

Educational Mobile Application as a Tool- Enabling Caregivers at Home !

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Background

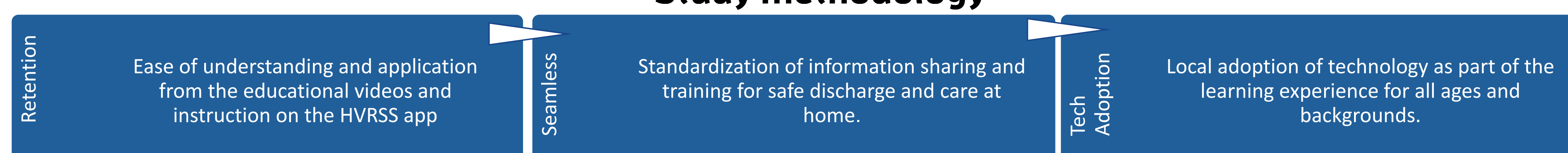
Home Ventilation and Respiratory Support Service (HVRSS) is the de facto adult chronic home ventilation service in Singapore which started in 2010. Prior to this, national guidelines or provision of care for Ventilator Assisted Individuals (VAIs) at home were non-existent.

Provision of care for VAIs can be demanding due to it being an altogether new territory. These caregivers may be hired or part of patient's family and come from diverse educational backgrounds cultures and possess varying levels of learning ability. Without an existing framework or information resource locally, it was daunting for healthcare workers (HCWs) as locally we were devoid of a framework for both the care of VAI(s) within the system and neither was there the availability of resources on how to train caregivers.

Training for Caregivers of VAIs and Observations:

- Training: Caregivers are required to complete a series of in-person training provided by the different groups of HCWs in the hospital which can take up to 2-3 months depending on their ability to retain and understand the training.
- Teachers: Caregivers will receive training from HCWs where the information provided by the different group of trainers and their approach may inconsistent which may contribute to misunderstanding amongst the caregivers impacting the retention of knowledge.
- Learning material: Primary resource provided were printed media with pictorial description (if any) obtained from various avenues. The actual learning was limited to hands on one on one sessions by the respective teams with return demonstrations.
- Discharge: It was noticed that despite the completion of institutional training by HCWs, the HVRSS team had to arrange for additional home visits and teleconsultations besides regular reviews to reinforce the training thus increasing manpower hours.

Study methodology



Study Design: Descriptive Quantitative design

Methodology: 15 question survey was sent out in English. No other languages were used in the survey. The survey was sent out to:

- 71 Patients and their Caregivers including the Support groups
- Participating HCWs in organisation campus- Tan Tock Seng Hospital and Integrated Care Hub-Ventilator Rehabilitation Unit users.

Included
<ul style="list-style-type: none"> Patients who are actively able to participate in their own care and able to use and understand the app. Caregivers who can understand and use the app and have received caregiver training within the past 2 years. HCWs who have experienced working with LTV patient/ Chronically ventilated patients consistently.

Excluded
<ul style="list-style-type: none"> Caregivers of patients who have passed on. Non-English literate users. Non app users- education received via different modes. Patients and caregivers not under our immediate care - different organisations who may use the app for teaching.

Safety, Follow-up, Consent and Ethical approval:

DSRB applied with IRB waiver as nil personal information was collected and stored for this descriptive quantitative survey. Survey was sent and data retrieved using Google Forms.

Data Management and Analysis:

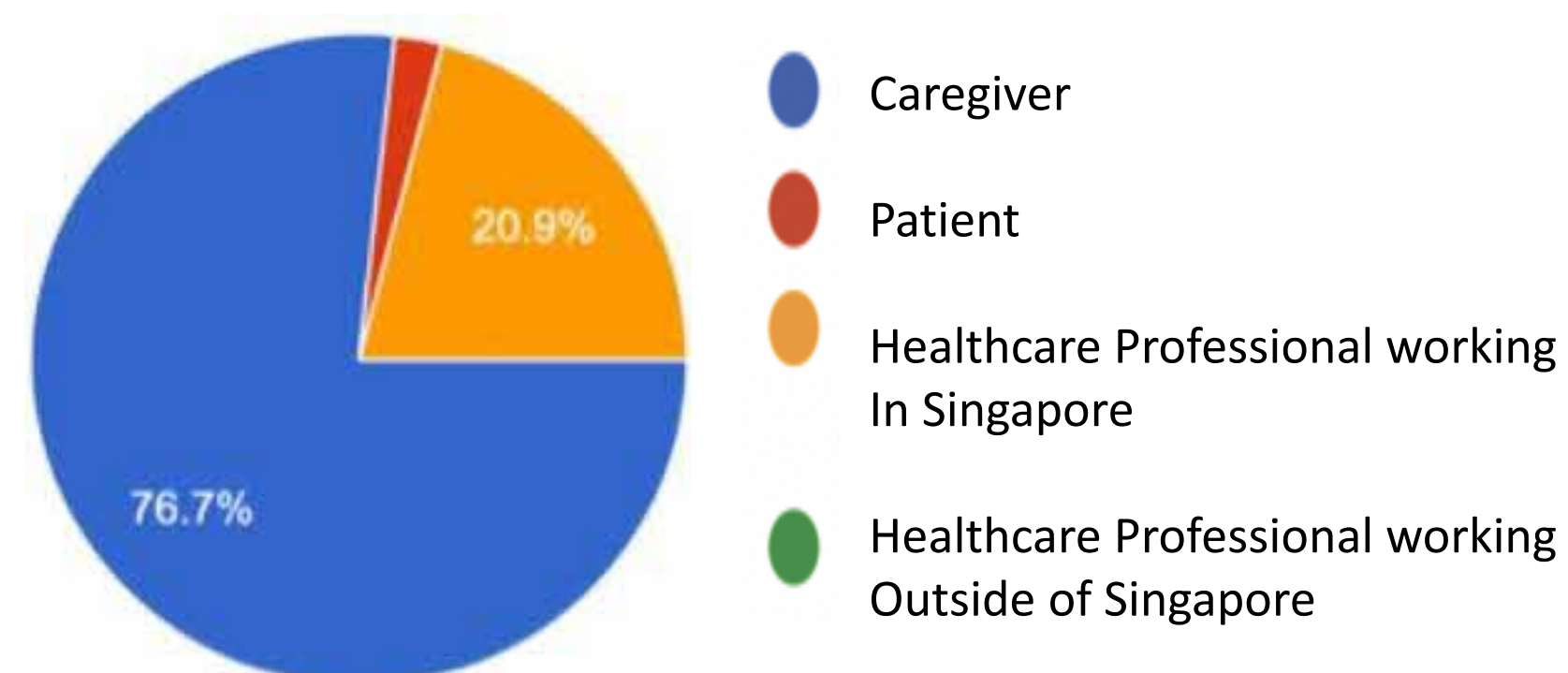
Information was collated using a Google Forms.

The app was launched in 2019. From 2019 -2024, it had been **Downloaded 1060 times and Viewed 18,000 times**. Distribution of Downloads were mainly from:

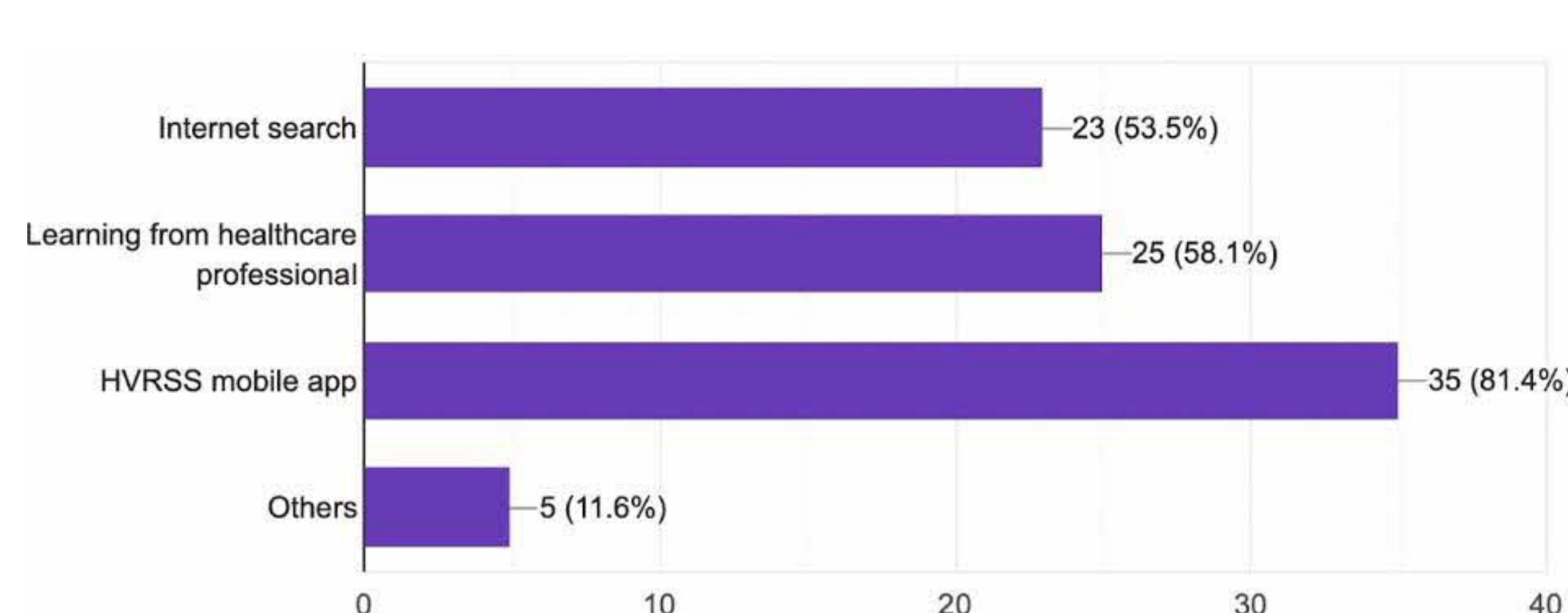


Outcomes: Responses: Total 43 responses: Caregivers 81.3% ; HCWs 15.6%

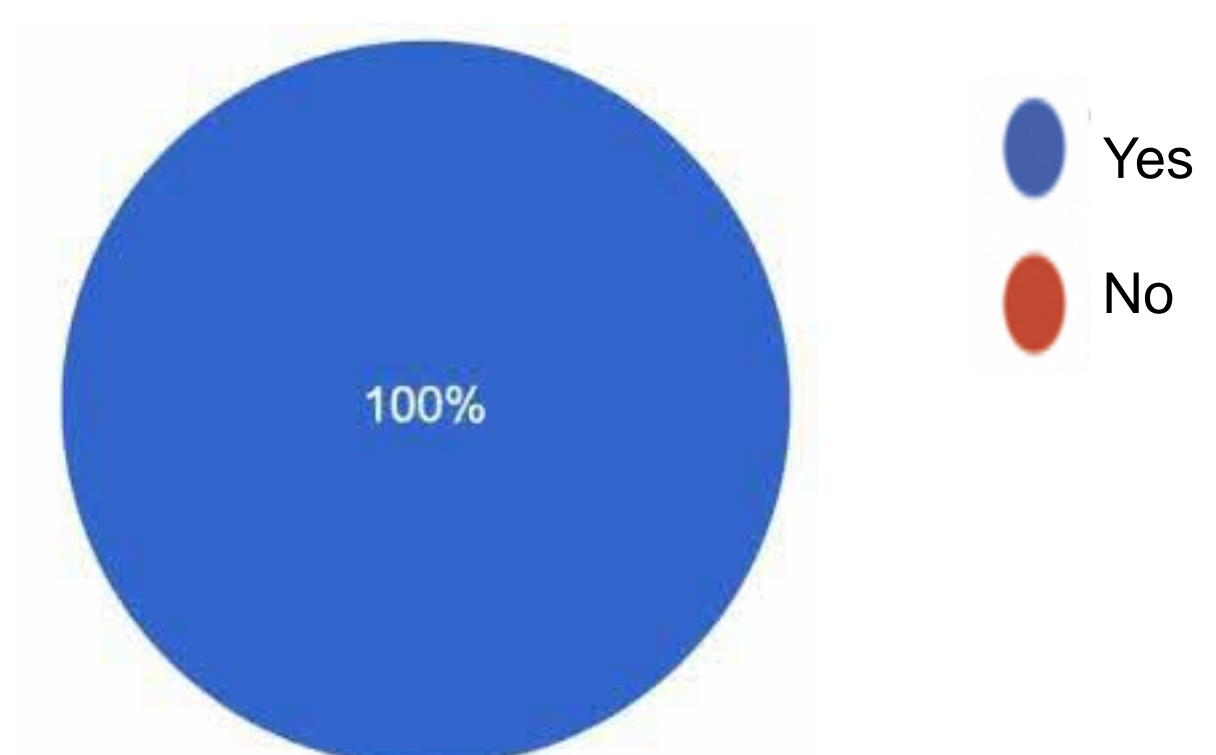
Please select the statement that best describe you.
43 responses



