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Medical students' attitudes towards people with dementia: An international investigation

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Abstract

Background
The changing demographics of societies mean that medical students worldwide must be sufficiently prepared to care competently for patients with dementia, through development of appropriate knowledge, skills and attitudes. No previous research had explored undergraduates’ attitudes toward people with dementia.

Methods
An adapted version of the Approaches to Dementia Questionnaire (ADQ) was completed by 501 medical undergraduates in years 1, 3 and 5 of their degree programmes in the UK and Malaysia. Non-parametric statistical analysis focused on any differences between year groups and nationalities.

Results
The mean ADQ response indicated a generally positive attitude across the sample, comparable with other healthcare professionals previously surveyed. Year 3 and year 5 students expressed significantly more positive attitudes than year 1s. Year 1 students based in the UK expressed significantly more positive attitudes than year 1 student based in Malaysia, but there were no significant differences between year 3 students based in the 2 locations.

Conclusion
The more positive attitudes found amongst year 3 and year 5 students compared to year 1 may be a result of teaching emphasising a person-centred approach. The differences between entry-level students from Malaysia and the UK may reflect variance in cultural norms and expectations, or the ADQ's "Western"
origin. Medical schools aiming to equip students with dementia-specific skills and knowledge can draw on the generally positive attitudes found in this study.

**Key words:** dementia, training, cross-cultural

**Running title:** students' attitudes towards people with dementia
Introduction

Dementia care is among the most significant social, health and economic challenges faced by societies. There are currently around 40 million people with dementia (PWD) worldwide, with estimates project a doubling of numbers every twenty years, reaching 115 million by 2050. 58% of PWD currently live in low and middle income countries, and this number will rise to 71% by 2050 (Alzheimer's Disease International, 2011). Given the scale and urgency of the challenge, healthcare professionals internationally must be sufficiently prepared to care competently for patients with age-related illnesses such as dementia. There is widespread current concern that there are deficiencies in the knowledge, skills and attitudes of healthcare professionals caring for PWD, both in the community and in hospitals, and that education and training about dementia must be improved at the undergraduate and postgraduate level internationally (Alzheimer's Disease International, 2011; Beer et al. 2011a; Department of Health, 2009; Royal College of Psychiatrists, 2011; Smyth et al 2013).

Why measure attitudes towards people with dementia?

The relationship between attitudes and behaviour, and the relevance of this relationship to healthcare service, is complex. There is evidence that attitudes predict behaviour, including communicative behaviour, in certain circumstances. One frequently cited model of the relationship between attitudes, intentions and behaviour is the Theory of Planned Behaviour (TPB) (Ajzen, 1991). This model has been previously applied to clinical environments and there is evidence to
suggest that healthcare professionals’ attitudes do influence their clinical practice, although the relationship is complex and contextual (Limbert and Lamb, 2002; Walker et al. 2001).

There is conflicting evidence as to the nature of attitudes of healthcare professionals towards PWD in different environments internationally, and to what extent those attitudes affect the behaviour of staff or the quality of care delivered (Lintern 2001; Brodaty et al., 2003; Turner et al., 2004; Macdonald and Woods, 2005; Zimmerman et al., 2005; Kada et al., 2009; Moyle et al., 2011; Kang et al., 2011). Negative attitudes that impair appropriate communication have been identified as contributing to poor care and stigmatisation of PWD internationally (Department of Health, 2009; Alzheimer's Disease International 2012); therefore strategies to improve care must include efforts to improve attitudes.

**The importance of attitudes in medical education**

Recognition of the importance of appropriate professional attitudes towards patients in medical education is reflected by inclusion and assessment of attitudinal learning outcomes in medical school curricula (Martin et al., 2002; General Medical Council, 2009). Moreover, there is increasing interest in evaluation of medical students’ attitudes and their relationship to behaviour in general (Rogers and Coutts, 2000; Woloschuk et al., 2004; Jha et al., 2007). Although previous studies have explored medical students’ attitudes to older people (Reuben et al., 1995; Beer et al., 2011b), geriatric medicine as a specialty
(Robbins et al., 2011) and to people with mental health problems (Dixon et al., 2008), medical undergraduates’ attitudes towards PWD remain under-explored. Given the imperative to improve medical education and training about dementia, and the relationship between attitudes and behaviour, it seems apposite to investigate medical students’ attitudes towards PWD. Improving undergraduate education about dementia will require multiple strategies, central among which will be becoming better informed about attitudes. This will facilitate the design and delivery of appropriate teaching and learning that will ultimately contribute to better quality care in practice for PWD.

This study had 2 main aims. Firstly, to survey and explore the attitudes of medical students in different year groups and in different international geographical locations towards PWD and, secondly, to compare the findings with attitudes of other groups of healthcare professionals towards PWD as surveyed in previous studies.

