DR. MICHAEL I MACENTEE (Orcid ID : 0000-0001-7015-3131)

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Developmental Regulation of Life-long Dental Experiences and Beliefs in Guangzhou and Hong Kong

Michael I MacEntee^{*}, Sabrina T. Wong[†], Iris Chi[‡], Edward CM Lo[§], Victor Minichiello^{**}, Shima, Soheilipour[~], Rodrigo Mariño^{††}.

Address for correspondence:

Michael I. MacEntee

^{*} Faculty of Dentistry, University of British Columbia, Vancouver, British Columbia, Canada.

[†] School of Nursing, and Centre for Health Services and Policy Research, University of British Columbia, Vancouver, British Columbia, Canada

[‡] Suzanne Dworak-Peck School of Social Work, University of Southern California, Los Angeles, California, USA.

[§] Faculty of Dentistry, University of Hong Kong, Hong Kong.

[~] Department of Oral Public Health, Torabinejad Dental Research Center, Isfahan University of Medical Sciences, Isfahan, Iran

^{**} School of Health, Faculty of the Professions, University of New England, Armidale New South Wales, Australia.

^{††} Cooperative Research Centre for Oral Health Science Melbourne Dental School, University of Melbourne, Melbourne, Victoria, Australia.

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Faculty of Dentistry, University of British Columbia

2199 Wesbrook Mall, Vancouver, B.C. V6T 1Z3, Canada

Phone : 604-822-3564; FAX : 604-827-4448

Email : macentee@dentistry.ubc.ca

ABSTRACT (Word count: 247)

Aims: The aim of this study was to explain through the life-course and life-span perspectives of developmental regulation theory the controls on dental experiences and beliefs throughout the lives of older people in Guangzhou and Hong Kong.

Background: Dental diseases and disabilities among older people are serious public health concerns in China. **Methods:** A facilitator conducted eight focus groups, three in Hong Kong and five in Guangzhou, involving a total of 51 participants. She encouraged discussions about lifetime events to explain dental experiences and beliefs. Transcripts were coded and analyzed using a constant comparative approach to identify themes that explained the regulators of dental experiences throughout the participants' lives.

Results: Participants explained the influence of culture and history through critical events, and how external and internal factors regulated their current oral health status and beliefs. They emphasised the role of Traditional Chinese Medicine and family, and the stress of social upheaval compounded by a scarcity of dental services. They revealed also how current choice of dental services and health promotional programs, helped by personal food choice, self-reliance, and skepticism, helped them to adjust and cope with dental diseases and disabilities and the commercialization of dental services.

Conclusions: Dental experiences and beliefs of older people living in Guangzhou and Hong Kong were regulated strongly during personal development by culture and history during critical events, and by various controlling factors, such as health promotion and choice of services supplemented by food choice, nutritional balance, self-reliance, skepticism and social adjustments.

Keywords (5 max)

Development regulation; Life-course sociology; Life-span psychology; Dentistry; Traditional Chinese Medicine.

Abbreviated title

Developmental regulation of dental beliefs and experiences in Guangzhou and Hong Kong

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INTRODUCTION

Oral diseases and dysfunction are very serious and expensive public health concerns and in China,¹ where dental caries, periodontal diseases and tooth loss are very prevalent and go mostly untreated in older people.² These assertions of disease severity and costs are due in part to the rapidly changing psychosocial structure of life in China over the last century. Between one-third and half of all city dwellers in China migrated recently from rural communities, and about 14 million are older than 60 years.^{3,4} Many cities provide healthcare in community centres,⁵ but older migrants rarely register in the *hukou* system that regulates access to healthcare,⁶ and rely on obligations of reciprocity through family networks and filial piety.^{7,8} Public health policies depend on environmental, social and personal determinants of health, such as life-styles, living and working conditions, health and social services, and social mobility.^{9,10} A large proportion of Hong Kong's population migrated from Mainland China since the 1950s.¹¹ Consequently, Hong Kong and Guangzhou have many cultural similarities, such as a strong obligations to filial piety,¹² but complex differences in social and political values.¹³

Traditional Chinese Medicine (TCM) and western medicine are complementary parts of the healthcare system in Mainland China.¹⁴⁻¹⁶ Lo and Tan¹⁷ recommended that oral healthcare services for Chinese elders be sensitive to cultural beliefs and values. Surveys in Mainland China¹⁸⁻²³ and Hong Kong,²⁴⁻²⁸ along with focus groups and interviews of older Chinese immigrants elsewhere,²⁹⁻³¹ revealed that older people from China prefer traditional dietary remedies to ease toothaches and bleeding gums but seek Western dentistry to extract, repair or replace teeth. However, it is unclear how these preferences evolved to influence oral healthcare in China today.

