

Vision to Learn: A Public Health Approach to Vision Screening for Children

By Mary Butler, Sarah Drummond, Kelechi Ogbuehi, Machiko Niimi and Karen Parker



Mary Butler

Email: Mary.Butler@op.ac.nz

Mary Butler works toward the development of sustainable approaches to issues of disability and rehabilitation. Her superpowers in this endeavour are the students she has taught along the way, and a commitment to community collaborations. She is a board member of the Visual Impairment Charitable Trust Aotearoa (VICTA).



Sarah Drummond

Sarah Drummond is a final year occupational therapy student with a history of commitment to community development projects. She has taken the last year off her studies to be the project manager of the Vision 2020 programme. Sarah hopes to do postgraduate research in this area of practice.



Kelechi Ogbuehi

Kelechi Ogbuehi is professor of ophthalmology at the School of Medicine at the University of Otago. He is interested in the expanding role of optometrists as primary eyecare providers. Kelechi is a board member of VICTA.



Machiko Niimi

Machiko Niimi is a senior lecturer at the School of Product Design at Otago Polytechnic.



Karen Parker

Karen Parker is Assistant Principal and Year 7 Dean at Tahuna Normal Intermediate. Karen has strengths in mathematics, science and health. She is interested in music, robotics and performances.

***"Knowing is not enough;
we must apply.***

Willing is not enough; we must do."
- Goethe

The above quote is frequently attributed to Goethe, and it is a call to action that resonates with occupational therapists and anyone interested in public health. The field of public health is underpinned by a belief in the social determinants of health, a commitment to addressing social inequities and injustice that manifest in terms of ill-health and ways of building capacity to address the need for clinical, institutional and policy changes. Public health principles apply to eye health and vision rehabilitation, areas that are poorly provided for in Aotearoa New Zealand and many other countries. The World Health Organization's Report on Vision (2019) identified the fact that most visual impairment occurs because of easily preventable causes, such as the lack of spectacles and that this affects about 900 million people worldwide. Integrated people-centred eye care is described as a continuum of approaches to promotion, prevention, treatment and rehabilitation. This is applied to the spectrum of visual impairments across the life course. Integrated people-centred eye care also contributes to achieving universal health coverage and the United Nation's Sustainable Development Goal 3 (SDG3): "Ensure healthy lives and promote well-being for all at all ages". In this article, we describe a project which is an example of integrated people-centred eye care for children.

At present, we don't have mandatory vision screening for children in Aotearoa New Zealand. Instead, a technician goes to intermediate schools and does a screen of all year 7 children who happen to be present on that day. The latest Ministry of Education attendance survey (2020) indicates that only 58% of children attend school more than 90% of the time. This fact means that a significant number of children may be absent on

the one day when the vision screening might happen. Even more importantly, the children who are frequently absent are most likely to be the ones who have difficulty at school.

The gaps continue to unfold after the screening: the letter reporting the outcomes of the screening may never make it out from underneath the banana at the bottom of the school bag. Even if parents get the message saying their child needs to go and see an optometrist, many of them will fail to do so. Another problem with this system is that teachers do not directly receive information about whether or not the child has visual problems. These are fundamental flaws in the provision of health services: children depend on the adults in their life to ensure they get help when needed. Vision is crucial for nearly every occupation children engage in, including reading, sports and social engagements.

The Government in Aotearoa New Zealand has steadfastly refused to carry out an epidemiological survey of vision health or to prioritise this field in any way. Over the last seven years, there has been a petition, a select committee and a national reference group. The most recent appeal to the Government was through the Eye Health Coalition, which presented a seven-point plan to address visual impairment in February 2020 (MaryButler.org). The plan reiterates similar calls from over the last decade: for a national eye health survey; for public education and eye examinations; and for high-quality treatment, support and rehabilitation. It is in this context that we describe the development of an alternative approach to vision screening for children.

The Development of a Child-to-Child Approach to Vision Screening

In 2018, two occupational therapy students (Aleisha McMurray and Tahlia Hapuku) applied for ethical approval to do vision screening of year 9 children as part of their final year community development project (Butler, 2019). They came up with the concept of child-to-child vision screening, drawing on occupational therapy concepts of empowerment and person-centred practice. We were perplexed to find that nearly 20% of children seemed to need a full optometry assessment. We gave them vouchers to attend an optometrist, and then followed up after three months. At that point, we found that only one family had taken their child to see an optometrist. This finding revealed many gaps in the process, and we started to think of all the ways in which vision screening and the provision of spectacles are issues of equity and occupational injustice. It seems self-evident that it is necessary to ensure a child can see before we put any other learning support in place. Why are these children not getting the most basic health support for their learning needs?

This was an interesting question, and a literature search and conversations with experts indicated that a child-to-child approach to vision screening is a genuinely novel approach (Burnett et al., 2018). So we applied and got funding from the Participatory Science Platform to explore the issue further, and then put together a team of optometrists, product designers, teachers and occupational therapists. We then worked with children at the school during 2019 through an

iterative co-design process to develop a chart and series of protocols that could be used by the children in a class.

We developed the screening chart to be both sensitive to refractive errors and to pick up issues of visual attention. The screening tool has exciting possibilities for helping to understand who might need more input in terms of visual processing. More importantly, the approach may offer a paradigm shift in how we offer vision screening to children as a public health intervention. For details about the development of the screening toolkit, see the video links at the end of the reference list.

The child-to-child vision screening protocol also teaches children the scientific concept of 'fair testing', which is understood by clinicians as 'standardised testing'. Conversations with teachers indicated that this process fits well with the science curriculum. So we kept going and started to develop a whole science module addressing vision. We are also carrying out conversations with parents to understand vision screening from their perspective. Ultimately, we hope to find a sustainable solution to the problem of children with poor vision, which will work in the interests of public health.



Children at Tahuna Intermediate carrying out child-to-child vision screening.

In Conclusion

This article has described the rationale for occupational therapists to pay closer attention to vision as a public health intervention. Our focus on equity motivates us to take responsibility for tackling gaps in service provision. Once we understand that a visual impairment will affect core occupations, like reading, sports and social engagement, occupational therapists have a mandate to do something to address it. Once we recognise the gap between screening and parents taking their children to an optometrist, then we as occupational therapists will find ways to bridge this gap. Once we realise that wearing glasses can be stigmatising and many children avoid wearing spectacles at school, then we will start to apply our creative capacities to develop a more enabling approach.

This project is congruent with the aims of the Ottawa Charter (World Health Organization, 1986) because it ultimately aims to influence the building of healthy public policy in regards to eye health. It helps to create a supportive environment for

children to get the help they need and to reduce stigma about wearing spectacles; it aims to work at a community level; and it builds personal skills in children, teachers and families regarding eye health. We hope that eventually, the health system in Aotearoa New Zealand will reorient this perspective to integrated people-centred eye care.

References

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Videos

- The process of doing Child-to-Child vision screening: <https://www.youtube.com/watch?v=4Rtkb1ARomc&t=25s>
- The Design process for the Vision 2020 Toolkit <https://www.youtube.com/watch?v=ukdQc5U9Pag&t=2s>
- Introduction to the Vision 2020 screening toolkit <https://www.youtube.com/watch?v=dV9Kvqetug0>

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