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**CELEBRATING 50 YEARS**

**50**

— 1965-2015 —

University of Newcastle  
Department of Rural Health



# PHYSICAL ACTIVITY OF RURALLY RESIDING CHILDREN WITH DISABILITIES: PERCEPTIONS OF PARENTS/CARERS.

Jessica Langham  
Luke Wakely  
Dr Catherine Johnston  
Dr Kym Rae

School of Health Sciences and Department of Rural Health  
University of Newcastle



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1965-2015

# BACKGROUND

- Physical Activity (PA)
  - Essential to live a healthy lifestyle<sup>1</sup>
  - Reduces the risk of chronic diseases <sup>2</sup>
  - Improves mental, physical and social health<sup>3</sup>
  - Develops cardiovascular fitness, motor skills, self confidence<sup>3</sup>



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# BACKGROUND

- Rural children:
  - Long distances and lack of public transport<sup>4</sup>
  - Lack of local facilities<sup>4</sup>
  - Physical environment<sup>5</sup>
  - Climate extremes<sup>5</sup>
  - Expenses of sporting activities<sup>6</sup>



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# BACKGROUND

- Children with a disability
  - Less active than their similarly aged peers<sup>7</sup>
  - Physical, cognitive and/or behavioural limitations<sup>8</sup>
  - Parental beliefs<sup>9</sup>
  - Fear or anxiety about participation<sup>9</sup>
  - Negative attitudes<sup>10</sup>
  - Lack of knowledge<sup>11</sup>
  - Facilities<sup>11</sup>



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# BACKGROUND

- No research investigating participation of rurally residing children with a disability in physical activity
  - Amount
    - Are they meeting recommendations?
    - Are there health implications?
  - Barriers
    - Are there barriers and what are they?
    - How does this affect the amount of physical activity children participate in?



# PROJECT AIMS

- To investigate:
  - Parents perceptions of physical activity undertaken by rurally residing children with a disability
  - Possible barriers for rurally residing children with a disability to participation in physical activity



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# METHOD: STUDY DESIGN

- Cross sectional design
- Approved by the University of Newcastle HREC prior to commencement (H-201400102)



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# METHOD: PARTICIPANTS

- Inclusion criteria
  - Parent/ carer of school aged children with a disability (5 -18 years)
  - Live in a rural/remote area
  - Accessed a local disability organisation or private practice clinic
  - Able to communicate in English
  - Over the age of 18 years



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# METHOD: PARTICIPANTS

- Exclusion criteria
  - Children were less than 5 years
  - Parent/ carer had a poor understanding of English and were unable to complete the survey



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# METHOD: RECRUITMENT

- Northcott society's database
- Private allied health service
- 325 surveys mailed out
- Estimated 95 families that met inclusion criteria



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# METHOD: DATA COLLECTION

- Survey instrument
  - Custom designed survey
  - 4 sections
  - 19 questions – categorical and short written answers
- Data collection process
  - Identified
  - Sent package
  - Completed paper survey
  - Returned to Tamworth Educational Centre
  - Surveys de-identified



# METHOD: DATA ANALYSIS

- Quantitative data
  - Descriptive analysis - frequency and proportion
- Qualitative data
  - Thematically analysed using qualitative content analysis<sup>12</sup>



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# RESULTS

- 34 surveys returned
- Overall response rate of 10% (34/325)
- Expected response rate of 36% (34/95)
- Surveys from:
  - Inner region NSW (n=12)
  - Outer regional NSW (n=19)
  - Remote NSW (n=1)



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# RESULTS: RESPONDENT DEMOGRAPHICS

Characteristic	n (%)
Yearly household income (\$AU)	
0 – 18 200	8 (24)
18 201 - 37 000	11 (32)
37 001- 80 000	9 (26)
80 001 – 180 000	5 (15)
>180 001	1(3)
Relationship status	
Single	7 (21)
De-facto	5 (15)
Married	17 (50)
Divorced	1 (3)
Separated	4 (12)
Widowed	0 (0)
Population of residential town	
200 - 800	6 (18)
800 - 3000	2 (6)
3000 – 25 000	15 (44)
25 000 – 30 000	2 (6)
30 000- 130 000	9 (26)



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# RESULTS: CHILDREN'S CHARACTERISTICS

- Range of disabilities
  - behavioural disorders n= 15
  - neurological conditions n= 11
  - genetic conditions n= 7
  - digestive disorder n= 1
  - endocrine disorders n= 1
  - hearing loss n= 1
  - no formal diagnosis n=2



