

BIOFILM DIAGNOSTIC AND TREATMENT: RELATING CONCEPT MAPPING TO CLINICAL ALGORITHM TO IMPROVE EXPERTISE

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Abstract. Chronically infected wounds are very costly to health care institutions and a significant cause of suffering. The major failure associated to chronic wounds is a delayed healing process due to the presence of single or polymicrobial communities that give protection to antimicrobials and host defenses. There is an urgent need to give an additional insight to health practitioners of the importance of the biofilm paradigm in explaining the delay in wound healing and its relation to a diagnostic, prophylactic and therapeutic management (Fonseca, 2011). This study examined potential solutions to combat health care professional knowledge and practice gap in the sessile paradigm by teaching how to relate networks of understanding - concept mapping with clinical algorithm - chain of practice. For the empirical study two Master students in Pharmaceutical Sciences were selected and asked to a) synthesize their thesis (biofilms related) and prepare oral defense by relating concept mapping with a clinical algorithm b) to convert this to text as a scientific manuscript. It was possible to assess the student's expertise by their ability to construct and relate a clinical algorithm/"chain of practice" to concept maps underlying the "network of understanding" (Kinchin, 2016; Kinchin *et al*, 2008). Master Students as future health care professionals can therefore have the competence to respond to changes in clinical context by their ability to access relational connections within the sessile paradigm, thus being able to convert between complementary chains and networks. This strategy in "biofilm paradigm" expertise promotion can be transferred to all health care professionals, namely by a scientific article (Pinto & Fonseca, 2018), seminar or workshop, but also to patients as a guidance for "self-management support" (Mills *et al*, 2015). The ability to use of concept maps to visualize deep understanding of the biofilm paradigm and algorithms to express clinical competence comprises a "powerful knowledge" (Kinchin, 2016) that is of utmost importance to ensure the ability to a correct identification of wound biofilms and subsequently the selection of the best therapeutic in the clinical practice.

Keywords: Biofilm diagnostic and treatment, clinical algorithm, concept mapping, meaningful learning, sessile and planktonic paradigm