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The British Journal of Occupational Therapy

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More than 30 years ago, the Canadian government provided support to health disciplines to develop quality assurance guidelines. Fortunately for occupational therapy, the Canadian Association of Occupational Therapists formed a collaborative task force that went beyond this mandate. Adapting an earlier model by Reed and Sanderson (1980), they developed the Canadian Model of Occupational Performance (CMOP), a lasting conceptual model for our profession. First published as practice guidelines in 1983, there have been several subsequent editions of this conceptual basis of practice (Townsend and Polatajko 2007).

The CMOP (Fig. 1) focuses on the interactions between the person, the environment, and occupation that result in occupational performance. When first published, unique characteristics of the CMOP included:

- Occupation as the core domain of occupational therapy
- Spirituality as the central core of a person
- The experiential nature of occupation
- Client-centred practice as a foundational principle of practice
- Environment (cultural, institutional, physical, social) as an important determinant of occupational performance
- Enablement as a core competency of occupational therapists

Beginning with the 1997 edition, Enabling occupation, an occupational therapy practice process model has also been included.

The development of CMOP supported a professional shift back to our core roots and focus on occupation. CMOP can be applied to a very broad range of occupational therapy practice across the lifespan and has been used as part of the development of educational programs internationally. It provides a relatively jargon-free language to support international debate of theoretical ideas and underpin research.

Review of CMOP-related literature has revealed that its impact goes well beyond Canadian occupational therapy, with recognition of its value by occupational therapy clinicians and academics in many other countries. Over 20,000 copies of Enabling occupation I or II have been sold, and translated into five languages. One of many examples of impact on practice is a 4-year action research project by Boniface et al. (2008), which involved all their occupational therapy staff (n = 270) in the application of CMOP across an integrated health and social care service in the United Kingdom. They reported that the implementation of CMOP enhanced their understanding of day-to-day practice; identified the client-centred and occupational nature of their practice; enhanced reflection on practice; supported the explicit identification of occupational therapists’ clinical reasoning in case notes; and positively influenced their organization’s understanding of occupational therapy.

Congratulations to the Canadian Association of Occupational Therapists, and to all those occupational therapists involved in the development of this model over the past 30 years! Its continuing relevance will be evident in the 2014 special issue of this journal on ‘Occupational performance measures for health and wellbeing: Research and practice’.


Progression routes and attainment in occupational therapy education: the impact of background characteristics

Jo Watson

Key words:
Educational achievement, gender, socioeconomic background.

Introduction: United Kingdom government agendas promoting widening participation in higher education and diversification of the health and social care workforce have contributed to changing student profiles in pre-registration occupational therapy education. Sixty-seven percent of the 2005 intake was mature, and students increasingly enter with a range of ‘non-traditional’ academic backgrounds. A small body of evidence suggests that final degree marks are indistinguishable for occupational therapy students holding traditional and non-traditional entry qualifications, but none of these studies considered students unable to complete or the potential influence of socioeconomic background or gender.

Method: The progression routes and academic achievements of 239 consenting occupational therapy students from a single programme were analysed using inferential statistics and binary logistic regressions to explore the influence of entry qualifications, age at entry, gender, and socioeconomic background.

Findings: None of these characteristics had a statistically significant impact on graduates’ final degree marks. The regressions, however, highlighted male gender and less privileged socioeconomic backgrounds as significant predictors of poorer outcomes regarding passing at Level 4, 5, and 6, and achievement of a ‘good’ (upper second or first class) honours degree.

Conclusion: The findings raise important questions about how a profession that promotes social justice supports diversity amongst its own ranks.

Introduction

Occupational Therapy pre-registration education in the United Kingdom (UK) is situated within a complex environment that spans higher education (HE) and professional practice. Responses to various government agendas, including what has been a commitment to widening participation in HE and the desire to diversify the demographics of the health and social care workforce (Department of Health [DH] 2000, Fryer 2006, Taylor 2007), have contributed to a changing occupational therapy student population.

Having traditionally recruited predominately 18-year-old female school leavers, figures from the College of Occupational Therapists (COT) indicate that in recent years the average proportion of new entrants commencing as mature students (aged 21 years or older) has exceeded 60% (COT 2003, 2007, 2010). Many have prior experience of working in the health and social care sector (COT 2003, Craik 2006) and, anecdotally, it appears many enter with ‘non-traditional’ academic backgrounds (an umbrella term encompassing a variety of entry qualifications outside traditional A-levels achieved by school leavers). The professional body does not collect data regarding the socioeconomic backgrounds of students but, like the HE sector itself (Archer and Leathwood 2003, Ball et al 2002, Hatt et al 2003), the profession is perceived to be dominated by the ‘white middle class’. Available data highlights an average nationwide attrition rate of 12% (COT 2003, 2007, 2010), a percentage which speaks
nothing of the potentially significant costs to the individuals involved or the financial implications for the public purse that funds pre-registration occupational therapy education.

There is a small body of evidence in the occupational therapy literature suggesting that occupational therapy students from non-traditional backgrounds are as academically successful as traditional school leavers at graduation (Howard and Jerosch-Herold 2000, Howard and Watson 1998, Shanahan 2004). However, each of these studies considered only those students who completed their programmes; no attempt was made to account for those who withdrew or were refused the opportunity to continue (for example, due to academic failure). The inclusion of students who were unable to complete may have generated very different findings. This is particularly the case given that other research suggests that occupational therapy students from non-traditional backgrounds are more likely than school-leavers to consider leaving the course (Wheeler 2001), that courses are perceived to be geared towards school-leavers and provide students from non-traditional backgrounds with inadequate systems of support (Graham and Babola 1998) and that these students feel at times that they have succeeded in spite of, rather than with the support of, their programme (Ryan 2001). It is also noteworthy that previous research has not considered the potential impact of gender or socioeconomic background on attainment.

Method

The aim of this study was to explore the influence of background characteristics and entry qualifications on occupational therapy students’ progression routes and academic attainment. A survey of the academic achievements of 239 consenting students enrolling in one of the UK’s research intensive universities was undertaken, with full ethical approval (see research ethics statement). Data was drawn from four consecutive cohorts enrolling on the full-time BSc (Hons) Occupational Therapy undergraduate programme between 2003 and 2006 and included age at entry, gender, entry qualifications, ethnicity, socioeconomic background, exit awards (including sub-honours awards), and final degree classifications. Codified data were analysed descriptively before proceeding to inferential and binary regression analysis, as will be described in the following sections, in conjunction with the study’s findings.

Profiling the sample

A total of 239 (87%) of 276 students registering between 2003 and 2006 consented to their data being included in the study; this high percentage enhances the representativeness of the findings within the context of the programme concerned. Reflecting the typical gender ratios of the profession and undergraduate populations (COT 2003, 2010), women comprised 89% of the sample and at least 80% of each year’s cohort (see Table 1). With a programme entry threshold of 18 years (COT 2006), age at entry data were inevitably skewed. Mean age of entry advanced progressively from approximately 23 to 26 years across the successive cohorts, but the proportion of mature students remained below the nationwide figures calculated by the professional body, which, during the period 2004–2008, were 55–67% (COT 2010).

Other data from the professional body (COT 2007) reported that across England the proportion of new students from black and minority ethnic groups stood at 7% in 2004, rising to 12% in 2005. Although 2.1% of the research sample (representing six of the 239 participants) refused information regarding their ethnic background when they enrolled, nearly 95% self-classified as White British or Irish, reflecting the limited ethnic diversity of the programme. With non-white British/Irish ethnic groups in this research incorporating data from black and minority ethnic groups as well as those of European and Australasian descent, the ethnic diversity of the programme was well below the cited nationwide figures (COT 2007). It is likely that the geographical location of the university and regional patterns of diversity had some bearing on the recruitment of students from ethnically diverse backgrounds to the programme. Potentially compounding this situation is evidence that some students from minority ethnic groups actively seek to enrol in institutions with demonstrable ethnic diversity (Reay et al 2001), suggesting that limited existing diversity may discourage future expansion.

Socioeconomic backgrounds

The study utilized data regarding social background gathered by the university’s central administration at the time of students’ enrolment and based on the National Statistics Socio-economic Classification (NS-SEC) categories. The analysis is, therefore, limited by the fact that younger students were categorized according to their parent’s occupations, while mature students self-categorized according to their current or former occupations. Although there was a small upward trend across cohorts in the percentage who were ‘not classified’ as a result of refusing information at enrolment, Table 2 indicates that the sample is generally weighted towards the middle classes. The proportions of the different socioeconomic backgrounds varied across each of the cohorts, but there is a degree of consistency in that those from higher managerial, professional, intermediate and semi-routine occupations dominate all four cohorts and the sample as a whole. The relatively high proportion of those from semi-routine occupations (16.3%) may be associated with the number of students who move from employment as unqualified healthcare support workers to studying for professional qualifications, but there is no evidence within the data to support this hypothesis.

Non-traditional academic backgrounds

A key driver of this research was the perception of a growing number of students entering occupational therapy programmes with non-traditional academic backgrounds or entry qualifications. For the purposes of this analysis, ‘traditional’ entry qualifications were deemed to be A-levels achieved by school leavers under the age of 21 years, while the range of ‘non-traditional’ entry qualifications was broad and incorporated A-levels achieved by mature students. Table 3 provides...
Progression routes and attainment in occupational therapy education: the impact of background characteristics

British Journal of Occupational Therapy

Table 1. Gender, age, and ethnicity characteristics of the sample

<table>
<thead>
<tr>
<th>Year of entry</th>
<th>Female</th>
<th>Range: age at entry (years)</th>
<th>Mean age at entry (years)</th>
<th>Mature at entry</th>
<th>Non-white British/Irish ethnic groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>80.35% (n = 45/56)</td>
<td>18–44 (SD = 7)</td>
<td>22.98</td>
<td>42.86% (n = 24/56)</td>
<td>1.79% (n = 1/56)</td>
</tr>
<tr>
<td>2004</td>
<td>92.75% (n = 64/69)</td>
<td>18–42 (SD = 7)</td>
<td>23.90</td>
<td>49.28% (n = 34/69)</td>
<td>2.90% (n = 2/69)</td>
</tr>
<tr>
<td>2005</td>
<td>88.33% (n = 53/60)</td>
<td>18–44 (SD = 8)</td>
<td>24.92</td>
<td>51.67% (n = 31/60)</td>
<td>1.67% (n = 1/60)</td>
</tr>
<tr>
<td>2006</td>
<td>94.44% (n = 51/54)</td>
<td>18–51 (SD = 11)</td>
<td>25.93</td>
<td>46.30% (n = 25/54)</td>
<td>5.56% (n = 3/54)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>89.12% (n = 213/239)</td>
<td>18–51 (SD = 8.241)</td>
<td>24.40</td>
<td>47.70% (n = 114/239)</td>
<td>2.9% (n = 7/239)</td>
</tr>
</tbody>
</table>

Table 2. Socioeconomic backgrounds of students across cohorts

<table>
<thead>
<tr>
<th>Socioeconomic background</th>
<th>Year of entry</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not classified</td>
<td></td>
<td>8</td>
<td>11</td>
<td>10</td>
<td>11</td>
<td>40</td>
</tr>
<tr>
<td>Higher groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher managerial and professional occupations</td>
<td></td>
<td>6</td>
<td>13</td>
<td>10</td>
<td>4</td>
<td>33</td>
</tr>
<tr>
<td>Professional occupations</td>
<td></td>
<td>16</td>
<td>17</td>
<td>16</td>
<td>19</td>
<td>68</td>
</tr>
<tr>
<td>Middle groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate occupations</td>
<td></td>
<td>9</td>
<td>14</td>
<td>9</td>
<td>6</td>
<td>38</td>
</tr>
<tr>
<td>Small employers and own account workers</td>
<td></td>
<td>3</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Lower groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower supervisory and technical occupations</td>
<td></td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Semi-routine occupations</td>
<td></td>
<td>8</td>
<td>14</td>
<td>9</td>
<td>8</td>
<td>39</td>
</tr>
<tr>
<td>Routine occupations</td>
<td></td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>56</td>
<td>69</td>
<td>60</td>
<td>54</td>
<td>239</td>
</tr>
</tbody>
</table>

Table 3. Entry qualifications across cohorts

<table>
<thead>
<tr>
<th>Entry qualifications</th>
<th>2003 (n = 56)</th>
<th>2004 (n = 69)</th>
<th>2005 (n = 60)</th>
<th>2006 (n = 54)</th>
<th>Total (n = 239)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-levels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;21 years at entry</td>
<td>29 (51.79%)</td>
<td>29 (42.03%)</td>
<td>20 (33.33%)</td>
<td>26 (48.15%)</td>
<td>104 (43.51%)</td>
</tr>
<tr>
<td>A-levels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mature at entry</td>
<td>3 (5.36%)</td>
<td>12 (17.39%)</td>
<td>7 (11.67%)</td>
<td>7 (12.92%)</td>
<td>29 (12.13%)</td>
</tr>
<tr>
<td>Access qualification</td>
<td>15 (26.79%)</td>
<td>17 (24.64%)</td>
<td>20 (33.33%)</td>
<td>14 (25.93%)</td>
<td>66 (27.62%)</td>
</tr>
<tr>
<td>Higher National Diploma</td>
<td>0 (0.00%)</td>
<td>0 (0.00%)</td>
<td>0 (0.00%)</td>
<td>0 (0.00%)</td>
<td>0 (0.00%)</td>
</tr>
<tr>
<td>General National Vocational Qualification</td>
<td>1 (1.79%)</td>
<td>0 (0.00%)</td>
<td>0 (0.00%)</td>
<td>0 (0.00%)</td>
<td>1 (0.42%)</td>
</tr>
<tr>
<td>Advanced Vocational Certificate of Education</td>
<td>2 (3.57%)</td>
<td>11 (15.92%)</td>
<td>8 (13.33%)</td>
<td>3 (5.56%)</td>
<td>24 (10.04%)</td>
</tr>
<tr>
<td>BTCE qualification</td>
<td>2 (3.57%)</td>
<td>0 (0.00%)</td>
<td>2 (3.33%)</td>
<td>1 (1.85%)</td>
<td>5 (2.09%)</td>
</tr>
<tr>
<td>Foundation degree</td>
<td>0 (0.00%)</td>
<td>1 (1.45%)</td>
<td>0 (0.00%)</td>
<td>0 (0.00%)</td>
<td>1 (0.42%)</td>
</tr>
<tr>
<td>OU Science Foundation</td>
<td>3 (5.36%)</td>
<td>2 (2.90%)</td>
<td>3 (5.00%)</td>
<td>0 (0.00%)</td>
<td>8 (3.35%)</td>
</tr>
<tr>
<td>International Baccalaureate</td>
<td>0 (0.00%)</td>
<td>0 (0.00%)</td>
<td>1 (1.67%)</td>
<td>1 (1.85%)</td>
<td>2 (0.84%)</td>
</tr>
<tr>
<td>Other</td>
<td>3 (5.36%)</td>
<td>5 (7.25%)</td>
<td>5 (8.33%)</td>
<td>5 (9.26%)</td>
<td>18 (7.53%)</td>
</tr>
</tbody>
</table>

Notes:
1. Within the ‘other’ category were: one AVCE recorded alongside A-levels, one Irish Leaving Certificate, four certificates in HE (equivalent to accruing 120 credits at NVQ Level 4), 10 undergraduate degrees (at a minimum lower second class), one MPhils and one Associate degree in Rehabilitation Therapy Technology (similar to a Foundation degree).
2. Some cases recorded more than one entry qualification. 2003 entry: one mature student recorded Access and A-level qualifications and one younger student recorded A-level and AVCE qualifications; 2004 entry: 10 younger students recorded A-level and AVCE qualifications; 2005 entry: Six younger students recorded A-level and AVCE qualifications; and 2006 entry: Two younger students recorded A-level and AVCE qualifications, while another recorded A-level and ‘Other’ qualifications.
a summary of the range of entry qualifications across the four cohorts, highlighting the finding that those qualifications most frequently recorded were A-levels achieved by school leavers and mature students, Access qualifications, and Advanced Vocational Certificates in Education.

With very small frequencies in some categories, and to establish more clearly the overall patterns of traditional and non-traditional entry qualifications, the data were collapsed into the dichotomous categorical variables ‘traditional’ and ‘non-traditional’ academic backgrounds according to predefined principles. Ten cases recording entry qualifications of at least a BA or BSc degree were excluded from this variable and further analysis, as previous successful engagement with HE was likely to influence progression and achievement in subsequent undergraduate awards, rendering it inappropriate to classify them as either traditional or non-traditional.

