



REVIEW ARTICLE

# The clinical experiences of dyslexic healthcare students

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## KEYWORDS

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**Abstract** This paper reflects on the experiences of healthcare students with dyslexia in order to raise awareness of the potential challenges for dyslexic student radiographers and their clinical educators. With widening participation policies it is likely that the number of student radiographers with specific learning difficulties such as dyslexia will continue to increase. A review of the literature associated with dyslexia in healthcare education was performed in order to provide an overview of the current position. Although Higher Education Institutions (HEIs) have embraced the support and learning opportunities for dyslexic students at university, evidence would suggest that this is not reflected in the clinical departments. The current literature strongly suggests that since the risk of errors with clinical information is far more significant within the clinical placement, there is an immediate requirement for greater understanding, robust support and risk assessment systems. This review considers the problems experienced by dyslexic students, coping strategies they employ and the possible implications for clinical radiography education.

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## Introduction

Any evidence based research that addresses how learning difficulties may affect student radiographers in clinical practice is absent within the current body of literature. Although there has been some consideration of the educational experience of this group of students,<sup>1</sup> the clinical

aspects of their training, and what difficulties they may encounter, have never been investigated.

Individuals with specific learning difficulties exhibit a wide spectrum of strengths and weaknesses. The most commonly known disability is that of dyslexia where varying degrees of difficulties are experienced with writing, reading and spelling. Although the focus of this review investigates dyslexia as a single entity, it should be noted that people may also have co-morbidities such as dyscalculia (problems with sequencing numbers and mathematical operations) and dyspraxia (psychomotor difficulties).<sup>2</sup>

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However, authors have also highlighted the positive aspects of being dyslexic. Davis and Braun,<sup>3</sup> for example, have pointed out that people with dyslexia often have intuitive, insightful minds that enable innovative and creative thinking.<sup>4</sup>

## Background

A computer-based literature search using the keywords: dyslexia, healthcare students and education was undertaken in CINAHL and MEDLINE search engines. It was clear from an earlier search that there was little published within the radiography profession so the search was broadened to include other healthcare groups. The search showed that the literature exploring dyslexia in clinical practice was very limited, even within nursing there were only a few studies that addressed this issue.

## Extent and perception

Although the number of healthcare students with learning difficulties is only likely to represent a small minority of the cohort, it is estimated that dyslexia can affect up to 4% of the general population.<sup>5</sup>

The number of dyslexic radiographers or student radiographers is unknown. However, since research suggests that dyslexics may be drawn to careers in the caring professions,<sup>6</sup> the number might actually be higher than that found within the general population.

According to Wright<sup>7</sup> there is a broad perception amongst healthcare professionals that associates dyslexia with unsafe practice. For example, staff raised concerns about the potential to confuse medical terminology and the accuracy of interpreting information at speed. This perception, which is debated at length in the literature, creates an immediate negative impression of the disability and therefore any associated strengths of being dyslexic are rarely known or acknowledged.<sup>8</sup>

However, this perception of an unsafe practitioner would appear to be a misconception since:

*There does not appear to be any evidence to suggest that people with dyslexia cannot cope with studying or becoming a qualified nurse or midwife. What little evidence there is suggests that students with dyslexia do go on to become nurses, but are better students and practitioners when given appropriate support. (Wright,<sup>7</sup> pp. 39)*

## Legislation and clinical placements

The Disability Discrimination Act (DDA)<sup>9</sup> requires the employer to make reasonable adjustments if employment arrangements place disabled people at a substantial disadvantage compared to non-disabled people. Furthermore the Special Educational Needs and Disability Act (SENDA)<sup>10</sup> extends this responsibility making it unlawful to discriminate against disabled students in education. These regulations are very familiar to HEIs and are enforced by law. However, further to these, the Disability Discrimination Act, 1995 (Amendment) Regulations,<sup>11</sup> which came

into force in October 2004, brought clinical work experience placements within the scope of the DDA. This means that a dyslexic student radiographer will also be covered by the DDA away from their educational institution. Therefore, if the clinical educator is aware that the student is dyslexic they must make allowances (reasonable adjustments) for this in the work place and in particular in the assessment of the student. The severity of dyslexia, like any other category of disability must be clearly established in order for the student to competently meet the Standards of Proficiency required by the professional body and thus prove fitness for practice.<sup>12</sup> In cases where, following professional assessment, the HEIs consider the degree of dyslexia to be too severe to meet the Standards of Proficiency, suitability for training must be addressed before the start of the training programme. Although moderate dyslexia would not preclude a student from training to be a radiographer, a cut-off level has never been established.

## Experiences of dyslexia healthcare students

In order to provide an insight into the potential difficulties that may be evident in radiography education, the experiences of dyslexic healthcare students are reviewed from the existing literature.

