

Musical interests and abilities of children with septo-optic dysplasia

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Abstract. Recent anecdotal evidence and appearances in the US media have indicated that children with septo-optic dysplasia ('s.o.d.') may have a tendency to precocious musical development, in some cases leading to 'savant syndrome'. Here, initial evidence based on a questionnaire survey of parents suggests that a significant proportion of this group do appear to have an unusual predilection for music. However, significant differences in the perceived levels of musical interest and ability of blind children with s.o.d. as opposed to those who are partially sighted indicate that level of vision may be a particularly important factor in musical development.

Keywords: Septo-optic dysplasia; optic nerve hypoplasia; blind; partially sighted; musical development.

1. Introduction

This paper summarises the findings of an initial investigation into the musical interests and abilities of children with septo-optic dysplasia ('s.o.d.'), following anecdotal evidence from parents and teachers of a tendency among this group to find music unusually important in a range of everyday contexts, leading, in some cases, to precocious musical development [1]. S.o.d. is a rare condition, occurring in approximately 1 in 16,000 children. It is defined as a combination of optic nerve hypoplasia, pituitary abnormalities and the absence of the septum pellucidum or corpus callosum, without which communication between areas of the mid-brain (such as the transfer of sensory information) is hampered. Among the likely effects of s.o.d. are visual impairment, hormonal problems, delayed development, behavioural difficulties and obesity. The type and range of symptoms can vary from mild to very severe [2].

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4. Findings and interpretation

Throughout the survey, through describing and reflecting on their own children, parents consistently judged the levels of musical interest and ability of those who were blind to be higher than those of children and young people who were partially sighted. Using Chi Square analysis, the difference between these two groups in relation to the dimensions described together with the perceived importance of music, is statistically significant ($p \leq 0.001$) (full details are available from the first author). This suggests that the level of children's vision is an important factor in influencing their musical development.

Parents' accounts suggest that, irrespective of their children's age, sex or general level of development, those who are partially sighted are more likely than their fully-sighted peers to have a particular interest in music ($p \leq 0.01$). However, while the musical development of partially-sighted children may well be in line with or somewhat above general expectations, there is a greater chance (in the view of parents) that it will be at a lower level than in the case of those without a visual impairment ($p \leq 0.025$).

As far as blind children and young people are concerned, however, the picture as painted by their parents is rather different. Irrespective of age, sex or general level of development, they are more likely than their fully-sighted peers to have a particular interest in everyday sounds ($p \leq 0.01$) and music ($p \leq 0.001$), and more likely to find music important as a source of stimulation or comfort, for communication, socialisation or understanding, or to mark out events in their daily routine ($p \leq 0.001$). And while their musical development may be in line with general expectations, or even delayed ($p \leq 0.05$), in the view of parents it is much more likely to be unusually advanced than in the case of fully-sighted children ($p \leq 0.001$). Where such advanced musical development occurs, the data from this survey support earlier findings [4] that a common feature is the possession of 'absolute pitch' ('AP') – the ability to recognise and reproduce notes in isolation [5,6].

While learning difficulties may have an impact on a child's musical development, it is possible that many areas of musicality (including AP) will be unaffected. Indeed, it is evident from individual case-studies beyond the current survey [7] that blind children with s.o.d. may excel in one area or more of musical performance despite having learning difficulties. Among the group of 16 participants with s.o.d. who were blind, an exceptional interest in music, which included spending two hours or more a day in active music-making, was always present in reported cases of exceptional musical development. According to parents, an exceptional interest in music did not necessarily lead to (and subsequently co-exist with) exceptional musical development, however.

Despite their generally high reported levels of musical interest and ability, fewer of the children and young people with s.o.d. were said to play musical instruments (at any level) than their fully-sighted peers (22% as opposed to 41%). Also, the range of different instruments that they played was more limited (four as opposed to seven).

While these differences may in part be attributable to the differing age profiles of the two groups (more of the children with s.o.d. were in the early years), the data nevertheless suggest an important underlying trend (see below).

None of the participants with s.o.d. was reported as having had lessons from a music teacher (compared with 28% of the comparison group who had). Moreover, although 34% of those who were blind and partially sighted were said to have a 'special talent for singing', none had received vocal tuition. While this difference may again partly be explained by the fact that those with s.o.d. were generally younger than the children in the comparison group, the data once more suggest a potentially important underlying trend which the researchers hypothesised may be related to unduly low expectations of musical learning and achievement in the context of disability. Hence we can assume that most of the children with s.o.d. who could play an instrument were self-taught and that, since none used any form of music notation (in braille or large print), they learnt pieces by ear or through visually copying what others did or both. This ties in with the fact that a significantly higher proportion of children with s.o.d. were reported to be self-motivated to make music than was the case with the comparison group (80% of those who responded as opposed to 48%; $p \leq 0.05$).

While 13% of the comparison group had taken instrumental examinations, none of those with s.o.d. had had their musical accomplishments formally recognised in this way, even though they were apparently able to perform to a similar standard as their fully-sighted peers – almost all participants were described as 'beginners'. This was despite the availability of some examinations and tests in appropriate formats for people with visual problems or learning difficulties or both. Again, the varying age profiles of the two groups may have contributed to this difference, although the researchers speculated once more whether perceptions of disability could at times be constraining the potential public recognition of ability.

Although ten of the children with s.o.d. with additional needs were said to find music important as a source of stimulation or comfort or had had musical experiences in order to promote their wider development or understanding, only four of them received (or had ever received) music therapy. Moreover, there appeared to be some ambiguity in the responses of parents and professionals (in both the UK and the US) as to their perceptions of the differing nature and function of music education and music therapy, and how each could make a distinct contribution to their children's development and well-being.

Overall, this initial survey supports the anecdotal evidence which stimulated it and suggests that organisations such as RNIB should campaign to ensure that appropriate provision is made to support the musical interests and abilities of blind and partially-sighted children, including those with s.o.d.

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