Dental Provider Burnout Effects on Clinical Care Outcomes

Where We Stand, 2020

INTRODUCTION

Provider burnout has been defined as an *"*A psychological syndrome in response to chronic interpersonal stressors on the job. The three key dimensions of this response are an overwhelming exhaustion, feelings of cynicism and detachment from the job, and a sense of ineffectiveness and lack of accomplishment.*"* – and more importantly, a key component of both provider and patient outcomes (Maslach & Leiter, 2016). Research through the Harvard Global Health Institute, Harvard T.H. Chan School of Public Health, the Massachusetts Health & Hospital Association, and the Massachusetts Medical Society, amongst countless other academic and media references, believe that provider burnout is a public health crisis due to the overwhelming primary impact on provider mental health, but due to the secondary tangible impact of provider burnout on clinical care outcomes ("A Crisis in Health Care: A Call to Action on Physician Burnout", 2018). As dentists, we not only are included in these statistics, but are amongst the worst affected by these issues. By definition, dentistry is a high-stress and high-risk profession, due to the requirements of managing a fine balance of the knowledge of medicine, physics, material and aesthetic sciences – all while working in a small, bacteria-laden environment with poor lighting, a gag reflex, and a need for micron level precision. Further, as dental providers, we typically are afforded more clinical and business freedom, while working in environments without typical quality improvement and patient outcome measurement standards – except for that in which we develop as part of our own drive for perfection and desire for success. Jointly, these factors provide numerous red flags for earlier and more severe cases of provider burnout in the dental profession.

METHODOLOGY

As part of this literature review, a three part methodology is used to determine qualitative severity of the provider burnout – clinical outcomes relationship. Due to the lack of standardized quality improvement / patient outcome surveillance measures in the general dentistry community, little quality research exists to directly substantiate this relationship. The methodology is as follows:

1. Substantiate the existence of provider burnout in dentistry, as well as acceptable burnout inventories for measuring provider burnout in the dental profession.
2. Measure extent of prevalence of burnout type issues in the dental profession in comparison to other fields of medicine in which more quantitative data exists, serving to provide a lower bound for clinical outcome effects in the dental profession.
3. Substantiate adverse effects of both clinical outcomes and dental provider clinical decision making in the context of burnout type issues.

In the scope of this literature review, both the Maslach Burnout Inventory (MBI) and the Copenhagen Burnout Inventory (CBI) are accepted as valid research instruments for the health professions per recommendation of the National Academy of Medicine Action Collaborative on Clinician Well-Being and Resilience (n.d.) due to use of emotional exhaustion being the central measurement of burnout and similar outcome reporting as continuous variables and outcomes. Both instruments are highly validated, and the Maslach Burnout Inventory is considered the gold standard for burnout measurement in the human services sector.

ARTICLE REVIEW

First and foremost, establishment of an appropriate burnout index and the presence of provider burnout in the dental profession is required. A review of academic consistently found the use of the Maslach and Copenhagen Burnout Inventories in the health services sector, and a validation of the use of the Maslach Burnout Inventory was performed in an article entitled “Using the Maslach Burnout Inventory Among Dentists: Burnout Measurement and Trends” (Brake, et al., 2007). This study served to validate the Maslach Burnout Inventory over time in dental professionals, and to determine if trends existed generally in the dataset. The Maslach Burnout Inventory instrument was administered to 930 dentists between 1997 and 2001, and analyzed. The MBI instrument is a 22 question, validated questionnaire administered to measure 3 dimensions of burnout: emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items) (Brake, et. al., 2007). Results for were significantly correlated with om this study indicated that emotional exhaustion and depersonalization dimensions, when compared to the general public, and that there was a strong relationship between emotional exhaustion and depersonalization in particular, suggestive of a mechanistic relationship.

Having substantiated the presence of burnout in the dental profession, the second step is to substantiate the extent of these issues. Due to differing practice models, where most dentist’s do not work within the confines of the hospital system, research directly comparing burnout across the health professions is limited in this context, and would likely require significant amounts of additional analysis to minimize data collection errors and research biases. An article covering the New Zealand healthcare system was not affected by these issues, and provided substantiation of the extent of burnout across the medical professions as measured by the Copenhagen Burnout Inventory (Chambers, et al., 2016). The Copenhagen Burnout Inventory has been substantiated in literature by

the American Psychological Association as being an equally valid instrument to the Maslach Burnout Inventory when used in the human survives sector (inclusive of healthcare), and is particularly excellent for high internal validity and for use in determining change over time (Kristensen, et. al., 2005). This research administered the Copenhagen Burnout Inventory to 1487 senior doctors and dentists in the New Zealand health care system for analysis (Chambers, et al., 2016). This research provided three key findings: the first, that females are 10-20% more likely to experience significant burnout across all ages and specialities; the second, that dentistry overall is significantly more likely to experience burnout issues, following only emergency medicine and psychiatry; and finally, that dentistry was significantly related to work and patient related burnout (Chambers, et al., 2016). As a whole, this study was limited in a smaller sample size, and in it's goal of providing qualitative over quantitative results: it's clear that dentist's experience burnout worse than most of the healthcare sector, but it's difficult to pinpoint by how much (Chambers, et al., 2016). Overall, it is clear that psychiatry, emergency medicine, and dentistry are clustered among the worst fields for experiencing burnout.

