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Modelling the Future Malaysian Clinician Dental Workforce using System Dynamics
(2024) *Malaysian Journal of Medicine and Health Sciences*, 20 (2), pp. 122-132.

DOI: 10.47836/mjmhs.20.2.17

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Abstract
Introduction: The aim of this operational research workforce project was to build, and test, a clinical dental workforce model for Malaysia to address population need/demand with a view to informing health policy. Methods: A system dynamics (SD) model was developed to take account of population oral health needs and demands and dental workforce supply nationally from 2010 to 2040. This involved building two sub-models: population need/demand; and dental workforce supply, drawing on evidence from two previous studies (student survey and interviews of key-stakeholders) supported by government data. The two sub-models were integrated in relation to clinical time to explore potential of over- or under-supply of clinical hours; were latter converted to clinical workforce numbers. The SD model was tested and validated as an acceptable baseline model for Malaysia using existing workforce data. Results: A SD model was developed to model the need, supply and demand for dental care in two sectors from 2010 to 2040. There is a short-term need for an expanded dental workforce to meet the needs of the population but there is a potential oversupply of dentists and therapists from 2040, or earlier. The level of public demand for both primary and secondary dental care is expected to increase respectively from the year 2010 to 2040, varying in relation to demographic and health trends across public and private sectors. Conclusion: The study suggests there is are current requirements for an expanded dental workforce to serve the population needs/demand and potential for oversupply from 2040, or earlier.

Author Keywords
dental workforce; simulation; System dynamics; workforce modelling

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Publisher: Universiti Putra Malaysia Press

ISSN: 16758544
Language of Original Document: English
Abbreviated Source Title: Malays. J. Med. Health Sci.
2-s2.0-85188785585
Document Type: Article
Publication Stage: Final
Source: Scopus