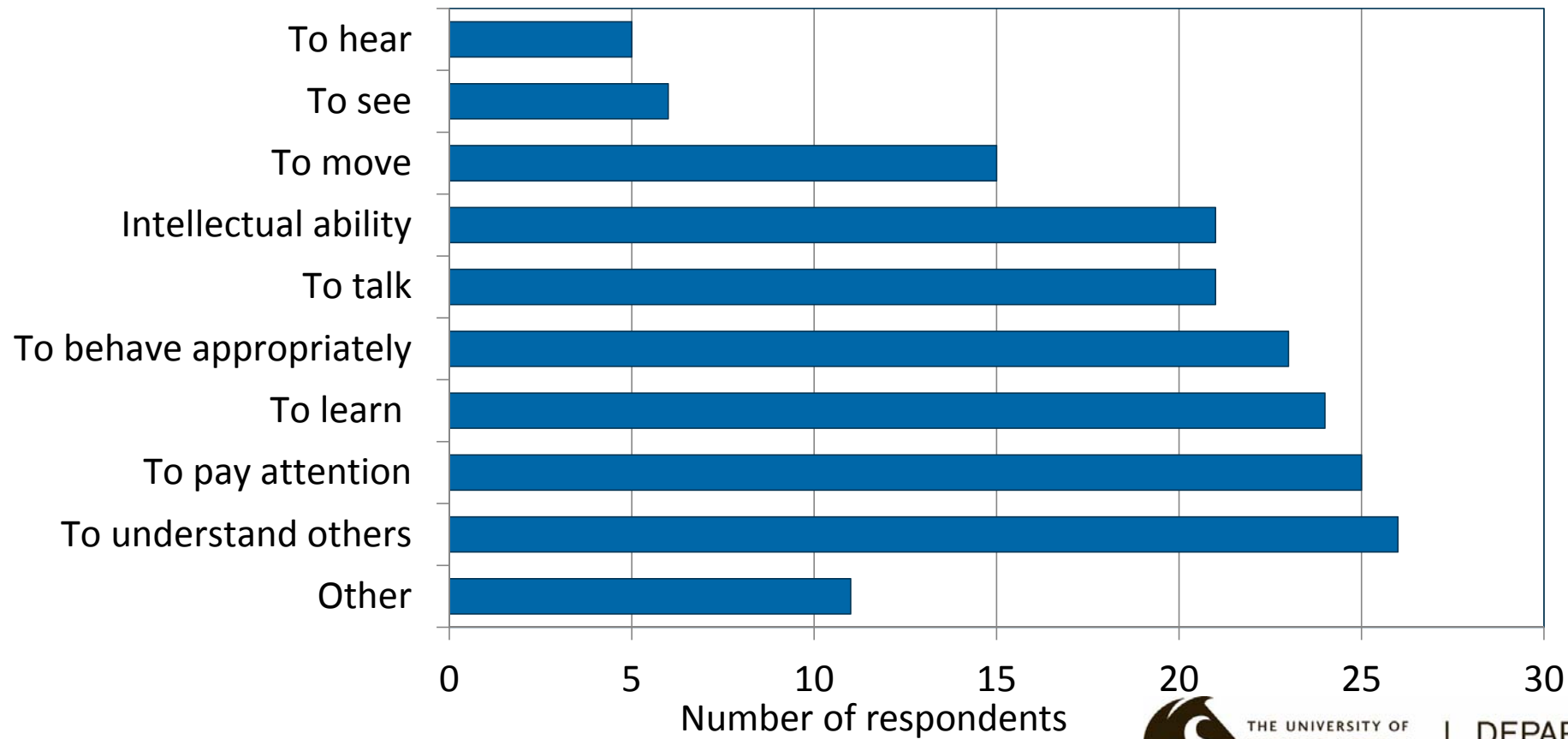
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# RESULTS: EFFECT OF THE CHILD'S DISABILITY

