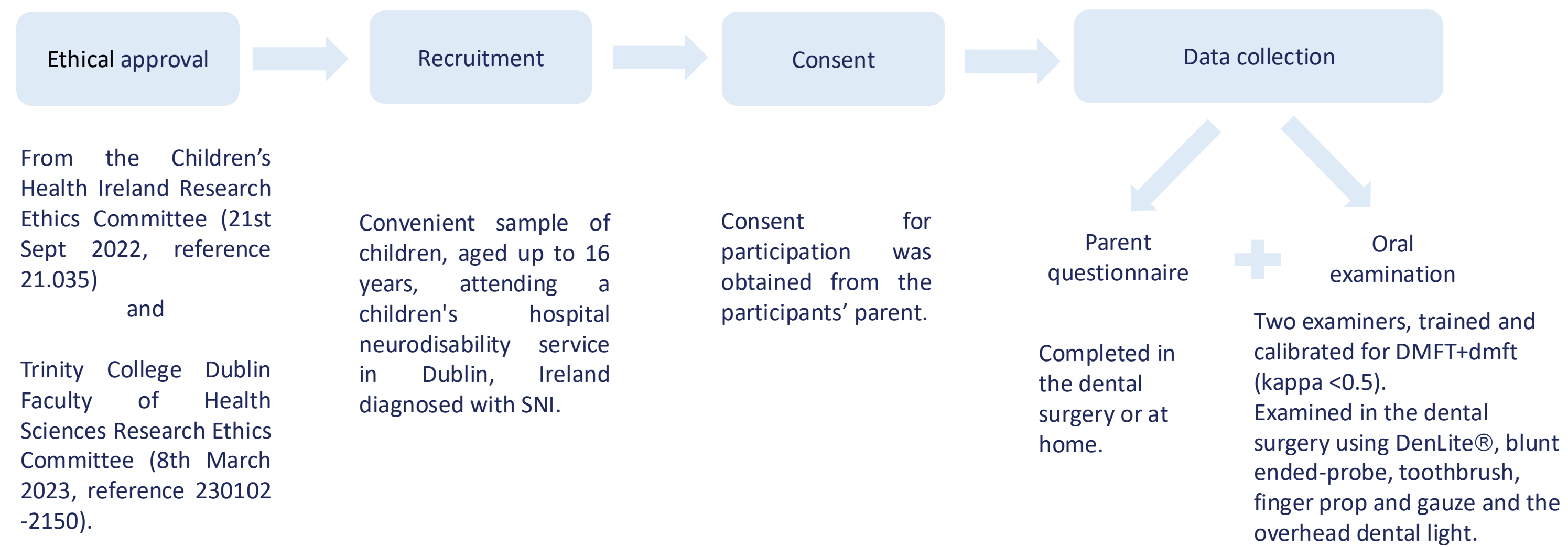


## Background

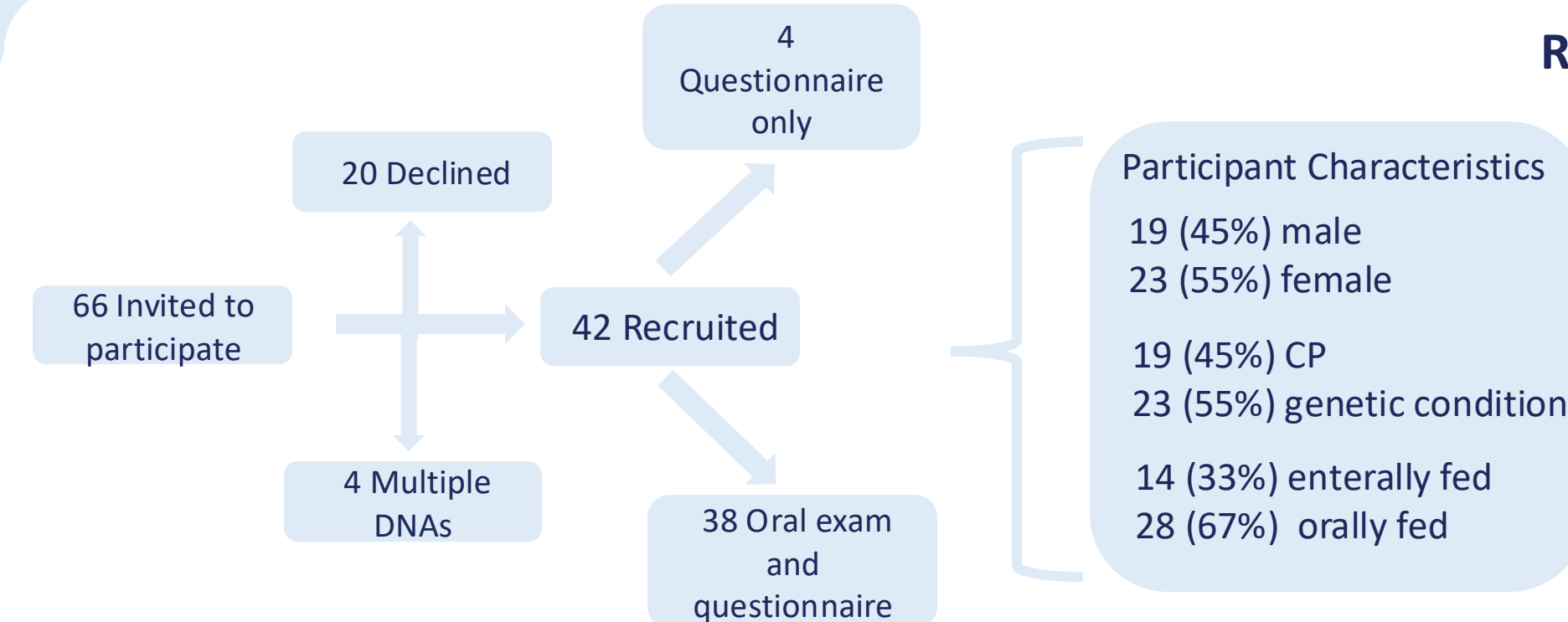
Severe neurological impairment (SNI) is defined as “a group of disorders of the central nervous system which arise in childhood, resulting in motor impairment, cognitive impairment and medical complexity, and where much assistance is required in the activities of daily living”. Many children with SNI are wheelchair users, are fed enterally and need help with everyday activities. Their condition may be congenital or acquired and can be static or progressive. Many of these children have very rare diagnosis and some may have no formal diagnosis. There are many conditions which may result in SNI, the most common of which is cerebral palsy (CP). Other conditions include Rett syndrome, Angelman syndrome, Wolff-Hirschhorn syndrome, CHARGE syndrome and Trisomy 18. The feature that is common to all these children is severe neurological impairment which results in impairment of intellectual function, mobility, communication, as well as multiple specific medical issues and increased healthcare needs and utilisation. The prevalence of children with SNI is unknown, both in Ireland and worldwide. Little is known about the oral health and the risk of dental caries, gingivitis, dental wear, dental trauma of these children compared to other children with special healthcare needs, where high treatment need, difficulty accessing dental care and untreated disease have been commonly reported. This multidisciplinary research aims to record baseline health data for children with SNI and assess their use of health services to assist future planning of healthcare delivery. The oral health component presented here, aims to assess the oral health of children with SNI, including dental caries, gingivitis and treatment need and correlate oral health data to medical variables.