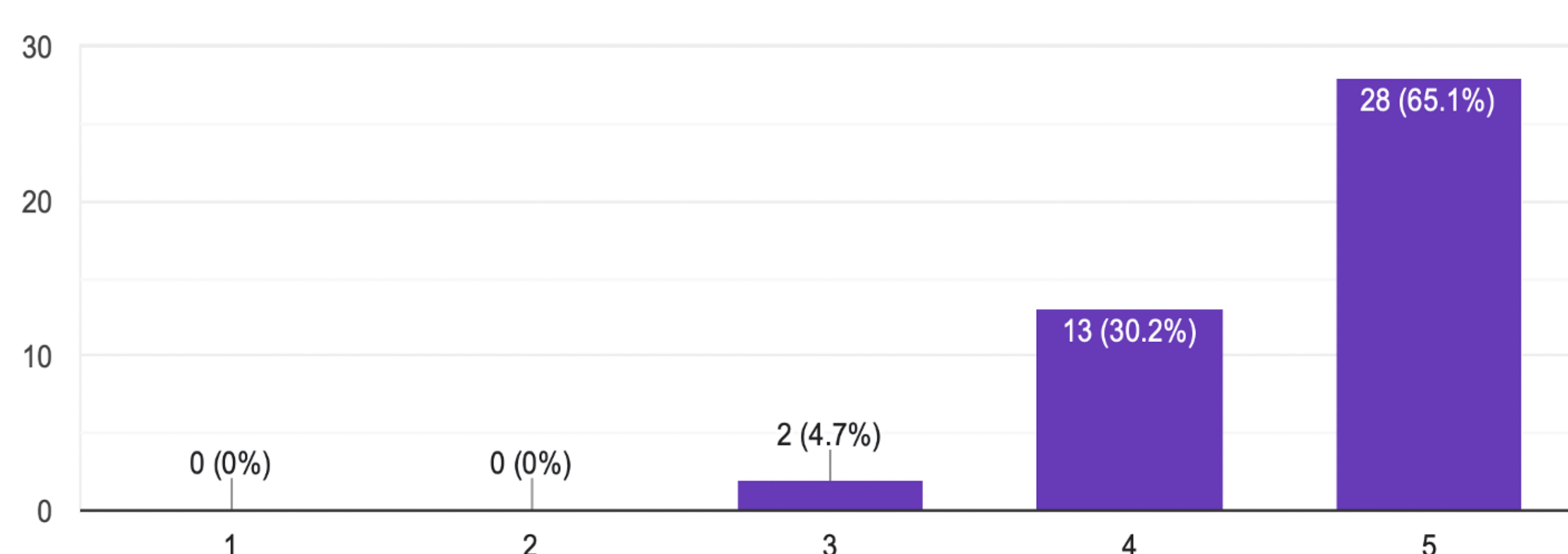
How do you look for information on chronic Ventilation currently?
43 response