The theory of developmental regulation, as in life-span psychology and life-course sociology, mixes social structure and personal goals with biological aging to explain how people regulate their own development throughout life.^{32,33} It proposes that cultural boundaries influence the social and psychological strategies for pursuing, engaging or disengaging personal goal,³⁴⁻³⁷ notably concerning chronic diseases.³⁸⁻⁴¹ Life-course studies on oral health have used survey questionnaires to expose how socioeconomic status, health beliefs and dental care in early life influence oral health and tooth loss in middle and old age.⁴²⁻⁴⁶ However, there has been little application of life-course or life-span perspectives on health beyond the dominant cultures of Western countries,³⁴ and no investigation of how critical periods or events throughout life influence oral health-related experiences and beliefs.^{33,40}

The aim of this study was to explain through the life-course and life-span perspectives of developmental regulation theory the controls or influence on dental experiences and beliefs throughout the lives of older people in Guangzhou and Hong Kong. The aim focused on three research questions: a) what are the oral health-related beliefs and experiences of older people in Guangzhou and older migrants in Hong Kong? b) what do the older people know about local health and social policies and services, and do they see benefits and limitations in them? and c) how do culture and history influence the beliefs and experiences?

METHODS

As part of a multi-site investigation in Australia, Canada and China,³⁰ focus group discussions in Hong Kong and Guangzhou, the largest city and capital of Guangdong Province next to Hong Kong, revealed the experiences and beliefs of older people through their histories and socioeconomic paths.⁴⁷ A female moderator without specialized knowledge of dentistry but fluent in Cantonese and English, familiar with the culture and healthcare of Hong Kong and Guangzhou, and sensitive to the concerns of older people, recruited participants for the focus groups.^{48,49} Advertisements and local staff helped to recruit 19 participants at three community centres in Hong Kong and 32 participants at a healthcare centre in Guangzhou to form three focus groups in Hong Kong and five in Guangzhou (Appendix 1). On the principle of maximal variation for a range of oral health-related experiences and beliefs, moderated by the convenience of access to people attending the same community group,⁵⁰ we recruited participants aged over 55 years, born in Southern China and who resided in Guangzhou or migrated from Mainland China to Hong Kong within the previous two decades (Appendix 2). The moderator obtained consent and demographic information from participants before prompting an open discussion guided when necessary by existing knowledge of oral health-related behaviours and beliefs in old age (Table 1).^{31,51} She audiotaped, transcribed and translated each group discussion to English for initial analysis by two investigators who by consensus recommended changes to the moderator's guide to clarify or probe for specific beliefs and experiences.^{52,53} Recruitment continued until answers to research questions were meaningfully saturated.⁵⁴ All procedures were approved by the ethical review board of the University of Hong Kong (UW 11-389).

Analysis

The moderator and an investigator coded each transcript independently before seeking consensus from the other investigators on the themes identifying the beliefs and experiences of the participants.^{55,56} The theory of developmental regulation and a constant comparison of the discussions helped to identify

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the regulators of critical events and controlling factors that were major influences on beliefs and experiences, such as historical events, socioeconomic status, health and other social structures, and the secondary influences, such as participant's efforts to control the effects of oral health on general health, comfort, and hygiene over their lifetime.^{40,51}

RESULTS

Participants explained the influence of culture and history through critical events, and how external and internal factors regulated their current oral health status and beliefs (Fig. 1). They described how the culture of family support, socioeconomic status, education, TCM and even genetic structure played a role in how they responded to toothaches and other critical events. They emphasised how the Cultural Revolution had a profound and lasting detrimental effect on their teeth, complicated further by demands of work, limited access to dental services and products, and recently by the dubious integrity of some dentists and toothpaste manufacturers. Nonetheless, they revealed how current choice of dental services and health promotional programs, helped by nutritional food, self-reliance and skepticism, together helped them to adjust and cope with dental diseases and disabilities. They were skeptical about the commercialization of health promotional programs, and the integrity and accessibility of some dentists, which prompted some to travel from Hong Kong to Mainland China for more accessible treatment.

The experiences and beliefs exposed by the focus groups addressed five dominant themes: two (natural teeth and tooth loss) relating to past and present experiences, and three (general health, comfort and hygiene) relating to beliefs (Table 2). Past experiences focused keenly on the disruptive effects of the Cultural Revolution and other major social changes on Mainland China, whereas current experiences revolved around the accessibility of dental services and products, and the benefits to oral health of government-sponsored health promotion campaigns. The three beliefs, influenced heavily by a blend of TCM and Western Dentistry, were used to explain, appraise and cope with toothaches, tooth loss and oral hygiene.

