

# Feasibility And Acceptability Of A Web-based Application For Assessing Multiple-component Behaviours In Older Children

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## Introduction

- Clear gaps exist in the collection of health behaviours in older children who are gaining autonomy from their parents.
- Digital media carries immense potential to assess behaviours, yet age-appropriate tools for this population is limited.
- To bridge the gap, we developed a web-based application to capture multiple lifestyle behaviours in older children.
- We aimed to examine the feasibility and acceptability of the application among schoolchildren.

## Methods

- Children aged 8-9 (n=29; males=23) and 11-12 years (n=30, males=16) were recruited from a primary school in Singapore.
- Participants were instructed to complete MEDAL for 3 weekdays and 1 weekend day and a 10-item usability questionnaire.
- Subgroups of students were assigned to either a wearable or have their meals photographed in school. Suitability of these tools for validation of data were examined.



Accelerometer captured activity and sedentary behaviours (n=18)

FitSight measured light intensity as marker of outdoor time (n=15)

Meal photography conducted during recess period (n=21)

## Results

### MEDAL

- 21% of children aged 8-9 and 60% aged 11-12 years completed 4 days of recording while the rest completed 1-3 days of MEDAL.
- When assessing the usability, majority agreed that instructions were clear (100%), it was easy to use (98%), they liked the application (96%), and they would play MEDAL again (89%).
- 52% reported that MEDAL was lengthy to complete. Median (IQR) time to complete a one-day record was 14 (11-20) mins.

### Wearables

- Accelerometer: 38% aged 8-9 and 10% aged 11-12 years wore for 4 days (>10 h/day) while the rest wore for 1-3 days. Majority prefer to wear it like a watch (82%), largely because the waist band was uncomfortable.
- FitSight: 14% aged 8-9 and 43% aged 11-12 years wore for 4 days while the rest wore for 1-3 days. Majority liked wearing FitSight (83%) but they tend to forget to wear daily and they felt that the design could be improved.
- To increase compliance in the next phase of study, we propose to use wrist-worn accelerometers and have the whole class wear the same device, either the FitSight or accelerometer.

### Meal photography

- All students turned up for meal photography and 87% of the dishes had a before-and-after consumption photo taken.