Mirroring the proportion of mature students within the sample, the percentage of students entering with non-traditional academic backgrounds rose steadily between 2003 and 2005, before declining again in 2006. Fig. 1 demonstrates the relationship between maturity at entry and the nature of individual academic backgrounds, highlighting that younger students enter largely, although not exclusively, with A-level qualifications.

![Fig. 1. Entry qualifications according to maturity at entry.](image)

**Table 4. Progression routes of students from traditional and non-traditional academic backgrounds**

<table>
<thead>
<tr>
<th>Entry qualifications</th>
<th>Traditional (n = 107)</th>
<th>Non-traditional (n = 118)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passed Level 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Min award: Cert Allied Health.................97 (90.65%)........109 (93.71%).....</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>10 (9.35%)</td>
</tr>
<tr>
<td>Passed Level 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Min award: Dip Allied Health..................95 (88.79%)........109 (93.71%).....</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>11 (10.36%)</td>
</tr>
<tr>
<td>Passed Level 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Min award: BSc (Hons) 3rd class............94 (87.85%)........109 (93.71%).....</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>13 (12.15%)</td>
</tr>
<tr>
<td>Good degree (2:1 or 1st)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Min award: BSc (Hons) 2.1....................83 (77.57%)........109 (93.71%).....</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>24 (22.43%)</td>
</tr>
</tbody>
</table>
|                      |                       | Four students from the 2006 cohort had yet to complete Level 6, and were not included in these figures.

Table 4 and Fig. 2 indicate that, just as previous research has found (for example, Cook 2003, Yorke 2000), the majority of students making early departures from the programme did so in their first year. While the ‘unsuccessful’ category at each point of progression includes departures that were voluntarily (for example, due to wrong career choice or personal circumstances) and involuntarily (due to academic failure), it is clear that when compared to those from traditional academic backgrounds, students from non-traditional academic backgrounds tended to have less successful outcomes, with greater proportions leaving without an academic award (having been unsuccessful at Level 4), with sub-honours awards and without achieving a ‘good’ (upper second or first class) honours degree.

Students from traditional and non-traditional backgrounds are not, however, homogenous in terms of characteristics such as maturity at entry, gender, socioeconomic background or ethnicity. A series of stepwise binary logistic regressions therefore examined the impact of these variables on progression routes and exit awards and ranked the relative importance of the statistically significant predictors identified. To meaningfully compare mean final degree marks and to avoid violating assumptions associated with expected frequencies in logistic regressions (Field 2009, p274), it was necessary to collapse some independent variables. Individual age at entry and socioeconomic background were each collapsed into three ordinal categories, in addition to collapsing the full range of entry qualifications into dichotomous variables. Data on...
Progression routes and attainment in occupational therapy education: the impact of background characteristics

All cases were examined for outliers using studentized residuals (which provide an estimate of the error variance of a particular case), and no cases were identified as exerting undue influence on or biasing the models. Further diagnostic procedures confirmed that the assumptions underpinning the regressions (that is, linearity, independence of errors and multicollinearity) had been met in all of the models.

### Findings

Table 5 highlights the variables identified as significant predictors of outcome in each of the regression models representing points of progression and achievement through the programme: passing Level 4, Level 5, and Level 6, and finally the award of a ‘good’ honours degree. Predictors not reaching statistical significance (including maturity at entry and backgrounds from the middle socioeconomic groups) are not included. A further point to note is that the nature of academic background was not influential at any stage. There was, however, a consistent pattern of male gender and backgrounds from amongst the lower socioeconomic groups acting as significant predictors of poorer outcomes at each level of analysis. Each was important over and above the effect of the other at each level of the analysis. That is, each had a significant influence even when the effect of the other was held constant. Male gender was the stronger predictor of a poor outcome at Level 4, while a background from the lower socioeconomic groups was the stronger predictor of poor outcomes in all other models.

As previously noted, and as might be expected for the discipline, there are highly imbalanced gender ratios in the data. However, to summarize the (rounded) findings represented in Table 5 that focus on the influence of gender:

1. The odds of a male student failing to pass Level 4 are nearly six times higher than for a female.
2. The odds of a male student failing to pass Level 5 are more than five times higher than for a female.
3. The odds of a male student failing to pass Level 6 are over five and a half times higher than for a female.
4. The odds of a male student failing to secure a ‘good’ degree are over three and a half times higher than for a female.
5. The odds of a student from the lower socioeconomic groups failing to pass Level 4 are approaching five times higher than for a student from a higher socioeconomic group.
6. The odds of a student from the lower socioeconomic groups failing to pass Level 5 are more than five times higher than for a student from a higher socioeconomic group.
7. The odds of a student from the lower socioeconomic groups failing to pass Level 6 are over five and a half times higher than for a student from a higher socioeconomic group.
8. The odds of a student from the lower socioeconomic groups failing to secure a ‘good’ honours degree are more than three times higher than for a student from a higher socioeconomic group.

The wide confidence intervals in Table 5 may reflect the small numbers in various sub-categories of the sample; although the findings are consistent across all four models, the lower confidence intervals, in particular, require that the

The wide confidence intervals in Table 5 may reflect the small numbers in various sub-categories of the sample; although the findings are consistent across all four models, the lower confidence intervals, in particular, require that the
analysis be interpreted with some caution. Representing the range of values between which there is 95% probability that the true odds ratios lie, it is possible, for example, that the odds of a male student failing to pass Level 4 are closer to two than to six times higher than for a female student. This would still represent a statistically significant finding and be worthy of consideration, but would undoubtedly dilute the impact of the findings. Conversely, the odds ratios could potentially be quite a bit higher, which would strengthen the findings.

Final degree marks
Narrowing the focus of analysis to only those students who successfully completed the programme (as has been the case in previous occupational therapy research), the average final degree mark (upon which classifications are based) achieved by students from traditional academic backgrounds (M = 63.37, SE = .45) was almost indistinguishable from that achieved by students from non-traditional academic backgrounds (M = 63.14, SE = .47), and the difference between the two groups was not statistically significant (t(182) = .39, p = .72). These findings are consistent with earlier studies utilizing this form of analysis (Howard and Jerosch-Herold 2000, Howard and Watson 1998) and having excluded students holding previous degrees, can account for the significant findings of Shanahan (2004).

Although the odds of male students failing to pass at each level of the programme were significantly higher than for female students, the achievements of those male students who went on to graduate were comparable with those of their female counterparts. On average, the final degree mark achieved by women (M = 63.44, SE .32) was only marginally higher than that achieved by men (M = 62.49, SE = 1.26) and, again, the difference was not statistically significant (t(193) = .83, p = .41). Neither socioeconomic background (H(2) = 1.98, p = .37), nor maturity at entry (H(2) = 1.40, p = .50), had a significant impact on final degree mark.

Discussion
The findings of this research emerge from the analysis of the progression routes and academic attainment of four cohorts of students registered on a single programme in a single UK higher education institution. Entry qualifications, age at entry, gender and socioeconomic background had no statistically significant impact on the final degree marks of those who graduated from the programme. Entry qualifications and age at entry were also shown to have no statistically significant impact on the identified outcomes of passing at NQF Level 4, 5 and 6, and the achievement of a ‘good’ honours degree, but male gender (the stronger predictor at Level 4) and a background from amongst the lower socioeconomic groups (the stronger predictor at all other outcomes) were significant predictors of poorer outcomes at all levels of this analysis of progression and achievement.

The sample size in this research was constrained by the number of students registered in each cohort, but for the purpose of comparison, to detect a small to medium effect size in a
random sample with 80% power and 5% statistical significance, a minimum of 153 cases would be required. The 225 cases underpinning the regression analyses, therefore, provide ample statistical power to detect the small to medium effect size identified in each of the statistically significant models. Explaining approximately 10% of the variability, the findings highlight that (as we might hope) there is more to academic progression and achievement in HE than individual background characteristics. While it is acknowledged that the programme and institution-specific focus of this research will render generalizations to broader student groups difficult, the findings raise important questions that are relevant beyond the study sample.

Conclusion

The need to diversify the occupational therapy profession is well-recognized (Lawson-Porter 2004, Taylor 2007), and this necessarily begins with diversifying the student population and providing mechanisms that support and sustain that diversity to successful graduation, and to entry into the profession. However, the concerns we have as a profession cannot be isolated from the concerns about inclusivity faced by the UK higher education sector as a whole.

Prior to the Second World War, men comprehensively dominated the HE student population; since then, the proportion of women participating has risen steadily and has now taken the lead (Reay et al 2005). Recent research has suggested that while men are now less likely to participate in HE, where they do, they are no more likely to discontinue their studies after the first year than women (Vignoles and Powdthavee 2010). With the findings of this research clearly standing in some contrast, there is a need for occupational therapy educators to reflect upon and examine the extent to which the female-dominated profession and educational environment is accessible to, and accommodating of, men. Although this research did not afford the opportunity to consider why male students were less successful than their female counterparts at each of the identified progression points, it has recently been suggested that the culture and practices of all educational institutions have influenced the participation and achievement of men in HE, and that the landscape of HE itself is currently less amenable to the learning strategies generally preferred by men (Higher Education Academy 2011). With the academic and practice learning environments of pre-registration occupational therapy education so heavily female dominated, this latter issue might well be all the more acute for the men who enter it.

Despite a significant increase in the proportion of students securing the necessary qualifications to enter and the number actually participating in HE, under-representation of those from less privileged social backgrounds remains an enduring problem (Reay et al 2005). Participation has increased to a much greater extent than it has widened (Gilchrist et al 2003) and the established traditions and practices of HE generally remain oriented towards its traditional white middle class student population (Read et al 2003). The UK Government has identified that ‘the most disadvantaged young people are seven times less likely than the most advantaged to attend the most selective institutions’ (Department for Business Innovation and Skills [BIS] 2011, p6). The findings of this research reinforce the need to evaluate the effectiveness of social inclusion policies in HE generally, and pre-registration occupational therapy education specifically, not solely in terms of recruitment or even retention, but also in terms of outcome.

Little has been written about the specific impact of social background on the learning experiences of occupational therapy students although it has been alluded to in, for example, discussion about mature students’ experiences (Ryan 2001). Beagan (2007) invokes vivid images of the experiences of occupational therapy students from less privileged backgrounds who invested a great deal of time and energy in trying to mask their social origins and ‘pass’ as middle class, both before and during their occupational therapy education. Reflecting many of the tensions Beagan highlighted, other aspects of this research have drawn upon Bourdieu’s theory of practice (Bourdieu and Wacquant 1992) to consider how the established, taken-for-granted practices of the social field of occupational therapy education privilege the perspectives, values, norms, and ways of being of the most dominant group in that field — the middle classes. It makes a modest start in trying to identify the ‘capital’ or resources that can facilitate ‘success’ in this environment (Watson et al 2009, Watson 2012), and, therefore, offers some insight for educators to contemplate when considering their own programme design and delivery.

Had the individual cohort sizes within the research sample presented here been larger, it would have been possible to split the data and cross-validate each model against each individual cohort to confirm the consistency of the models and, therefore, validate the findings for generalization (Field 2009 p221). Indeed, future larger-scale, multi-site studies may overcome the limitations of this work. Nevertheless, previous research considering student attainment on pre-registration occupational therapy programmes (Howard and Jerosch-Herold 2000, Howard and Watson 1998, Shanahan 2004) has not considered socioeconomic background or gender, and has not considered students who failed to graduate from their programmes of study; so these findings represent a valuable contribution to the current body of knowledge.

The philosophy underpinning professional occupational therapy practice is one that is open, inclusive, enabling, and empowering, and much professional energy is focused on endeavouring to dismantle social, structural, and environmental barriers to active participation in life (Curtin et al 2010, Duncan 2011). These professional foundations are as relevant to pre-registration occupational therapy education as they are to practice, especially when it seems that students from non-traditional backgrounds are potentially encountering social and cultural barriers to success within HE. As a profession that identifies social justice as a core value (Beagan 2007), there would be an uncomfortable paradox in valuing diversity in the populations we serve in practice while inadequately acknowledging or addressing the challenges to facilitating diversity amongst our own ranks.
Acknowledgements
My grateful thanks are extended to the students who consented to their information contributing to this study, my doctoral supervisors, Dr Alan Bothwick, Professor Melanie Nind and Professor Debra Humphris, for their guidance, support and encouragement, and to Dr Peter Nicholls for his advice regarding the development of the database and analysis of the data.

Key messages
Both male gender and coming from a less-privileged social background are significant predictors of poorer progression and achievement outcomes in pre-registration occupational therapy education.

What the study has added
With students from non-traditional backgrounds potentially encountering social and cultural barriers within occupational therapy education, the findings of this research raise important questions about how we promote diversity within the profession.

Conflict of interest: None declared.
Funding: None received.

Research ethics: Ethics approval was obtained from the formal ethics committee of the School in which the research was conducted (SO6/01-01), 27th January 2006. This research also received research governance sponsorship from the University hosting the research (RSO 4394).

References
Introduction: The United Kingdom Occupational Therapy Research Foundation provides profession-specific funding for research, but what is its impact? An exploratory study was undertaken to gather intelligence on the impact of completed projects.

Method: Eleven grant holders were invited to complete a research impact assessment form based on the multidimensional Becker Medical Library Model. Four domains of impact were included: research outputs and advancement of knowledge, clinical implementation, community and public benefit, and economic benefit.

Results: Eight impact assessment forms were returned (73%); these reflected grants awarded across the four funding streams, although there were no returns from grant holders receiving over £50,000. Clearly evident was that most researchers were seeking publication in a range of journals, and disseminating findings at conferences. Other notable impacts included the extent to which participants were using findings in educational activities; the apparent importance of the collaborative partnerships in terms of the clinical application of findings post project; the active engagement of practitioners and service users; and the opportunities arising for follow-on funding or projects.

Conclusion: Capturing research impact is complex, but vital. The project provided a strong argument to adopt a prospective approach to impact reporting throughout, and beyond, the life of a grant.
ing what research is delivering is a crucial element in making the case for investment (European Science Foundation 2011, p3).

The UKOTRF contracting process requires grant holders to produce two specific outputs in addition to a final project report: a submission to the British Journal of Occupational Therapy (BJOT), and an abstract submission to a COT annual conference. These type of research ‘outputs’ are, however, only one dimension of the potential impact or outcomes of the research process. The overarching aim of this study was, therefore, to explore the wider scope of the research impact of UKOTRF-funded studies.

**Literature review**

A search was conducted to identify and facilitate a review of the contextual literature (articles and grey literature reports) in relation to the assessment of research impact. Five databases were searched for the period 2000–2013 (CINAHL, AMED, PsychInfo, HMIC, Social Policy and Practice), with subsequent harvesting of further references from articles retrieved. A total of 37 items were reviewed.

**Research impact models**

The Health Economics Research Group, based at Brunel University, has taken a leading role in the United Kingdom (UK) in measuring the impact of health and medical research. Their Payback Framework (Buxton and Hanney 1996) is based on a logic model consisting of seven stages and two interfaces between the research system and the wider political, professional, and economic environment. The framework has been applied in a number of UK-based studies (Buxton et al 2000, Centre for Policy in Nursing Research et al 2001, Hanney et al 2004, Hanney et al 2007, Peckham et al 2008, Soper and Hanney 2007, Wooding 2006) and internationally (Canadian Academy of Health Sciences 2009, Kalucy et al 2009, Nason et al 2008).

A more recent framework, the Becker Medical Library Model for Assessment of Research Impact, developed at the Washington University School of Medicine Becker Medical Library (Sarli et al 2010), includes a focus on the research process and specific indicators for assessment of research impact; it is supported by a freely available impact indicators tool (Sarli and Holmes 2012).

The areas of impact included in both the Payback Framework (Donovan and Hanney 2011), and the Sarli and Holmes (2012) model essentially mirror those defined by the REF, with only slight variations in terminology and detail in the dimensions addressed.

A literature review of ten models and approaches to research impact was reported by Banzi et al (2011). The Payback Framework emerged as that most frequently used to date, but the review suggested that factors such as the multifaceted nature of the evaluation and a lack of standard terminology, together with the heterogeneity of the empirical experiences, make it difficult to identify a preferred model.

**Common themes from research impact assessment studies**

A key feature that emerges from the literature is that whilst there are multiple ways to conduct an impact assessment, measurement of research impact must be multidimensional. Traditional measures of research outputs, typified by publications, give only a narrow perspective. Impact pathways are complicated, and publication outputs do not necessarily equate with outcomes or impact in the wider context of areas such as policy, decision-making, or health gain.