In the following text we provide verbatim quotations from the discussion groups to illustrate each themes along with a subscript at the end of each quotations indicating the source from the list of participants presented in Appendix 2.

Experiences

Past

The social upheaval of the 1950s and the Cultural Revolution were socially and psychologically disruptive to oral care:

the People's Commune... in 1958... was not very fair when gain depended on the work contributed. Therefore old and sick people could not get much out of it, unless their children worked... people... couldn't even afford a toothbrush... there was not much toothpaste either.^{*}_(Gz4.4)

Participants described themselves as *"pioneers of the new China"*_(Gz5P1) who improvised toothpaste and toothbrush during the revolution with *"ashes from [burnt] crop shells... on the fingertip"*_(Gz4.4) even though *"crop shells damage the teeth's porcelain... and the gums were damaged from brushing poorly"*_(Gz4.4). They were proud of having survived the social disruptions, and they wished to *"celebrate our good luck that we have made it today"*_(Gz5.7). China, they believed, is *"a big land of plenty"*_(Gz5.1) but recent social change and prosperity came at a cost to their health:

I think my belief and attitude towards oral health have been somewhat affected by the social change. The growing economy has affected our teeth. The most obvious factor is Coca Cola... another is the barbecue... it causes cancer._(Gz3.3)

Experiences in the army during the Revolution enhanced some participants' knowledge and practice of oral hygiene, although only for a short while because:

after I left the army, I started to care less about my teeth. A doctor in the army told us to see a dentist if we discover periodontitis... but I ignored the problem and just ate something to remove the yang - sometimes herbal tea... until my 50s, when my teeth loosened and fell out._(Gz2.5)

Others were more critical because they:

were not educated much, and public health was promoted even less. So we didn't know the importance of teeth... We only started to realise the importance and look into the issues as we get older and discover more problems._(Gz5.7)

* Coding of quotations refers to each participant's characteristics as presented in Appendix 2

HK: Hong Kong; Gz: Guangzhou.

A woman in Hong Kong explained *“how happy you were when we got a candy to eat as a child back in the old days when we had nothing much to eat”* ^(HK1.6) but another admitted that *“when I was young, I ate too many candies so [my teeth were] all rotten”* ^(HK1.5). Sugar addiction was recognized also in Guangzhou as a threat to teeth:

we love sugar very much. When we were young, no matter if you had enough dinner dishes or not, we must eat rice together with a sugar block, especially sliced brown sugar. Then, we didn't know that sugar is not good for teeth and that we should brush our teeth after eating. My teeth started to rot already at very young age. My front teeth had two black spots and I never dared to smile. That's why until now, I rarely smile... I had very low self-esteem with teeth like that... I always had toothache... My financial condition was not very good... when studying in high school I needed subsidy from the government, so I couldn't do much but had to withstand the pain... I wasn't aware of sugar intake and toothbrushing, and probably genetics. ^(Gz5.2)

We heard that ignorance about prevention of oral diseases continued after the Revolution until *“the ideas of toothbrushes... came from Hong Kong... as lives came on track with the popularization of television”* ^(Gz4.4). Television arrived in the 1960s and was a source of health promotion and useful information about dental problems.

Recent

Health Promotion

Programs of oral health promotion are provided by community centres in Hong Kong and hospital health departments and television in Guangzhou. Participants appreciated them because *“our parents still didn't quite know how to care for our teeth, now we can teach our children that sweets are not good”* ^(Gz1.2), and *“I can watch the TV and know all that stuff”* ^(Gz2.4) while younger people have *“more opportunity and knowledge... [and] should be more aware of the importance of oral health”* ^(Gz1.4). On the other hand, there was skepticism in Guangzhou about toothpaste advertisements, which some considered *“all for commercial purposes”* ^(Gz5.7), rather than *“curing this or that disease”* ^(Gz5.2). Even with recent educational and economic developments, there was still the view that:

the most important thing is to rely on ourselves. In fact for elderly like us, we should pay more attention to personal healthcare and diets if we want to keep a long lifespan. Frankly, education is knowledge for our reference, but we should avoid eating unhealthy food like high fat and sugar in order to keep healthy. ^(Gz3.3)

Clearly the lessons from the past on self-reliance continue to serve beneficially.