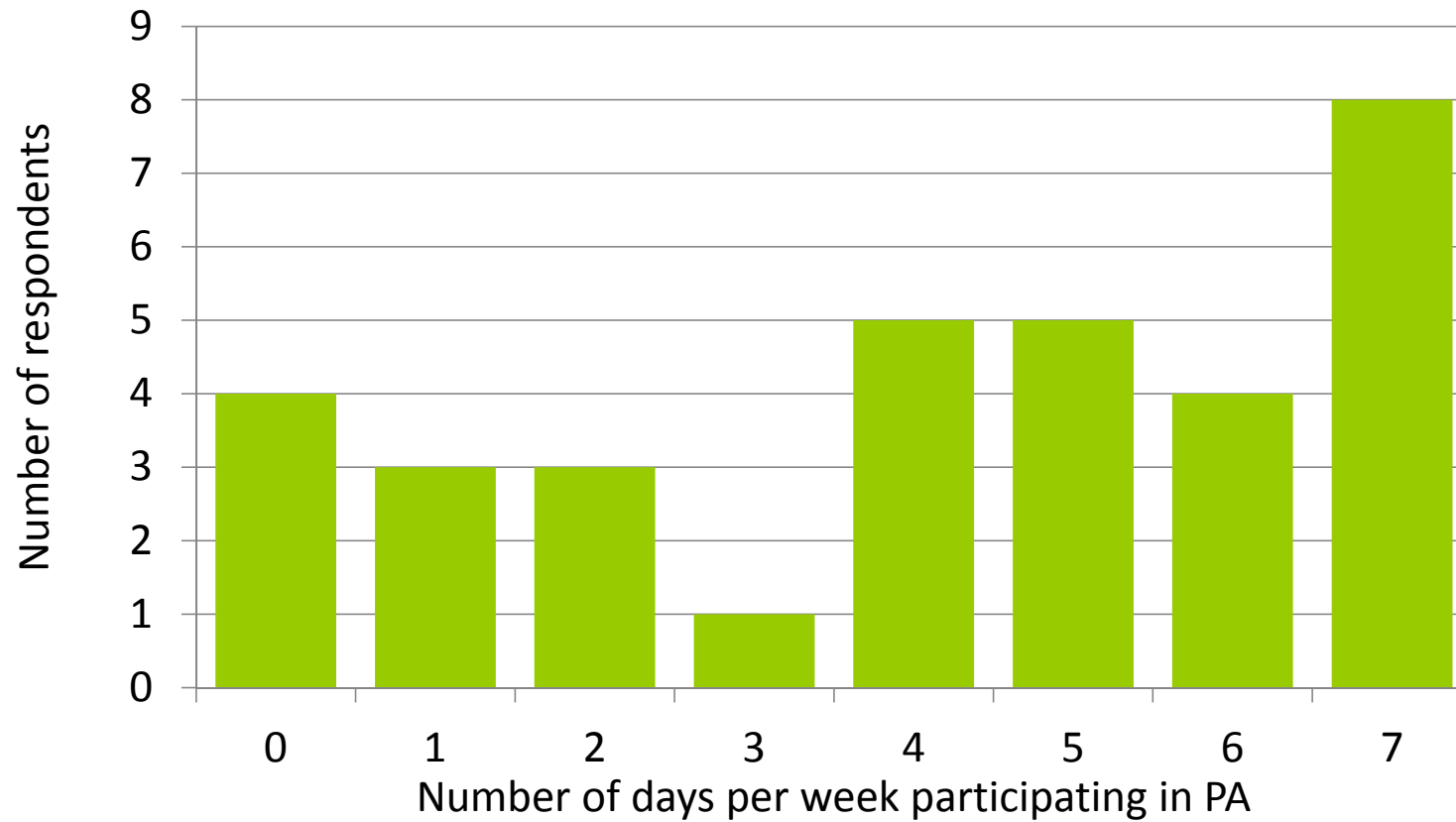
How does your child's disability affect them?