**Methods**

**Participants**

The study involved students in years 1, 3 and 5 at a medical school with UK and Malaysian sites. The medical school’s largest facility is based in the UK, but a smaller branch medical school in Malaysia, where the same curriculum is delivered, has recently opened. Study participants were recruited from both sites. Year 1 students in Malaysia were the first entry-level cohort at the new site which opened in 2011, whereas year 3 students in Malaysia had spent their
previous 2 years based in in the UK before moving back to Malaysia in 2011 to continue their studies. Year 5 students were only recruited from the UK site as there were no students who had yet reached year 5 at the Malaysian site.

**Questionnaire**

This study used a modified version of the Approaches to Dementia Questionnaire (ADQ), an instrument previously validated for use with social care professionals (Lintern, 2001). The instrument contains 19 statements related to appropriate care of people with dementia in a care environment, for example "It is important for people with dementia to have stimulating and enjoyable activities to occupy their time" (ADQ 5), and are scored using a 5-point Likert scale ranging from "strongly agree" to "strongly disagree". Higher scores reflect more positive attitudes, and some items are reverse coded to minimise the risk of acquiescence bias. Item scores are added to produce a total score in the range of 19 to 95.

Although qualitative and quantitative measures other than the ADQ have been used to evaluate attitudes towards people with dementia (Brodaty et al., 2003; George et al., 2011; McParland et al., 2012; O’Connor and McFadden, 2010; Norbergh et al, 2006;), the ADQ has been the most frequently applied instrument in healthcare settings. Use of the ADQ has previously been largely limited to groups of healthcare professionals working in “Western” contexts (Bussin, 2010; Kada et al., 2009; Lintern; Macdonald and Woods, 2005; Moyle, 2011; Zimmerman et al., 2005) this was its first use with medical students to our knowledge.
Medical students at both the UK-based and Malaysian sites speak English, their language of instruction, to a high minimum standard, either as their first language or to at least band 7 in the International English Language Testing System or an equivalent, indicating ‘fully operational command of the language’ (IELTS, 2012). The phrasing of the ADQ statements were reviewed with Malaysian staff and minor amendments made where socioculturally-specific colloquial usage might be confusing. For example, phrasing of item 10 “Once dementia develops in a person, it is inevitable that they will go down hill” was modified to “Once dementia develops in a person, it is inevitable that they will deteriorate”. Students were also asked for demographic data including year of study and gender.

**Procedure**

Students at all sites were counselled that participation was voluntary and anonymous. UK-based year 1 students were approached at the end of a lecture for the whole year-group and invited to complete a paper-based questionnaire. UK-based year 3 and year 5 students were widely dispersed at hospitals across the region and thus cohorts of students undertaking mandatory psychiatry rotations were approached during tutorials and similarly invited to complete the same paper-based questionnaire. The questionnaire was converted to an electronically administered instrument and all year 1 and 3 students based in Malaysia were contacted by email to invite them to complete the questionnaire online. Appropriate ethical approval of the project as whole was given by the
relevant Medical Board of Studies and by the ethics committee of the University's School of Education.

**Statistical analysis**

Data derived from the ADQ was entered into IBM SPSS 19, analysed for normality using Kolmogorov-Smirnov. Group comparisons were made using non-parametric tests including Kruskall-Wallis and Mann Whitney U.

**Results**

**Group demographics**

A total of 501 questionnaires were collected from the UK and Malaysian sites. 256 were collected from year 1 students representing 91% of the year-group at the two sites. 114 were completed by year 3 students representing 36% of the year-group at the two sites. 131 were completed by year 5 students representing 44% of the year group. For practical reasons associated with collecting data from geographically spaced cohorts of students on clinical rotations, samples sizes of year 3 and year 5 students were smaller, but these samples were still representative of the cohort as a whole in terms of demographics. 54% of the respondents were female. For a summary of responses see Table 1.

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1 This percentage appears disproportionately small because in year 3, approximately 80 medical students from a separate medical school merge with the existing year group to expand the total from approximately 220 to 300 students.
<table>
<thead>
<tr>
<th>Group</th>
<th>UK</th>
<th>Malaysia</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 (responses/group size)</td>
<td>208/225</td>
<td>48/57</td>
<td>256/282</td>
</tr>
<tr>
<td></td>
<td>% group</td>
<td>92%</td>
<td>84%</td>
</tr>
<tr>
<td>Year 3 (responses/group size)</td>
<td>102/300</td>
<td>12/20</td>
<td>114/320</td>
</tr>
<tr>
<td></td>
<td>% group</td>
<td>34%1</td>
<td>60%</td>
</tr>
<tr>
<td>Year 5 (responses/group size)</td>
<td>131/300</td>
<td>n/a</td>
<td>131/300</td>
</tr>
<tr>
<td></td>
<td>% group</td>
<td>44%</td>
<td>n/a</td>
</tr>
<tr>
<td>Total</td>
<td>441</td>
<td>60</td>
<td>501</td>
</tr>
</tbody>
</table>

**Table 1.** Summary of responses by year group and location

**Missing data, normality and descriptive**

Not all respondents answered every item – 40 questionnaires had at least one missing ADQ data item. For analysis of total ADQ scores and group comparisons only the data from fully completed questionnaires were included.