An impact assessment is not, however, without methodological challenges (European Science Foundation 2012). The retrospective and self-evaluative nature of most impact assessment studies has been highlighted in the literature, together with the inherent potential for recall bias (Banzi et al 2011, Patel et al 2011, Peckham et al 2008). The time period between project completion and demonstration of impact can also vary considerably, being influenced by how quickly the different impact indicators can be evidenced. Robust attribution of impact to a particular project, for example in influencing changes in policy or interventions, can be extremely difficult to confirm.

A case study approach to determining impact was adopted in the majority of the studies reviewed. Although generating detailed information, the methodology requires a relatively high level of resources and, how those cases are selected, can bring in to question selection-bias (Ovseiko et al 2012, Peckham et al 2008). The option of questionnaires to obtain a broad perspective has been suggested as a potential way forward (Buxton et al 2000, Kalucy et al 2009).

The need for ongoing recording and reporting of impact has become a priority for major research funders with the implementation of online reporting of research outcomes both throughout the period of a grant award and, typically, for 2 or more years beyond project completion (Association of Medical Research Charities [AMRC] 2013).

**Aims**

There has been an annual round of UKOTRF funding since the grants were first awarded in 2008; members of the British Association of Occupational Therapists are eligible to apply. This study aimed to explore the wider scope of the impact of UKOTRF-funded research focusing on quantifying the achievement of UKOTRF aims, and additionally addressing the following objectives:

- Quantify the nature of any return on research investment.
- Discover how research findings are being used.
- Identify whether research findings are resulting in meaningful health and wellbeing outcomes (clinical application).
- Discover any community and public benefit (wider wellbeing of the community enhanced) as a result of research findings.
- Provide evidence that could be instrumental in securing future funding for UKOTRF.
Determine whether an impact assessment form could provide a convenient approach to report information about the impact of UKOTRF projects. The objectives were acknowledged as being exigent given that 'measuring research impact is a challenging endeavour because of its multidimensional, unpredictable, non-linear and contingent nature' (Beacham et al 2006, p1).

### Method

The project research sponsor was the College of Occupational Therapists and, as such, was subject to COT's research governance procedures (RG14/2012). Approval was granted by a Project Ethics Review Panel that involved occupational therapists experienced in research and external to the College. Additionally, two researchers were invited to provide an independent review of the collated findings and their interpretation, to mitigate any potential for bias in reporting.

### Sample and recruitment

Eleven UKOTRF projects had been completed as of 31 January 2013; these constituted the sampling frame. The individual grant recipients were contacted by the impact assessment project lead, via email, with a letter of invitation to participate from the Chair of the UKOTRF Advisory Group. Those who wished to participate were requested to return their completed personalized impact assessment form within a 4-week period; a reminder was sent to all the grant recipients 3 weeks after the initial mailing. Participant information explained that responses would be collated anonymously. Consent was implied by the return of the completed form. The impact assessment project was considered exploratory, rather than an accountability mechanism, and grant holders (who had all completed their projects) were under no obligation to take part.

### Data collection

The Becker Medical Library Model (Sarli and Holmes 2012) was selected as appropriate to gather intelligence for the UKOTRF impact assessment. This decision was supported by the fact that the model:

- Provides a multidimensional approach and a range of indicators.
- Offers applicability and relevance to smaller scale and exploratory studies.
- Gives specific recognition of clinical implementation indicators.
- Makes reference to ‘community benefit’ of research, important in its compatibility with public benefit as it relates to the College of Occupational Therapists’ charitable purposes (COT 2011, p9).

### Table 1. Impact assessment form fields

<table>
<thead>
<tr>
<th>Project profile</th>
<th>Research outputs / advancement of knowledge</th>
<th>Clinical implementation</th>
<th>Community or public benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grant reference</td>
<td>Peer reviewed journal articles (submitted/published)</td>
<td>Assessment tools generated or validated by the research in use</td>
<td>Service user engagement activities in project</td>
</tr>
<tr>
<td>Grant funding stream</td>
<td>Grey literature/reports</td>
<td>Outcome measures generated or validated by the research in use</td>
<td>Strategic promotion of research project outcomes</td>
</tr>
<tr>
<td>Specialist field</td>
<td>Conference papers, workshops, seminars, posters</td>
<td>Cited in a practice guideline/evidence resource</td>
<td>Presentations to public/community</td>
</tr>
<tr>
<td>Key words relating to project</td>
<td>Books/book chapters</td>
<td>Thesis loan from library</td>
<td>Non-professional conference presentations</td>
</tr>
<tr>
<td>Funding bracket</td>
<td>Collaborative partnerships</td>
<td>Final report loan from library</td>
<td>Website dissemination</td>
</tr>
<tr>
<td>Institution country</td>
<td>Occupational therapy practitioner or student involvement</td>
<td>Training materials developed</td>
<td>Social media discussion</td>
</tr>
<tr>
<td>Duration of project</td>
<td>Employer support/contributions</td>
<td>Lectures to practitioners/students</td>
<td></td>
</tr>
<tr>
<td>Project completion date</td>
<td>Promotion of researcher profile and UKOTRF funding</td>
<td>Enquiries/requests for information from other occupational therapists</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PhD completion/progress</td>
<td>Enquiries/requests for information from other professionals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Career progression</td>
<td>Clinicians in field report change in practice based on findings of research study</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Citations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow-on research projects/funding</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Economic benefit** — a single field was provided for this indicator. Form was based on The Becker Model: Indicators for impact (Sarli and Holmes 2012).
Table 2. Grant funding streams

<table>
<thead>
<tr>
<th>Funding stream</th>
<th>Number of grants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career development grant (up to £10,000)</td>
<td>3</td>
</tr>
<tr>
<td>Research priority grant (up to £80,000)</td>
<td>1</td>
</tr>
<tr>
<td>Commissioned research grant (unspecified)</td>
<td>3</td>
</tr>
<tr>
<td>Externally sponsored career development grant (up to £5,000)</td>
<td>1</td>
</tr>
</tbody>
</table>

A further factor in this choice was that no single preferred model could be identified from the literature. The Becker Model and its associated resources although relatively unreported, were, however, easily accessible.

The Becker Model: Indicators for Impact tool (Sarli and Holmes 2012) was used as a framework to construct a form with a list of indicator items, grouped under five headings, that were considered directly relevant to UKOTRF projects (see Table 1). This omitted some areas from the original tool, such as those related to pharmaceutical or laboratory research. Free text space was provided against each field for completion of details and examples, as applicable, by the participant.

Information on the project profile, or from dissemination outputs previously provided by grant recipients to COT, was pre-populated into individualized copies of the forms.

Analysis of data

Responses provided by participants were collated into each of the four main impact indicator areas: research outputs and advancement of knowledge; clinical implementation; community and public benefit; and economic benefit. Each indicator dimension was then reviewed to identify and collate the nature and range of activities from the details reported.

The individuality of the grant schemes, project topics, and time period since completion of each project meant that statistical analysis was not applicable; the presentation of the results is, therefore, descriptive and summative.

Results

Eight impact assessment forms were returned from a sample of 11 (73%), and these reflected grants awarded across the four funding streams offered during the funding rounds from 2008–11 (Table 2). There were, however, no completed impact assessment forms returned from grant holders receiving over £50,000.

The eight projects provided examples from all four UK countries, and reflected occupation-focused research within mental health, neurological practice, social care, equipment/adaptations, and substance misuse. Project duration and time since sign off of the project final report by COT was most frequently 12 months or less.

Research outputs and advancement of knowledge

The research outputs and advancement of knowledge indicators for impact were those most frequently reported by the participants (Table 3).

UKOTRF grant holders are required as part of their contract to submit an article to BJOT. At the time of the study, one submission had been published, six participants had made submissions, and one submission was outstanding. Three participants had articles published in other peer-reviewed journals and one participant reported on co-authorship of a

Table 3. ‘Research outputs/advancement of knowledge’ impact indicator activities by grant funding allocation

<table>
<thead>
<tr>
<th>Impact indicator activities</th>
<th>Grant of £10,000 or under</th>
<th>Grant of £20,000–£50,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>BJOT published .................................................................................................................</td>
<td>1 (2)</td>
<td>1</td>
</tr>
<tr>
<td>BJOT submissions (contractual) ...........................................................................................</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Other peer reviewed articles published ...............................................................................</td>
<td>4 (5)</td>
<td>3</td>
</tr>
<tr>
<td>Other peer reviewed articles submitted/in preparation ....................................................</td>
<td>2 (4)</td>
<td>3 (4)</td>
</tr>
<tr>
<td>UKOTRF Final Project Report ..............................................................................................</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Books/book chapters ..........................................................................................................</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>COT Annual Conference submission (contractual) ..................................................................</td>
<td>4 (8)</td>
<td>4 (5)</td>
</tr>
<tr>
<td>Other conferences presentations ..........................................................................................</td>
<td>4 (14)</td>
<td>3 (12)</td>
</tr>
<tr>
<td>Collaborative partnerships .................................................................................................</td>
<td>3</td>
<td>3 (5)</td>
</tr>
<tr>
<td>Employer support/contributions ...........................................................................................</td>
<td>3 (4)</td>
<td>4 (5)</td>
</tr>
<tr>
<td>Occupational therapy practitioner involvement within project ........................................</td>
<td>1</td>
<td>4 (5)</td>
</tr>
<tr>
<td>Occupational therapy Master’s level or PhD student involvement ......................................</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Thesis donated to library/pending .......................................................................................</td>
<td>1/3</td>
<td>N/A</td>
</tr>
<tr>
<td>Promotion of researcher profile ........................................................................................</td>
<td>2 (4)</td>
<td>3 (4)</td>
</tr>
<tr>
<td>Career progression activities ............................................................................................</td>
<td>4 (5)</td>
<td>2 (4)</td>
</tr>
<tr>
<td>Follow-on research projects/funding ...................................................................................</td>
<td>2 (3)</td>
<td>2 (4)</td>
</tr>
</tbody>
</table>

*Represents the number of participants who reported an activity in the impact category.

**Represents the total number of occasions an activity was mentioned in an indicator category; that is, some participants reported more than one activity per indicator.
Cochrane review related to the research topic. Five participants also reported that a submission had been made, or was specifically planned, to one or more journals, covering a range for which the majority had an impact factor.

Grant holders are also required to submit an abstract for a COT Annual Conference. At the time of the study, seven participants had made a submission, the eighth having presented in a UKOTRF session at conference. Three participants had, in total, two or more abstracts related to their project accepted. Seven of the eight participants reported on successful abstract submissions to one or more other conferences, including a small number (7) of diverse European or international events.

Collaborative research partnerships were identified by a number of the participants and could be classified as either clinical organizations (n = 4), universities (n = 2), or charitable partners with specific reference to service user engagement (n = 2). Support from employers, host institutions, or a partner organization was highlighted by six participants. In two projects, specific additional funding had been obtained from other sources.

Four participants, all receiving funding above £20,000, identified core involvement of occupational therapy practitioners in their projects. Their contributions included leadership roles within the clinical organization participating in the project, steering group membership, and delivering clinical activities. In one grant there was a specific role for a specialist practitioner as a co-author of the report and the BJOT and COT Annual Conference outputs. A PhD student was involved in the research process and activities for one commissioned project.

Four participants had received grants in relation to their personal career development. At the time of the impact assessment, two had received their awards (PhD and MPhil) and two were completing their theses. A copy of their thesis was identified as being scheduled for provision to the COT Library by all four participants.

Promotion of the researcher’s profile and UKOTRF funding was highlighted by some participants via presentations on the research, and use of their University networks to promote outcomes (newsletters, websites, or blogs).

Career progression was also referred to by six of the participants. Progression was manifest in activities such as appointment to a journal editorial board, supervision of master’s level students, post promotion or increment, appointment as associate member of staff at a host university, and also in seeking opportunities for further UKOTRF funding, research specific posts, or awards such as a Doctoral Research Fellowship or a Senior Research Fellow position.

Four participants reported that further research was specifically in progress or planned, with the UKOTRF-funded project being identified in one response as providing ‘a catalyst for new grants and works streams’. Joint working with other universities (overseas) on related or follow-on projects was highlighted by one of these four participants, with developments with a National Health Service (NHS) department and commercial organizations identified by a second.

Clinical implementation
Clinical implementation indicators of impact were less frequently reported across all projects. Three participants reported on how their project’s specific screening or assessment measures, mapping, or design tools had been demonstrated as valid or useful in clinical applications. They were also able to report on how, post project, the outcomes of the research were being applied within local practice.

Lectures to undergraduate and postgraduate programme students were identified as an output by 75% of the participants, with one participant lecturing to universities within the UK and Europe in addition to their host university. Two participants highlighted future exploration into developing training materials, while another highlighted presentations given to occupational therapy and non-occupational therapy staff in partner organizations.

Five participants reported receiving enquiries, covering requests such as providing workshops, further information, or advice, with one participant having been invited to contribute to committee meetings in an American initiative related to their area of research and practice.

Community and public benefit
The impact indicators for community and public benefit were less frequently populated; two participants did not provide any comments within this dimension.

Engagement of service users, or a service user representative group, was identified by five of the participants; charitable organizations were involved in two projects and a condition-specific consumer group was an active partner in another project steering group. Service user representation within steering groups was specifically referenced for three projects.

A strategic or policy perspective of impact was referred to by four participants. In one case the local partner trusts were examining how the research findings could be translated into the commissioning and service development context. Another participant indicated how their research report had been used to inform discussions at a national policy event. Two participants made particular reference to national and regional dissemination forums in relation to their specific topic areas.

The public availability of findings from the research to those service users and carers involved in projects, together with the wider community, was identified as being promoted via dissemination events, websites and, in two cases, social media.

Economic benefit
The area of economic benefit impact was referred to by two participants, both of whom had received funding of below £10,000. One participant indicated that an economic paper was being submitted to BJOT; the second identified how the clinical application of their research findings could reduce risks and costs to services.

Case examples
To demonstrate the potential for impact by an individual project, a case example from two core funding streams is
detailed in Tables 4 and 5. These demonstrate both productivity and a wide range of impact activities, as reported by two of the participants.

### Discussion and implications

The impact assessment findings for the eight participating projects clearly demonstrated evidence of both a breadth and depth of impact activities. The discussion considers the results in the context of the potential benefits of the impact assessment, as identified in the objectives of the project, and concludes by considering the future potential for UKOTRF impact activity.

### Quantifying the achievement of UKOTRF aims

The impact assessment findings provide quantifiable evidence of achievement of the following three aims of UKOTRF: meeting research priorities of the profession, developing occupational therapy research leaders, and building research capacity.

The research areas identified within the participants’ project profiles were varied, reflecting the fact that UKOTRF calls for proposals are open, with no pre-determined occupation-focused topic. A core requirement is for the applicant to identify how their proposal will address the profession’s research priorities. One must, therefore, assume, *a priori*, that meeting the priorities is duly considered via the grant application process.

UKOTRF research priority grants or commissioned projects, (circa £20,000–£50,000), are targeted at individuals with some research experience and an existing track record, aiming to contribute to their continuing development as occupational therapy research leaders. Publications and presentations are undoubtedly an important element of developing that profile, well demonstrated by all four participants in this funding banding. A link between impact activities and research leadership is not automatically explicit from the findings. However, the following activities are implicit in contributing to the development of participants as research leaders for the profession: the principal investigator role; increase in personal profile via research dissemination; involvement of occupational therapy practitioners in projects; and seeking opportunities for further career building through other funding or positions.

The activities of those non-respondents receiving grants over £50,000 could have been particularly useful in this respect. Greater intelligence on the emergence of occupational therapy research leaders could potentially be captured by engaging grant holders in constructing profession-specific research career pathway case studies.