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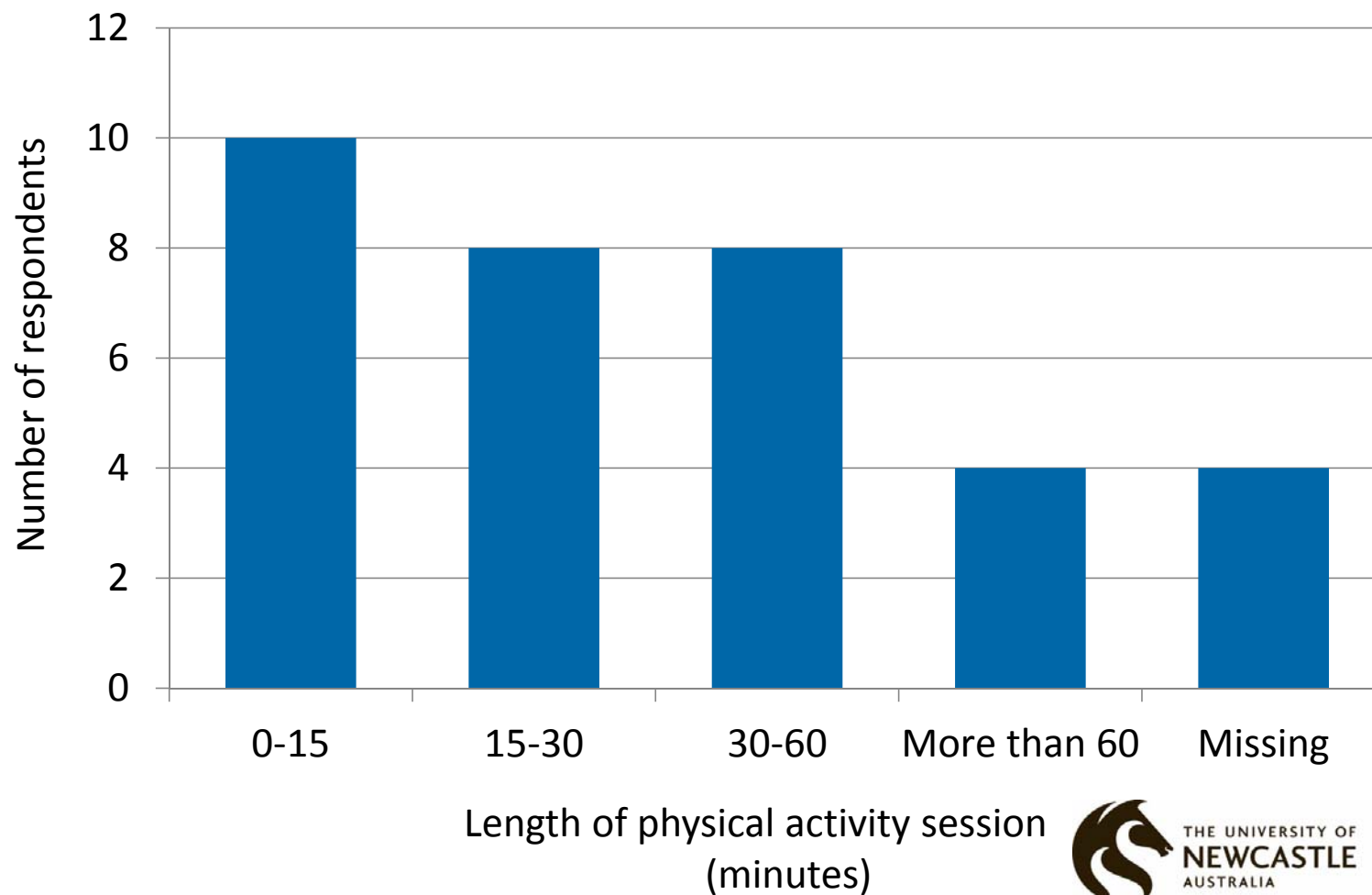
# RESULTS: LEVEL OF PHYSICAL ACTIVITY



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# RESULTS: LEVEL OF PHYSICAL ACTIVITY



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## RESULTS: BARRIERS TO PHYSICAL ACTIVITY

- Twenty seven participants (79%) indicated that there were barriers to their child participating in physical activity.



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# RESULTS: BARRIERS TO PHYSICAL ACTIVITY

Physical Barriers	Number (%)
Cognitive difficulties	16 (59)
Physical difficulties	16 (59)
Child feeling fatigued/tired	13 (48)
Child having pain	5 (19)
Child being unwell	5 (19)



# RESULTS: BARRIERS TO PHYSICAL ACTIVITY

Emotional Barriers	Number (%)
Child struggles to understand activities	16 (59)
Child feeling uncomfortable due to there being too many in teams/ groups	13 (48)
Child being left out/excluded	12 (44)
Child dislikes physical activity	4 (15)

