Network for Canadian Oral Health Research
Réseau canadien de recherche en santé buccodentaire

UBC DENTISTRY | THE UNIVERSITY OF BRITISH COLUMBIA

NCOHR Summer Research Institute

Life Course Approach to Oral Health

August 2016

Setting the stage

Imagine that you have to talk to someone about who you are, but you could not provide any information about your past, or about things that have happened to you last year, 10 years ago or when you were a child. You probably guessed that it would be difficult to say much about yourself simply because your past is an integrant part of who you are now; you want to mention about your past experiences, events, occurrences in your life that have shaped who you are today.

Now, think about a chronic oral disease. Can you really understand how it develops without looking into the past, or even better, without following in to the progression of such disease?

The background

Dental decay and periodontal disease are mostly cumulative across the life span, yet they are preventable. Although they are also among the most frequently reported diseases worldwide, they are described as the "silent epidemic". Chronic oral diseases remain unequally distributed within populations; disadvantaged groups or of lower socio economic status seem to bear most of the psychosocial and financial burden, from childhood to the end of life. Nonetheless, biomedical models and clinically focused definitions of oral health continue to prevail when causes and progression of dental decay and other oral diseases are studied. Given that such *bio-clinical* models and definitions do not account for the complex interplay of the socio-environmental, psychological, and behavioural factors of disease progression longitudinally, alternative theories and multilevel research approaches that foster interdisciplinary are needed to understand the course of oral disease overtime.

In this context, the life course approach emerges to explore people's lives within structural, social, and cultural contexts throughout the life span. It examines an individual's life history and the influences of life events such as marriage and divorce and other exposures (e.g., childhood infection) on the risk of disease and other outcomes later in life. It entails a multidisciplinary paradigm to include an interplay of social and health disciplines, while directing attention to the

powerful connection between individual lives and the historical and socioeconomic context in which their lives unfold. A life course approach emphasizes a temporal and social perspective, looking back across life experiences for clues to current patterns of health and disease, whilst recognising that both past and present experiences are shaped by the wider social, economic and cultural contexts.

This research approach can be successfully applied to the study of oral health and disease. Nevertheless, only a few Canadian dental researchers have employed this framework. There is a need to build capacity in life course perspective to better explore the complex interplay of life events, social context, and biological factors in the development of oral diseases and the maintenance of oral health for life.

Such premises led Drs. Brondani, Amin, Nicolau and Poon to organize and host a three-day interdisciplinary and multi-sectorial workshop in August 2016 at the University of British Columbia (UBC) Faculty of Dentistry.

Summer Research Institute description:

The 3-day Summer Institute covered the foundational ideas about population health and epidemiology as applicable to life course research in oral health. The Institute also brought together local and national perspectives from junior and senior research trainees and academics. Participants were encouraged to brainstorm ways to better utilize the life course approach in oral health research. The Institute also explored ways to better prepare future Canadian researchers with knowledge and skills on this underutilized approach to oral health research.

Summer Research Institute objectives:

By the end of this 3-day Summer Institute, participants were able to:

- Situate the life course approach as applicable to oral health research;
- Explore the connection among live course concepts;
- Describe the different models in live course research;
- Appreciate the use of qualitative and quantitative methods in life course research;

- Draft a 1-page research proposal (per each group) on the use of life course approach in self-selected oral health topics. These research proposal drafts should briefly outline the gap in knowledge, objectives, methods and expected outcomes.

Summary of Activities

The workshop had 21 participants representing Laval University, McGill University, University of Saskatchewan, University of Toronto, University of British Columbia (Faculty of Dentistry and the School of Population ad Public Health), University of Montreal, University of Alberta, University of Indiana (U.S.A), and the Canadian Dental Hygienist Association (Ottawa, Ontario).

The main presenters were Drs. Brondani, Amin, Nicolau and Poon and two of their trainees, Drs Madathil (from McGill University) and Elyasi (from University of Alberta). Participants also received a comprehensive list of all oral health-related publications using the life course in one way or another, prepared by another trainee, Dr Gazzaz (the list is attached at the end of this report). The three days were structured to introduce the life course approach to oral health research in both epidemiology and qualitative methodologies to the participants, to discuss current Canadian research using life course, and to present some of the existing national and international data sets that can be used in life course studies. Overall, the activities were divided into two main interdisciplinary areas: life course epidemiology and life course in social sciences. While in epidemiology a life course approach studies the physical and social hazards during gestation, childhood, adolescence, young adulthood and midlife that affect chronic disease risk and health outcomes in later life, in qualitative inquiry a life course approach focuses on the meaning of health and disease experiences across the life span.

