

Could music mask dyslexia?

The literature shows that musicians have better developed auditory skills in terms of attention (1), prosody (2), and phonological awareness (3). In many studies, these skills have been found to transcend music and impact on other areas, such as in an academic domain (4). The problem is that where these cognitive skills are enhanced, they do not match behavioural expectations of dyslexia (5). Furthermore, the literature has consistently demonstrated a common assumption that musicians have a naturally higher IQ than their non-musician peers (6). This aligns with consistencies within the literature on the impact of environment on manifestations of dyslexia (7).

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Introduction

It has been hypothesised that engaging with music from an early age enhances working memory (WM), phonological awareness (PA) and word reading efficiency (WRE); cognitive correlates that inform the diagnosis of dyslexia. It can therefore be assumed that a child with dyslexia can benefit from music. It follows that engaging with music might equip individuals with skills that mask traits of dyslexia. For example, if a child does not demonstrate memory difficulties, is able to complete work on time, and achieve peer-related average levels in class, as opposed to achieving their potential, the literature indicates that teachers would not consider dyslexia (8). See Figure 1. This can make the identification of dyslexia in musicians problematic.

Objective

The present study examines whether music can be said to mask traits of dyslexia, particularly relating to the cognitive elements tested in dyslexia diagnostic assessments.

Methodology

Participants were recruited as musicians diagnosed with dyslexia later in their educational journeys, up to post-graduate study. Five participants shared their learning histories and musical backgrounds, alongside cognitive testing measuring WM, PA and WRE. Interviews were carried out online via Zoom, and remote tests were conducted, using the TOMAL2 (9), CTOPP2 (10) and TOWRE2 (11). Qualitative data is analysed using Reflexive Thematic Analysis (RTA) (12).

Results

We would typically see a 'spiky profile' in dyslexia. The overall mean results shown in Figure 2, demonstrate a distinct pattern of higher scores in the WM and WRE, with a dip in PA. This pattern aligns with the literature to some extent, while acknowledging that there is much information missing here that would be available in a full diagnostic assessment.

The RTA highlighted that despite the known positives of music, we can also perceive a negative side to the relationship between music and dyslexia. Although there may be compensatory strategies provided by a musical training, those same compensatory strategies appear to mask dyslexia. This impacts on how dyslexia is recognised. Participants unanimously felt that earlier recognition of dyslexia would have been beneficial to their academic progression and more importantly, their well-being.

Analysis

The mean scores (figure 2) show clear dyslexia traits. However, lower CTOPP2 scores, and particularly the rapid naming (RN) subtests, would not be substantial evidence to diagnose dyslexia. The mean overall WM measured as mid-average; RN as mid-average; and mean WRE as above average. This then would not suggest dyslexia without further investigation. There is some evidence in this small sample that cognitive skills might be better developed in dyslexic musicians and that this may level out their cognitive profile, making a dyslexia diagnosis more problematic.

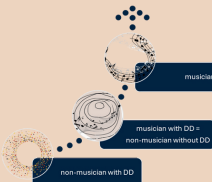


Figure 1: A hierarchy of performance in terms of cognition and literacy, which impacts on how dyslexia is recognised. The literature shows that musicians tend to outperform non-musicians with and without dyslexia.



Figure 2: Mean results of participants' cognitive testing showing an overall pattern of working memory (WM), phonological awareness (PA)/ rapid naming (RN), and word reading efficiency (WRE).



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Conclusion

There are negative assumptions about the abilities of dyslexics and positive assumptions about the abilities of musicians. Neither of which are useful. The far transfer effects of music training are clear in the literature. Consequently, music has been shown to be beneficial for individuals with dyslexia. This research shows that music can be seen to mask aspects of dyslexia. Music must therefore be considered as a vital part of developmental history within dyslexia assessments. As a result of this research, the author has created a Music Checklist (13) for SpLD Assessors. This is designed to be included in pre-assessment questionnaires when assessing musicians for dyslexia.

Related literature

- 1 Roman-Caballero, Martin-Arévalo, and Lupiáñez (2021)
- 2 Obergrfell et al., (2021)
- 3 Goswami et al., (2011); Raugnacco et al., (2015)
- 4 Schellenberg, (2005)
- 5 Overy et al., (2003)
- 6 Overy (1998); Schellenberg (2011)
- 7 Frith (1999); Carroll, J., et al., (2024)
- 8 Knight (2018); Washburn, Binks-Cantrell and Joshi (2013)
- 9 Reynolds, C.R., and Vores, J. K., (2007)
- 10 Wagner, R. K., Torgesen, J. K., Rashotte C. A. and Pearson, N. A. (2013)
- 11 Torgesen, J.K., Wagner, R. K. and Rashotte, C. A. (2012)
- 12 Braun and Clarke (2022)
- 13 The Music Checklist created by Alicia Johnson can be found at musicdyslexia.co.uk/research (scan the QR code above)