Smaller UKOTRF grants (up to £10,000) aim to provide financial support for occupational therapists in doctoral studies and early postdoctoral activity, which are particularly important in building capacity for the profession to undertake research. The achievement of this aim was exemplified

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### Table 4. UKOTRF impact indicators (doctoral level grant up to £10,000)

<table>
<thead>
<tr>
<th>Research outputs and advancement of knowledge</th>
<th>Clinical implementation</th>
<th>Economic benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>UKOTRF Final report</td>
<td>Advice to colleagues on practice area</td>
<td></td>
</tr>
<tr>
<td>BJOT submission</td>
<td>Clinical application in locality</td>
<td></td>
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<tr>
<td>Journal publications (1)</td>
<td>Adaptation planning and design tools</td>
<td></td>
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<tr>
<td>Other journal submissions (3)</td>
<td>Student teaching</td>
<td></td>
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<tr>
<td>COT Conference abstracts (2)</td>
<td>Seminars</td>
<td></td>
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<tr>
<td>Conferences other (3)</td>
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<td></td>
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<tr>
<td>PhD thesis and award</td>
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<tr>
<td>Collaborative partnerships — academic and commercial</td>
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<tr>
<td>Associate of a university School</td>
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<tr>
<td>Follow-on project with NHS</td>
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<td>Application for post-doctoral grant</td>
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### Table 5. UKOTRF impact indicators (major research activity £20,000–£50,000)

<table>
<thead>
<tr>
<th>Research outputs and advancement of knowledge</th>
<th>Clinical implementation</th>
<th>Community benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>UKOTRF Final report</td>
<td>Master’s level teaching</td>
<td></td>
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<tr>
<td>BJOT submission</td>
<td>Undergraduate teaching</td>
<td></td>
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<tr>
<td>COT Conference abstracts (1)</td>
<td>Development of workshop materials</td>
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<tr>
<td>Conferences, symposium (6)</td>
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<tr>
<td>Specialist practitioner co-author</td>
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<tr>
<td>Practitioner engagement</td>
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<td>Educational Research Association (paper, USA)</td>
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<tr>
<td>Collaborative follow on projects (USA)</td>
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<tr>
<td>Applied Research Fellowship (South Africa pilot)</td>
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<tr>
<td>Future international grant proposal</td>
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<tr>
<td>Consider senior researcher fellowship</td>
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<tr>
<td></td>
<td>Expert service users on steering group</td>
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<td></td>
<td>Workshops with NHS partners</td>
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<tr>
<td></td>
<td>Website dissemination</td>
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<td></td>
<td>Social media and blog</td>
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<tr>
<td></td>
<td>Strategic planning and influencing commissioners and service development</td>
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<td></td>
<td>Presentations to service users and carers</td>
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by the four participants in receipt of such grants. For the two participants who had already completed their awards, funding for future research activities had been obtained or was being actively sought, indicating, as did a range of other activities reported, that their studies and research projects were not isolated activity but, rather, part of an early researcher career pathway.

Research capacity can also be considered in the context of the ‘research experience’ that practitioners can gain from involvement in a UKOTRF project. This aspect of partnership, working with health trusts or local authorities, and the involvement of practitioners in the research, was evident in the impact assessment reports returned by participants receiving grants of £20,000–£50,000. Such involvement is significant, in providing opportunities for practitioners within the workplace to benefit from the support and expertise of the researcher, and provides an indicator of the value of collaborations between academics, researchers, and practice settings.

Quantifying return on research investment

Quantifying the return on research investment could be viewed from a variety of perspectives: the direct financial benefit to UKOTRF or the researcher/their institution; meeting the aims of the UKOTRF funding stream; fulfilment of grant contractual obligations; achievement of individual project objectives; or research outputs such as publications.

Financial benefit to UKOTRF is probably unlikely to be a direct result of the research investment. A financial benefit to the researcher or their institution is possible, in that the research may attract follow-on funding for other projects. This was intimated, although not quantified, by three respondents. Where that follow-on research is occupational therapy specific, this could be viewed as a proxy quantifiable return for the profession.

Meeting the aims of UKOTRF funding streams and the fulfilment of grant contractual obligations, as discussed earlier, was demonstrated by the impact assessment findings. The achievement of individual project objectives was not explored; it is a contractual expectation, however, that projects report on their outcomes in relation to the objectives and deliverables within the original research proposal.

Research outputs could be viewed as providing the most tangible quantification of return. Publications have been the traditional measure of research impact, and, indeed, the quality of research outputs continues to be significant, 65% of the weighting in the REF being given to this dimension (HEFCE et al. ca. 2012). The number of actual UKOTRF-funded project publications at the time of the study was nominal, but this highlighted the interim period that can occur between a project’s completion and an article being written, submitted, peer reviewed, and potentially reaching publication. Since 2012, the importance of early publication has been reinforced, in that UKOTRF contracts make submission to the British Journal of Occupational Therapy a condition of the final grant instalment.

Conference presentation outputs were also evident from the findings, and are an important and timely means of disseminating findings. While conference outputs are not necessarily publicly accessible, acceptance of papers and workshops (and particularly at non-occupational therapy specific events) can increase awareness of the profession, making such activity an important return on the investment, even if not directly measurable.

The final project reports and executive summaries from UKOTRF projects are also of central importance, both in terms of contractual deliverables and as a means of early dissemination of findings (they are available via the COT Library and the UKOTRF web pages, respectively).

Discovering how research findings are being used

The use of findings from the research projects emerged in two key areas of activity: clinical and education related.

Clinically related activities were reported on, specifically, in three of the projects, with reference to particular tools, clinical advice, or models that were the subject of the research having been used in practice. Important to note, was the extent to which respondents highlighted this being in the context of the participating services or host organizations. This concurs with findings on the importance of partnerships in ensuring that outputs of research benefit those funding, delivering, or using services, as identified by Parker and van Teijlingen in their study of the REF (2012).

The use of the research in terms of educational activities was well reported by participants, most being involved in delivering education to undergraduates or postgraduate students. Development of training materials, referred to by two participants, could also come under the umbrella of education. In the context of informing future practice, educational activities are a very important use of research findings and, whilst not noted in the literature reviewed, could be considered as being as significant as publications, in terms of their potential import for clinical activities.

Identifying whether research findings are resulting in meaningful health and wellbeing outcomes

A question exists: what difference are the projects making to occupational therapy practice and, as a result, to the health and wellbeing of service users?

Final reports from individual projects discuss issues such as the potential benefits or implications for service users identified from the research, and any recommendations for practice or commissioners. Determining how those recommendations have been specifically taken forward by the wider occupational therapy community has not been within the scope of this project. Reporting on any changes in practice, based on the research findings, was potentially difficult for the participants unless there were specific affiliations with practitioners; there was, however, indicative reference to ongoing activities with clinical partners in three of the impact assessment reports.

Any attempts to attribute changes in practice or health and wellbeing to the evidence from a single project (particularly if
exploratory or a feasibility study) are likely to be tentative. Evidence generated by UKOTRF-funded research needs to be considered in the context of the available body of evidence within the speciality concerned.

Discovering any community and public benefit as a result of research findings
COT aims to contribute to the ‘public good’ in line with its duties under the Charities Act 2006 (Great Britain. Parliament 2006). Research, and, hence, UKOTRF, has an important function in contributing to the delivery of public benefit by COT, in the shape of both evidence-informed services and public awareness of occupational therapy (COT 2011). Engagement with service users and representative groups in the research process is also a key way of empowering service users, and increasing the relevance of research to the public; this was highlighted explicitly in five of the impact assessment returns.

Providing evidence that can be instrumental in securing future funding for UKOTRF
This impact assessment has provided evidence of the volume and variety of impacts that have been returned from UKOTRF investment to date. Valuable impact activities and other perspectives that might have been provided by non-respondents may be absent; however, the detail provided by the eight participants has provided an excellent overview of the scope of impact of UKOTRF funding, and offers a more comprehensive understanding of the impacts that can be attained.

In the context of research investment, a pertinent question is whether there is a ‘better value’ differential between the impacts and return reported for the different grant award amounts. Answering this is difficult, given the small number of projects and the high number of project variables, but the findings indicate the nature and volume of impacts being analogous across the various levels of funding provided. Additional impact information gathered over time could provide a perspective on whether career development or research priority grants are ‘better value’ at this stage of the profession’s research capacity development.

The future of impact activity for UKOTRF
The background literature highlighted the move towards recording of impact activities throughout the life of a grant-funded project (AMRC 2013), and potentially for a period up to 2 years post-project completion. On the basis of the added value that more detailed reporting of impact activities can provide, as demonstrated by the impact assessment project, a similar approach might be invaluable with respect to UKOTRF projects. While mindful of the need for reporting activities to be proportional to the level of funding and ‘not significantly adding to the administrative burden on researchers’ (European Science Foundation 2011, p18), the need to record impacts is, indisputably, part of the strategic agenda associated with funding.

Impact reporting could be part of the ongoing UKOTRF grant monitoring process. Longitudinal case study analysis could also provide additional insights, and validation of impact activities, as well as opportunities to explore the contribution of individual projects to the wider evidence base that informs practice. Tracking career pathways for grant holders could also provide useful information concerning the contribution of UKOTRF to the development of occupational therapy research leaders.

Limitations
A collective overview of impact activities was feasible, but it was not practicable, or appropriate, to undertake any comparative analysis. This was a reflection of the variables involved in the projects: for example, different time periods since completion, topic areas, methodology, objectives, and funding objectives.

Although the participants were representative of the sample with regard to UKOTRF funding streams, they did not reflect impact activities from projects with funding of £50,000 or more, due to non-response from those in this category; in consequence, some potential data may have been lost. However, the diversity of the information obtained from the impact assessments that were returned demonstrated that level of funding was not necessarily indicative of, or associated with, the nature or type of impacts achieved. With respect to the pre-existing information on publication outputs used to populate the impact assessment forms prior to recruitment, the three non-participants’ activities were similar to the participants.

In terms of the reliability of responses received, the assessment was based on self-reporting from the participants and was, in the main, from a retrospective perspective. There is the potential, therefore, for some recall bias, together with possible selection bias by participants for activities that they may not have perceived as being relevant to include.

It should be acknowledged that the information collected represented that available at a particular point in time, and that a number of projects had only been completed recently. Information on impact gleaned solely from the perspective of the grant holder cannot be comprehensive. Similarly, while dissemination activities and partnerships provide some indication of communication of the outcomes of the research with the occupational therapy community, they cannot be interpreted as a robust measure of how the research has been applied.

Conclusion
Capturing research outputs and impacts is complex, but vital. The impact assessment form based on the Becker Medical Library Model proved to be a useful framework for gathering intelligence on the impact of UKOTRF projects, in particular proving its ability to reflect both breadth and depth of activities.

The findings supported the literature reviewed in that the most frequently reported, and potentially measurable, impact indicator was in the area of research outputs and advancement of knowledge. Clearly evident was that most researchers
were seeking publication in a range of journals, in addition to the contractual requirement to submit an article to BJOT. Reducing the period between project completion and submission for publication, maximizing dissemination, and proactive promotion of project reports must all continue, however, to be addressed by both researchers and Cot.

The assessment also provided detailed information on impact indicators that may not otherwise have been fully attributed to a project. In particular, these included the extent to which participants were using research findings in educational activities; the apparent importance of the collaborative partnerships in terms of the clinical application of findings post project; the active engagement of practitioners and service users; and the opportunities arising for follow-on funding or projects, for both individuals and their host institution.

Implications for future action for UKOTRF have been identified from the impact assessment, and these could also be considered by all occupational therapy researchers, regardless of the funding stream:

- The reporting of impact, across a range of indicators, during the life of a research project and 2 years following completion.
- Exploration of the attributable impact of research, with particular reference to changes in occupational therapy practice, and health and wellbeing of service users.
- The construction of exemplar research career pathways.

The Wellcome Trust, which has adopted an online reporting system, provides a succinct rationale for recording impact: ‘it takes information on progress and outputs from our supported researchers throughout the life of a grant, helping us to track and understand the impact and activities that we support’ (Wellcome Trust ca. 2013). The need to report impact is, indisputably, part of the research agenda and, as such, has an important role in providing information for funding bodies such as UKOTRF, individual grant holders and their institution, and the wider profession.

Acknowledgements
The author gratefully acknowledges the contributions of the UKOTRF grant holders who participated; the advice of the Project Ethics Review Panel members; and the expertise and opinions of Dr Irene Ilott and Dr Clare Taylor.

Key findings
- UKOTRF projects are delivering impact across dimensions of advancement, knowledge, clinical implementation, and community benefit.
- UKOTRF funding contributes to the development of research leaders and research capacity.

What the study has added
The study established that a multidimensional framework, such as the Becker Medical Library Model, can facilitate the assessment and reporting of the impact of occupational therapy research.

Conflict of interest: The author is an employee of the College of Occupational Therapists.

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References


The effectiveness of local authority social services’ occupational therapy for older people in Great Britain: a critical literature review

Gail Boniface,1 Margot Mason,2 Jacqueline Macintyre,3 Christine Synan,4 and Jill Riley5

Key words: Social care, independence, community.

Introduction: Older people are the main users of adult social care services in Great Britain. Evidence suggests that occupational therapists employed by local authorities are providing interventions that promote and maintain older people’s independence, and decrease dependency on other services. However, such evidence is disparate in nature and lacks synthesis.

Method: This literature review systematically selected, critically appraised, and thematically synthesized the post 2000 published and unpublished evidence on the effectiveness and cost effectiveness of occupational therapy interventions for older people in social care services.

Findings: Identified themes established: the localized nature of social care services for older people; organizational and policy impacts on services, and factors influencing effectiveness and cost effectiveness. Although occupational therapists are increasingly involved in rehabilitation and reablement, there is a continuing focus on equipment and adaptations provision. A high level of service user satisfaction was identified, once timely occupational therapy services were received.

Conclusion: Overall, occupational therapy in social care is perceived as effective in improving quality of life for older people and their carers, and cost effective in making savings for other social and healthcare services. However, the complex nature of social care services makes it difficult to disaggregate the effectiveness of occupational therapy from other services.

Introduction

Social care services for older people are a part of local authority adult social care services in England, social work services in Scotland, and social services in Wales. In Northern Ireland, health and social care is integrated into one structure (College of Occupational Therapists [COT] 2010). Occupational therapists are employed in all of these services. However, in view of Northern Ireland’s organizational differences, which inevitably impact on service delivery, this critical review of the literature relating to occupational therapy for older people in local authority social services focused on England, Scotland, and Wales (Great Britain).

Older people are the main users of health and social services (Department of Health [DH] 2001) and the number of older people in the United Kingdom (UK) as a whole is expected to rise, with the fastest projected increase in those over the age of 85 years (Office for National Statistics 2012). This growth in a potentially frail population will place further pressures on social care services, including occupational therapy, at a time of increasingly scarce resources. Such pressures place an onus on the profession to demonstrate the effectiveness of its services for older people in social care settings.
Across Great Britain, National Service Frameworks and strategies for older people emphasize the need for services, such as occupational therapy, that help people to manage and maintain independence in their own homes and communities for as long as possible, and prevent the need for hospital admission or long-term care (DH 2001, Welsh Assembly Government [WAG] 2008, Scottish Executive 2007a). Government policies relating specifically to local authority social care services in England, Scotland and Wales (DH 2008, Scottish Executive 2006, WAG 2007) state that this is achievable through a preventative and enabling approach to social service provision that reduces the need for complex and costly packages of care. A review of the literature on occupational therapy in local authority social services prior to 2000 identified the importance of occupational therapy interventions in maintaining older people’s independence (Mountain 2000). Since then, occupational therapists have continued to play a key role in promoting individuals’ self-reliance and resourcefulness (COT 2008).

Occupational therapists in adult social care services make up approximately 2% of the social care workforce in all three countries (Information Centre for Health and Social Care 2011, Scottish Government 2011, Welsh Government 2011) Despite their small numbers, occupational therapists are reported as handling over 35% of adult social care services’ referrals and their skills have been identified as key to the delivery of Government policies in England, Scotland, and Wales. Since Mountain’s (2000) review of the literature, no systematic reviews of evidence relating to occupational therapy in social care services. Taking into account the changes in policy and organizational drivers that have had an impact on the delivery of occupational therapy services. At the time of the review these were: Changing Lives in Scotland (Scottish Executive 2006), Fulfilled Lives, Supportive Communities in Wales (WAG 2007) and Putting People First in England (DH 2008). Scotland also included a rehabilitation framework (Scottish Executive 2007b) and all three countries have developed strategies for older people (DH 2001, Scottish Executive 2007a, WAG 2008) and frameworks for action. Whilst there are discrete differences, and services are broadly addressed, all emphasize a person-centred approach, and promotion of self-reliance and resourcefulness for service users, principles which are central to occupational therapy in social care services. Taking into account the changes in policy and organizational drivers that have had an impact on social care services since 2000, this review aimed to critically appraise and synthesize the post 2000 evidence on the effectiveness of occupational therapy interventions for older people in preventing the need for complex packages of care in social care services in Great Britain.

**Method**

A systematic approach was employed to identify, select, critically appraise, and synthesize the available published and unpublished evidence to address the research questions, which were revised during the review period (Table 1).