Services

Some participants in Hong Kong returned to the Mainland for dental treatment because it is less expensive, or at least faster if *“not really cheaper”* (HK1.7). The participants in Guangzhou discussed their choice of public and private healthcare where:

people generally go to a public hospital... but many would also go to the private [hospital]...

private care is slower and detailed whereas the public [system] is always very hurried. (Gz5.8)

Retired workers there also had public health insurance to treat *“toothache, extraction and filling... then you can claim back the money from the insurance company”* (Gz1.2). Yet there were complaints about dentists in the hospitals:

Many dentists don't really spend time explaining... they aren't that willing to talk much even if we want to ask questions... [some] specialized in preventive care... might be more willing to talk... Some dentists are really nice, but ... general practitioners... get annoyed by talking to us... The local hospital... and some specialized dental hospitals... are very classy but [the doctors] don't seem interested in my concern and find me annoying... Smaller practices... are more patient, and more willing to listen and explain... The big ones cost you more and small ones are cheaper and have a good attitude. (Gz1.2)

The experiences of two well-educated participants in Guangzhou prompted them to comment that "the whole medical system has lots of problems" (Gz5.3), and dentistry as a "profession is recognised but not for integrity" (Gz5.7). Experiences with dental services in Hong Kong seemed more respectful, because, as we heard, dentists there "all graduated from Hong Kong University... [and] don't receive gifts from the patients [whereas dentists in Mainland] China have this bad habit" (HK1.1). There were, nonetheless, complaints about the cost and waiting times associated with dental services in Hong Kong:

It's not like you can see a dentist easily when you have toothache... You need to book in advance, then you need to queue up... [In] Mainland China you get instant treatment when you say you have toothache and given medicine to relieve your pain. (HK1.6)

We heard also in both cities that participants were reluctant to ask their children for help to attend a dentist because *“they need to work”* (HK3.4), and *“can't help much anyway - toothache is your own problem”* (HK3.2). In sum, the participants in general reported dissatisfaction with dental services in both Guangzhou and Hong Kong.

Beliefs

General Health

The TCM concept of harmony between the forces of yin and yang infused every discussion: *“when we were young, we could balance our yin ‘cold’ & yang ‘hot’ ourselves”* ^(HK3.4), but *“we are old now already, we should only eat mild [foods]... not deep-fried hot food”* ^(HK3.2). The harmonious connection between teeth and general health could lead to *“longer life-expectancy”* ^(Gz5.7), because:

teeth connect to the whole human body and blood circulation, and because teeth are the closest to the central nervous system... If you don't chew the food enough, your stomach can be harmed and in pain. So teeth and body-health are inseparable. ^(Gz5.1)

With TCM, we were told *“we only treat it if it's painful, otherwise just leave it”* ^(HK1.7), because TCM relieves symptoms *“but does not cure completely”* ^(HK1.6). For instance, with *“insomnia you'll get yang leading to toothache... [and] sweet dessert soup with purple haricot relieves the pain temporarily”* ^(HK2.4). Participants who were self-reliant recommended *“mild soup, including dried mussels, fish, black eyed peas”* ^(HK3.1), or *“preserved duck eggs to reduce the yang”* ^(HK1.7). They recommended also a jaw exercise to increase salivation and digest hard food *“by pressing your tongue against the roof of your mouth... [and] biting your upper and lower teeth 100 times in the morning and night”* ^(Gz1.4). Dental caries, they believed, was prevented by a *“cooling herbal soup... [containing] red dates, Dioscorea opposite, dried red medlar berries, adenophora uehatae and lotus seeds”* ^(HK3.4). Bleeding gums were associated with *“hot teeth”* ^(HK2.5) and treated with *“pseudo-ginseng”* ^(HK2.1).

A woman in Guangzhou explained with a hint of humour that her remedy for toothache was to:

catch the little frog, (*Hoplobatrachus rugulosus*) and put it on the painful spot [to] lift up the worms from the rotten tooth... very painful... no scientific proof... It was like this back in the countryside. I didn't feel good with something like this being put in my mouth, but I seemed to feel slightly better psychologically... They said worms are in the white stuff I spat out, but in fact they are not worms I know. ^(Gz3.5)

Most of the participants mixed TCM and Western dentistry to manage toothaches. They would *“visit the hospital when pain is unbearable and you cannot treat it yourself”* ^(Gz1.5) to change their personal environment and *“listen to whatever the dentist suggests... like extraction, filling or root canal treatment”* ^(Gz3.2). However, this primary influence was approached cautiously, by one participant who *“rejected [endodontic treatment] because I'm scared of the pain it might cause”* ^(Gz4.6). Others believed that:

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filling a tooth is so painful... and sometimes... I may need to have it fixed again...
troublesome when you still need to study or work... I'd rather have them removed.^(Gz1.2)

A mix of traditional therapy and Western toothpaste was associated with dental caries and toothaches, although with uncertainty about the benefits of the toothpaste:

I rubbed [the tooth with] over-the-counter medicated oil to relieve the pain; and drank soup to remove yang and toxin... to prevent toothache... I now try to eat less hot fried food, and now I know to brush my teeth in the morning and at night, and to change the toothpaste brand from time to time... some claim to have a whitening effect, some may be anti-acid, and some others anti-inflammatory and detoxifying.^(Gz5.3)

Participants in Guangzhou with a tertiary education seemed very well-informed about dental science and the benefits of *"fluoride... added to Guangzhou tap water... [and] to some toothpaste"*^(Gz5.7). They believed that *"dentitions might be determined by genes... [that] the growth and health of teeth depend on calcium intake after-birth"*^(Gz1.2), and that *"people with good teeth have longer life-expectancy... because they have a gene of long life, and teeth are part of these inherited genes"*^(Gz5.7). Overall, our participants endorsed the importance of self-reliance whereby:

the most important thing is to rely on ourselves... we should pay more attention to personal healthcare and diets if we want a long lifespan... avoid unhealthy food like high fat.^(Gz3.3)

There was no disagreement that without dental comfort it was difficult to stay healthy.

Comfort

All focus groups identified comfort, which included references to pain, eating and personal appearance, as the primary goal of oral health. The belief that toothache is *"not a sickness"*^(HK1.1) nor *"a disease [although] as awful as an illness"*^(Gz1.5) surfaced in both cities. It is, we heard, *"worse than sickness"*^(Gz2.3) because *"the whole head spins... eyes also get blurry"*^(HK2.2), and with it *"you cannot pronounce clearly"*^(HK2.6); or *"eat hard vegetables... [or] fruit"*^(HK1.2). But, when healthy, teeth were valued for grinding bones that *"have calcium"*^(Gz2.4) and as the *"'front door' of our body... [but] if they are not good, and cannot chew properly they will affect health"*^(Gz5.4).

Missing teeth were a challenge to personal comfort and self-esteem. Apart from a concerns that *"air will leak out through the gap"*^(Gz2.2), the more expected comment was that *"you wouldn't want to laugh out loud when you have a missing front tooth, otherwise you'd just look like an idiot"*^(Gz3.3). However, not everyone believed that dental appearance was important in old age. A man in Guangzhou explained

happily that “old people like me wouldn’t care about looks... I have a denture for the purpose of eating rather than looking good”^(Gz2.5), although a woman nearby did not agree and told him that “at least you look better with some teeth”^(Gz2.3), and another complained that a “retired colleague has missing teeth on the both sides of his mouth [and] looks awful”^(Gz2.4). Everyone placed considerable store on physical comfort but women was more assertive about the importance of personal appearance in old age.

Hygiene

We were told, as reported above in the historical section, how dental hygiene changed with improved access to toothpaste, toothbrushes and dentists, which revealed the connection between personal and structural forces in healthcare. But other personal and social factors influenced dental hygiene. A women in Guangzhou explained how she:

didn’t pay much attention to my teeth in my teenage years. I was busy working and couldn’t be bothered rinsing my teeth after meals, so I only brushed them once a day.^(Gz1.2)

Whether or not this slight lack of attention did any damage to her teeth or gums was not clear, although another woman in the same group was prompted to respond with the belief that “food remains between your teeth and ferments overnight... [to] harm your teeth and health”^(Gz1.4). There was no doubt in any of the discussions that daily toothbrushing was essential to maintaining healthy teeth, and that comfortable teeth contributed considerably to enjoyable and healthy eating and a pleasant quality of life.

DISCUSSION

This study offers a novel insight to experiences and beliefs relating to oral healthcare in Guangzhou and Hong Kong over the last half century. Biographical narratives within group discussions revealed the resilience of people born in China between 1931 and 1956 during their development from youth to old age. Although Hong Kong and Guangzhou have had different political systems for much of the last century, both cities have many similarities and strong Chinese culture and values.^{11,13} Our research method used a novel combination of life-course social experiences and life-span beliefs and emotions to explain how participants attempted to control their oral health during transitions of healthcare that included critical periods harrowing poverty, work demands, poor nutrition, and scarce access to dentists and aids for oral hygiene.

