Translation of Dental Therapists Scope of Clinical Practice to Adults

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Introduction

• Demand for public dental services for adults is continuing to increase.
  – The population is ageing
  – Older people are retaining their teeth longer
    • Increasing demand for dental treatment (caries & periodontal) & preventive services to maintain their dentition

• Workforce shortages have been predicted across all oral health professional groups (include dentists, dental therapists, dental hygienists and dental prosthetists).

• Publicly funded dental services rely on dentists to provide the majority of adult dental services
Dental Therapists

Current scope of practice for dental therapists (DT) enable DTs to undertake the following clinical procedures on patients younger than 25 years of age:

- Oral examination including intra-oral dental radiography
- The restoration (fillings) of coronal tooth structure
- Extraction of deciduous teeth.
- Local analgesia for dental procedures;
- Application of therapeutic solutions to teeth, excluding ‘in-surgery’ bleaching;
- Orthodontic procedures, under the supervision of a dentist,
- Preventive dental procedures including fissure sealants and removal of deposits from teeth;
Dental Therapy Project

• In 2002, the DPBV encouraged research aimed at extending the role of dental therapists and dental hygienists.

• In 2006, DHSV responded to this call from the DPBV and designed a study to test whether the DTs’ current scope of practice, with regard to direct restorative care (fillings), could be translated to patients older than 25 years.
  – This project was:
    • funded by Dental Health Services Victoria (DHSV)
    • undertaken in partnership with the Melbourne Dental School and La Trobe University
Objectives of DT project

To:

- Report on the success rate, 6 months post placement, of direct coronal restorations placed by dental therapists in adults older than 25 years of age on the prescription of a dentist.

- Assess adult patients’ satisfaction with the restorative services provided by the dental therapists

- Assess dental therapists’ satisfaction with the provision of restorative services to adult patients older than 25 years of age
Method

Staffing
- 7 dental therapists (4.0 FTE)
  - All DTs undertook a three day training program
- 3 assessing dentists
- 2 supporting dentists (with extensive experience in clinical teaching) and
- 5 reviewing dentists (with extensive experience in clinical teaching)

The **assessing dentists** prescribed the restorative work that was to be undertaken by the DTs

The **supporting dentists** confirmed the diagnosis and suitability of restoration prescribed and assessed each restoration completed by the DT before the patient departed

The **reviewing dentists** provided whole-of-mouth assessment of restorations and were blinded to origin of the restorations. This review was undertaken 6-months post placement of restorations.

The reviewing dentists *were calibrated* to ensure inter & intra operator reliability
A standardized assessment tool was developed for the study*

- **5 assessment levels:**
  1. **Meets all standards:** The restoration is of an excellent quality and is expected to adequately protect the tooth and surrounding tissue.
  2. **Acceptable:** the restoration is of acceptable quality but exhibits one or more features that can be corrected by polishing.
  3. **Satisfactory:** restoration has minor shortcomings which cannot be eliminated without damage to the tooth.
  4. **Needs to be corrected or repaired:** the restoration has defects which must be corrected or repaired.
  5. **Must be replaced immediately:** the restoration is missing or fractured and must be replaced immediately.

- **The Assessment Tool was used by:**
  - DTs, and Supporting Dentists at the time of placement of restorations by the DTs.
  - Reviewing dentist used the assessment tool at the six-month review.

*Based on criteria developed by Ryge (1970's) and reviewed more recently by Hickel et al (2007)
Results

Recruitment:

- 452 letters were sent
- 195 patients were assessed by a dentist for their suitability (response rate 43.4%)
- 115 patients were selected according to specific inclusion and exclusion criteria
- Age range: 26-82 years (mean 53.7 years) (80% were older than 40 years);
- Gender: 41.7% males (N= 48); 58.3% females (N=67)

Restorations – at time of placement

- 356 restorations placed by DTs (range of dental materials)
- Single (48%) & multi (52%) surface restorations placed
- 100% rated as ‘meeting all standards (N= 335; 94.1%)’, ‘acceptable (N= 21; 5.9%)’ or ‘satisfactory (N=0; 0%)’

Six month review:

- 69.6% (80) patients & 72.5% (258) restorations
- 96.4% (244) restorations rated as ‘meeting all standards (N= 125, 48.5%)’, ‘acceptable (N= 105; 40.7%)’ or ‘satisfactory (N= 14; 5.4%)’
- 5.4% (14) restorations rated as needing “correction, repair or replacement”

(This is within acceptable standards (Sheildon and Treasure 1999)
Results

• **Patient Feedback**
  – Of the 80 patients reviewed:
    • 72 (90%) said they would return for DT treatment
    • 70 (87.5%) said that they would recommend DT treatment to other adults

• **Supporting Dentist Feedback**
  – Patient management across all age groups was excellent
  – Direct restorative care provided by the DTs is at least of a similar standard as that expected of a newly graduated dentist.
  – DTs ability to provide safe treatment to this population group was of a high standard

• **Dental Therapist Feedback:**
  – The experience was extremely rewarding
  – They appreciated the gains they made in knowledge and technical skills
Conclusions & Outcomes

• Dental Therapists are capable of providing direct restorative care to adults older than 25 years on the prescription of a dentist.

• The results of this project influenced a change in code of practice for dental therapists in Victoria resulting in:
  – The removal of the age restriction from the practice of dentistry by dental therapists (approved January 2009).

• The code requires that dental therapists, like all registered practitioners, only practice dentistry within the scope of their formal education, training and competence.

• In September 2009, DPBV approved, as a PILOT, a 30-day bridging educational program developed by DHSV for public sector DTs with a university qualification.
  – The program includes didactic, observational, clinical practicum and clinical experience.
Objectives of the pilot bridging educational program

On completion of the educational Program, participants would be able:

- to undertake clinical procedures within the existing scope of clinical practice for dental therapists on patients 26+ years without the prescription of a dentist, and

- Provide appropriate referral to a dentist when treatment needs are beyond the scope of clinical practice of the dental therapist
Pilot Educational Program Model

The educational model used for this program included:

- self-directed learning prior to commencement of the program
- didactic and interactive workshop activities (42 hours);
- clinical observation (14 hours);
- a clinical practical component with direct supervision from a dentist experienced in clinical teaching (42 hours) at the RDHM
- a clinical experience component working in close collaboration with a dentist at a local dental clinic (105 hours).
<table>
<thead>
<tr>
<th>Hours</th>
<th>Topics</th>
</tr>
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<tbody>
<tr>
<td>Oral examination</td>
<td>3</td>
</tr>
<tr>
<td>Management of older adults</td>
<td>3</td>
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<tr>
<td>Communication skills</td>
<td>3</td>
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<td>Management of Medically compromised patients</td>
<td>3</td>
</tr>
<tr>
<td>Periodontology</td>
<td>6</td>
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<tr>
<td>Dental materials</td>
<td>3</td>
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<tr>
<td>Prosthodontics</td>
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September 2010
### Curriculum content of the didactic component of the bridging program

<table>
<thead>
<tr>
<th>Hours</th>
<th>Topics</th>
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<tbody>
<tr>
<td><strong>Oral medicine</strong></td>
<td>3</td>
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<tr>
<td><strong>Local anaesthesia</strong></td>
<td>6</td>
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<tr>
<td><strong>Dental emergencies</strong></td>
<td>3</td>
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<tr>
<td><strong>Medical emergencies</strong></td>
<td>3</td>
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<tr>
<td><strong>Case presentations</strong></td>
<td>3</td>
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</tbody>
</table>
Method

- The program was advertised across the public dental sector
- Applicants who met the selection criteria were selected into the program (self-selection)
- Process and impact evaluations were developed which were implemented at various stages of the program
- Assessment of DTs were undertaken throughout the program:
  - by the supervising dentists at the completion of the clinical practicum - RDHM
  - by the supporting dentists at the completion of the clinical experience sessions – local dental clinics
  - on the completion of the program the therapists undertook written (3 hrs) and *viva voce* (1.5 hrs) assessments (external examiners)
  - patient satisfaction was measured during the clinical practicum and clinical experience sessions.
- The program was delivered over a six month period
The Process Evaluation:
- Participants (dental therapists, supervising dentists, and supporting dentists) were asked to comment on the quality, appropriateness and value of each component of the program including, but not limited to, delivery, content, and relevance.