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<th>Table 1. Research questions</th>
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<tr>
<td><strong>Final research questions</strong></td>
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<tr>
<td>1. What are the legislative, policy, guidance, and local organizational factors that influence the delivery of occupational therapy interventions in England, Scotland, and Wales?</td>
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<td>2. What interventions do local authority social services occupational therapists use with older people? (Local authority social services occupational therapists, and interventions are defined as where the service or therapist works to the social care and housing legislation).</td>
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<tr>
<td>3. Do interventions differ between England, Scotland, and Wales?</td>
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<tr>
<td>4. How effective are social services’ occupational therapy interventions for maximizing older people’s ability to remain living in the community?</td>
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<td>5. What are the outcomes of social services’ occupational therapy interventions for older people and their informal carers?</td>
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<td>6. Are social services’ occupational therapy interventions cost effective in terms of reducing the extent of and/or the need for packages of care?</td>
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This article concentrates on the findings that addressed the revised questions 4, 5, and 6; specifically the contextual factors that impact on the perceived effectiveness and cost effectiveness of occupational therapy in social care services, which was the main focus of the review. Questions 1–3 are addressed in the final research report (Riley et al 2012).

**Inclusion criteria**

Literature included published peer-reviewed articles; literature accessible via electronic databases and library holdings; published reports and evaluations; current research activity; and grey literature (that is, unpublished dissertations and local authority service evaluations) from January 2000 to February 2012, relating to:

- Older people living in the community.
- Local authority based occupational therapy services.
- Local authority occupational therapists’ interventions.

**Exclusions**

Literature published before 2000 and/or relating to non local authority occupational therapy provision, or from outside Great Britain was excluded.

**Theoretical approach**

Traditional systematic reviews of the effectiveness of health interventions usually recognize a hierarchy of evidence. Such reviews aim to be ‘context-free’ with randomized control trials (RCTs) and are considered the ‘gold standard’ (National Institute for Health and Clinical Excellence [NICE] 2009, p32). However, in social care, as in public health, community-based interventions tend to be complex and dependent on context (Rychetnik et al 2002). To account for this, effectiveness...
reviews can include qualitative as well as quantitative and experimental studies (NICE 2009). Therefore, the mix of research traditions underpinning studies included in this review meant that different appraisal methods and a flexible approach were required. In line with Social Care Institute for Excellence (SCIE) (2010) guidance on conducting systematic reviews in social care, this review aimed to achieve comprehensive coverage from a wide range of sources. Included studies were subject to a rigorous quality appraisal, but were not excluded on grounds of methodological quality alone. In view of this approach, the resulting thematic synthesis was both aggregative and interpretive in nature (Thomas and Harden 2008).

Review process
The collaborative team who carried out the review included two researchers (both occupational therapists/academics with a social services background); three practice collaborators (one from each country working in social care settings), and a carer of an older adult, with experience of social services. All team members contributed to the review design and reviewed the methods and processes as the review progressed. They also commented on report drafts. In addition, the practice collaborators also appraisal selected papers.

The methods incorporated in the review process are outlined sequentially, below. It should be noted, however, that stages overlapped, and search strategies, research questions, and inclusion criteria were revisited at certain points during the process. The historical, social, political, and organizational contexts of included studies were taken into account during appraisal, synthesis, and reporting.

Literature search and retrieval
The search strategy was shaped initially by the review questions and informed by the team’s prior knowledge of the field and an initial search. The strategy aimed to be comprehensive, while taking into account the need for maximum variability (Thomas and Harden 2008), and was developed and refined as the project proceeded.

Search strategy
Published literature was accessed through electronic databases (Cinahl, AMED, Medline, ASSIA, EMBASE, OSeeker, OTDbase, HMIC, Cochrane and Campbell collaborations) and library holdings. Grey literature was accessed through the COT and university libraries and the System for Information on Grey Literature (SIGLE).

Websites (for example, SCIE, COT, social care policy units, and local authorities) were searched for policy documents and reports, and for current and ongoing research. In addition, occupational therapy networks in all three countries were approached for assistance with identifying relevant local authority evaluations, service user satisfaction, and audit reports. Although no ethical issues were identified, electronic consent was obtained for the use of reviewed unpublished reports where appropriate. Search terms (see Table 2) were used in combination.

<table>
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<th>Table 2. Search terms</th>
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<td>adaptations</td>
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Refining the appraisal templates
The mix of methods across relevant literature meant that different methods of appraisal were also required. Appraisal templates have been developed for use with different types of study by the Critical Appraisal Skills Programme (CASP) (University of Oxford 2005). Others, aimed more explicitly at social care studies, are available from SCIE and were developed by Long and Godfrey (2004) to take account of organizational and local contexts. These different templates were tested by the research team for their efficacy and appropriateness on published studies from the following categories: a randomized control trial (RCT), and a qualitative and quantitative (non-experimental) design. Appropriate templates (related to research design) were also tested on an unpublished research report and a service evaluation. An adapted template was then designed and refined for use with a wide range of literature.

Data evaluation process
Data evaluation took place in two stages:

Stage 1: Screening and assessing for relevance
Literature was screened and assessed for relevance, initially according to the inclusion criteria and research questions. To maximize inclusion, no restrictions were placed on study design. Methodological quality was assessed during stage 2 (appraisal). In total, 72 articles and reports (both published and unpublished) were included. See Fig. 1 for full search results.

Stage 2: Critical appraisal
Fig. 2 presents an overview of the appraised literature and shows the numbers and types of study reviewed. All studies were appraised by two reviewers independently, using the adapted template; reviewers whose reports or articles were included did not appraise their own work. Sensitivity analysis was used to assess the impact of quality on findings (Thomas and Harden 2008).
Quality
The following quality issues were addressed during the appraisal process: rigour in the application of research methods, validity, and approach; credibility and reliability of findings; relevance of findings to review aim and objectives; and description of the setting and context. The team found that most of the research-based literature relating specifically to occupational therapy in social care services for older people reported on small-scale local studies, which were both qualitative and quantitative in nature. The findings from these studies were considered to be transferable to other similar settings and contexts. Of the mixed-methods studies appraised, the larger scale studies tended to address more general issues such as reablement, shared assessments processes, eligibility criteria, or types of services. These generalizable studies were rigorously conducted, and informed the review on issues impacting on the nature and delivery of social services’ occupational therapy interventions. The few pragmatic RCTs compared interventions or services within and between authorities. The unpublished evaluation and audit reports received from individual authorities were variable in quality; some were presented as full reports and others as raw data on, for example, service user satisfaction.

Data extraction and synthesis
Following Thomas and Harden’s (2008) methods for developing a thematic synthesis, study findings were identified independently by two reviewers, and a consensus was reached. Agreed findings were entered into an overview document and then coded for meaning and content. Codes from each study were added to a coding framework, and new ones were developed as necessary. During this stage the reviewers checked for consistency in interpretation, and descriptive themes were identified.

Generating analytical themes
The first stage of this process resulted in an aggregative synthesis that summarized and described the data under key concepts (Thomas and Harden 2008) but remained close to the original study findings. The second stage moved beyond this, through further interpretation, using the descriptive themes to address the review questions and develop more analytical themes. Each reviewer did this independently and then together. The process was repeated until the themes were sufficiently refined (Thomas and Harden 2008).

Overall, the main weaknesses, which had an impact on the findings from this review, can be summarized as a lack of detail on the context or study location; limited description

Fig. 2. Overview of literature appraised.

*These number 61 in total, since 14 were removed as follows: 10 papers were discussion based and 3 were briefing papers; one report was discussion based.
of participants, or explanation of the service, team, or intervention; a medical, rather than social model perspective, and a lack of reflexivity; with the researcher appearing to be part of the setting being researched. Such quality issues clearly have an impact on claims made for the effectiveness or cost effectiveness of occupational therapy services within individual studies. To take account of this, and of the contextual nature of included studies, the term perceived effectiveness has been used in the report of the review findings below. A summary of the quality appraisal of the 75 reviewed papers is available as an appendix to the full research report (Riley et al 2012).

Review findings
A full list of the themes established in the review is provided in Table 3. The following sections concentrate on the nature of occupational therapy social care service provision and interventions for older people; influencing factors; perceived effectiveness, and cost effectiveness.

The nature of occupational therapy social care services for older people
The review identified that the majority of adult social care service users in England, Scotland, and Wales were over 60 years of age (Inverclyde Council 2010, Reid-Howie Associates 2000, Tucker et al 2011) and women (Chamberlain et al 2001, Heywood 2001, Miller and Foulkes 2011). Consequently, both the nature of services for adults and the influencing factors were found to be relevant to older people.

Occupational therapy social care services across Great Britain are historically driven by Government legislation. Adherence to the Chronically Sick and Disabled Persons Act 1970 (Great Britain. Parliament 1970 [1972 in Scotland]) especially, has led to occupational therapists in social services being heavily involved in adaptation and equipment provision. The review findings confirmed that during the twelve year timeframe, occupational therapy remained centred around adaptations and equipment provision (Stubb et al 2004, Forsyth and Hamilton 2008). Services also focused mainly on self-care (Armstrong 2001, Brittle et al 2007, Heywood 2004, Inverclyde Council 2010, Miller and Foulkes 2011, Sainty et al 2009, Tucker et al 2011). During the review timeframe, however, policy initiatives began focusing on enabling older adults and the creation of reablement services (Scottish Executive 2007a, Social Services Improvement Agency Wales 2011). Although not all reablement teams include occupational therapists, the fact that access to an occupational therapist is crucial to reablement provision (Rabiee and Glendinning 2011) was identified.

Influences on occupational therapy service provision
There are numerous influences on the provision of occupational therapy services in social care. These include workforce issues such as recruitment and retention (Wilson 2010); organizational factors such as workforce planning, career structures, eligibility criteria, and priority systems. The latter operated across local authorities in all three countries and had an impact on working practices and access to services. Despite organizational attempts to create standardization, for example through the introduction of Fair Access to Care Services (FACS) in England (Lett et al 2006, Sackley et al 2009), services remained variable and localized (Lett et al 2006). In addition, the high referral rates, which contributed to lengthy waiting lists for occupational therapy services in many authorities impacted on staff morale (Hunt and Cook 2001, Wilson 2010), which, in turn, affected professional autonomy and, consequently, the perceived effectiveness of occupational therapy intervention and service delivery.

Perceived effectiveness
The sub-sections below include some general points from the literature on the perceived effectiveness of occupational therapy interventions and services for services users, carers, professionals, and the organization; how effectiveness might be achieved and where it is lacking. Outcomes are also addressed, including how these are measured and the inherent problems in doing this in social services settings. Later sections consider service user satisfaction as a means of establishing effectiveness followed by a review of cost effectiveness and evaluation.

General aspects of effectiveness
Occupational therapy is perceived to be effective in improving independence and quality of life for older people living in their own homes (Armstrong 2001). Claims for the effectiveness of equipment (or assistive technology) and adaptations, especially, were made in several articles. Mountain (2004) found that assistive technology was important in preventing accidents, reducing the fear of falling, maintaining dignity, and independence for service users. Equipment provision was described as ‘pivotal’ in enabling...
service users to engage with everyday activities (Forsyth and Hamilton 2008, p69), and good housing adaptations promoted functional independence and improved quality of life for service users and carers (Heywood 2001, Heywood and Turner 2007, Mountain 2004).

Where reablement services were in place, these too were perceived to be effective in maintaining people in their own homes and improving independence. Littlechild et al (2010) found that an independence at home service both promoted independence and reduced re-referral. An evaluation of a community rehabilitation service in Scotland (Inverclyde Council 2010) indicated that this type of service could improve independence and reduce care packages. In general, maintaining people at home through occupational therapy interventions reduces the need for hospital admissions. Several authors also suggested strategies that contribute to effectiveness.

**Perceived effectiveness strategies**

The perceived effectiveness of occupational therapy interventions and services depends not only on the nature of the interventions themselves but also the professionals and organizational structures involved. Littlechild et al (2010) identified three important features for promoting or maintaining service user independence: speed of response, assisting family carers, and adequate time. In a study of older people’s participation in the disabled facilities grant professional was an important feature. The perceived effectiveness of intervention in a reablement service also considered too short to take into account the effectiveness of interventions such as adaptations. Indeed, timing — particularly where adaptations are concerned — was a major issue (Heywood and Awang 2011). Outcomes should not just be measured straight after provision but also in the medium and longer term (Heaton and Bamford 2001).

There was a general view that social services’ occupational therapy outcomes should be measured, and that standardized methods have been used in some areas. The Care Services Efficiency Delivery Programme (CSED) (2007) reported use of the Community Dependency Index (CDI), the Barthel Index, the Morriston Occupational Therapy Outcome Measure (MOTOM), and the Canadian Occupational Performance Measure (COPM). The CDI, for example, was used in the CAMELOT RCT, conducted to establish whether, on a range of clinical outcomes and, primarily, dependency in self-care, there was any significant difference between occupational therapy-led and social work-led assessments for frail older people and their carers (Flood et al 2005, Stewart et al 2005). No significant differences were found; in terms of outcomes, the conclusion was that both social work services and occupational therapy are successful in making care assessments that enable older people to remain at home (Flood et al 2005). However, the timescale for measuring the outcome of occupational therapy (8 months) was considered too short to take into account the effectiveness of interventions such as adaptations. Indeed, timing — particularly where adaptations are concerned — was a major issue (Heywood and Awang 2011). Outcomes should not just be measured straight after provision but also in the medium and longer term (Heaton and Bamford 2001).

It would seem that standardized measures have their place in evaluating the effectiveness of specific interventions where it is possible to establish a baseline score and a measure post intervention. However, taking into account the inherent variables in social care settings, there is also an argument for developing client-centred localized outcome measures (Armstrong 2001) that focus on the outcomes people want, rather than on what services provide (Glendinning et al 2008). Establishing service user views of how effective services were for them (in the timeframe for this review) was commonly achieved through the use of service user satisfaction questionnaires.

Measuring outcomes has become an accepted way of establishing the effectiveness of interventions, especially in healthcare settings. Heaton and Bamford (2001) argued that because outcome measures are commonly developed and validated for hospital settings where there is a focus on improvement following intervention, their applicability to the community is questionable. In social care the focus is often on maintenance rather than improvement. Therefore, equipment and adaptations may be provided to maintain performance, especially for older people. Glendinning et al (2008) found that maintenance outcomes were important where the focus was on preventing deterioration, whereas change outcomes were important as a means of enabling functional improvement. Social care reablement services, for example, focus on outcomes that improve performance in daily activities, and service users’ perceived quality of life (Francis et al 2011). It was acknowledged, however, that attributing change to occupational therapy alone is difficult, especially where other agencies are involved (Heaton and Bamford 2001).
Service user satisfaction
During this review, a range of published articles was found reporting service user and carers’ views of services; several unpublished reports were sent to the research team from authorities in all three countries, or came from the grey literature. The findings from this body of literature as a whole indicate a high level of satisfaction among service users and carers with occupational therapy interventions and services, once received. In a review of English local authorities, Skelton (2006) found that this was the case despite waiting lists; similarly, reports from Scotland indicated that once in the system, service users were mostly satisfied with the occupational therapy service (Reid-Howie Associates 2000). Other reports also indicated that the general trend in satisfaction continued across England, Scotland, and Wales (for example, Chamberlain et al 2001, Equipu 2010, Miller and Foulkes 2011, Sainty et al 2009).

Where housing adaptations were concerned, good adaptations gave positive long-term outcomes for recipients, carers, and families, and could prevent admission to care (Heywood 2001, 2004). Satisfaction levels were also high for rehabilitation and reablement services (Francis et al 2011, Inverclyde Council 2010, Kent et al 2000, Jones et al 2009, McLeod and Mair 2009, SSIA 2011, Walden 2011a, 2011b). However, Littlechild et al (2010) found in their evaluation of an independence at home service that service users’ perceived satisfaction in performance was not necessarily matched by improved performance.

Despite the generally high levels of satisfaction with occupational therapy services, a few authors also addressed the reasons for dissatisfaction, which are important to note if improvements are to be made. Concerns included charging policies; waiting lists for provision; difficulties in making contact; lack of follow up; inconsistencies in service provision; inadequate communication; poor installation; repairs and servicing; and the impact adaptations had on others in the household (Heywood 2001, Mountain 2004, Reid-Howie Associates 2000). In addition to satisfaction for service users and carers, the cost effectiveness of occupational therapy services is also a concern for the organization.

Cost effectiveness
The potential for cost effectiveness was generally reported in terms of the savings that occupational therapy could make for other parts of the service. For example, by maintaining older people in their own homes, reducing care packages, and preventing dependency on other services (Heywood 2001, Heywood and Turner 2007, Lansley et al 2004). Housing adaptations were identified as benefiting not just the individual and their family but also health and social care providers because of reduced demand for other services if adaptations were perceived to be effective.