Influences

The participants identified three primary influences for changing the environment to manage their oral health, and a wider array of secondary influences based on TCM, food choice, and social adjustments

supplemented by self-reliance and skepticism for appraising and coping with dental diseases and disabilities (Figure 1). The general concerns about treatment accessibility and costs prompted some participants in Hong Kong, like older Chinese immigrants in Western countries,^{30,31} to take primary control of their dental needs by travelling to Mainland China for more accessible and possibly less expensive treatments. In Guangzhou, they endorsed a city policy of water fluoridation to prevent dental caries, and preferred smaller dental clinics rather than larger dental hospitals for communicating with dentists. In addition to self-reliance as a secondary influence initiated during earlier critical periods of social and political upheavals, they placed considerable prominence on balancing *yin* and *yang* to prevent and manage toothaches and bleeding gums, and restricting their diets to soft foods or making social adjustments to avoid smiling when missing teeth. Skepticism about dental services in both cities also served as a secondary influence or reaction to concerns about the cost of dental treatment, the professional integrity of dentists, and the commercialization of health promotion programs including the unsupported claims of toothpaste manufacturers. Out-of-pocket payments for dental care in Mainland China has been described as a catastrophic expenditure, and very little dental care is covered by insurance schemes.¹

Rigor

We used an inductive qualitative exploration rather than a questionnaire survey that were used in other life-course investigations of oral health.⁴²⁻⁴³ Focus group discussions can blend personal and collective experiences to reveal a life-span of culturally sensitive beliefs and experiences.^{17,31,34,47,55} The reflexivity of individual participants portrayed life-span development as a trajectory of recurrent crises and struggles from youth to old age rather than the more abstract view of old age as a static destination devoid of social change.³³ Participants explained how they adjusted their goals by exerting primary control of their environment when the social and economic conditions allow, and secondary control of themselves when confronted by major social upheaval or other intractable environmental situations. However, as people living in a centralized and carefully controlled political system, they exposed an unexpected diversity of experiences and needs that defies cultural stereotyping,^{34,40}

We had meaningful thematic saturation of responses after three discussion groups in Hong Kong and after five in Guangzhou. Thematic coding in Hong Kong was essentially complete from the first group but the two subsequent groups helped to clarify themes, whereas in Guangzhou we required five groups for the investigators to agree fully on the experiences and beliefs of the participants.^{54,55} The rigor of our research design and the scope of our findings were enhanced further by the inclusion of participants

with and without natural teeth, and by negative or outlying experiences that surfaced in all of the discussion groups.⁵⁶ The similarity of experiences and beliefs from both cities reflects the origin in Guangdong Province of all but one participant and indeed a large proportion of Hong Kong's population,¹¹ while the higher educational level of the Guangzhou groups explains the wider and critical scope of their discussions. The longer tradition of Westernized professional education and healthcare in Hong Kong probably explains the more favourable appreciation for dental education there in contrast to Mainland China where there was little direct influence from Western knowledge until the 1970s.¹⁸⁻²⁰

Limitations

The practical implications of our results for other communities are limited generally by the variability and instability of psychological phenomena,³⁴ and, like other recall-based studies,³² by our participants' memory. Most of the participants in each group were acquainted with one another, and acquaintances produce convivial and trusting, but not necessarily diverse or deviant, discussions.^{47,49,50} There are close cultural similarities between people in Hong Kong and people in Guangzhou which is a benefit and a limitation of the study. Cantonese is the dominant dialect in both cities, and the cities are geographically close, which strengthened our analysis by accommodating one focus group moderator/translator. However, the similarities limited the diversity of the participants, and we make no claims for our findings beyond the experiences of the participants. Clearly there was sex-bias in the all-female discussion groups in Hong Kong, although we found no evidence of this bias from the mix of sexes in Guangzhou. Some participants might have felt inhibited by more highly educated participants, despite the moderator's vigilance and encouragement of everyone in the discussions. Moreover, the moderator was unable to seek information about each participant's dental or socioeconomic status, other than education, which restricted our analysis of specific dental and social variables as developmental regulators. This also limited our ability to attribute beliefs or experiences to the presence or absence of natural teeth or dentures, much beyond the typical opinions on the benefits of natural teeth compared to dentures.

