How can we support those we know nothing about? Leading on and advocating for more research to support neurodivergent student Radiographers in the UK

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Abstract

Being neurodivergent (i.e., autistic, dyslexic, dyspraxic, ADHD, etc) can present challenges in the neurotypical world. These challenges can be disabling and thus, in accordance with the Equality Act 2010 of the UK, reasonable adjustments should be made. However, there is little published research investigating the experiences of, and therefore support needed for, neurodivergent students on clinical placements. This is especially true in radiography research, which is pertinent considering the potential for neurodivergent disabilities to interact with the demands of the role. Worthy of note, there is no research exploring the experiences of autistic students, dyspraxic or ADHD students. Due to this, it is impossible to know what radiography-specific support is needed. This piece will review the literature from the radiography and wider healthcare field and outline the possible impact this research deflect will have on neurodivergent student radiographers.

What is Neurodiversity?

The term neurodiversity, originally coined by Judy Singer in 1998 (Armstrong, 2011), describes the range of diversity in human brains, borrowing from the notion of biodiversity used in the politics of ecological conservation (Doyle, 2020). Biodiversity, an idea which emphasises the benefit of a wide range of different plant and animal variations in nature, is used analogously to stress the benefit of rich neurological diversity (Doyle, 2020). This can include a wide range of distinctive characteristics, expressions and differences. However, it is important to note that the neurodiversity model does not seek to erase the disabling nature of neurodivergence but seeks to reclassify neurological differences as personality characteristics and self-expression rather than pathologies and disorders (Hughes, 2020). Hughes (2020) writes that throughout the autistic community, there is a recognised difference between disability and disorder. Those that are neurodivergent are not suffering from disorders but encounter disability due to a society constructed for neurotypical people. However, if these are not addressed, and the needed adjustments are not made, there is potential for a serious significant impact on one's ability to learn and their physical health and emotional well-being (Griffin and Pollak, 2009; Jones et al., 2014; Young et al., 2021)

Doyle 2020 refers to the below four neurominorities as the most commonly attached under the umbrella of neurodivergence:

- Dyslexia is recognised as the most common neurominority and is estimated to impact 10% of people. Challenging aspects of dyslexia include slower reading and/or writing speeds, poorer working memory, organisation and time management skills.
- Dyspraxia, medically known as Developmental Co-ordination Disorder (DCD), has an estimated impact of 6% of people and challenges motor skills, processing speed, working memory and organisation.
- ADHD, a grossly under-recognised and underdiagnosed neurominority, has a prevalence of 5% worldwide (Ginsberg et al., 2014). An ADHD person can have trouble maintaining focus and attention, difficulties with time management and prioritising tasks and difficulty with emotions and self-regulation.
- Autism is the rarest neurominority impacting up to 1.6% of people. Difficulties can include time management, communication and social skills, sensory sensitivities and concentration.

It is important to recognise these are common examples and that each person experiences their neurodivergence differently. It is also important to note that Tourette syndrome, mental health conditions and conditions acquired through brain injury are often also included within neurodiversity and that the paradigm is purposefully not limited (Doyle, 2020).

The Issue of Equality

In accordance with the UK Equality Act 2010, higher education institutions must make reasonable adjustments to ensure students experiencing disabilities are not at a disadvantage in comparison to their non-disabled peers. This would include the disabilities experienced as an aspect of one's neurodivergence. The same is also true for clinical sites at which students take part in practice-based learning as required in their training.

The BMA (British Medical Association) (2020) published a report investigating the experiences of doctors and medical students, which has exposed many issues they face. The survey found that 77% feared discrimination if they disclosed their disability or long-term health condition. Without disclosure, it is impossible to provide support for a person experiencing a disability. This is said to be due to fear of stigma, in particular, worries about how being disabled would affect them fitting in with the group, and possible impacts on their career progress, due to seniors viewing it as a weakness. These fears are not unfounded as the report shows that

from those that did disclose, only 41% felt it had led to improved support and just 46% felt their colleagues had been supportive. There are accounts of colleagues advising disabled medics to leave the profession and questioning their ability to fulfil their role. Only 55% of those that require reasonable adjustments have had access to them due to service pressures, arguments around funding and cost, and complex and lengthy processes. Over a third of participants (35%) said they have faced direct discrimination, bullying or harassment, which includes two fifths of consultants (42%).

From this report, the vast amount of work needed to support disabled doctors and medical students is apparent. There is currently no report of a similar nature investigating any of the allied healthcare professions (AHPs) to draw a comparison. It could be the case that the structure or professional culture of medicine uniquely breeds discrimination. However, medics do not work in isolation and often work closely with the AHPs in multi-disciplinary teams, fulfilling roles in similar or the same environments. Therefore, it would be fair to imagine a level of similarity between the experiences of disabled medics and disabled allied healthcare professionals, but this is not yet evidenced.

Across all higher education, the literature reports that the number of students recorded as being neurodivergent is increasing (Couzens, 2015). It is unclear whether this is due to a genuine increase, or an increase in disclosure (Kendall, 2015). Regardless of origin, this increase should provide further impetus to increase the awareness, research and guidance in this area. However, there is yet no evidence of this.