The payback period from investing in adaptations and equipment for older people was considered short and worthwhile, with costs being recouped within the individual’s life expectancy time (Lansley et al 2004). Equipment costs, particularly, were considered to be low compared with the benefits (Sainty et al 2009). Of the few studies that offered concrete evidence of cost effectiveness of specific services, a cost-benefit analysis conducted by an equipment service in Scotland (Equipu 2010) demonstrated significant potential savings in care costs. Others suggested, however, that the cost of older peoples’ adaptations would not necessarily offset home care costs because a proportion of older people receive no home care, or remain frail and still need care despite adaptations (Heywood and Turner 2007). Indeed in an economic evaluation, conducted alongside the CAMELOT RCT, Flood et al (2005) concluded that occupational therapy and social work were equally cost effective in enabling older people to remain in their own home.

It was acknowledged that determining the cost effectiveness of housing adaptations and equipment for older people is extremely complex because of the differences in housing stock and cost-effective adaptations are only possible in certain types of housing (Heywood 2001, Lansley et al 2004, Mountain 2004). Timescales were also considered important when evaluating the cost effectiveness of adaptations, which can take a considerable length of time to complete (Flood et al 2005). In addition, preventing delay in adaptations provision can reduce costs in other areas: for example, the need for care or reassessment due to deterioration in the person’s needs. In other words, paying out for adaptations should reduce other spending as long as this is done in a timely manner (Heywood and Turner 2007).

Where rehabilitation and reablement services are concerned, evaluations tend to consider the cost effectiveness of the service as a whole. Their perceived effectiveness in reducing service-users’ dependency, home care packages, admission to hospital, or residential or nursing home care has been reported (CESR 2007, Francis et al 2011, Glendinning et al 2008, Latif 2011, McLeod and Mair 2009, Rabiee and Glendinning 2011). What now needs to be determined is the extent to which cost effectiveness is related to occupational therapy involvement, which is regarded as central to social care reablement (Francis et al 2011, Glendinning et al 2008, Walden 2011a).

Evaluation and audit
Examples from service evaluations and audits have been used in the sections above to illustrate the perceived effectiveness and outcomes of occupational therapy interventions and services for older people. However, several authors have recommended what needs to be done in terms of evaluation in future. In relation to policy implementation, Ridout and Mayers (2006) called for more active auditing in order to evidence the client-centeredness of occupational therapy practice in the light of the single assessment process (SAP); Sackley et al (2009) pointed to a lack of audit of the use of eligibility criteria. In order to evidence effectiveness across services, Skelton (2006) suggested that a comprehensive database of occupational
therapy services and staff in local authorities was needed. In a study of waiting lists in a Scottish authority, Wilson (2010) recommended that local authorities should regularly audit and evaluate occupational therapy services in order to improve practice, and that best practice should address timescales for provision after assessment. In relation to reablement, audits should give detail of the goals and interventions that are used to achieve them, together with professional input.

Discussion

The localized nature of local authority social care services and geographical variability across Great Britain inevitably has an impact on how occupational therapy services are organized and delivered. Such variability makes benchmarking and service comparisons problematic. In addition, because occupational therapists in social care work in collaboration with other professions (and in some instances their services are integrated with, for example, housing, social work, or home care), disaggregating the effectiveness and cost effectiveness of occupational therapy interventions from others is also problematic.

Despite this, the review established that there is a growing body of evidence to support the perceived effectiveness of social care occupational therapy services in different localities, and that the benefits for older service users were identifiable. Much of this evidence, however, came from small-scale localized studies (mostly conducted in England), from which it was difficult to generalize. The transferability of findings from these studies was also difficult where there was a lack of description of the context and location. These studies were, however, specifically related to occupational therapy, and collectively provided worthwhile evidence. The larger-scale studies, mostly conducted within and across organizations, were more generalizable, but tended to address broader issues that involved occupational therapists. By taking a flexible and pragmatic approach, in this review it was possible to establish patterns in the findings across studies, and the discussion-based and opinion pieces reviewed, together with policies and reports, added further detail on specific topics. However, several authors identified that more work is needed to address the difficulties in isolating the effectiveness of occupational therapy from other aspects of social care services (Glendinning and Newbronner 2008, Heywood and Awang 2011, Heywood and Turner 2007, Latif 2011, Walden 2011a).

Critical evaluation

A major limitation of this review was accessing literature that was specifically relevant to the topic. There was little published literature available that was specific to the effectiveness of occupational therapy in social care. To try and address this, the search terms were expanded as the review progressed. In terms of addressing the research questions, it was found that the small-scale studies, which tended to use one data collection method and were restricted to one location, were specifically related to occupational therapy, whereas the larger-scale studies, which utilized mixed-methods or RCTs, addressed broader issues, and it proved difficult to disaggregate occupational therapy from other services. In addition, most of the published reports and research-based literature focused on services in England. In order to obtain a comprehensive picture of occupational therapy services in all three countries, the research team also acquired unpublished literature. This proved easier to achieve in Wales and Scotland, which helped to offset the concentration of published literature on services in England. However, the search cannot claim to be exhaustive, and the quality of literature as a whole was variable, as identified in the quality section above.

Recommendations

Further research is needed into:

- The effectiveness of occupational therapy in social services and whether it is possible to disaggregate it from other services.
- The impact of organizational constraints on the effectiveness of occupational therapy social care services.
- The effectiveness of rehabilitation and reablement social care teams where occupational therapists are involved.

Implications for practice

Occupational therapists need to:

- Acknowledge the importance of their role in providing equipment and adaptations that contribute to older service users’ occupational engagement, independence, health, and wellbeing.
- Be more proactive in publicizing the effectiveness of their interventions more widely.
- Proactively engage in wider policy and organizational issues.
- Investigate the appropriate use of outcome measures for occupational therapy in social care services.
- Carry out regular audits and evaluations to provide evidence of the effectiveness of their services.
- Publish the evidence supporting the effectiveness of their interventions.

Conclusion

Overall, this literature review has identified a high level of service user satisfaction, and that once timely occupational therapy services have been accessed and delivered, they are perceived to be effective and preventative for older people. It is also evident that occupational therapy can be cost effective by improving and maintaining older people’s independence and preventing dependency on other services. However, the localized, complex, and collaborative nature of social care services across Great Britain will continue to make it difficult to prove the effectiveness of occupational therapy in isolation from other local authority services and further work is needed to address this.
The effectiveness of local authority social services’ occupational therapy for older people in Great Britain: a critical literature review

Key findings
- Social care occupational therapy interventions maintain older people’s independence at home.
- Timely interventions can be cost effective for other services.
- Service user satisfaction is high once services are received.

What the study has added
This study contributes to the evidence base for the effectiveness and cost effectiveness of social services’ occupational therapy in maintaining older people’s independence at home and preventing dependency on other services.

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Motor abilities and coping in children with and without developmental coordination disorder

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Key words: Coping strategies, motor competences, differences, relationship.

Introduction: This study was conducted in order to identify differences in motor abilities and coping in children with and without developmental coordination disorder. The study also discusses the relationship between coping and motor abilities.

Method: A cross-sectional design with two independent groups was chosen to identify the differences. The Movement Assessment Battery for Children — second edition (Henderson et al 2007) was used to assess motor skills. Coping was evaluated with the Coping Inventory observation form (Adaptive Behaviour Index) (Zeitlin 1985).

Results: Univariate analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA) showed significant differences between the motor abilities and coping efforts of children with and without developmental coordination disorder. Calculations using Pearson’s correlation coefficient showed a significant correlation between coping and motor competences. In the overall model, boys and children with lower coping efforts were found more likely to be participants in the group with development coordination disorder.

Conclusion: Children with coordination problems differ from typically developing children in their motor and coping abilities when rated by their parents. This highlights the importance of paying attention to the coping strategies and resources of children with developmental coordination disorder during therapy.

Introduction

Motor competency is important to both self-esteem and social inclusion. Children between 4 and 8 years of age enjoy jumping, running, and climbing. They love to play, draw, sing, and dance. The children in this age group learn to dress themselves, eat on their own, and perform other activities of daily living (Largo 2009). Children with motor coordination difficulties, however, struggle with zippers, putting toothpaste on a toothbrush, or using a knife during meals. They cannot jump or ride a bike as well as their friends; they experience failures every day, and must find ways of coping with them. Their difficulties often reduce their participation in games with their peers, and sometimes even leads to psychosocial problems (Missiuna et al 2007).

But are there any differences in the way these children cope with their feelings and everyday situations? Is there interdependency between the constructs of motor competency and coping? How do the motor abilities of typically developing children and children with developmental coordination disorder (DCD) differ?

Literature review

DCD has a prevalence of 1.8–6 per cent in children from 5 to 11 years of age (Lingham et al 2009, American Psychiatric Association 2000). It is a motor impairment with unknown aetiology and has significant impact on the participation of children in activities. Yet, those affected are not a homogeneous group because specific impact on the individual child differs (Miller et al 2001).
Diagnostic criteria for DCD according to Diagnostic and statistical manual of mental disorders, 4th edition, DSM-IV (DSM-IV-TR) (American Psychiatric Association 2000, p55) are as follows:

A) Performance in daily activities that require motor coordination is substantially below the level expected given the person's chronological age and measured intelligence …

B) … this interferes with academic achievement or activities of daily living.

C) The disturbance is not due to a general medical condition or … a Pervasive Developmental Disorder.

D) If mental retardation is present, the motor difficulties are in excess of those usually associated with it.

The diagnosis of DCD is found about twice as often in boys than in girls (Sugden and Chambers 1998, Kirby and Sugden 2007), with children frequently diagnosed between 5 and 6 years of age; before that age, motor development is reported to vary widely (Schoemaker 2008).

Gross motor signs of DCD include delayed motor milestones, falling over frequently, difficulties in jumping, running, skipping, climbing, and playing with a ball, also being late in learning to ride a bike, and fatiguing easily. Fine motor signs are difficulties in manipulating small objects, using utensils such as a pencil, and bimanual activities (Schoemaker 2008). These children often exhibit abnormal muscle tone and poor body awareness, have difficulties with gross motor sequencing, and deficits in timing and perceptual processing (Piek et al 2006). Some children exhibit problems in fine motor activities such as drawing, colouring, writing, or using a knife and fork (Polatajko and Cantin 2006); others have problems with all motor activities (Miller et al 2001, Polatajko and Cantin 2006). Typical childhood activities are often reduced, as children with DCD experience problems when it comes to dressing, personal hygiene, and eating skills (Dunford et al 2005, Summers et al 2008). This can lead to secondary psychosocial issues such as low self-esteem, social exclusion and isolation, victimization, anxiety and depression (Dewey et al 2002). Children with DCD have difficulties participating in or successfully completing everyday tasks, which can influence their wellbeing and quality of life (Christiansen and Townsend 2010, Ruckser-Scherb et al 2013).

The World Health Organization (WHO 2007) International Classification of Functioning, Disability and Health: Children and Youth Version — Children and Youth (ICF-CY) provides a framework to understand the condition of children with DCD in a holistic manner. The framework considers the body structures and functions affected by DCD (impairment in gross and fine motor skills) as well as the impact on children's activities and participation in school, home and leisure pursuits. Barriers and facilitators stemming from environmental and personal factors are also considered (WHO 2007) (see Fig. 1).

Motor performance deficits can be seen as a considerable source of stress for children with DCD. They are forced to find a response to these stressful circumstances and to solve problems arising in everyday activities. Coping is ‘a general term for the learned behaviours one uses to meet personal needs and to adapt to the demands of one’s environment’ (Zeitlin 1985, p2) and, as such, is a response to stress that challenges the individual to search through a repertoire of adaptive behaviours and choose effective strategies (Christiansen 1991), representing the efforts of an individual to manage specific internal and/or external demands (Lazarus 1999). The effectiveness of coping ranges on a continuum from adaptive to maladaptive:

- Adaptive coping behaviour allows one to react adequately, care for oneself, and meet the demands of the environment (for example, other people). The higher the effectiveness of coping behaviour, the more resources the child has for further adaptive coping, enabling them to cope with more demands, and to generate new strategies for coping with unknown situations, as new patterns of behaviour are tried and learned.

- Maladaptive coping behaviour may help the child to master a stressful situation, but does not allow new learning, in result leading potentially to more stress, and increased vulnerability.

The level of effectiveness for coping behaviour indicates whether a child's coping resources are either a source of strength or a source of concern that requires intervention (Lazarus 1993, Zeitlin 1985).

Personality disposition and environmental factors each influence coping efforts (Christiansen 1991), and Zeitlin also differentiates between coping with ‘self’ and coping with the ‘environment’.

Coping with ‘the environment’ refers to how the child adapts to the requirements of others, and to his or her surroundings: that is, if the child plays with others, is liked and accepted by others, and is empathetic to other people, and able to give and accept support (Zeitlin 1985).

Previous studies have examined how the effectiveness of coping relates to gender and age. In a longitudinal study of the
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There is some evidence that effectiveness in coping decreases as children get older. In children between the ages of 3 and 10 years, Zeitlin observed a slight drop in Adaptive Behaviour Index (ABI) scores (Zeitlin 1985), and adolescents were found to show a decrease in adaptive, and an increase in maladaptive coping (Hampel and Petermann 2005). Related findings have been reported in studies for motor ability, where girls display slightly better motor abilities than boys, and older children show higher skills than younger ones (Starker et al 2007). There are a few studies on low motor competency and its relationship to coping. Watson and Knott (2006) found that children with DCD apply fewer different types of coping strategies, are more passive, and adopt more avoidance strategies than children without diagnosis.

The aims of this study were twofold: (1) to examine how coping relates to motor ability in children with DCD compared with children without it (it was hypothesized that children with DCD would demonstrate lower coping efforts); and (2) to study differences in motor abilities and coping, as well as evaluating the extent to which these, along with socio-demographic variables, could predict to which of the two groups the child belonged.

Method

Design
A cross-sectional study was conducted, including a group of children with DCD (DCDG) and a control group comprised of children who showed no developmental deviations in motor skills (CG).

Procedure
Ethics approval for this study was obtained from the Ethics Committee of Interuniversity College Graz/ Castle of Seggau, Austria. Questionnaire packages consisted of (1) a cover letter to parents; (2) the Coping Inventory; (3) questions on children’s abilities; and (4) a consent form. Two hundred questionnaire packages were handed out to parents in Linz, Upper Austria, and surrounding urban and rural areas; 106 of these were filled in by parents and returned with a signed consent form, with a response rate of 53 per cent.

Participants
The DCDG comprised 32 children who were identified by experienced occupational therapists in clinics and independent practices in Upper Austria. The children fulfilled all diagnostic criteria of the DSM-IV-TR:

- No other diagnoses, such as attention deficit hyperactivity disorder (ADHD), autistic spectrum disorders (ASD), or cerebral palsy (Criterion C)
- No mental retardation (Criterion D)

The CG comprised 74 potentially typically developing children who were recruited in schools and kindergartens in Upper Austria, and were scheduled for testing with the MABC-2 by the first author, who is an occupational therapist. Ten children had to be excluded from the sample: five were absent on the day of the MABC-2 test, and five had an MABC-2 percentile less than 26 but higher than 9. Sixty-four children with an MABC-2 percentile of more than 25 were assigned to the control group.

To fulfil Criterion B of the diagnostic criteria in the DSM-IV-TR, the first author designed questions concerning the impact of DCD on daily life and academic activities. At this time there was no standardized questionnaire available in German. Parents’ reports on their children’s skills and deficits have been shown to be a sensitive, reliable, and valid source of information (Faraone et al 1993, Glascoe 2000). Thus, five activities were selected, based on a review of literature (Cairney et al 2008, Schoemaker et al 2008, Wilson et al 2000): parents rated their children’s ability to perform handwriting or drawing/colouring, handicraft, eating with a knife and fork, dressing, and physical exercise (in a classroom, or a gym hall) on a five-point Likert scale (from 1 = ‘very good’ to 5 = ‘really bad’).

Measures

MABC-2
This standardized assessment (Henderson et al 2007) is a revision of the Movement Assessment Battery for Children (Henderson and Sugden 1992). The aim of MABC-2 is to identify children with movement difficulties. The test is divided into three age bands: (1) Age Band 1: 3–6 years, (2) Age Band 2: 2–7 years, (3) Age Band 3: 11–16 years. Children are asked to perform a series of eight motor tasks appropriate to their band. The main items assessed in this instrument are manual dexterity (MD), aiming/catching (AC), and static and dynamic balance (BL) (Henderson et al 2007).

