Initial Steps in Developing an Ontology of Dental Care-Related Fear, Anxiety, and Phobia – Abstract

William D. Duncan^{1,*}, Astha Singhal¹, Olga S. Enz¹, Alexander D. Diehl², Brenda Heaton³ and Daniel W. McNeil¹

Abstract

Dental care-related fear, anxiety, and phobia (DFA) broadly refer to negative emotional, behavioral, or physical responses that occur when thinking about or being a patient receiving professional dental care. These responses pervade societies globally and significantly impact population oral health through patterns of dental care utilization and avoidance. Avoidance stemming from DFA often manifests as eschewing preventive or restorative care, often until pain or dysfunction necessitates it, and involves late cancellations or appointment no-shows, the latter leading to empty chair time which has significant societal costs. Moreover, despite advances in pain management and anxiety control, society-wide estimations of the prevalence of DFA have remained high for over half a century with phobic levels relatively unchanged. Currently, DFA research is stymied by the absence of an agreed-upon and controlled vocabulary. The scientific literature on DFA constructs is replete with inconsistencies and includes terminology that refers to only dental fear or dental anxiety and these terms are often used interchangeably. In the broader psychological literature, however, fear and anxiety are treated as separate constructs with unique manifestations. The lack of consistency/interoperability between the medical and dental care communities in defining and classifying such phenomena has contributed to the current stalemate in scientific progress as it relates to understanding the etiology and implications of DFA. To address these shortcomings in DFA terminology and classification, we are developing the Ontology of Dental care-related Fear, Anxiety, and/or Phobia (ODFA). By addressing these weaknesses, the ODFA will facilitate the development of tools and resources capable of enhancing our understanding of the individual, clinical, and population impacts of dental care-related fear and anxiety. Specifically, we aim to develop an ontology that garners acceptance from the scientific and clinical communities and that represents the types of fear and/or anxiety experienced by individuals to predict the likelihood of dental care avoidance, including emergency-only care, delay of treatment, cancellation of dental care appointments, or not showing up for scheduled appointments (i.e. no- shows).

Keywords

Ontology, Dental Care-Related Fear, Anxiety, and Phobia, DFA

^{© 0000-0001-9625-1899 (}W. D. Duncan); 0000-0001-9191-6978 (A. Singhal); 0000-0002-3943-6819 (O. S. Enz); 0000-0001-9990-8331 (A. D. Diehl); 0000-0002-3097-4717 (B. Heaton); 0000-0002-0766-8455 (D. W. McNeil)



© 2024 Copyright for this paper by its authors. Use permitted under Creative Commons License Attribution 4.0 International (CC BY 4.0).

¹Department of Community Dentistry and Behavioral Science, University of Florida College of Dentistry, Gainesville, USA

²Department of Biomedical Informatics, University at Buffalo, Buffalo, USA

³Department Epidemiology & Health Services Research, University of Utah School of Dentistry, Salt Lake City, UT, USA

¹⁵th International Conference on Biomedical Ontologies 2024, July 17-19, 2024, Enschede, The Netherlands *Corresponding author.

wdduncan@gmail.com (W. D. Duncan); ASinghal@dental.ufl.edu (A. Singhal); OEnsz@dental.ufl.edu (O. S. Enz); addiehl@buffalo.edu (A. D. Diehl); brenda.heaton@hsc.utah.edu (B. Heaton); DMcneil@dental.ufl.edu (D. W. McNeil)