Each presentation was followed by whole group discussions, and interactive working groups to develop and explore possible research ideas in life course while learning the skills needed to employ life course theory, concepts and methodologies. At the end of day 3, each of the four groups formed presented a 1-page summary of their proposed research idea that showed their engagement within the group while understanding the limitation of their knowledge. The research questions that the groups presented showed breadth and depth in scope, and were focused in different areas, from exploring *the extent to which do grandparents' tooth loss experience predict the trajectory of their grandchildren tooth loss through adulthood'* to addressing '*the extent to which do biological, social, and environmental factors experienced in early childhood influence the progression of early childhood caries (ECC) in children?*

Below are some of the summative points discussed throughout the 3 days:

- The chronic and cumulative characteristics of oral diseases and their interactions between biological, behavioural, socio-cultural, and contextual factors makes them a good fit for life course research.
- Life course as a perspective, an approach, and/or a theory is an umbrella term to both qualitative and quantitative methodologies.
- Life course may be intuitive, but it is complex and requires interdisciplinary research teams to be successful.
- Longitudinal studies may not lend themselves to be studies under the life course approach. A life course theoretical conceptualization of disease causation is not only a collection of exposure data across the life course. Rather, it involves a theoretical conceptualization with a temporal ordering of exposure variables and their inter-relationships, both directly and indirectly, with the outcome of interest.
- Given the temporal ordering of events and the impact of expose variables over time, birth cohort studies are the best fit for life course research.
- Although there is no large birth cohort in Canada yet, countries like New Zealand, the United Kingdom, Denmark, Norway and Brazil, among others, do offer a diverse of data information from their respective studies; data acquisition may be an issue to some of these birth cohort studies.
- Those embarking in life course research should be aware of its origins, development and application.
- Life course approach brings the bio-socio-psychological and historical-cultural pathways to oral disease development together.

Future research and points for discussion:

The participants and the presenters raised key points for further consideration and research, including:

- The need to differentiate between longitudinal research design and longitudinal studies using a life course approach;
- As a tool to collect information throughout the life course, the life grid should be carefully considered when used in quantitative or qualitative inquiries;
- The complexity of life course research could be better entangled with the use of mixed methods research.


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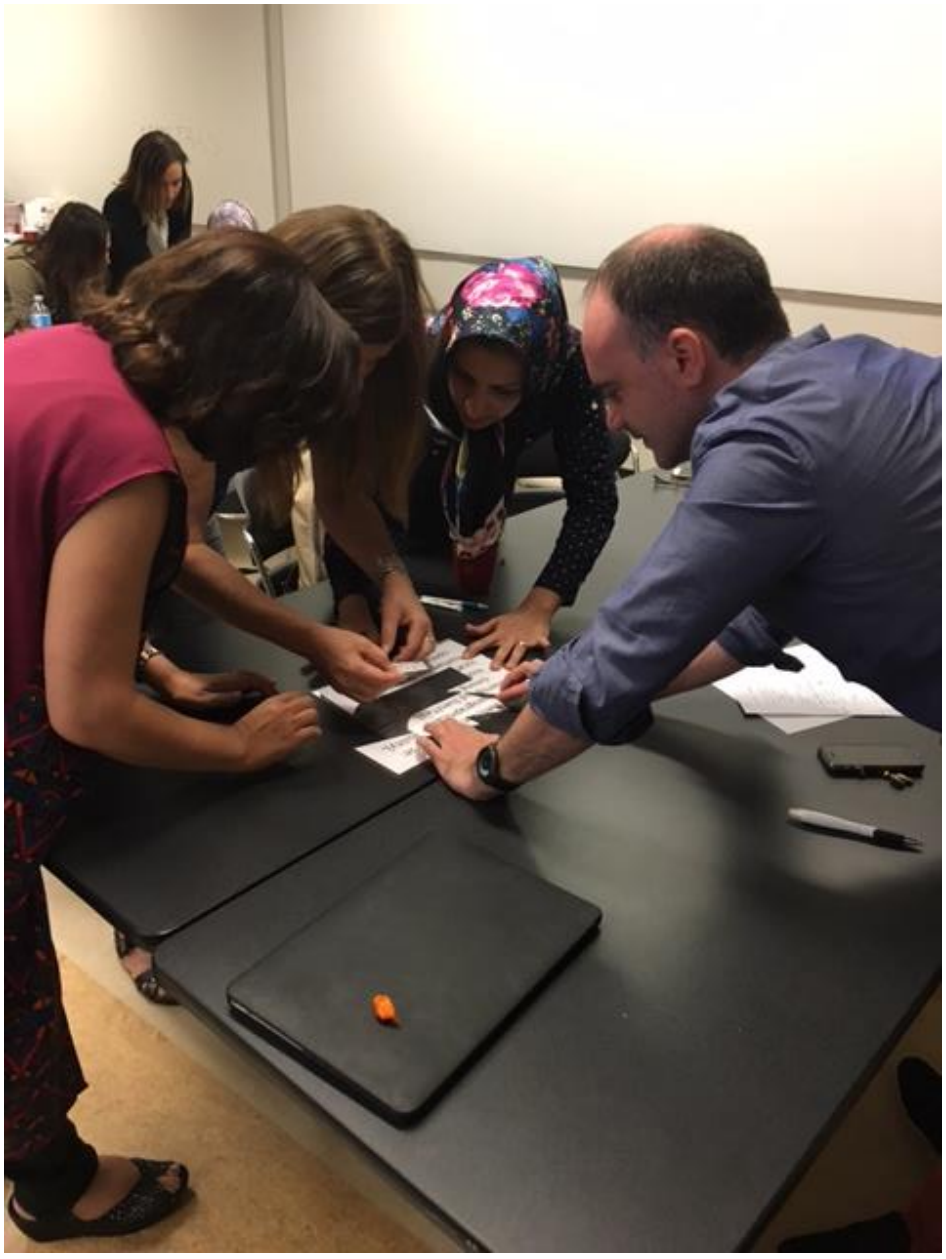