MABC-2 is widely accepted as a test for identifying motor coordination problems, and satisfies Criterion A of the DSM-IV-TR guideline (American Psychiatric Association 2000, Brown and Lalor 2009, Crawford et al 2001, Rodger et al 2007). A validated German version of the MABC-2 is available (Petermann et al 2008), and was used in this investigation. Studies prove criterion-related validity, discriminative validity, and high inter-rater reliability for the MABC-2 (ICC = 0.94–1.0) (Henderson et al 2007).

Coping Inventory — a measure of adaptive behaviour
This observation form (Zeitlin 1985) is used for children between 3 and 16 years of age and includes 48 observation items, each rated on a five-point Likert scale (from 1 = ‘never’ to 5 = ‘always’). It consists of two categories of coping
behaviours, Self and Environment, and the theoretical concept considers three additional dimensions in each of these: ‘productive’, ‘active’, and ‘flexible’. Each item of the Coping Inventory describes behaviours that are observable. For example, in the Self category, ‘Child does not get frustrated easily’ is a behaviour for Coping with Self — productive; ‘Child asks for help when needed (either from adults or peers)’ for Self — active; and ‘Child can shift plans or change behaviour to achieve a goal’ for Self — flexible. In the Environment category, ‘Child knows what is expected and behaves accordingly’ is an example for Coping with Environment. ‘Child is stimulating to others (gets others started, enthused, involved)’ for Environment — productive; ‘Child is stimulating to others (gets others started, enthused, involved)’ for Environment — active; and ‘Child, when necessary, accepts new ideas for Environment — flexible’ (Zeitlin 1985). Scores could be provided for each category in the two categories of Self and Environment, and a total calculated to provide the ABI.

Internal consistency reliability coefficients reported in the Coping Inventory manual ranged from 0.84 to 0.98 across the six rated dimensions. All inter-rater reliability coefficients were significant, ranging from 0.781 to 0.895 (p < 0.001) (Zeitlin 1985). This measurement was translated from English to German by the first author with permission from Scholastic Testing Service (personal communication, November 2008). The author followed three out of the six steps of the cross-cultural adaptation process (Beaton et al 2000): forward translations by two translators, synthesis of the two translations, and pretesting with 27 parents — to get a revised instrument. After this, a factor analysis was performed (n = 96; 48 items), which verified the internal validity (the existence of two dominant factors, Self and Environment). The results of the reliability analysis also confirmed these categories of Self (Cronbach’s alpha = 0.918) and Environment (Cronbach’s alpha = 0.923) in the German version, and showed high Cronbach’s alpha values for all items within these categories.

Results

Sample

Ninety-six participants between 48 and 95 months of age (mean age 72 months, SD 13.05) were included. The DCDG consisted of 32 children (8 girls, 24 boys) and the CG of 64 children (29 girls, 35 boys). Usually, more boys than girls are diagnosed with DCD, and this was reflected in the DCDG and CG (group (DCDG, CG) x gender (f, m): Chi² = 3.71599; p = 0.054). DCD is often identified at the age of 60 to 72 months and this was reflected in there being slightly more children of this age group in the DCDG (group (DCDG, CG) x age (<72, ≥72 months): Chi² = 3.04762; p = 0.081). Additionally, girls and boys differed in age, with girls being older than boys (gender x age: Chi² = 7.34587; p = 0.007).

Data analysis

The relationship between coping and motor ability was investigated using Pearson’s correlation coefficient. An overall model was calculated by logistic regression, predicting the affiliation to the DCDG or CG using gender, age and ABI as predictors.

Further analyses examined differences in motor abilities and coping between groups, considering age, gender and type of location. This was done by univariate analyses of variance (ANOVA) and multivariate analyses of variance (MANOVA). The latter were used to examine effects of the independent variables — group (DCDG, CG), Age (<72, ≥72 month) and gender (m/f) — on a set of related dependent variables (ABI as Coping Inventory total score, Coping Inventory subscales, MABC-2 total score, MABC-2 subscales).

Motor ability

The children in the DCDG and CG differed significantly in the MABC-2 total and three subscale scores, as this measure had been used as a diagnosis group allocation. We also expected age and gender differences in the MABC-2 scores in general. In the ANOVA of the total score we found gender (F1,92 = 6.726; p = 0.011) and age (F1,92 = 7.60; p = 0.007) differences, indicating that girls had higher scores (M = 12.57, SD = 4.72) than boys (M = 9.73; SD = 4.59) and younger children had higher scores (<72 months: M = 12.82; SD = 4.23) than older ones (≥72 months: M = 9.70; SD = 4.83).

Taking the three MABC-2 subscales into account, MANOVA provided significant main effects in age (F1,90 = 6.24, p = 0.001) and gender (F1,90 = 3.363, p = 0.022). Gender differed in MD (p = 0.003) and BL (p = 0.019), in both aspects girls were better, whereas age differences appeared in MD (p = 0.002) and AC (p = 0.002) showing lower scores in the age group ≥72 months. The fact that older children seemed less skilled in motor activities might result from the norms in the age bands: the younger group fell into the higher age of the 3–6 years age band, whereas the older children were among the youngest in the 7–10 years age band, and so might have found the tasks relatively difficult.

Typically developing children reached nearly the same scores in all three MABC-2 subscales, with children with DCD showing more difficulties in MD (M 5.34; SD 2.27) and BL (M 5.63; SD 1.79) than in AC (M 7.22; SD 2.21) (see Fig. 2).
Coping
ANOVA was calculated with the total coping score (ABI) and the independent variables ‘group’ (DCDG, CG) and ‘gender’ (f, m). Highly significant group differences were obtained between DCDG and CG in ABI ($F_{1,92} = 13.19, p<0.001$). The same held true for the two coping categories (multivariate: $F_{2,91} = 45.851; p<0.001$) of Self ($p<0.001$) and Environment ($p<0.001$). For the subscales, gender also showed multivariate significance ($F_{1,91} = 3.838$), but only Self scores differed between genders, with girls obtaining lower scores ($p = 0.024$). No significant interactions of ‘group x gender’ were found. Children in the CG used more effective coping strategies than DCDG children. (See Fig. 3)

**Fig. 3.** Coping scales (Self, Environment) and total score (ABI) in relation to diagnosis (DCDG, CG), gender (f, m) and age in months (<72 and ≥72).

Relationship between coping and motor ability
Highly significant correlations were obtained between the Coping Inventory total score and the MABC-2 total score ($r = 0.602; p<0.001$) and subscale scores (MD $r = 0.593$; AC $r = 0.469$; BL $r = 0.540$). The same also applies to the two subscales of the Coping Inventory (highly significant correlation, $p<0.001$, of Self, $r = 0.529$, and Environment, $r = 0.614$, to the MABC-2 total score).

Affiliation to group
An overall model was calculated by a logistic regression predicting the affiliation to the DCDG or CG using gender, age, location, and ABI as predictors. Children with lower coping efforts (ABI) ($OR = 82.940; p<0.001$) were more likely to be DCDG participants than those with higher coping efforts. Girls were less likely to be DCDG participants than boys ($OR = 0.162; p = 0.024$). Age was not significant, and 89.6% of the children could be placed in the appropriate group.

Discussion and implications
Relationship between coping and motor abilities
Our results indicated that coping in children with DCD differed significantly from coping in children without motor problems, supporting the fact that children with DCD have more problems in ‘coping with self’ and are not always able to fulfill their personal needs; they also experience difficulty in ‘coping with environment’, being less likely to succeed in adapting to the requirements of others and their surroundings.

The ICF-CY framework (WHO 2007) provides guidance for understanding the interaction between personal factors and environment, and the impact of impaired body functions on activity and participation. Difficulties in motor abilities may be associated with difficulties in activities and problems in participation: that is, activities of daily living (ADLs) at school, home, and in leisure pursuits. Environmental and personal factors interact with activities and participation: for example, when a child needs support from another individual (environmental factors) in order to get dressed, or when a child applies problem-solving strategies (personal factors) in order to participate in a game. Performance deficits lead to constantly challenging situations.

Children have a desire for mastery, and their environment demands mastery of them. The interaction of these two elements creates a pressure to gain mastery; in the form of an occupational challenge in particular situations, triggering the need to develop an adaptive response. The child has to involve sensorimotor, cognitive, and psychosocial features in finding a response to meet the challenging situation. If the response is adaptive and results in success, it is remembered for future use, so enhancing the child’s coping skills (Schkade and McClung 2001). Difficulties in motor abilities are related to coping: the better a child’s motor abilities, the better he or she is able to cope. Children with poor motor competency are confronted with more stressful situations as a result of their condition, and experience low self-efficacy and low self-esteem (Engel-Yeger and Hanna-Kasis 2010). Their lack of self-belief also means that they have not developed a realistic self-image. As a result, they often ask for help, especially in problem solving, and avoid being confronted by challenging situations (Missiuna et al 2007); rather than creatively seek out new solutions, they stick to what they know, which makes their coping style inflexible, and therefore less effective. Their coping abilities are reduced, yet they are confronted with situations that are more challenging and in need of coping than for typically developing children (Watson and Knott 2006).

Children learn by doing and participating in occupations of daily life. They become competent, independent, and build an occupational and coping repertoire (Zilberbrant and Mandich 2005). Children with DCD experience failure in motor activities as well as in their ability to engage in self-care and play activities (Morgan and Long 2012), interfering with successful participation in ADLs (American Psychiatric Association 2000). Occupational participation (in self-care and play) is associated with coping strategies (Roche and Taylor 2005), and these children have to use strategies to facilitate occupational performance: they have to solve problems. The problem-solving process includes steps such as ‘exploring options’ and ‘planning action’ (Polatajko et al 2001). When ‘exploring options’, children have to appraise
the demands associated with the activity and identify limitations and resources, whereas for ‘planning action’ they need to find solutions, overcome limitations, and use available resources (Roche and Taylor 2005). But children with DCD are known to have problems with problem solving (Garralda and Rangel 2004), and tend to use less active coping strategies and more passive coping strategies (Ruckser-Scherb et al 2013). Out of a lowered sense of confidence (Missiuna et al 2007) and competence in dealing with problems, they show an increased use of resignation coping strategies, which are known to be less effective (Garralda and Rangel 2004). Intervention approaches should, therefore, facilitate problem solving and finding useful strategies, as described in interventionist approaches such as cognitive orientation to occupational performance and occupational coaching with parents (as discussed further in Implications, below).

Differences in coping and motor abilities in children with and without DCD

The study saw no significant differences between girls and boys, with respect to the total coping score: Zeitlin’s findings (1985) regarding a difference in gender were, therefore, not confirmed, and it was only in the Self category that girls showed less adaptive behaviour and received lower ratings for coping behaviour. Similarly, age was not associated with coping; this was remarkable, since one might expect that older children would be better at coping with everyday demands.

This study also showed that motor ability differed significantly between the two groups. Compared to typically developing children, those with DCD displayed more difficulties in manual dexterity and balance than they did in aiming and catching. This was consistent with results obtained by Wright and Sugden (1996), who identified two groups: one that performed poorly in manual dexterity and balance, and another that performed poorly in aiming and catching. Gender was not related to motor ability, but in the manual dexterity and balance subscales, girls tend to perform better. These findings are consistent with Starker et al’s (2007) research indicating that girls in general display slightly better motor abilities than boys.

Analysis of motor abilities showed that none of the children in the sample demonstrated only line or gross motor impairment, with all in the diagnosis group having deficiencies in both areas. This distribution did not correspond to findings by Polatajko and Cantin (2006), which identified children with just one of the two categories of impairments.

Implications

For therapists, this study highlighted the need for effective intervention to have an awareness of coping abilities. Performance deficits require coping skills because diminished functional performance leads to stressful sequences or constantly challenging situations. Individuals’ coping abilities are challenged by the multiple stressful situations that result from their conditions (Christiansen 1991). The present study suggests that these implications apply equally to children with DCD. Understanding the way in which coping is created in children with DCD will help therapists to support these children in finding, developing, and using effective coping strategies. Feedback from the therapist can help these children to identify limitations, resources, and solutions, as well as reduce unrealistic expectations (Roche and Taylor 2005). This improves the child’s ability to master goals, become more confident, and more willing to persist in difficult tasks (Mandich et al 2003).

Occupational therapy is directed at improving an individual’s ability to adapt, addressing the patient’s internal processes and how such processes are facilitated, in order to improve occupational functioning. The individual’s occupational environment is as important as their experience of personal limitations and potential (Schkade and McClung 2001)

Several intervention approaches can be applied. The child can be given the opportunity to participate in activities that challenge appropriately and lead to a sense of competence or mastery (Larson 2000). Cognitive Orientation for daily Occupational Performance (CO-OP) helps to enhance children’s skill acquisition in order to enable engagement in relevant occupations, and promote participation in the activities of daily life. The child is assisted in identifying the most useful cognitive strategies to support successful performance. This may include global problem-solving strategies as well as domain-specific strategies, with the therapist and child working together to find out what works best (Rodger and Polatajko 2010).

When the child’s performance is highly dependent on the context, occupational therapists often use ‘Occupational Performance Coaching’, which enables parents to support their child’s performance and leads to successful practice, improved occupational performance, and transferable skills (Graham and Rodger 2010).

Effective intervention requires knowledge of a child’s coping strategies and resources; it is important for occupational therapists and parents to know whether the child has problems with meeting personal needs and fulfilling personal demands, or has difficulties in adapting to the requirements of others. It is important to know what is most helpful to the child; interventions should be planned to improve coping skills, enhance resources for coping, and overcome the child’s difficulties in establishing self-esteem and self-efficacy.

The challenge of the ICF-CY framework is the move from a focus on impairment to an emphasis on improving participation as the result of intervention (Missiuna 2005). To achieve this, therapists often choose everyday occupations that are meaningful to the child, focusing interventions on areas such as:

- Task-specific intervention: to enhance skill acquisition.
- Cognitive approaches: to discover strategies that address motor problems and involve active problem solving.
- Accommodation of the task and the environment: to encourage the child’s participation and to prevent deterioration in academic performance.
- Education of people in the child’s environment: to empower the child and family to manage throughout life.
All four types of intervention may be required at some point in time (Missiuna 2005).

The aim of occupational therapy intervention is that children with DCD are able:

… to live more productive and enjoyable lives and become independent in the things that they need and want to do. This includes their ability to look after themselves (self care), enjoy themselves (leisure) and perform to their full potential (learning) (College of Occupational Therapists 2012).

Limitations of the study and future research
The results of this study are limited by several factors. No information on parents’ social status was gathered. The Coping Inventory observation form by Zeitlin (1985) was translated from English to German, and omitted three steps of the cross-cultural adaptation process: there was no back-translation, no expert committee review, and no submission to developers for appraisal (Beaton et al 2000, Gjersing et al 2010). In order to answer the Coping Inventory, parents required very good German reading and comprehension ability, which may explain why few children from families of other ethnicities were included in the sample.

The authors collected the data from a convenience sample that included more boys than girls in the DCD group, in order to coincide with natural occurrence of the condition, but boys and girls occurred in equal distribution of CG. For this reason, the effects and interactions of gender should be interpreted with caution.

Finally, it would be important in future studies to investigate the strategies used by children and their families in coping. It would also be interesting to study the impact of DCD on overall wellbeing and quality of life.

Conclusion
These results show a strong relationship between coping and motor abilities. Children with DCD require occupation-centred intervention in order to overcome their difficulties in creating coping strategies, establishing self-esteem, and experiencing self-efficacy. It is important for therapists to facilitate a better match between the demands and abilities of the child, and to take into account the relationship between coping, successful adaptation, and wellbeing. The impact of DCD on overall wellbeing and quality of life will be investigated in a further study.

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Research ethics: Ethics approval was obtained from the Ethics Committee of Interuniversity College Graz/Castle of Seggau, Austria.

References

Key findings
- Coping in children with DCD differs from that of typically developing children.
- There is mutual influence between motor competences and coping. This leads not only to differences in motor abilities but also to coping differences; it is suggested that both have long-term effects on development in children with DCD.

What the study has added
This study expands our current knowledge of the relationship between coordination difficulties and coping. It suggests that, for children with DCD, both motor abilities and coping behaviour should be considered in the intervention plan.


Developing mental health occupational therapy practice to meet the needs of people with mental health problems and physical disability

Helen Miles¹ and Mary Morley²

It is well documented and evidenced that individuals with serious mental illness have an increased risk of developing a range of physical illnesses and conditions. This practice analysis describes how an initial audit of mental health occupational therapists identified a lack of clarity and protocols around working with individuals with associated physical conditions. Local joint care pathways and a skills development programme were introduced, and a follow-up audit completed to assess progress to date. The advancement in practice and production of a clear physical care pathway has made a positive difference to service users.