Illingworth<sup>13</sup> studied the varied experiences of nurses and healthcare assistants with dyslexia in the clinical environment. Using interviews to collect her data she noted the difficulties experienced by dyslexic students were significant and posed questions about risk and safety both for the student and the patient. Some students struggled with communication skills, particularly in following directions and taking telephone messages. Others described problems with order sequencing, time management and mathematical calculations. Morris and Turnbull<sup>14</sup> revealed some similar findings with one respondent stating that:

*A drug round will take me a long time because I'll check and re-check the drug card and dosage....I may read the same drug about 20–30 times. (p. 242).*

Quite critically as far as radiography would be concerned, many dyslexic nursing students reported problems with spatial awareness (up, down, left to right orientation). This problem is further supported by an experimental study of dyslexic orthodontic students which found that individuals identified as having scores suggestive of dyslexia performed poorly on a task of left–right orientation. Further empirical research within the radiography student population is indicated, but clearly if this was a difficulty evident in even a small percentage of students then measures would have to be put in place to reduce this risk.

However, it should be recognised that many students with no specific learning difficulties may also struggle with some of these tasks in the clinical setting and the small sample sizes within these studies will not support any generalisations across the larger population.

Although many studies described difficulties in clinical practice others mentioned how barriers were overcome by simple adjustments and an awareness of the issues. Research also suggests that dyslexic students may manage and

adapt to the clinical environment more easily than non-dyslexic students.<sup>15</sup> It is further suggested that this may be part of their intuitive mindset and since dyslexics may have a kinesthetic learning style, rather than auditory or visual, the understanding of a practical procedure may come to them quickly.<sup>3,16</sup> These attributes may lead to a multidimensional approach to practice, thus increasing the potential to develop into a more holistic practitioner.<sup>15</sup> Furthermore, it is argued that dyslexic students bring a more caring, aesthetic dimension to nursing.<sup>4,6,14</sup> Wright,<sup>7</sup> who is an advocate for the clinical support for dyslexic nurses, believes that some dyslexic students pose little problem in the clinical department since they tend to be hypervigilant, as is noted in the example given above.

## Disclosure

Literature suggests that the level of clinical support for dyslexic healthcare students is generally very poor. However, if the department is unaware of the student disability they are unable to make any reasonable adjustments or provide the necessary support. Since there is no legal requirement for the student to make a disclosure of a disability to the HEI,<sup>9</sup> there may be a large number of healthcare students receiving no support.

Studies of dyslexic university graduates in the United States show disclosure rates that vary from 57% to as low as 5%.<sup>16–18</sup> Although these were not healthcare students there is no research to suggest that figures would be significantly different. An additional complication arises with confidentiality.<sup>14</sup> Students may make the disclosure in confidence to the university, but since half their time is spent in the clinical department, should the clinical supervisor who is responsible for the student on placement not also be made aware of the disability? Furthermore, the supervision of student radiographers is a shared responsibility across all grades of clinical staff, so the questions about who would need to be informed and the role of explicit consent from the students are interesting ones.

It could be argued that as long as the key members of staff were aware, with the student's consent, and reasonable adjustments are in place to support their work, the disclosure would not need to be disseminated any further. Although this approach may still pose some potential health and safety risks, it may help to reduce the feelings of embarrassment, ridicule and inadequacy felt by some dyslexic nurses upon disclosing their disability to the broader clinical staff. In this particular study, Morris and Turnbull<sup>14</sup> found that widespread concealment of students' disabilities in the clinical setting was mainly due to poor staff attitude and a very negative perception of dyslexia. As one nursing student commented:

*'When they [staff] find out they withdraw from you and make out you're not on the same level...they try to rubbish you and make you feel you've got nothing in your brain' (p. 38).*

## Initial screening

In order to provide dyslexic students with the highest quality of clinical education and comply with legislation, there is

a need to ensure that self-disclosure is encouraged in a supportive environment.<sup>19</sup> However, this does not necessarily avoid the complications of concealment or an undiagnosed disability. Academic qualifications and interviews do not always indicate that there may be a potential learning disability. It would therefore appear to be a sensible approach to perform a simple screening of *all radiography students* at the admissions stage in order to identify those students that may require professional assessment for dyslexia or other associated learning difficulties.<sup>20</sup> This would not be deemed controversial or discriminatory if applied to all candidates. However, issues of personal rights and consent would still have to be addressed. Similar screening of entrants was noted in a nursing study,<sup>7</sup> but the specific details are not known. This test would not seek to make a diagnosis of any kind but merely identify potential problems at the earliest possible stage. This would assist in identifying undiagnosed disabilities before any placement is considered, thus giving time for support mechanisms to be set up.

## Coping strategies

It is suggested that dyslexic healthcare students can quickly develop some complex coping strategies in order to compensate for their learning disability. These strategies include keeping short notes or short-hand lists, proof reading, rehearsing instructions and the effective use of information technology.<sup>15</sup> Other studies showed the use of coloured paper, overlays, tinted glasses and self-managing strategies.<sup>21,22</sup> With clear systems of work and a good awareness of the issues many of the difficulties can be overcome by relatively simple adjustments to the work place.<sup>13,15</sup> A supportive and knowledgeable mentor was noted as being a major asset to students. Nurses were seen to develop their own practical methods of coping; examples included a transfer to a quieter shift to give more time for report writing, using a spell checker and rote learning medical terminology.<sup>13</sup> Despite this Ellis<sup>23</sup> expressed considerable concern at dyslexic nursing staff administering drugs, but in defence Morris and Turnbull<sup>14</sup> pointed out that the nurses in their study were hypervigilant about this particular task and, like all healthcare professionals, were responsible for the double-checking of the drug within the presence of another qualified member of staff.