Kolmogorov-Smirnov indicated that the data distribution tended to normal, but that year 1 data fell outside of the assumption of normality. Non-parametric tests were therefore used for group comparisons.

The median ADQ score for all participants was 73 (range 52-88).

**Relationship between year group and ADQ score**

Comparison of total ADQ score between whole year groups using Kruskall-Wallis test suggested a significant difference in scores (p 0.00). Year 5 students scored
more highly than year 3 students who scored more highly than year 1 students (Table 2), thus attitudes were shown to be more positive in more senior year groups. A post-hoc pairwise test using Mann-Whitney U with Bonferroni correction (p value considered as significant reduced from 0.05 to 0.016) showed that the difference in ADQ score between year 1 and year 3 students was significant (p 0.00) but the difference in scores between years 3 and 5 did not reach significance (p 0.055). In other words, year 3 students expressed significantly more positive attitudes than year 1 students, but year 5 students did not express significantly more positive attitudes than year 3 students.

<table>
<thead>
<tr>
<th>Group</th>
<th>Year 1</th>
<th>Year 3</th>
<th>Year 5</th>
<th>p 0.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean rank</td>
<td>191.93</td>
<td>253.50</td>
<td>284.56</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Table 2. Kruskall-Wallis comparison of ADQ scores by year group

Relationship between international location and ADQ score

Comparison of ADQ scores between students based in different locations using the Mann-Whitney U test showed a significant difference (p 0.00) - students based in the UK scored more highly, demonstrating more positive attitudes, than students based in Malaysia. However, when the groups were sub-divided and analysed separately by year group, a significant difference was found only between year 1 students. Whilst year 1 students based in the UK expressed more positive attitudes than students based in Malaysia, in year 3 this difference not
significant (Table 3). There were no year 5 students in Malaysia so a comparison for this year group could not be made.

<table>
<thead>
<tr>
<th></th>
<th>UK-based</th>
<th>Malaysia-based</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All year groups (mean rank)</td>
<td>180.51</td>
<td>112.48</td>
<td>0.00</td>
</tr>
<tr>
<td>Year 1 (mean rank)</td>
<td>125.59</td>
<td>76.38</td>
<td>0.00</td>
</tr>
<tr>
<td>Year 3 (mean rank)</td>
<td>55.00</td>
<td>41.75</td>
<td>0.16</td>
</tr>
</tbody>
</table>

**Table 3** – Mann-Whitney-U comparison of ADQ scores by geographical location and year group

*Comparison with healthcare professionals from other studies using the ADQ ADQ table*

A review of the literature yielded 7 other studies measuring healthcare professionals’ attitudes toward PWD using the ADQ (Table 4 - TBC). Although all of the studies used the same tool, scores were reported in different ways. None of the studies reported whether data collected was normally distributed but chose to use mean or median to report average total ADQ score. 2 papers reported mean score per ADQ item allowing an estimate of total ADQ to be made.

<table>
<thead>
<tr>
<th>Author</th>
<th>Sample</th>
<th>Median</th>
<th>Mean</th>
<th>Mean per item</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bussin (2010)</td>
<td>24 year 1 doctors, UK</td>
<td>74</td>
<td>n/a</td>
<td>n/a</td>
<td>60-92</td>
</tr>
<tr>
<td>Kada (2009)</td>
<td>291 staff from 15 care facilities, Norway</td>
<td>n/a</td>
<td>70.3</td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>
Table 4. Summary of studies using the ADQ to measure healthcare professionals’ attitudes towards people with dementia

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample Description</th>
<th>N/A</th>
<th>Median ADQ Score</th>
<th>Minimum Maximum ADQ Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kang (2010)</td>
<td>99 nurses in hospital, Korea</td>
<td>n/a</td>
<td>71?</td>
<td>3.76</td>
</tr>
<tr>
<td>Lintern (x)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MacDonald (2005)</td>
<td>158 nurses in care homes, UK</td>
<td>n/a</td>
<td>75.86</td>
<td>49-90</td>
</tr>
<tr>
<td>Moyle (2011)</td>
<td></td>
<td>n/a</td>
<td>77?</td>
<td>4.06</td>
</tr>
<tr>
<td>Zimmerman (2005)</td>
<td></td>
<td>n/a</td>
<td>70.7</td>
<td>49-88</td>
</tr>
</tbody>
</table>

Discussion

This study demonstrated that this group of medical students’ attitudes towards PWD are generally positive – the median score of 73 is comparable with previously surveyed groups of health and social care professionals where scores have ranged from 70-77. Given the likely relationship between professional attitudes and behaviour in practice it is encouraging that medical student attitudes toward PWD tend to the positive. Moreover, it appears that student attitudes become significantly more positive between entry as year 1 students and progression to year 3. It remains unclear why this is the case, but it may be that teaching and learning during this time does engender a person-centred approach that corresponds to more positive attitudes toward individuals with conditions such as dementia. Other explanations include increasing maturity of
students or a growing awareness of the type of response expected as a professional.