Statement of context

Individuals with serious mental illness (SMI) are more likely to experience physical health problems than the general population. The Disability Rights Commission (2006) highlighted that someone with schizophrenia is less likely to receive health screening and intervention in primary care, even though they belong to a group with a higher incidence of heart disease, stroke, and hypertension. Individuals with SMI do less physical exercise and have poorer physical health than the general population (Northey and Barnett 2012). Similarly, many people with existing long-term physical health problems experience mental health problems, and their reduced ability to self-manage can lead to poor health outcomes (Naylor et al 2012).

In England, the ‘No health without mental health’ strategy (Department of Health 2011) aims to improve the population’s mental and physical health and wellbeing and to redress the inequities experienced by those with SMI. Occupational therapists receive pre-registration education in both physical and mental health, placing them in an ideal situation to meet the holistic needs of all individuals (Terry and Westcott 2012). As careers progress, they tend to work as either ‘physical’ or ‘mental health’ practitioners, restricting assessments and interventions to their chosen field, and possibly becoming less confident in using skills outside their field when working with individuals with complex multiple conditions.

This practice analysis describes how the occupational therapy service in a large, urban Mental Health National Health Service (NHS) Trust responded to the needs of service users with both physical illness and SMI. In 2006, the Trust launched its Disability Equality Scheme Action Plan and introduced the role of occupational therapists as disability champions across all teams (Samuels 2012). As careers progress, they tend to work as either ‘physical’ or ‘mental health’ practitioners, restricting assessments and interventions to their chosen field, and possibly becoming less confident in using skills outside their field when working with individuals with complex multiple conditions.

Critical reflection on practice

The Trust’s occupational therapy service undertook an audit in 2007 to establish the scope of practitioners’ caseloads and identify development needs
in relation to meeting the requirements of service users with a physical disability. A locally-devised questionnaire was sent to all occupational therapists, asking about the extent of collaborative working when carrying out functional assessments and provision of minor equipment/adaptations to alleviate physical impairments. The results are presented here, and informed an action plan to increase the competence and confidence of the occupational therapists in meeting physical disability needs. The impact of the actions taken is discussed, and the findings may be of interest to occupational managers and educators as well as practitioners.

Results
The responses showed significant variation in the proportion of occupational therapy caseloads with physical health needs. This ranged from 100% in one borough to 10% in another, and varied across service user types and age groups. There was low awareness in many multidisciplinary teams of the occupational therapy role in addressing physical issues, which limited referrals.

The audit indicated that there was inconsistency in the occupational therapy assessment of needs and treatment interventions to meet the physical health needs of individuals with SMI. Most occupational therapists were positive about expanding their role to address basic physical disability needs, but reported a lack of confidence, skills, time, and resources to do this.

There was a wide range of previous clinical experience in assessing or providing interventions in relation to physical health or disability issues. The occupational therapists had variable knowledge of systems to gain access to equipment, or referral to other services. Similar findings have been reported in relation to mental health nurses in the United Kingdom (UK). Howard and Gamble (2011) found that nurses have variable levels of confidence, and require more skills and training to fully meet the physical health needs of those with serious mental health problems.

The results of the audit informed an action plan developed by the lead occupational therapists, with the overarching goal of using core occupational therapy skills more effectively to deliver a more positive service user experience. The main steps were to:

- Identify stakeholders within the Trust and in partner agencies.
- Agree appropriate levels of assessment and intervention to be carried out by occupational therapists in the Trust.
- Agree pathways and protocols across agencies to increase provision of services to service users.
- Carry out a training needs analysis and propose a training plan.
- Monitor the impact on service user experience.

Implementing the action plan
A team leader from one of the local authority disability teams was seconded to share her expertise and to initiate the project. The work was handed over to each of the mental health occupational therapy leads with a remit to improve liaison with social services departments and to agree an occupational therapy physical care pathway in their locality. This clarified the interface between mental health, primary care, and local authority occupational therapists.

The mental health occupational therapists were given guidance around their role in the provision of minor pieces of equipment, and now have direct access to the local authority ordering system in four out of the five boroughs. Links between local authority staff and health staff have been strengthened and joint learning opportunities have arisen (Forsyth and Hamilton 2008).

An internal physical health occupational therapy protocol was devised by the lead therapists to assist occupational therapists in identifying individuals with higher needs or requiring urgent input (Heasman and Morley 2012). The protocol gives guidance on levels of assessments and interventions and encourages consistency in service delivery; this optimizes the occupational therapist’s time, and facilitates more appropriate referrals. The criteria draw on the Mental Health Clustering Tool (Care Pathways and Packaging Project 2013) that is mandatory in mental health services. Service users with a score of two and above on item five of the MHCT, indicating some clinical need in relation to either physical illness or disability problems, are screened by the occupational therapists.

An additional screening tool was designed to be completed by the ward team, which asks about any sensory and mobility needs of service users and is now included in the Trust’s Physical Healthcare Policy.

The training needs analysis identified that most of the occupational therapists wanted basic training or revision of skills learnt as students, with a focus on practical skills. The leads adopted the trusted assessor (Winchcombe and Ballinger 2005) model of training, and worked with the local authorities to design refresher training that would enable mental health occupational therapists to competently assess and prescribe a simple solution or basic piece of equipment. This training was rolled out across the Trust in a series of small workshops. The occupational therapy leads created a training environment with a mock-up bathroom and kitchen in the multidisciplinary physical health training area for Trust staff, in order to encourage confidence in skills.

In conjunction with the refresher training workshops, four of the local authorities trained the mental health occupational therapists in the use of the new Retail Model and Transforming Community Equipment Systems (Department of Health 2010), to enable mental health staff to order equipment directly.

Recently, a Trust-wide equipment store was set up, with 24-hour access. This store holds small pieces of equipment for short-term loans, enabling inpatients with physical disabilities to access all relevant areas of the ward environment, and to participate in relevant ward activities.

Progress to date
A follow-up online questionnaire was designed, in March 2012, to evaluate progress against some of the actions from the earlier audit and identify further development needs. The
questionnaire was sent out to 78 occupational therapists, 62 of whom completed it, a response rate of 80%. There was an even number of respondents from across each of the five boroughs and a good cross-section of all pay bands. Most respondents had received some post-qualification training regarding physical disability (see Table 1).

<table>
<thead>
<tr>
<th>Training</th>
<th>Response %</th>
<th>Response count (N = 62)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental health Trust OT refresher training</td>
<td>52%</td>
<td>32</td>
</tr>
<tr>
<td>Mental health Trust disability awareness training</td>
<td>73%</td>
<td>45</td>
</tr>
<tr>
<td>Trusted assessor training</td>
<td>10%</td>
<td>6</td>
</tr>
<tr>
<td>Other (mostly from physical posts prior to joining Trust)</td>
<td>24%</td>
<td>15</td>
</tr>
</tbody>
</table>

The occupational therapists indicated being most confident in signposting people to resources and providing advice on reasonable adjustments; least confident in assisting with access assessments and advice on environmental adjustments. The therapists were asked to outline what actions they had taken in the past year to address physical disability needs. These included prescribing/lending equipment (25); advice giving (13) and providing signposting to clients and colleagues (7); onwards referral to Social Services (13); liaison/collaborative working with a physiotherapist, dietician, or exercise therapist (8); and training (6) (for example, training for Disability Champions on Disability).

In 2007 only 34% of occupational therapists stated that they had access to protocols to enable access to equipment. This has now risen to 60%. In 2007, 41% of the therapists who had used the protocols had found them straightforward to use; in 2012 this has risen to 61%.

With regard to minor equipment provision, 79% of respondents were aware of the physical disability equipment store for assessment and short-term loans for inpatients within the Trust, and 44% stated that they were aware of other local resources where they could access advice or try out equipment prior to ordering.

The local occupational therapists were asked to share examples of positive practice when working with service users with physical disability and mental health needs. Two of these vignettes are set out below:

**Example 1**

A 22 year-old woman with psychosis and epilepsy had problems in self-care. She was referred to the occupational therapist, who used the Occupational Self-Assessment (OSA) (Baron et al 2006) tool and goal setting to explore her difficulties with showering. The woman had a fear of falling, worsened by auditory hallucinations. The occupational therapist was able to introduce a bath board and non-slip mat. This intervention has increased the woman’s confidence and frequency of showering.

**Example 2**

A middle-aged man in a rehabilitation ward with a diagnosis of schizophrenia and personality disorder was referred to the occupational therapist. He had Chronic Obstructive Pulmonary Disease and was overweight, with a body mass index (BMI) of 42. His physical complications included sleep apnoea and poor extremity circulation leading to oedema. He was assessed by the occupational therapist, who prescribed a padded footstool and walking programme to stimulate venous return. He was given advice on dressing techniques. A bed wedge and an adjustable bed were ordered to assist sleep. The environment was adapted with a bariatric type raised toilet seat.

**Summary**

The case vignettes indicate that there has been real progress against the action plan. Service user informal feedback has been positive. Positive steps, such as the ability for inpatients to access minor equipment and the prompt provision of equipment to enable safe discharge (via joint working with local authorities and direct access to their systems), have made a real difference.

It is important that the occupational therapy team continuously monitors and reviews this agenda in order to ensure that staff members have the necessary skills and confidence. The comparison of the results from the original audit in 2007 with those from 2012 indicate that mental health occupational therapists are now more confident in addressing physical needs of individuals, and know where to seek assistance and support. However, over 70% of respondents stated that they still had development needs regarding physical health assessments, indicating that training needs to be ongoing. Although the occupational therapists are aware of the work achieved, other professionals are not always aware of this agenda.

Mental health occupational therapists experience significant challenges in balancing responsibilities such as care co-ordination with providing occupational therapy (Harries and Gilhooly 2003, Cook and Birrell 2007, Ormston 2008). In a climate of unprecedented change and a drive for increased productivity as well as quality (Department of Health 2011), some respondents raised questions around the realities of occupational therapists retaining a holistic approach that addressed both mental health and physical needs, as discussed by Terry and Westcott (2012). This practice analysis aims to encourage further discussion, and to promote a culture of increased sharing of skills across organizational boundaries. Occupational therapists that are supported in retaining their dual skills, and thus able to deliver a wider scope of practice, ensure that the individual receives the best possible service, and demonstrate the added value of the profession’s contribution to excellent care.

**References**

Why are you pretending to be normal? Phil Friend and Dave Rees. Friend & Rees Publishing, 2013. £7.00, also available on Kindle. ISBN: 978-0957599901

This book is an accessible and informal introduction to the issues around understanding the challenges posed by disability. It would be very useful to provide to a newly disabled client, or to family members wanting more understanding of the experience of disability. In taking as its protagonist a person with an impairment, Chris, the book guides the reader through the experience of coming to terms with and accepting an impairment, as well as tackling the issues that affect a person who is deemed disabled by society. It also demonstrates the valuable point that having issues with disability yourself does not automatically give you wisdom and insights on the subject — everyone has to come to understand and adapt to their individual situation. Authors, Dr Phil Friend OBE and Dave Rees examine the importance of language in limiting or empowering people, and how vital the words we use are when it comes to shaping our own behaviour and our expectations and support for others. This is a book which guides and educates without preaching or blinding you with jargon.

The simple style of writing and the delightful illustrations by Colin Davidson make this an approachable text, clear and easy to understand. It is an authentic, relatable voice that readers can connect with. The authors confront difficult issues in everyday language, looking at the lives of ordinary people with a disability, bringing the reader into their experience, and making sense of the day-to-day challenges involved. The book gives useful, practical advice for anyone managing a disability themselves or living or working with someone who is disabled. Above all, it is uplifting and inspirational, encouraging us all to face the challenges of life head on.

In the end, as Chris tells us: We are all normal because we are all different.

Allegra Holbrook
College of Occupational Therapists
Emotional intelligence

Madam,

As authors of ‘Emotional intelligence and the occupational therapist’, published in the September issue of the journal (McKenna and Mellson 2013), we write in response to the subsequent letters (Chaffey 2013, Healey 2013).

We thank the authors for their interest in this article and their acknowledgment of the importance of discussion around the emotional aspects of our practice. Whilst we accept that cultural literacy is essential for our holistic practice and that overreliance on assumptive conceptual tenets is undesirable, it is important to acknowledge that emotional intelligence (EI) draws on evidence from established psychological theory. This theory describes emotion by linking thinking, emotion, and behaviour from an individual perspective, thus taking account of contextual and cultural influences. The ability to identify, express, and discriminate feelings, and then use them to prioritize, understand multiple viewpoints, problemsolve, reflect, and monitor emotional demand and function must include individual context and experiences in order to be effective (Goleman 2004, Mayer and Salovey 1997). Evidence exists to suggest that abilities are malleable, and that lifelong learning is both possible and desirable. The evidence base for EI within the disciplines of psychology, medicine, nursing, and social work is well developed, and supports application of this concept in the facilitation of emotional competence for a range of individuals (Por et al 2011, Smith 2005, Weng et al 2011).

This support for the potential of an EI score as an indicator of personal and professional success is growing and in simple terms we cannot ignore it. In line with the National Health Service (NHS) Constitution (Department of Health 2012), our professional education programmes are required to produce practitioners who are fit for practice with compassion; we must be able to satisfy all stakeholders that we can evidence our ability to do this. Many stakeholders, including the potential employers of our students, are advocating values-based recruitment and the utilization of EI measures and training as a tool for selection of staff and for senior staff/leadership development. This supports the need to recognize the emotional demands of our profession and to measure and develop the ability to utilize emotion with intelligence with service users, carers, colleagues, and students, ensuring their success in the workplace and to support competence in profession.

We acknowledge the work of Chaffey et al (2012) in exploring emotion management and its influence on good practice, and appreciate the work done in raising awareness of the links between intuition and emotional intelligence. Notwithstanding these studies, the authors contend that this area has not been well explored to date by our profession. We, too, wish to see an increase in research in this area, and we welcome this vigorous approach to a discourse which is both timely and essential.

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Obituary

Mary Marquis Donald
1943–2013

Mary Donald was passionate about her work and strongly believed in the therapeutic power of occupation. She trained at Astley Ainslie Hospital, Edinburgh, where I first met her as a fellow student in 1962. One of my abiding memories of her then was her ability to produce beautiful craft work — perhaps a skill inherited from her mother, an Art School graduate.

On qualifying, Mary worked for some months in Australia and then Canada, where she developed her interest in working with patients with head injuries or stroke. On returning to the United Kingdom she worked at the Southern General and the Western Infirmary, Glasgow, in stroke rehabilitation. On my return to occupational therapy after having some years out to bring up my children, she invited me to join her while she treated her patients. I observed that she brought her warm personality to her patients, showing skill, dedication and caring for those she worked with.

Subsequently, she became the fieldwork educator at the Glasgow School of Occupational Therapy, where we became colleagues again, in 1985. She remained a member of staff when the school moved into Queen’s College in 1990, and despite a very demanding job, completed first an Open University Arts degree and then a Master’s degree in Community Care. When the school became part of Glasgow Caledonian University (GCU), I became her line manager.

Throughout her career she showed deep concern for and commitment to her students and they remember her with respect and affection. Mary’s vision for expanding our students’ experience led her to create a wholly new concept of non-traditional placements, first introduced at GCU in 1995, with students working across the voluntary sector receiving their occupational therapy supervision from university staff. As a result, many occupational therapy graduates have gone on to successful employment in this sector. This model has now been taken on board across occupational therapy education in the United Kingdom, and is seen as innovative, forward looking, and role enhancing. What a legacy she gave the profession!

Mary had a wide circle of friends, and warmly welcomed many into her home and beautiful garden. Active in retirement, she loved gardening and had an enviable knowledge of plant names. She also took up golf (and was delighted when she scored a hole in one!) as well as being a founding member of our ‘Retired Occupational Therapists who Lunch’ group, which meets four times a year.

Both family and her Quaker faith mattered deeply to Mary, and she was pleased and proud when her great nephew, Thomas, was born. She was an active member of her local Quaker Meeting House and, for many years, organized starter packs for people who had been recently homeless but were now rehoused.

Mary’s Quaker friends and others supported her throughout her illness until her death, at the Marie Curie Hospice, Glasgow on 15 July 2013. She was my fellow student, my colleague, a creative staff member, my neighbour — but, most of all, my friend. She will be sadly missed by all who knew her.

Ann Carnduff