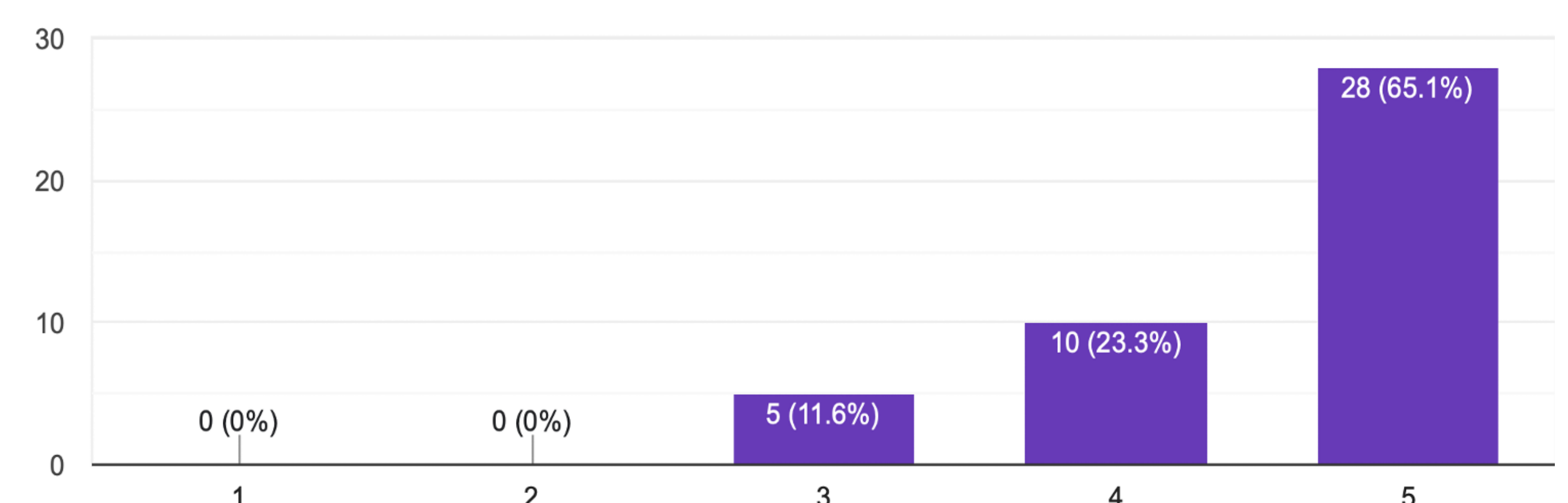
Is what you taught by the healthcare worker easy to understand with the help of the app and would you recommend this mobile app?
43 response



Please rate the following statement on a scale of 1 to 5 (1 being strongly DISAGREE and 5 being Strongly AGREE).
The HVRSS mobile app covers topics on chronic ventilation adequately.
43 responses



Please rate the following statement on a scale of 1 to 5 (1 being strongly DISAGREE and 5 being Strongly AGREE).
HVRSS mobile app makes my learning smooth and easy
43 responses



Conclusion

The HVRSS mobile application has:

- demonstrated the ease of which mobile application allows patients, caregivers and interested HCWs to access, share and apply knowledge to aide their journey of caregiving.
- topics relevant to their needs and cover most of the areas of care necessary for VAIs.
- paved the journey to ensure caregivers are equipped with the necessary skills to ensure that the transition of care back home is smooth and less arduous than expected.
- Most of them strongly agree that they would introduce the mobile application to others.

Moving forward, the expectation of use of applications for education will evolve. There needs to be increased audio visual function on the app for immersive and experiential training for the participant. It would also be crucial for us to include more local and regional languages in order to cater to different caregivers whose first language is not English.