New Information

This study contributes to the limited information on the cultural psychology and developmental regulation of non-Western societies.³⁴ It confirms the view that people have a strong and resilient capacity to appraise, adapt and cope with adversity.^{37,39} It expands developmental regulation by integrating life-course and life-span perspectives as recommended by Gilleard and Higgs³³ and by Mayer,³⁶ and by synthesising individual experiences and beliefs beyond the sociological and quantitative

perspectives that dominated previous studies.^{9,42-44,55} The discussion groups revealed how older people in Hong Kong and Guangzhou believed and experienced both TCM and Western traditions of oral healthcare to prevent and manage chronic disease and to repair defective dentitions. Their sophisticated knowledge of both traditions is in contrast to the limited knowledge of preventive and restorative dentistry among older people surveyed by questionnaires within the last two decades in Hong Kong and Mainland China.^{5,18-26} Acceptance of new ideas contrasts also with life-course evidence from New Zealanders who seem to carry childhood patterns of self-care and dental service-use into adulthood, although without the prolonged social upheavals and crises experienced in China.⁴² Overall, we found that the experiences and beliefs in both cities were more alike than different. Changes in health and healthcare have improved recently in both cities due to effective oral health promotional programs in community centres, hospitals, and on television, and by improved access to dentists and dental hygiene aids. Overall, there was a strong belief in both settings that oral and general health are interdependent, that dental comfort and hygiene are important to overall quality of life, and that oral health promotion offers hope of better health for all and especially for the younger generation.

Future Research Needs

There is need for further prospective studies on possible differences in the developmental regulation of oral healthcare for men and women and for different social strata, particularly in China where older migrants have difficulty accessing health and social services,^{1,6} and in other parts of the globe where major migrations of people are underway. Future focus groups could include different age groups to reveal how personal and structural factors influence generational experiences. It is clear from our discussions that older people in Guangzhou and Hong Kong believe that the responsibility for dental care extends to the community at large beyond a personal responsibility, and it would be interesting to know whether this belief holds in other societies where collective identification and social obedience are less influential than in China.^{7,8,12,17,34}

CONCLUSIONS

Dental experiences and beliefs of older people living in Guangzhou and Hong Kong were regulated strongly during personal development by their culture and history during critical events, and by various controlling factors, such as health promotion and choice of services supplemented by food choice, nutritional balance, self-reliance, skepticism and social adjustments.

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focus groups. Asuman Kiyak, an active member of our research team, died in 2011 before the study was complete.

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TABLE 1

Table 1. Themes of oral health* used when necessary to prompt focus group discussions.

Themes	Prompts
Components:	
Hygiene	How does oral hygiene influence older people personally and socially?
Comfort	How does comfort in the mouth influence eating and speaking?
General health	How does appearance of teeth concern personal comfort and social interactions?
	How does oral health influence general health?
	How does oral hygiene influence general health?
	What aspects of Traditional Chinese Medicine relate to hygiene, comfort, and general health in the context of oral health?
Disturbances:	
Impairment	How do problems of the mouth and teeth cause impairments (e.g. missing teeth), limited activities (e.g. eating; smiling), and restricted participations (e.g. socializing)?
Limited activity	How does the balance of <i>yin</i> and <i>yang</i> influence personal and social impacts of oral hygiene, comfort, and general health?
Restricted participation	What is the significance in life of personal appearance?
	How do teeth influence personal appearance?
	Is it unlucky to replace natural teeth?
	What personal strategies are used to cope with dental impairments, limitations, and restrictions (see examples above)?
	What social strategies are used in Guangzhou / Hong Kong to cope with dental impairments, limitations, and restrictions?
Environmental Stimuli:	
Personal	Are traditional beliefs changing among urban and/or educated elders in Guangzhou / Hong Kong?
Social	Do older men and women have different beliefs, and needs relating to oral hygiene and mouth-comfort?
	Should families help older parents and grandparents to get dental care? Is this easy or difficult in Guangzhou / Hong Kong?

Coping Strategies

When is Western dentistry used in Hong Kong (or Guangzhou)?

How do elders manage acute dental disorders (e.g. toothaches; swollen/abscessed gum; broken tooth/dentures)?

What preventive dental care do you use?

Can you trust the advice of dentists educated in Guangzhou, Hong Kong, elsewhere in China; or the West?

* Based on existing knowledge of oral health-related behaviors and beliefs in old age.**Error! Bookmark not defined.****Error! Bookmark not defined.**

TABLE 2

Table 2. Themes and topics concerning oral health-related experiences and beliefs of older people in Hong Kong and Guangzhou.

Themes	Topics
Experiences	Past Disruptive Social Change
	Present Health Promotion Services (cost; insurance; professionalism)
Beliefs	General Health Traditional Chinese Medicine (balance; prevention; chronicity) Western Dentistry (acute and restorative care)
	Comfort Pain/Toothache/Tooth loss/Dentures Eating /Nutrition Appearance/Social activities
	Hygiene Prevents disease Limited by work demands

FIGURE

APPENDIX 1

Appendix 1. Demographic characteristics of focus groups in Hong Kong and Guangzhou.