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2016 NETWORK FOR CANADIAN ORAL HEALTH RESEARCH (NCOHR)
Summer Research Institute in Life Course Approach to Oral Health Research

Suggested Reading List prepared by Dr Arwa Gazzaz, Ph.D student

I. REVIEW ARTICLES/ EDITORIAL

1. Schuch, H. S., Peres, K. G., Do, L. G., & Peres, M. A. (2015). Can socioeconomic trajectories during the life influence periodontal disease occurrence in adulthood? Hypotheses from a life-course perspective. *Medical Hypotheses*, *84*(6), 596–600. http://doi.org/10.1016/j.mehy.2015.03.011
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9. Sisson, K. L. (2007). Theoretical explanations for social inequalities in oral health. *Community Dentistry and Oral Epidemiology*, *35*(2), 81–88. http://doi.org/10.1111/j.1600-0528.2007.00354.x
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11. Watt, R. G. (2002). Emerging theories into the social determinants of health: implications for oral health promotion. *Community Dentistry and Oral Epidemiology*, *30*(4), 241–247. http://doi.org/10.1034/j.1600-0528.2002.300401.x

II. EXAMPLES OF THESIS / DISSERTATION

12. Nicolau, Belinda Farias. (2000) " The relationship between conditions in early life and along the life

course and oral health status in teenagers." Doctoral dissertation University of London, University College London. Retrieved from *ProQuest Digital Dissertations Web*. http://ezproxy.library.ubc.ca/login?url=http://search.proquest.com.ezproxy.library.ubc.ca/docview/1752803162?accountid=14656

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III. QUANTITATIVE PAPERS

a. Cohort Studies including Birth Cohort:

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b. Case-Control

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38. Shin, B.-M., Ryu, J.-I., Sheiham, A., Do, L. G., & Jung, S.-H. (2015). Which life course model better explains the association between socioeconomic position and periodontal health? *Journal of Clinical Periodontology*, *42*(3), 213–220. http://doi.org/10.1111/jcpe.12360
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IV. QUALITATIVE PAPERS

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diagnosis explain low-income parents' child dental decisions: a qualitative study. *Community Dentistry and Oral Epidemiology*, *41*(1), 13–21. http://doi.org/10.1111/j.1600-0528.2012.00741.

V. FEW EXAMPLES OF INDIRECT USE OF LIFE COURSE

1. Bright, M. A., Alford, S. M., Hinojosa, M. S., Knapp, C., & Fernandez-Baca, D. E. (2014). Adverse childhood experiences and dental health in children and adolescents. *Community Dentistry and Oral Epidemiology*, *43*(3), 193–199. http://doi.org/10.1111/cdoe.12137
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