Dental development: An aid to give identities and to inform general health

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Ms Ka Yan CHEUNG, Mr Kit LEE, and Mr Ka Fai WONG, and
Mr Yat Fung LEUNG
Background

- Birth registration is a basic right of each child and a fundamental step towards acquiring citizenship and nationality, as well as realizing other human rights.

- Registering a child is not only the duty of the child’s guardian, but also the public responsibility of the government.

- A child without birth registration cannot prove his or her legal existence before the law; consequently, his or her survival, protection, participation, and development in society will be negatively affected.

UNICEF 2002
Youth Advocate Program International 2002
Some examples of ages of legal importance and birth registration practices in the world

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<th>Country</th>
<th>Minimum age of Criminal responsibility (years)</th>
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Background

Children who lack legal identity

- Face difficulty enrolling in school
- Vulnerable to exploitation
  - Child labour
  - Early marriage
  - Child prostitution
Background

Possible reasons for these problems

- Inadequate knowledge
- Lack of public awareness about birth registration
Aim

- To promote the practice of birth registration
- To provide estimated age for unregistered children
Underpinning Research

Dental development
Underpinning Research
“Odontogenic tissues follow the same pattern of development as the skeletal tissues, and the former is preferred as they are subjected to less modification”. (Chertkow and Fatti 1979)
Underpinning Research

Tooth and developmental stage

Estimated age

MOLARS

BICUSPIDS

CANINES

A

B

C

D

E

F

G

H
Underpinning Research Fund

General Research Fund

➢ GRF No 17122914

Dental age assessment: Development and validation of a reference data set for the southern Chinese and its application to the northern Chinese
Dental age assessment in Southeast Asians: Is the reference data set of southern Chinese applicable?
Child risk factors for delayed eruption of permanent teeth
Underpinning Research
HKU Seed Funding Programme for Basic Research

- Secular trend in the development of permanent teeth among five years old children

- Dental development in southern Chinese: Which reference dataset is accurate?
Dental age assessment for children with and without a supernumerary tooth
Underpinning Research Papers


- King N.M., Tsai J.S.J. and Wong H.M.; Morphological and numerical characteristics of the southern Chinese dentitions. Part II: Traits in the permanent dentition. The Open Anthropology Journal, 2010, 3, 71-84

Underpinning Teaching & Learning
## Engagement and Impacts Achieved

1. World’s first dental age assessment dataset for southern Chinese has been established

Summary data of mandibular left second molar corresponding to tooth developmental stages for southern Chinese females and males (LL7 f & m)

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2. The dataset for age estimation has been contributed to the international population database of the Dental Age Research London Information Group (www.dentalage.co.uk)

- It can be used by any researchers and related authorities in civil, legal, criminal and forensic applications.

Christmas Island, Australia, December 2010

Port-au-Prince, Haiti, January 2010

Miyako, Japan, March 2011
3. Establishment of a charity, the “D.O.B. (Date of Birth) Foundation” (www.dob-foundation.org) to promote accurate birth records
Engagement and Impacts

Achieved
4. Student KE Project “Giving an identity to undocumented children in Chennai, India”

- Campaign on “Birth certificate is important” in Irular colony, Nandiambakkam village, India
Engagement and Impacts

4. Student KE Project “Giving an identity to undocumented children in Chennai, India”

- Campaign on “Birth certificate is important” in Irular colony, Nandiambakkam village, India
Engagement and Impacts

4. Student KE Project “Giving an identity to undocumented children in Chennai, India”

- Distribution of flyers
Engagement and Impacts

4. Student KE Project “Giving an identity to undocumented children in Chennai, India”

- Different versions of flyers
Engagement and Impacts

- Campaign on “The importance of birth registration” in Silatur Village, India
Engagement and Impacts

4. Student KE Project “Giving an identity to undocumented children in Chennai, India”

- Oral examination
- Oral health education
Engagement and Impacts

Achieved

4. Student KE Project “Giving an identity to undocumented children in Chennai, India”

- Age certificates issued to undocumented children in Day Spring Orphanage Centre, Chennai, India
Engagement and Impacts

