

# An assessment of a service-learning placement programme in residential aged care facilities for final year dental hygiene students

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## Abstract

**Aim:** To record student feedback on a placement programme where students offered oral health assessments and oral hygiene advice to older people living in Residential Aged Care Facilities (RACFs) on the NSW Central Coast, Australia.

**Methodology:** Final year Bachelor of Oral Health students from the University of Newcastle were asked to complete pre and post placement questionnaires relating to knowledge, willingness and ability to assess oral health needs and deliver oral health advice to RACF residents and staff.

**Results:** Sixty seven students attended the placement programme, 50 (77%) completed the pre- and post- placement questionnaires. Mean Likert scores showed that students reported knowledge to assess the oral health needs of residents with Alzheimer's significantly improved post placement ( $P < 0.0001$ ) as did their knowledge of how to produce oral hygiene educational material for RACF staff ( $P < 0.0001$ ). An improvement in ability to assess the oral health needs of residents with dementia was significant ( $P < 0.01$ ) and students reported feeling less nervous following the placement ( $P < 0.0001$ ). Student willingness to provide oral hygiene instruction, routinely work with older people in RACFs and speak confidently to RACF staff did not change as a result of the placement.

**Conclusions:** The placement programme enhanced students' reported knowledge and ability to assess oral health needs and provide oral hygiene instruction for older residents including those with Alzheimer's and dementia. However, other aspects of the programme had no positive impact and require further research.

**Key words:** *Special care dentistry, student placements, service learning, dental hygiene students, care of older person, dental education*

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## Introduction

Whilst the aim of education is to enable students to learn, teaching has to be considered as a series of activities that stimulate, facilitate and progressively guide the learning process, culminating in a graduate who has the skills to engage in self-directed reflective learning (Oliver *et al.*, 2008). Community based service learning dental education programmes have been in existence for many years; however, information on the value of this type of teaching in dental hygiene training programmes is limited (Elkind *et al.*, 2005a; Schonwetter *et al.*, 2006). Community based service learning dental education programmes provide a real life learning experience for students, whilst providing

a level of care that may otherwise not exist. The involvement of undergraduate students in the provision of preventive oral health care and education in RACF provides an opportunity to address the existing deficit in oral health care to this group of the population; in addition, it allows the student a significant experiential learning opportunity and enhances links with the community (Elkind *et al.*, 2007; Mascarenhas, 2007). The institutionalised elderly have long been identified as a risk group for dental disease and poor oral hygiene care. Residents display some of the poorest oral health in Australia; this is directly linked to the inability to access dental services and in particular,

preventive dental care. Residents within aged care facilities (RACF) face significant barriers to good oral hygiene care, including lack of available staff with the appropriate oral health knowledge and skills (Hopcroft *et al.*, 2008).

The philosophy of student placement programmes under the heading of community based service learning dental education (CBSLDE) is built on a pedagogy of experiential learning through which students apply their academic skills and knowledge, by solving real problems and addressing needs using theoretical classroom learning in a real world context. This practical experience provides an opportunity for the student to improve confidence, develop initiative and gain the ability to interact with other students, residents and staff within the RACF environment. CBSLDE is a means of achieving local relevance in teaching and learning activities so that education is intimately engaged with the community, which then becomes the learning environment (Elkind *et al.*, 2005b; Ruvimbo *et al.*, 2010). Students are asked to reflect on their experiences during a placement programme, enabling them to draw meaning from their reflection and use this experience to enhance their knowledge and skills. Experiential learning is a process by which the learner reflects on their experience and draws significance and meaning from such reflection (Strauss, 2003; Waldman *et al.*, 2005). CBSLDE placement programs are based on instructional methods that combine community service with classroom instruction, focusing on critical, reflective thinking as well as personal and civic responsibility (Furco, 1996). Dental educators have long recognised the need to prepare students for the care of the older population with its accompanying panorama of medical complications (Waldman *et al.*, 2005).

The Faculty of Health, University of Newcastle decided to implement a student placement programme as part of a strategy to provide dental hygiene students with a 'real life' learning experience, specific to the oral health needs of the older person. This paper reports on the effectiveness of the placement programme in terms of its effect on students' knowledge and ability to provide oral hygiene care for older people and whether the program increased student willingness to routinely provide oral care in the future for the older person living in RACFs.

## Materials and method

This exploratory study was approved by the University of Newcastle, NSW, Australia, Ethics Committee (Ethical approval number H2010 – 0036). All 67 final year Bachelor of Oral Health students were asked to participate in the study. Questionnaires were distributed for self completion during the aged care student placement orientation workshop. Non-respondents were followed up by email to remind them about the research project and encourage their participation.