Characteristics		Hong Kong (n=3)	Guangzhou (n=5)
Number of Participants		19	32
Sex	Female	19	17
	Male	0	15
Age-group (years)	55-59	0	1
	60-64	1	3
	65-69	7	14
	70-74	3	7
	75-79	3	6
	≥80	5	1
Educational levels	None	7	3
	Primary or less	10	8
	Secondary	2	15
	University	0	6
Mother tongue	Mandarin	5	0
	Cantonese	13	30
	Other	1	2
Origins	Guangzhou	9	31
	Elsewhere in China	10	1
Resident in Hong Kong	Less than 5 years	1	na
	5-10 years	7	na
	11-15 years	10	na
	More than 15 years	1	na

n = number of focus groups; na = not applicable

APPENDIX 2

Appendix 2. Demographic characteristics of participants in Hong Kong and Guangzhou focus groups.

Focus Groups	Identity of Participants	Sex	Age-group in Years	Education	Origin	Mother-tongue	Years in Hong Kong
Hong Kong							
1	1	F	65-69	Secondary	Guangdong	Shanghai	11-15
	2		≥80	None	Guangdong	Hakka	5-10
	3		65-69	None	Fujian	Fujian	5-10
	4		≥80	None	Guangdong	Hakka	11-15
	5		≥80	None	Guangdong	Cantonese	5-10
	6		70-74	Primary	Guangdong	Cantonese	5-10
	7		75-79	Primary	Guangdong	Kaiping	11-15
	8		75-79	Primary	Guangdong	Cantonese	11-15
2	1	F	75-79	Primary	Guangzhou	Cantonese	≥16
	2		≥80	None	Xinhui	Cantonese	11-15
	3		65-69	Primary	Dongguan	Hakka	11-15
	4		65-69	Primary	Xinhui	Cantonese	5-10
	5		65-69	None	Kaiping	Cantonese	11-15
	6		≥80	None	Kaiping	Cantonese	11-15
	7		70-74	Primary	Kaiping	Cantonese	11-15
3	1	F	70-74	Primary	Kaiping	Cantonese	5-10
	2		65-69	Secondary	Jiangmen	Cantonese	<5
	3		60-64	Primary	Xinxing	Cantonese	11-15
	4		65-69	Primary	Guangzhou	Cantonese	5-10
Guangzhou							
1	1	M	65-69	Secondary	Guangzhou	Cantonese	
	2	F	65-69	Secondary	Guangzhou	Cantonese	
	3	M*	65-69	Secondary	Guangzhou	Cantonese	na
	4	M	75-79	Secondary	Guangzhou	Cantonese	

	5	M	65-69	Tertiary	Guangzhou	Teochew	
	6	F*	65-69	Secondary	Guangzhou	Cantonese	
2	1	F	<60	Secondary	Guangzhou	Cantonese	
	2	F	60-64	Secondary	Guangzhou	Cantonese	
	3	F	65-69	Primary	Guangzhou	Cantonese	na
	4	F	60-64	Primary	Guangzhou	Cantonese	
	5	M	65-69	Primary	Guangzhou	Teochew	
	6	F	60-64	Secondary	Guangzhou	Cantonese	
3	1	M	65-69	Secondary	Guangzhou		
	2	M	65-69	Secondary	Guangzhou		
	3	M	65-69	Secondary	Guangzhou	Cantonese	na
	4	F	70-74	Primary	Guangzhou		
	5	F	75-79	Secondary	Guangzhou		
4	1	F	70-74	None	Guangzhou		
	2	F	70-74	None	Guangzhou		
	3	F	75-79	None	Guangzhou		
	4	M	75-79	Secondary	Guangzhou	Cantonese	na
	5	M	75-79	Secondary	Guangzhou		
	6	F	65-69	Primary	Guangzhou		
	7	F	≥80	Primary	Guangzhou		
5	1	M	75-79	Primary	Guangzhou		
	2	M	70-74	Tertiary	Dongguan		
	3	M	70-74	Tertiary	Guangzhou		
	4	F	65-69	Tertiary	Guangzhou	Cantonese	na
	5	F	70-74	Secondary	Guangzhou		
	6	F	70-74	Primary	Guangzhou		
	7	F	65-69	Tertiary	Guangzhou		
	8	M	65-69	Tertiary	Guangzhou		

F: Female; M: Male; * Married couple; na = not applicable.

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Author/s:

MacEntee, MI;Wong, ST;Chi, I;Lo, ECM;Minichiello, V;Soheilipour, S;Marino, R

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