Achieved

5. Workshops on “Age Assessment in Dentistry” to train forensic practitioners and dentists
6. Service 100/Student KE Project “Aiding age estimation for orphans in Guangxi, Mainland China”
6. Service 100/Student KE Project “Aiding age estimation for orphans in Guangxi, Mainland China”

- Campaign to promote oral health and respecting lives in the villages
6. Service 100/Student KE Project “Aiding age estimation for orphans in Guangxi, Mainland China”

- Oral health education to girls of ethnic minority groups
6. Service 100/Student KE Project “Aiding age estimation for orphans in Guangxi, Mainland China”

- Dental age assessment and oral examination for orphans
Engagement and Impacts

Achieved

6. Service 100/Student KE Project “Aiding age estimation for orphans in Guangxi, Mainland China”

- Oral hygiene instruction for orphans
6. Service 100/Student KE Project “Aiding age estimation for orphans in Guangxi, Mainland China”

- Workshop on dental development for orphanage and primary school teachers
7. Service 100/Student KE Project “Dental Outreach Project - To Special-Need Groups in Nanning & Liuzhou Guangxi, Mainland China”
7. Service 100/Student KE Project “Dental Outreach Project - To Special-Need Groups in Nanning & Liuzhou Guangxi, Mainland China”

- Workshop on maintenance of oral hygiene for parents, teachers and caregivers
Engagement and Impacts

Achieved

7. Service 100/Student KE Project “Dental Outreach Project - To Special-Need Groups in Nanning & Liuzhou Guangxi, Mainland China”
Engagement and Impacts

7. Service 100/Student KE Project “Dental Outreach Project - To Special-Need Groups in Nanning & Liuzhou Guangxi, Mainland China”

- Oral examination for children with cerebral palsy in Nanning
Engagement and Impacts Achieved

7. Service 100/Student KE Project “Dental Outreach Project - To Special-Need Groups in Nanning & Liuzhou Guangxi, Mainland China”

- Oral examination for children with autism in Liuzhou
7. Service 100/Student KE Project “Dental Outreach Project - To Special-Need Groups in Nanning & Liuzhou Guangxi, Mainland China”

- Home visit – to understand the background, concerns and difficulties of families with special need children
Engagement and Impacts

Achieved

8. WAY Fund Project “Oral health service and education for young people in Southern District of Hong Kong”

- Dental development and general health have been monitored
- Personalized oral and general health instructions were provided
8. WAY Fund Project “Oral health service and education for young people in Southern District of Hong Kong”

- Supporting programme for new immigrant mothers
Engagement and Impacts Achieved

8. WAY Fund Project “Oral health service and education for young people in Southern District of Hong Kong”
8. WAY Fund Project “Oral health service and education for young people in Southern District of Hong Kong”
Collaborating Research Institutions

Oral Health Centre of Western Australia, University of Western Australia, Perth, Australia

Department of Paediatric Dentistry, King’s College London Dental Institute, London, UK

The Dental Age Research London Information Group, London, UK
Partner Organizations

Student KE Project “Giving an identity to undocumented children in Chennai, India”

India Lutheran Development And Relief Agency, Chennai, India

Faculty of Dental Sciences, Sri Ramachandra University, Chennai, India

Indian Dental Association, India
Service 100/Student KE Project “Aiding age estimation for orphans in Guangxi, Mainland China”

Fountainhead Association, Hong Kong

WAY Fund Project “Oral health service and Education for young people in Southern District of Hong Kong”

Integrated Children and Youth Services Centres, Social Welfare Department, The Government of The Hong Kong SAR
Partner Organizations

Service 100/Student KE Project “Dental Outreach Project - To Special-Need Groups in Nanning & Liuzhou Guangxi, Mainland China”

Rainbow missions, Hong Kong

Angel house, Nanning, Guangxi, China

Liuzhou special school, Liuzhou, Guangxi, China