As the UK has the most studies published on the topic, it would be fair to assume that disabilities experienced as a barrier in the academic elements of higher education are well researched and appreciated (Bunbury, 2018; Lane, 2017). However, in lesser understood neurominorities, like ADHD, this is not the case in the UK and Ireland (Segwick, 2017). Furthermore, Kendall (2016) found there had been no work on improving the awareness of lecturing staff, and this has manifested in "generic" support plans lacking the student-centred approach needed. From the literature, it is also clear that there are persistent issues originating from students' perception of themselves (Greaney, 2018). Issues surrounding disclosure, identity and stigma permeate the whole of the neurodivergent student's experience of healthcare training, echoing some of the themes in the previously mentioned BMA report (BMA, 2020; Greaney, 2018; Osborne, 2019; Shaw, 2021).

Radiography requires a distinct skill set that combines knowledge in physics, technology, anatomy, pathology, oncology, and patient care and communication. This blend of knowledge poses a unique challenge for learners, particularly when

tasked with putting the education into practice on clinical placement; an environment well documented to be stressful (Hyde, 2015; Mawson et al., 2021). This is why it is imperative that reasonable adjustments, support and accommodations are made for neurodivergent students in radiography placements. However, within radiography research, there is very little investigating the placement experiences of neurodivergent student radiographers, and worthy of particular note, there is no work exploring autism, dyspraxia or ADHD and only two pieces of older work focusing on dyslexia (Murphy, 2008; Murphy, 2010). There is also no policy or professional guidance on supporting, adapting practice or providing reasonable adjustments for neurodivergent students, or qualified, radiographers.

It should be recognised that this neurodiversity research and awareness deficit lies proportionately across all healthcare disciplines. Unsurprisingly, nursing, the largest field, produces the majority of research in this field.

Wider Healthcare Research

A review of the UK nursing literature by Storr et al (2011) states that support varies widely throughout institutions, regardless of efforts to standardise. The support available to students tends to be reactive when a proactive approach is needed, meaning students experience academic or clinical adversity before support is provided and undertaken (Baker, 2022; Storr et al., 2011). A proactive approach would include promoting disclosure, and highlighting entitlements and possible adjustments that could be made, before clinical placement begins (Baker, 2022; Storr et al., 2011). It is also important to note that, due to the protection of sensitive data, the information about a student's particular disclosed disability does not stretch from university to their placement setting and the student would need to disclose it to the placement supervisor and/or staff team themselves. This is a repeated key issue that is highlighted in much of the research (Norris et al, 2019; Storr et al, 2011; King, 2018). In King (2018), nursing link lecturers (also called clinical tutors or mentors) felt that students' choice not to disclose and engage with the disabilities process meant they were not able to reach their full potential. One lecturer commented "[they] could muddle through and just sneak a pass". Overall, the mentors felt that they had the knowledge to implement any needed adjustments but there are many barriers impacting their successful facilitation.

King (2019) assessed nursing students and link lecturer's experiences with reasonable adjustments. The research found that many suggested adjustments are

not practical in a clinical setting, such as a recording device for spoken notetaking causing concerns around patient confidentiality. There were cases of good practice, but a lack of education and the lack of robust and comprehensive national guidance makes the process complex.

A similar view was taken by Craig (2018), exploring the concept of student nursing reasonable adjustments in Scotland. The research concluded that the term reasonable adjustments remains unclear. There is more education and guidance about disabilities and reasonable adjustments needed to increase staff knowledge and confidence. Students also need education on the benefits of disclosure and are empowered to request, review and evaluate any adjustments they access.

In the field of UK physiotherapy, in 2016-2017, 12% of students declared a disability, with the majority being dyslexic (Norris et al, 2019). Norris et al (2019) found that students felt worried about how disclosing their diagnosis may affect how they are treated by clinical staff and if the staff are "not gonna know where to start with you". They acknowledged their own bias pre-diagnosis and equated dyslexia with low intelligence. Overall, although students had faced clinical staff that were ignorant of specific learning difficulties, most were well informed.

Across much of the work, there is an element of internalised stigma. This was especially highlighted in Greaney (2018), which investigated dyslexic student nurses. It is important that these harmful self-perceptions are challenged at every step of the student journey, so that students feel able to disclose and thus able to access the support they need.

The Radiography Literature

The experiences of radiography students on clinical placement have been researched in several studies (Hyde, 2015; Kelly et al., 2021; McPake, 2019; McPake, 2020). This research has investigated the transition from classroom to clinical setting (Hyde, 2015), the effect of radiographer's attitudes (McPake, 2020), the educational models used (McPake, 2019) and the effect of communication training (Kelly et al., 2021). However, as previously discussed, there is a deficit of work investigating the experiences of neurodivergent student radiographers in this, or any, context.