Having substantiated the presence and severe extent of burnout in dental providers, we seek to understand and measure the adverse effects of burnout on patient outcomes. A systematic literature review ("Evidence Relating Health Care Provider Burnout and Quality of Care") was performed by Tawfik that measured burnout and the degree of it's effects on clinical care outcomes from the MEDLINE, PsycInfo, Health and Psychosocial Instruments, Mental Measurements, EMBASE, and Web of Science databases (Tawfik, et al., 2019). Articles accepted for review must use an accepted burnout inventory and directly substantiate a quality of care outcome, resulting in a sample size of 241,533 providers in review (Tawfik, et al., 2019). Due to the vast amount of data, it was not reasonably possible to substantiate exacting effects of burnout in patient care outcomes or other quality of care metrics (an example being that a measured intensity of burnout did not quantify a

mathematical relationship to a number of missed diagnoses or dollars spent) (Tawfik, et al., 2019). Instead, quantitative results were generated to measure degree of correlation between burnout and various quality of care metrics, resulting in an average 96.1% correlation (and ranging from 93.4 to 98.85); a result that shows that critical patient care outcomes are severely and highly correlated to degree of provider burnout (Tawfik, et al., 2019). Notably, two clusters of effects were noted in our review of the data: Metrics affected frequently, but with moderate to severe effects included:self reported medical errors, self reported medication errors, low quality of care, and low patient safety scores. Several phenomena that occurred less frequently but with more severity included: neglect of work, observed medication errors, low individual safety grade, and low safety perceptions. This gap in data most simply suggests that more severe errors are not typically reported by an individual, and that it's likely that that many cases are unobserved or unreported, but would further adverse effect patient care. While 62% of medical error related metrics and 84% of quality and safety related metrics were significantly adversely affected, it is likely this number represents a lower bound.

Clinical patient care does not just cover the patient clinical care outcomes, but the provider decision making in them. As providers, we are constantly making judgements and decisions both consciously and unconsciously that affect these outcomes, and determining whether judgement abilities were compromised is an important part of this link. A research study entitled "A Study to Explore if Dentists' Anxiety Affects Their Clinical Decision-Making" administered the Maslach Burnout Inventory as part of a battery of cognitive instruments to measure whether anxiety, burnout and stress are linked to each other and to clinical decision making abilities (Chipchase, Chapman & Bretherton, 2017). This study administered the Maslach Burnout Inventory for Human Services (Burnout), the Melbourne Decision Making Questionnaire (Decision Making Ability), the Dealing with Uncertainty questionnaire (Impact of Uncertainty) and the Dentists Anxiety in Clinical Situation Scale (Actions in Clinical Care) to measure several dimensions of cognition as it relates to clinical decision making

(Chipchase, Chapman & Bretherton, 2017). Notably, a close relationship was found between anxiety, burnout, and decision making ability, with decreased anxiety associated with decisional self esteem and personal accomplishment (Chipchase, Chapman & Bretherton, 2017). Conversely, increased anxiety led to heightened issues with self esteem and personal accomplishment, which are key factors affecting burnout; with all burnout dimensions (emotional exhaustion, depersonalization, and personal accomplishment) noted to have statistically significant effects on altered decision making (Chipchase, Chapman & Bretherton, 2017). In essence, burnout unequivocally affects provider decision making, stress, and anxiety levels.

CONCLUSION

In conclusion, we have substantiated the presence of burnout type issues within the dental profession, that dentists and dental providers are amongst the most effected of the health professions, and that burnout type issues affect both dental decision-making skills and clinical outcomes. In any scenario, burnout does not provide a positive effect in either decision making or clinical outcomes; and while some metrics are non-significantly affected, others are severely and adversely affected: quality of care, patient safety and care outcomes. While causes of burnout are multifactorial, and cannot be fully addressed by one intervention, these findings are essential in showing a need for development of burnout mitigation strategies at the provider and system level to limit or remove the adverse impacts of burnout on patient care

This literature review further elucidated several key shortcomings within the dental profession that should be addressed as part of a multi-level approach to improvements in provider burnout, quality and safety of patient care delivery, and clinical care outcomes:

- The development of quality improvement metrics at a provider level as well as aggregated system level surveillance of these outcomes. Medical care has already started developing and implementing such systems for identification of trends to address improvements in care effective, patient safety, and waste reduction – factors cited in literature as contributing to conditions causing burnout.
- Diversified research in dental clinical outcomes should be initiated outside of directed research for product development as a mechanism to allow for research to substantiate a causative relationship between burnout levels and clinical outcomes. Research currently available only can substantiate a correlative relationship.

Ultimately, provider burnout is a real, prevalent, and important issue in both the medical and dental professions. While system level improvements are necessary to better show the full extent of the adverse outcomes associated with burnout, burnout can be unequivocally shown to have adverse primary and secondary effects, of which both provider and system need to be aware and take action to address. The true impact of burnout is not just that on the provider, but that of the health and well-being of our patients – and we all accepted to first do no harm.

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