Use and Acceptability Study of Swallis DSA™ Device for Distanced Swallowing Assessment for Older Adults In Nursing Home

Gaëlle Soriano[1,2], Fabrice Neveu[2], Muriel Gabas[3], Yann Tannou[4], Xavier Cormary[4], Linda Nicolini[2], Virginie Woisard[1]

[1]Centre Hospitalier Universitaire de Toulouse, France; [2] Swallis Medical, France; [3] Cabinet d'orthophonie, Boussens; [4]Cabinet d'orthophonie, Muret

Introduction

- There is a lack of swallowing experts in nursing homes (1,2).
- Swallis Medical offers a medical device **(Fig.1)** to facilitate the **evaluation of swallowing using telehealth technology**.
- The feasibility of the procedures performed over telehealth has not previously been assessed in a clinical setting.
- The **aim of this study** was to assess the use and acceptability of the **Swallis Device for Swallowing Analysis (DSA)™** by evaluating older adults 'compliance and nursing staff's usability.

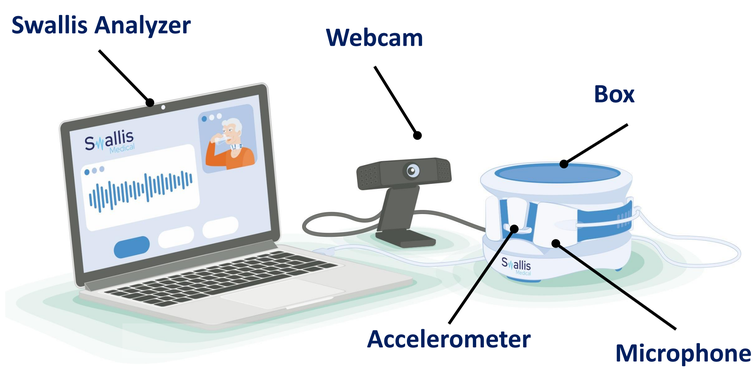

Figure 1: Swallis Device for Swallowing Analysis (DSA) ™

1. The NH staff installs the necklace on the patient's neck.
2. During the meal, sounds and vibrations of swallowing are recorded with the necklace, and the subject's behavior is recorded with the webcam **(Fig.2)**

Figure 2: Webcam view

Methods

- These are **preliminary data** from the Swall EHPAD study, a multicentric study in **3 nursing homes** (NH) in France.
- **100 residents suspected of having dysphagia** (>60 y) will be recruited. Recruitment is ongoing (May-October 2022).
- All participants will perform a **teleswallow evaluation** with the Swallis DSA™, designed by a **team of 3 speech-language pathologists (SLP) (Fig.3).**