The placement was offered in 17 different RACFs for 12

weeks, one day per week for a period of 4 hours. Students worked in pairs with some guidance from the RACFs, management and access was available throughout the placement to a faculty teaching staff member to answer their queries. A pre placement orientation programme provided them with an insight into aged care facilities and the emotional, physical and oral health needs of the older person. To assist their learning experience, students were provided with kits containing oral hygiene products and dental mirrors to assess the residents' oral health needs. Whilst on placement, students were required to demonstrate oral hygiene instruction to both residents and RACF staff. The end of placement assessment comprised the production of a presentation for staff on the importance of oral health and good oral hygiene practices for older people.

Those students who volunteered to participate in the research were asked to complete pre and post placement validated identical questionnaires (Keselyak *et al.*, 2006) which were derived from a literature review and amended to change the focus from special needs patients to older people with medical conditions common to the older age group. The questions were formulated to seek the students' opinions on the RACF student placement programme, to obtain thoughts on their ability to assess the oral health needs of older people, to provide oral hygiene education to residents in RACFs, including those with Alzheimer's disease and dementia and to gauge any effect the programme had on them. The questionnaire consisted of 18 statements covering the topics of:

- Knowledge about oral health problems of the older person
- Willingness to work with older people
- Reported ability to offer care to older people.

Students were asked to score how well they agreed or disagreed with each of the 18 statements using a five point Likert scale ranging from Strongly Agree to Strongly Disagree. Pre- and Post- mean Likert scores were produced for each question and P values were calculated using standard t-tests.

## Results

Sixty seven students attended the RACF placement programme and 50 (77%) completed both the pre- and post-placement questionnaires. Students reported knowledge was shown to increase significantly following the student placement (*Table 1*), particularly in terms of understanding how to assess the oral health needs of the older including those with Alzheimer's disease ( $P < 0.0001$ ). Students also reported a significant improvement in their understanding of how to produce presentations for RACF staff ( $P < 0.0001$ ).

The placement programme had little effect on either student willingness to work in RACFs or with older people (Table 2). Students reported enjoyment of providing oral health care to elderly residents did not change following the placement programme with a mean score of 2.6 pre-placement and 2.4 post-placement, neither could they see themselves routinely treating older patients in RACFs. Students reported a slight reduction with a mean score of 3.6 prior to the placement experience and a mean score of 3.5 post placement in the area of working with individuals who have Alzheimer's, hearing or vision impairment or memory disorders.

Student's reported ability following the placement (Table 3) showed a significant improvement in the area of assessment of the oral health needs of patients with dementia ( $P < 0.01$ ). The placement experience also had a positive effect on student apprehension with improvement in the area of provision of care to residents; the students feeling significantly less nervous following the placement ( $P < 0.0001$ ). However, students' confidence when speaking or presenting to RACF staff did not improve despite spending 12 weeks working in the RACF.

Table 1. Pre- and Post-placement mean Likert scores for knowledge related questions

Question	Pre-placement Mean (SD)	Post-placement Mean (SD)	P-value
I have experience working with people in RACF	4.1 (1.1)	1.9 (0.9)	<0.0001
I have family members that live in RACF	3.9 (1.4)	4.0 (1.2)	0.61
I understand how to assess the oral health needs of residents with Alzheimer's disease	3.6 (1.0)	2.7 (1.1)	<.0001
I understand how to assess the oral health needs of the elderly	2.7 (0.8)	2.1 (0.9)	<0.001
I understand how to produce oral health presentations for RACF staff	3.0 (0.9)	1.8 (0.8)	<0.0001
I understand the unique needs of vision and hearing impairment	2.9 (1.0)	2.6 (1.1)	0.03

1=Strongly Agree

5= Strongly Disagree

Table 2. Pre- and Post- mean Likert scores for willingness related questions

Question	Pre-placement Mean (SD)	Post-placement Mean (SD)	P-value
I would not like to work in a setting other than private practice	3.8 (1.1)	3.4 (1.2)	0.06
I enjoy providing oral hygiene care to residents in RACF	2.6 (0.6)	2.4 (1.2)	0.24
I find providing care for older persons with special needs rewarding	2.1 (0.8)	2.1 (0.7)	1.0
I would prefer not to work in RACF's	3.5 (1.0)	3.2 (1.2)	0.18
I would prefer not to work with individuals who have Alzheimer's, hearing or vision impairment or memory disorders	3.6 (0.9)	3.5 (0.9)	0.89
I enjoy working with patients different from me	2.0 (0.7)	1.8 (0.6)	0.16
I foresee myself routinely treating older patients in RACF	3.0 (0.9)	3.1 (1.1)	0.40