There is one piece of primary research investigating clinical placement experiences of neurodivergent students. Murphy (2010) conducted 10 in-depth interviews with

radiography students, which included 8 that had a dyslexia diagnosis and 2 without. The research showed that, although there were recognised learning support plans in place in the university setting, these were largely ignored on placement. There are no explanations for why this was by Murphy (2010), however, the notion of staff forgetting about a student's disability is explored in Wray et al. (2005), in which the reasoning for this is the invisible nature of neurodivergence-related disabilities. It is unclear in Murphy (2010) whether staff in this case were ignoring the university's support plan or the student's disability entirely. A further possibility is the practicality of the reasonable adjustments in a clinical environment. Evidence of this is that the only student in the study that received additional support on placement was in the form of a Dictaphone. As outlined by King (2019), there is a data and confidentiality issue with such recording devices and therefore it would be fair to assume that its use was prohibited and ignored.

Murphy (2010) found a particularly pertinent theme around time and the extra pressure dyslexic students faced to carry out tasks in a prompt manner. One student felt that to get any support, he should apologise for his slowness. The students also faced inappropriate comments surrounding their suitability and capability for radiography. This represents an ignorance towards the support needed for a dyslexic person and the merits of a dyslexic person. It also assists in perpetuating a pre-empted fear of discrimination felt by students. This all contributes to painting a bleak picture of the support and care for dyslexic student radiographers. The research gives eight recommendations for improvement, relating to methods of support – including support groups and a named disability support mentor, education of staff about different disabilities, accessibility of materials, and admission and recruitment of radiography courses. From examining this list, twelve years later, it is difficult to find evidence of any of these recommendations being enacted.

Previously research by Murphy (2008), reviewed the literature, recognising the absence of research in the radiography domain. As a result of this, Murphy investigated the nursing literature and noted how the coping strategies used in the field of nursing may not be applicable to the radiography role. Skills such as spatial awareness, which are familiar challenges for dyslexic people and also essential in radiography, are not addressed in the nursing literature where they are less important. However, Murphy covered this in his, previously mentioned, later 2010 work, finding that the dyslexic students had neither poorer nor improved spatial awareness. More detailed research is needed to comprehensively investigate this. Murphy (2008), rather than focusing solely on student wellbeing, concluded that supporting dyslexic students was important to uphold standards and comply with health and safety legislation, which is an interesting point often overlooked in the other healthcare literature.

Moving away from the practice-based learning domain and to academic radiography learning environments, Foster (2006) examined educational strategies used in radiography courses and how these might be enhanced for dyslexic student radiographers. The paper states the usefulness of active learning and action research in dyslexic education. It has nine recommendations that address the themes of monitoring teaching practice, awareness and recognition of student needs and common challenges, and the use of support groups and a named advocate. The final two themes echo the recommendations made in Murphy (2010), however, in contrast to clinical placement environments, universities do provide named disabilities teams for students to approach for support (Chown, 2017).

The Impact

With only one piece of primary research investigating one neurominority, it is the belief of the author that this lack of research is going to impact students in four ways.

1. Lack of awareness of neurodiversity (and therefore lack of training resources for neurodiversity).

   The previous literature discussed highlights how the lack of knowledge of healthcare staff impacts students. Staff may not be aware of neurodiversity and the intricacies of the various neurominories. Those that are may have preconceived negative connotations leading to unfair and discriminatory assumptions. This can be particularly true for ADHD in which the general public's perception is dismissive and cynical (Young et al., 2021). The lack of awareness may be from the student themselves. Without the awareness of neurodiversity, they may not be able to understand their experiences. They also may not be aware of the support available and what they are entitled to. This also results in a lack of proportionate training schemes for other students and academic staff, which could help effectively support neurodivergent students for progression in an academic course.

2. Perpetuating stigmatisation and impeding documentation of experiences.

   Murphy (2010) highlighted many challenges faced by dyslexic student radiographers on placement. Without any further research, it is important to say if these experiences are rare anomalies or universal. It is impossible to explore

the reasons why students chose not to disclose. Is it the stigma and fear of discrimination highlighted in the BMA (2020) survey? How does this impact their future career progression? It is also important to comment on if experiences have improved or worsened over time.

3. Delaying assessment of structures of support.

   There is currently no standardised system of support for neurodivergent healthcare students. With every university and placement site functioning as silos, research is needed to show what is and what is not working. It is impossible to identify what good support looks like. There is also no way to assess implementing reasonable adjustments.

4. Lack of guidance and policy.

   Without a rigorous research base, the formation of an agreed policy is not viable. As there is no standard to hold HEI and placement providers to, there is no accountability, liability or responsibility.

Conclusion

In conclusion, the vast deficit of research on the experiences of the neurodivergent student radiographers is almost certainly going to have an impact on how supported they are. The one example of dyslexic student radiographers highlights a grave issue with student experience, student support and staff knowledge. Current literature from other healthcare fields provides a consensus that more research is required. Without rigorous and current radiography research, there is no improvement in the awareness of neurodiversity, no documentation of experience, no methods to assess strategies and no published professional policy and guidance.

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