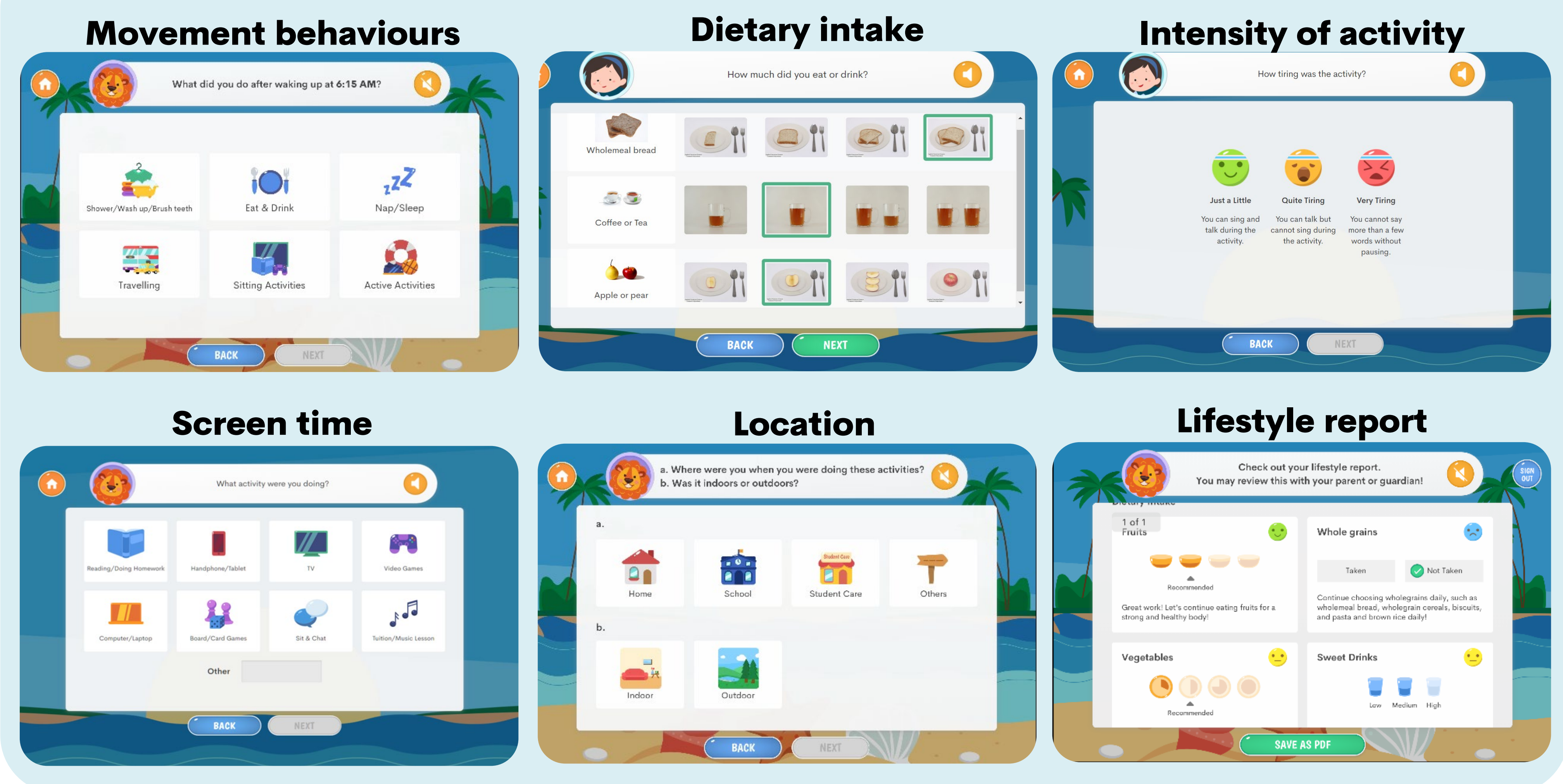
## Conclusion

- MEDAL appears to be a feasible and acceptable tool for assessing multiple behaviours as its evaluation was mostly positive.
- Younger children (<9 years) may need more assistance to complete MEDAL independently.
- Revisions to the study are underway and will be retested and further validated in another group of students.

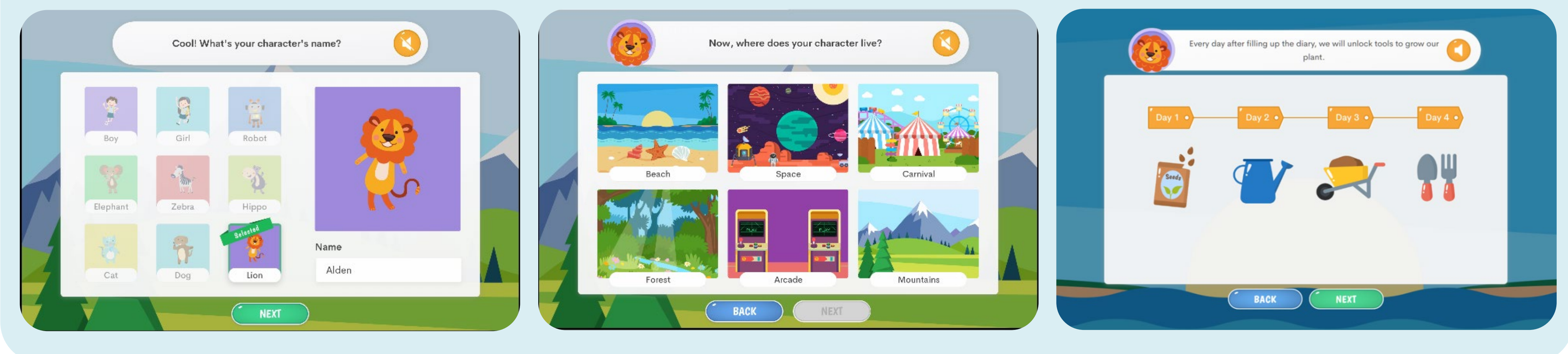


## MY E-DIARY FOR ACTIVITIES AND LIFESTYLE

Take users through completion of a 4-day activity diary



Adolescent-friendly graphic design and game-like elements



### Usability responses