## Materials and Methods



### Acknowledgements

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Mr Bahman Honori, Statistician, DDUH, Ireland



Measure	Min-max	Mean (SD)	Median
DMFT+dmft	0-8	0.46(1.6)	0
PUFA (pulpal involvement, ulceration, fistula and abscess)	0-3	0.1 (0.5)	0
P-I	0-6	1.45	1.33
C-I	0-2	0.9 (1.2)	0.7
OHI-S	0-6	1.5 (1.3)	1.3

### DMFT+dmft

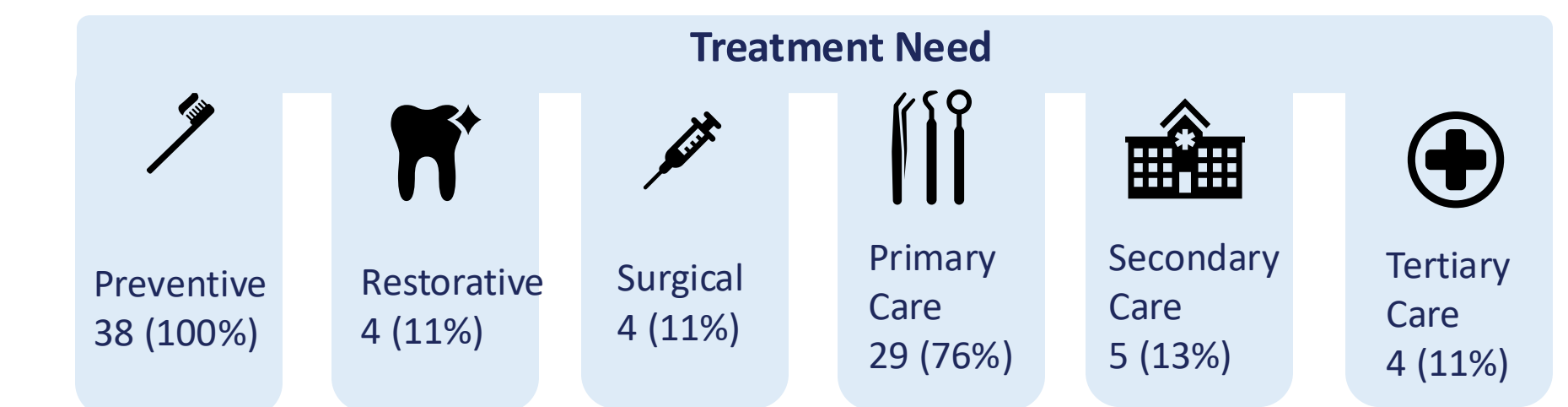
- No difference in DMFT+dmft in those enterally fed versus those orally fed ( $z = -0.39$ ,  $p = 0.85$ ).
- No difference in DMFT+dmft of those with greater number of hospital stays ( $> 5$  nights) compared to those with fewer nights spent in hospital ( $< 5$  nights) ( $z = -0.28$ ,  $p = 0.89$ ).