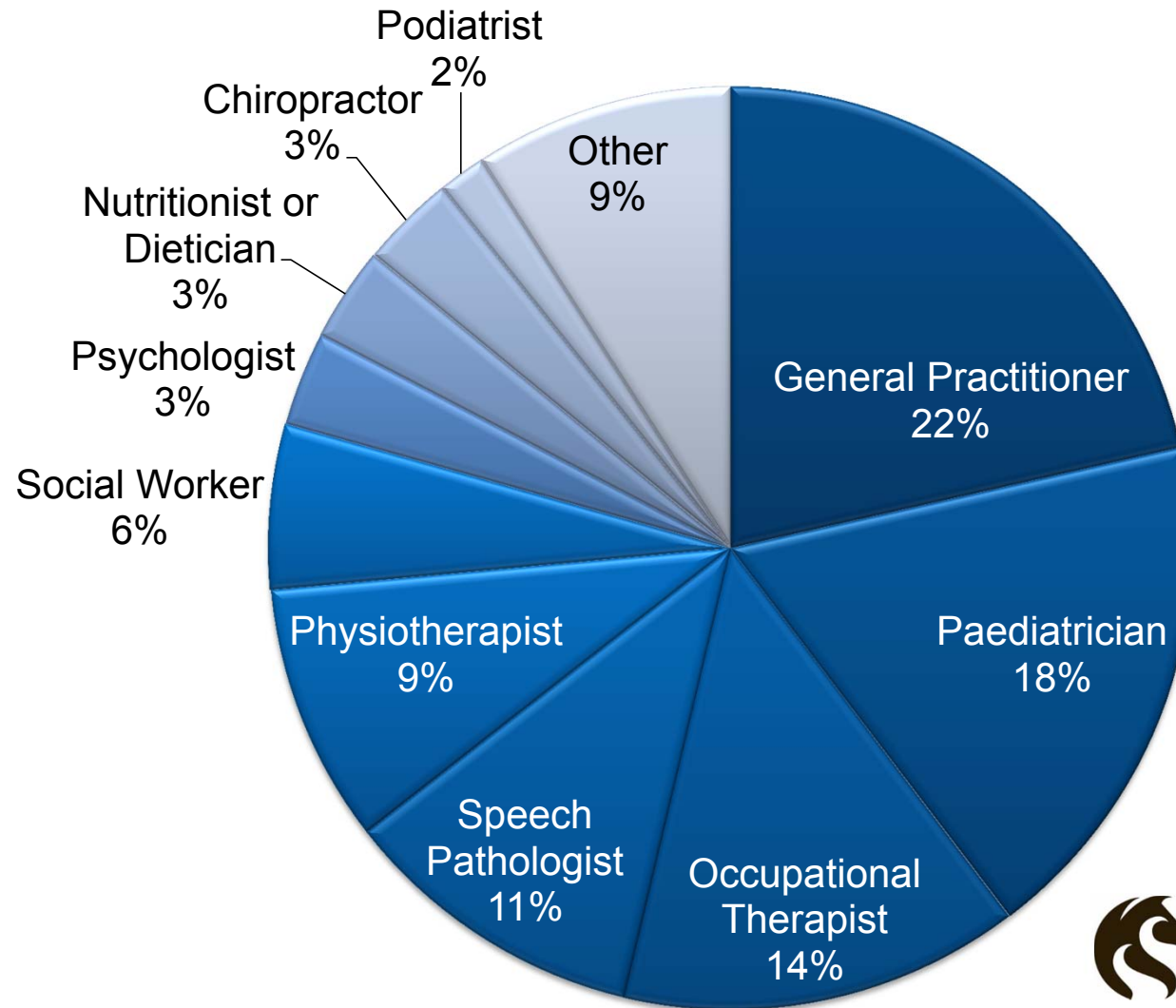


# RESULTS: BARRIERS TO PHYSICAL ACTIVITY

Environmental and community	Number (%)
Lack of awareness of sporting opportunities for child	15 (56)
Lack of environment supporting children with disabilities	15 (56)
Lack of trained professionals	13 (48)
Distance to sporting facilities	10 (37)
Cost of sporting activities	7 (26)
Limited access to sporting facilities	7 (26)
Lack of time	4 (15)



# RESULTS: HEALTH PROFESSIONALS ACCESSED



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# QUALITATIVE RESULTS:

- Three main themes emerged:
  - Segregation
  - Access to facilities and resources
  - Barriers specific to the child



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## QUALITATIVE RESULTS:

- Segregation

*"I had to fight to get my daughter the right to go swimming at school for sport as she was considered a level 5 risk despite being able to swim and have an aide in the water with her who is not only a swimming coach but also trained in swimming with the disabled and her full time aide at school."*

(Mother, outer regional)

*"lack of dance schools that cater for our daughter. The schools here all move so fast and she just can't keep up. A dance studio who caters would be brilliant."*

(Mother, inner regional)



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## QUALITATIVE RESULTS:

- Access to facilities and resources

*"Distance and the lack of trained professionals are the biggest barrier. There is no organised sports in our town and we need to travel to the main town- they do not have organised sports for her disability anywhere."*

(Mother, inner regional)

*"A lot of facilities are not set up for wheelchair."*

(Mother, outer regional)



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# QUALITATIVE RESULTS

- Barriers specific to the child

*“His prosthesis and limb deficiency impacts on his balance and mobility and subsequent confidence with gross motor activities.”*

(Mother, outer regional)

*“His inability to move without the aid of a wheelchair does not allow him to freely participate in physical activity. He has no ability to move.”*

(Mother, inner regional)

*“My child is physically active but struggles to participate in group activities.”*

(Mother, outer regional)

*“If he gets bullied or not picked, brings on attention seeking, behaviour issues”*

(Mother, inner regional)



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## DISCUSSION: MAIN FINDINGS

- Children with disabilities are not participating in recommended amounts of daily PA
  - 53% less than 30 minutes
  - 74% not participating in daily PA
- Multiple barriers preventing participation
  - Lack of access to facilities
  - Lack of trained professionals
  - Limitations of child's disability



# LIMITATIONS

- Small sample size
- Survey instrument
  - Not validated
  - Self reported
- Distribution of survey
  - Unable to control who received the survey
  - Only completed by one person in a household
  - Did not account for families with 2 children with disabilities



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# STRENGTHS

- Novel
- Rural focus
- Participants representative
  - Broad range of disabilities
  - Range of demographics
  - Respondents from different rural and remote areas



## WHERE TO FROM HERE?

- Educating schools, parents and sporting facilities/coaches
- Assisting parents and carers accessing funding
- Linking families and schools with the necessary recourses
- Development of exercise for children with disabilities in rural areas via skype?



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# CONCLUSION

- Children with a disability face the combine barriers of those who reside in a rural area and those who have a disability.



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# ACKNOWLEDGEMENTS

- Northcott Society
- Participating parents and carers



# REFERENCES

1. Conchar L, Bantjes J, Swartz L, Derman W. Barriers and facilitators to participation in physical activity: The experiences of a group of South African adolescents with cerebral palsy. *Journal of Health Psychology*. 2014;1-12.
2. Warburton DER, Nicol CW, Bredin SS. Health benefits of physical activity: the evidence. *Canadian Medical Association Journal*. 2006;174(6):801-9.
3. Okely A, Salmon J, Vella S, Cliff D, Timperio A, Tremblay M, et al. A Systematic Review to update the Australian Physical Activity Guidelines for Children and Young People. Report prepared for the Australian Government Department of Health, 2012. , 2012.
4. Moore J, Jilcott S, Shores K, Evenson K, Brownson R, Novick L. A qualitative examination of perceived barriers and facilitators of physical activity for urban and rural youth. *Health Education Research* 2010;25(2):355-67.
5. Hennessy E, Kraak V, Hyatt R, Bloom J, Fenton M, Wagoner C, et al. Active Living for Rural Children Community Perspectives Using PhotoVOICE. *American Journal of Preventative Medicine*. 2010;39(6):537-45.
6. Yousefian A, Ziller E, Swartz J, Hartley D. Active Living for Rural Youth: Addressing Physical Inactivity in Rural Communities. *Journal of Public Health Management Practice*. 2009;15(3).
7. Rimmer J, Rowland J. Physical activity for youth with disabilities: A critical need in an underserved population. *Developmental. Neurorehabilitation*. 2008;11(2):141-8.
8. Bedell G, Coster W, Law M, Liljenquist K, YC. K, Teplicky R, et al. Community Participation, Supports, and Barriers of School-Age Children With and Without Disabilities. *Archives of Physical Medicine and Rehabilitation*. 2013;94:315-23.
9. Yazdani S, Tang Yee C, Chung P. Factors Predicting Physical Activity Among Children With Special Needs. *Preventing Chronic Disease*. 2013;10:1-8.
10. Shields N, Synnot A, Barr M. Perceived barriers and facilitators to physical activity for children with disability: a systematic review. *British Journal of Sports Medicine*. 2012;46:989-97.
11. Rimmer J, Riley B, Wang E, Rauworth A, Jurkowski J. Physical Activity Participation Among Persons with Disabilities: Barriers and Facilitators. *American Journal of Preventative Medicine*. 2004;26(5):419-25.
12. Sandelowski M. Focus on Research Methods Whatever Happened to Qualitative Description? *Research in Nursing & Health*. 2000;23:334-40.



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