/MMPI-2-RF, when the topic of pain is the major subject area of study. In fact, researchers should feel secure in this endeavor as Table-2 illustrates that the body of published research across many of these topics, about the subject of pain, is rather extensive (Piotrowski, 2017; Turk & Melzack, 2011).

Table 2: Popularity of Salient Topics in Pain Research

# of Articles indexed in PsycINFO 1992-2017	
Anxiety & Pain	1,549
Elderly & Pain	339
Psychotherapy & Pain	323
Gender differences & Pain	241
Cross-cultural & Pain	141
Anger & Pain	134
Disabled & Pain	75
Ethnicity & Pain	62
Emotion Regulation & Pain	40
Self-Esteem & Pain	40
Racial differences & Pain	32
Catastrophizing& Pain	18
Social desirability& Pain	08

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