1=Strongly Agree

5= Strongly Disagree

Table 3. Pre- and Post- mean Likert scores for ability related questions

Question	Pre-placement Mean (SD)	Post-placement Mean (SD)	P-value
I am comfortable speaking with staff in RACF	2.2 (0.7)	2.5 (1.1)	0.12
Providing care to residents in RACF makes me nervous	3.0 (1.0)	3.8 (0.9)	<0.0001
Working with people with special health care needs is stressful	2.8 (0.9)	2.8 (1.0)	0.23
I am able to assess the oral health needs of patients with dementia	3.1 (0.7)	2.6 (1.0)	<0.01
I find presenting Oral Hygiene Instruction to RACF staff stressful	3.2 (0.7)	3.5 (1.1)	0.45

1=Strongly Agree

5= Strongly Disagree

## Discussion

The Outcomes of this study are consistent with current literature on service-learning which recognises the link between academic course work and community student placement programmes in providing students with an opportunity to gain a deeper understanding of the subject matter (Elyer and Giles, 1999; Yoder, 2006). In addition to the experience of providing oral hygiene care to residents in RACF, this programme ensured that students met a diverse range of residents with a variety of oral health needs in an environment where oral hygiene care was often poor or nonexistent. The experience has the potential to promote student thinking and influence their attitudes to the general care of elderly people. Dental education should cultivate graduates who have a broader understanding of health enabling them to become advocates for community members in need (Yoder, 2006).

In this study, the response rate from the students was good with 77% completing the pre- and post-placement questionnaires. The programme targeted final year dental hygiene students and took place over a 12 week period where students were allocated to RACFs spending four hours a week assessing oral health needs and providing oral hygiene instruction. Many students provided oral hygiene advice to residents with dementia and Alzheimer's disease. Research in this area is limited since student placement programmes for dental hygienists in RACFs are relatively new to Australia (Wallace *et al.*, 2010), so, comparison with other Australian programmes could not be undertaken. Likert scale methods were used to provide quantitative data for this research and although a validated questionnaire (Keselyak *et al.*, 2006) was used, self reporting has the potential for bias and students might be tempted to provide answers that they perceive as desirable by the researcher. The use of Likert scale questions

also limits the student response and prohibits elaboration of their experiences. To clarify student learning experiences and identify knowledge gained from the placement, completion of newly designed pre- and post-knowledge tests which focus on medical and oral health conditions specific to the older person may provide a more accurate measurement of improved student knowledge, and at the same time reduce the potential for bias of student self reporting. Students' reflective folios will also be examined to identify learning and reflective practice benefits gained from the programme. This will be part of a new strategy to improve the learning experience.

The student placement programme was successful with students reporting increased knowledge and ability in the area of assessing oral health needs of elderly residents with particular reference to those suffering from Alzheimer's disease and dementia. This improvement is particularly encouraging since these conditions present challenging management for the most experienced of dental professionals. Students also reported improvement in their knowledge of preparing oral health educational presentations for RACF staff, although disappointingly their confidence when speaking or presenting to RACF staff did not improve. Further investigation is required to ascertain the reasons why students still lacked confidence in the presence of RACF staff.

The placement had a positive effect by reducing students' apprehension and nervousness of treating the older person in RACFs; however, it was envisaged that the RACF placement experience would increase student willingness to work with the elderly in RACFs and increase their enjoyment of working with the older people, but this did not occur with little recorded change between pre- and post-placement. It was hoped that the placement experience would inspire students to want to work with these older people in RACFs after graduation; again, however this

was not the case. Clearly the programme is not working in these two areas and further research and development are required to identify the barriers prohibiting students from wanting to work in the RACF environment and to increase student learning.

In addition to a newly designed medical and oral health pre- and post-knowledge test, students will be provided with a pre-placement orientation programme that includes representation of 'real life' RACF scenarios. Students who have completed the RACF placement will be working alongside students who have not yet commenced the placement, this will provide students with an opportunity to learn from each other and potentially model their behaviour to improve the RACF learning experience.

The challenge here is to identify why students' willingness to provide care to elderly residents and routinely work in the RACF environment showed no improvement and why after a significant period of exposure, students still felt uncomfortable speaking to RACF staff. Identification of these barriers may provide an insight into future planning where improvement to the program will enable students to positively benefit from all aspects of the placement programme experience.

## Conclusions

The RACF service learning student placement programme increased student knowledge and ability in terms of assessing oral health needs of the elderly including those with Alzheimer's disease and dementia. Students reported a significant improvement in producing presentations for RACF staff and feeling less nervous about providing care to residents after the placement. The programme did not increase student willingness to work with older people in RACF in general, nor did it improve student comfort or confidence to speak and present oral hygiene information to RACF staff.

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