### OHI-S

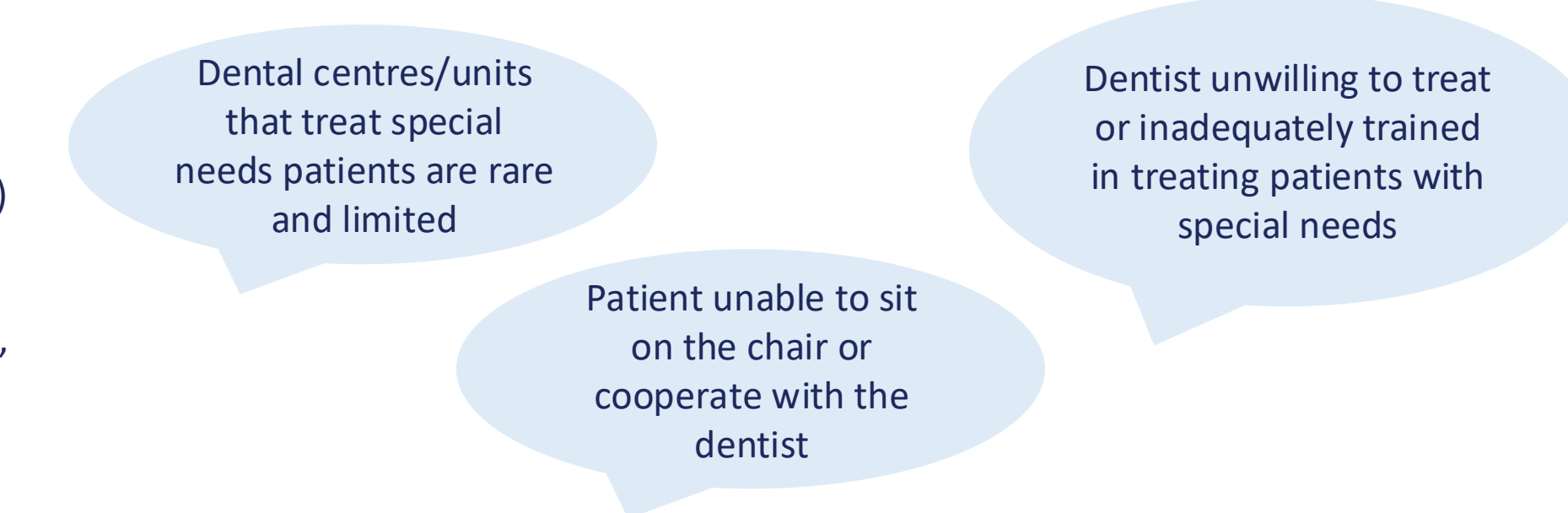
- Enterally fed children had a significantly higher C-I compared to those fed orally ( $z = 2.3$ ,  $p = 0.02$ ).
- No difference in OHI-S between the same two groups ( $z = 1.15$ ,  $p = 0.26$ ).

## Results

Examination location	Wheelchair	Dental chair	Parent's lap	Knee-to-knee	Buggy
No participants	28	4	3	1	2
Holding required	Yes		No		
Mouth prop used	29 (76%)		9 (24%)		
	31 (82%)		7 (18%)		



### Perceived Barriers to Care



## Discussion

- The sample consisted of slightly more females (55%) than males (45%). This is to be expected as some genetic conditions have x-linked inheritance, and affected males may not survive.
- The most common underlying diagnosis was cerebral palsy, which is known to be the most common underlying diagnosis in children with SNI.
- Mean DMFT+dmft was 0.46. This is the first time caries has been measured in a sample of children with SNI. It is lower than previously reported for children with special healthcare needs, in Ireland and worldwide. It is also lower than that reported generally for children in Ireland. This may be due to the use of DMFT+dmft to measure caries and not other, more sensitive indices. Furthermore, this specific population may have a low level of caries due to their high level of healthcare utilisation, and a significant proportion of our sample were enterally fed.
- No difference was found in the caries prevalence of those orally fed versus enterally fed. This contrasts to previous studies where orally fed children typically have higher caries levels to those enterally fed. The timing and duration of enteral feeding was not accounted for which may affect our results.
- C-I was higher in those fed enterally which is in line with previous research.
- Treatment need was identified in all participants. This is in line with previous research which reports high level of untreated disease in children with special healthcare needs worldwide.
- The main perceived barrier to dental care was the rarity of dental clinics and dentists treating those with special needs. This has been reported previously.
- Further research is needed to assess impact of oral health on these children's quality of life and the impact of their oral health on their general health.

## Conclusion

- Children with SNI have unique oral health issues.
- There is no difference in dental caries levels in those with SNI diagnosed with cerebral palsy or genetic conditions, or those fed orally or enterally.
- Calculus levels are higher in those with SNI fed enterally.
- Children with SNI have a high unmet treatment need.
- Parents of children with SNI perceive many barriers to accessing dental care, including the lack of suitable clinics and trained professionals.

## References