The trend was for scores to improve between year 3 and year 5 although this did not reach significance. Given international concerns about negative attitudes of qualified healthcare professionals, this begs the question as to why attitudes might erode in the time between undergraduate training and clinical practice. Alternatively, if attitudes of junior doctors are indeed positive (as per the small study by Bussin, 2010), there may be a discrepancy between the translation of attitudes to behaviour in clinical practice. The Theory of Planned Behaviour proposes a number of influencing factors in the translation of attitudes to behaviour including intentions and perceived social norms (Ajzen, 1991). In the light of our findings here, it would be worthwhile to extend the quantitative evaluation of attitudes to year groups in later stages of training, and across national and international locations. Furthermore, qualitative research could usefully explore the basis of attitudes towards dementia amongst medical students, and the relationship between attitudes, intention and clinical behaviours such as communication.

Our finding that entry-level Malaysian students have a significantly more negative (if still largely positive) attitude to dementia is likely to be of interest to medical educators and to policy makers. Little previous work had explored attitudes to dementia from an international/intercultural perspective, with most biomedical and psychosocial research being conducted in and for the ‘West’ -
largely North America, Western Europe and Australasia (Prince, 2010). Nevertheless, some work in China, India and Japan has suggested high levels of societal stigmatisation and attitudinal negativity towards mental health conditions such as dementia (Kua, 2010). In low and middle income counties, and among ethnic minorities in the west, elderly PWD exhibiting confusion and behavioural difficulties may be more likely to be a perceived as a burden, promoting a negative view of dementia (La Fontaine et al., 2007). A survey of dementia in Malaysia suggested that the greatest challenges in dealing with dementia there are awareness, stigma and a lack of resources (Nikmat et al., 2011). In the west, on the other hand, where resources are more readily available relative to low and middle-income countries, it has been suggested that social stigma has reduced in recent years (Young and Manthorpe, 2009). It should also be acknowledged that the ADQ was designed for the Western social care environment. Efforts to validate the scale for our sample included changes to reduce ambiguity of socioculturally-specific colloquial phrasing, but the difference in ADQ scores between nationalities may be a result of applying a scale that recognises positive attitudes as corresponding to ‘Western’, person-centred beliefs about appropriate approaches, attitudes and care. Future research could usefully address in more detail the issue of the intercultural applicability of Western person-centred dementia care models to non-Western contexts.

The study has a number of limitations. It is possible that social desirability in answering the ADQ may have been a source of bias, but this was mitigated by
anonymity. The practical difficulties of collecting data from year 3 and year 5 students – here, widely dispersed - meant that sample sizes were smaller than for year 1 students. The fact that students in years 3 and 5 were undertaking a psychiatry rotation may have produced a recency effect, although it should be noted that all year 3 medical students in both the UK and Malaysia complete this rotation.

Our findings have implications for medical education and training. Recent concerns about dementia care have highlighted a deficiency in knowledge, skills and attitudes of healthcare professionals. However, this study amongst others cited, suggest that health and social staff attitudes toward PWD are largely positive. A deficiency in attitudes may not be the primary cause of poor quality care for PWD in the health and social care environment, but rather the influence if other factors on the translation of positive attitudes to effective behaviour such as person-centred communication. Although psycho-social aspects of medical education about dementia should clearly aim to nurture existing positive attitudes that predispose to helpful behaviour (as per George et al., 2013), positive attitudes alone are unlikely to automatically result in successful person-centred care for PWD. Teaching about dementia must also aim to equip students with the knowledge and skills to sensitively interact with PWD in the clinical environment. In international settings, teaching may need to be adapted to respect the prevailing care models in that particular cultural environment.

Improving medical education about dementia is a complex task. However,
finding positive attitudes towards PWD amongst students internationally should encourage teachers that the task is possible.

**Conflict of interest**

Ellen Tullo is supported by the National Institute for Health Research (NIHR) Newcastle Biomedical Research Centre based at Newcastle upon Tyne Hospitals NHS Foundation Trust and Newcastle University. The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health.

**Description of authors’ roles**

Ellen Tullo and Tony Young designed the study, collected and analysed the data, and wrote the paper.

**Acknowledgements**

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