The Impact Evaluation:
aimed to assess the longer term effect of the program on:
- the confidence level and knowledge of the dental therapists in the management of adult patients
- The appropriateness of the clinical educational model in developing the skills of the dental therapists to provide appropriate care to adult patients within their scope of clinical practice.
- Patient satisfaction with treatment provided during clinical practicum and clinical experience sessions

- A pre-program evaluation questionnaire was sent to all participating dental therapists before commencement of the program.
- A post program evaluation questionnaire was completed by the participating dental therapists, the supervising dentists, and the supporting dentists upon completion of the program; and will be implemented again at 3 months, 6 months and at 12 months post implementation.
- Process and Impact evaluation questionnaires used a 5-point Likert scale
Results

• 10 dental therapists with university qualification were recruited into the program,
• Gender Mix: 2 Males, 8 Females
• Clinical experience ranged from 2 to 12 years, with a mean of 5.7 years clinical experience
Patient visits and clinical procedures performed during clinical practicum and clinical experience sessions (mean, SE).

<table>
<thead>
<tr>
<th></th>
<th>Patient Visits</th>
<th>Oral Examination Visits</th>
<th>Restorative Visits</th>
<th>Restorations Placed</th>
<th>Preventive Procedures</th>
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</thead>
<tbody>
<tr>
<td>Clinical Practicum (42 hours)</td>
<td>Mean</td>
<td>18.6</td>
<td>11.3</td>
<td>4.5</td>
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<tr>
<td></td>
<td>SE</td>
<td>1.2</td>
<td>0.7</td>
<td>1.0</td>
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<tr>
<td>Clinical Experience (105 hours)</td>
<td>Mean</td>
<td>80.4</td>
<td>34.3</td>
<td>27.1</td>
<td>43.2</td>
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<tr>
<td></td>
<td>SE</td>
<td>5.5</td>
<td>3.8</td>
<td>3.3</td>
<td>6.9</td>
</tr>
</tbody>
</table>
Results

- Supervising and supporting dentists rated the knowledge and clinical skills of the participants as “good” to “high” at the completion of the education program, and considered them safe to treat adults aged 26+ years.
- Dental therapists consistently referred patients appropriately when their treatment needs were outside of the DTs scope of clinical practice.
- Patients were very satisfied with the dental treatment provided during the study.
- Eight participants successfully completed the assessment component, and were permitted by the Dental Practice Board of Victoria to extend their clinical scope of practice to adult patients aged 26+ years.
- Two had to undertake supplementary assessments.
- Gaps were identified by supervising and supporting dentists in the theory content of the educational bridging program in:
  - Prosthodontics (incl. occlusion)
  - Oral Medicine and Pharmacology
  - Contemporary Cariology
  - Emergency Management of Oral Conditions
- Those therapists granted an extended scope of practice were required to undertake an additional targeted 24 hours of Continuing Professional Development to cover the identified gaps within a six month period.
Conclusion and Overall Outcomes

• This pilot educational bridging program provided this group of dental therapists with the knowledge and skills required to enable them to translate their current scope of practice to adult patients 26+ years of age.

• The 10 DTs who participated in this program were awarded an extension of scope of clinical practice to enable them to translate their current scope of clinical practice to adults.

• La Trobe University has included a module into the undergraduate curriculum of the BOHSc to enable DT graduates to translate their scope of practice to adults.

• DHSV is currently working with Melbourne and La Trobe Universities to develop bridging programs that would enable Department of Health educated and University educated dental therapists to translate their scope of clinical practice to adults.

• This project has influenced the extension of DT scope of practice Nationally.
Thank you
Clinical experience evaluation – supporting dentists (mode, mean and 95% confidence interval).
Clinical experience evaluation – supporting dentists (mode, mean and 95% confidence interval).
Patient satisfaction during clinical experience and clinical practicum sessions compared with 2002 Dental Satisfaction Survey (mean and 95% CI).
Patient satisfaction during clinical experience and clinical practicum sessions compared with 2002 Dental Satisfaction Survey (mean and 95% CI).

5=strongly agree  4=agree  3=neutral  2=disagree  1=strongly disagree