Although these coping strategies address some of the problems in healthcare professionals, student radiographers require a different set of skills that may not be adapted to the same extent as those noted in the nursing research. For example, the literature does not indicate how the difficulties of spatial awareness may be compensated for. This critical skill for any imaging professional includes the correct left to right orientation of the patient to the resultant image. It is not known to what extent this difficulty is experienced by dyslexic student radiographers or what coping strategies might be used. Further research into this important issue is ongoing.

## Conclusion

Gaining an understanding of the challenges facing dyslexic student radiographers and their educators is a daunting task.

With no previously published research that specifically considers clinical radiography, reflection on the experiences of other healthcare professions can act as a starting point to guide further research in radiography. Supporting dyslexia in the clinical radiology setting is an important issue, not only because of the need to comply with legislation, but also to maintain standards and uphold health and safety.

## References

1. Foster I. Enhancing the learning experience of student radiographers with dyslexia. *Radiography* 2008;14(1):32–8.
2. Department for Education and Skills. Delivering skills for life: a framework for understanding dyslexia. Available from: <<http://www.teachernet.gov.uk/docbank/index.cfm?id=7073>>; 2004 [accessed: 10.03.08].
3. Davis R, Braun E. *The gift of dyslexia*. London: Souvenir Press; 1997.
4. British Dyslexia Association. *Becoming a dyslexia-wise employer*. Available from: <<http://www.bdadyslexia.org.uk/whatisdyslexia.html>>; 2003 [accessed 12.03.08].
5. Snowling M. *Dyslexia*. Oxford: Blackwell; 2000.
6. Taylor K, Walter J. Occupation choices of adults with and without symptoms of dyslexia. *Dyslexia* 2003;9:177–84.
7. Wright D. Educational support for nursing and midwifery students with dyslexia. *Nursing Standard* 2000;14(41):35–41.
8. Riddick B. Experiences of teachers and trainee teachers who are dyslexic. *Journal of Inclusive Education* 2003;7(40):389–402.
9. HMSO. The disability discrimination act 1995, explanatory notes. Available from: <[http://www.opsi.gov.uk/Acts/acts2005/en/ukpgaen\\_20050013\\_en\\_1](http://www.opsi.gov.uk/Acts/acts2005/en/ukpgaen_20050013_en_1)>; 1995 [accessed 13.03.08].
10. HMSO. Special educational needs and disability act 2001, explanatory notes. Available from: <[http://www.opsi.gov.uk/acts/acts2001/ukpga\\_20010010\\_en\\_1](http://www.opsi.gov.uk/acts/acts2001/ukpga_20010010_en_1)>; 2001 [accessed 13.03.08].
11. HMSO. The disability discrimination act 1995 (amended) Regulations. Available from: <<http://www.opsi.gov.uk/si/si2003/20031673.htm>>; 2003 [accessed 13.03.08].
12. Health Professions Council. A disabled person's guide to becoming a health professional. Available from: <<http://www.hpc-uk.org/publications/index.asp?id=82ions>>; 2005 [accessed 14.03.08].
13. Illingworth K. The effects of dyslexia on the work of nurses and healthcare assistants. *Nursing Standard* 2005;19(38):41–8.
14. Morris D, Turnbull P. Clinical experiences of students with dyslexia. *Journal of Advanced Nursing* 2006;54(2):238–47.
15. Sanderson-Mann J, Mc Candless F. Understanding dyslexia and nurse education in the clinical setting. *Nurse Education in Practice* 2006;6:127–33.
16. Kolanko K. A collective case study of nursing students with learning disabilities. *Nursing Education Perspectives* 2003;24(5):251–6.
17. Greenbaum B, Graham S, Scales W. Adults with learning disabilities: occupational and social status after college. *Journal of Learning Disabilities* 1996;29(2):167–73.
18. Witte RH, Philips L, Kakela M. Job satisfaction of college graduates with learning disabilities. *Journal of Learning Disabilities* 1998;31(3):259–65.
19. Quality Assurance Agency. Code of practice for the assurance of academic quality and standards in higher education section 3: students with disabilities. Available from: <<http://www.qaa.ac.uk/academicinfrastructure/codeOfPractice/section3/default.asp>>; October 1999 [accessed 13.03.08].
20. Murphy FJ. Working with dyslexia. *Synergy* April 2007:26–7.
21. White J. Supporting nursing students with dyslexia in clinical practice. *Nursing Standard* 2007;21(19):35–42.
22. Morris D, Turnbull P. The disclosure of dyslexia in clinical practice: Experiences of student nurses in the United Kingdom. *Nurse Education Today* 2007;27:35–42.
23. Ellis R. Dyslexic nurses 'give out pills by colour'. *Mail on Sunday* 16th December 2001. London, England.