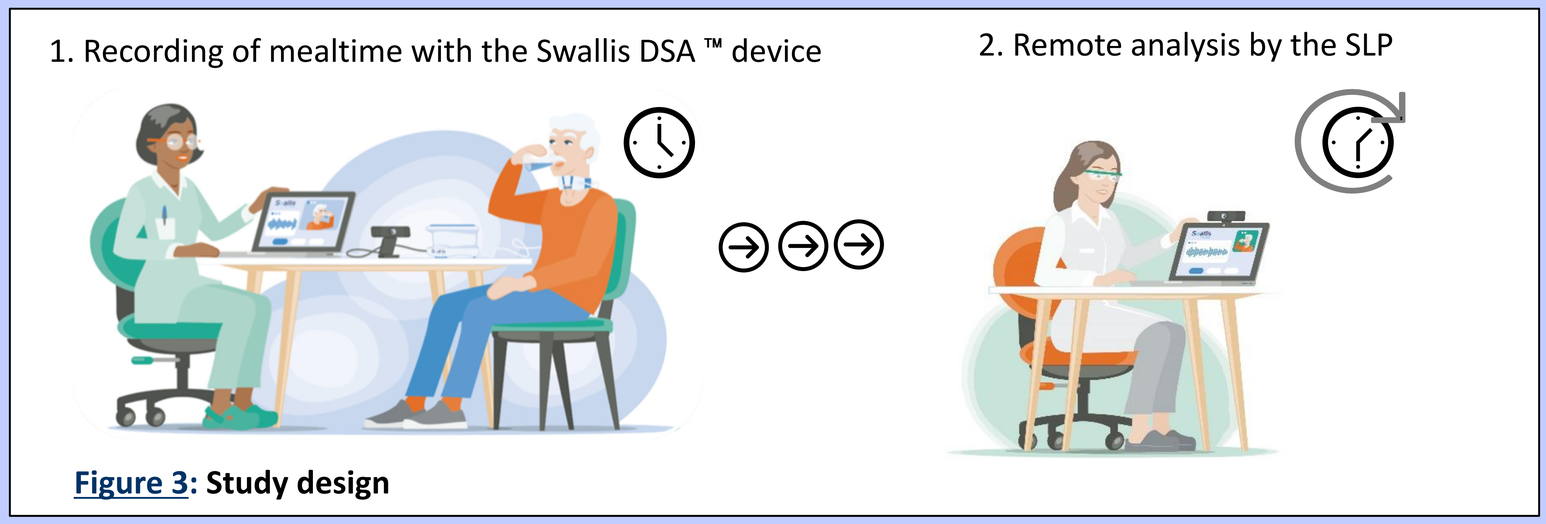

Figure 3: Study design

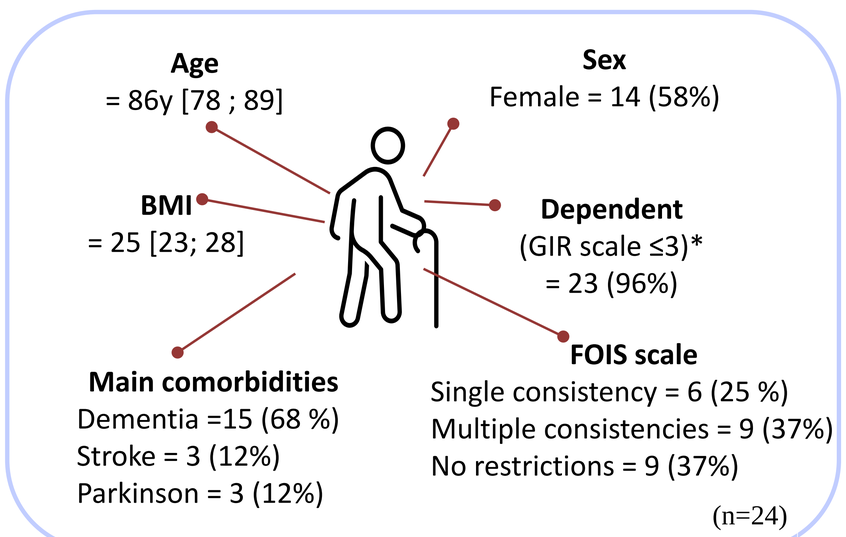

Figure 4: Description of included NH residents

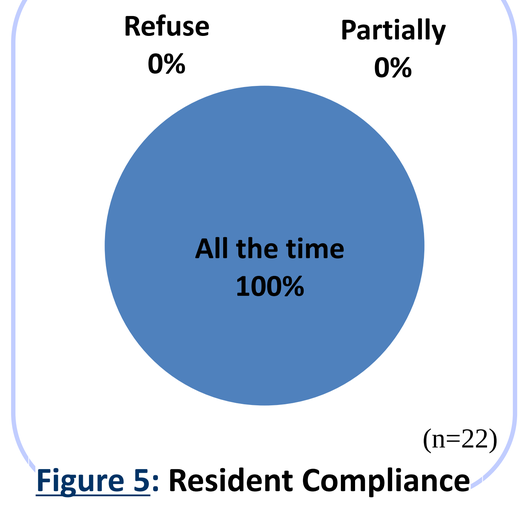

Figure 5: Resident Compliance

Preliminary results

- 24 residents were recruited (aged 74-97 y, with a median age of 86 y). Most of the participants had dementia (Alzheimer's disease or related disorders) **(Fig.4).**
- All participants could perform the procedure (wearing device during a meal, up to 45 min) **(Fig.5).**
- There were some difficulties to install the device (particularly in positioning correctly the necklace), which required the intervention of the SLP to help the nursing staff **(Fig.6).**
- A prior training provided by the SLP significantly diminish the help needed for the NH staff. **(Table 1).**

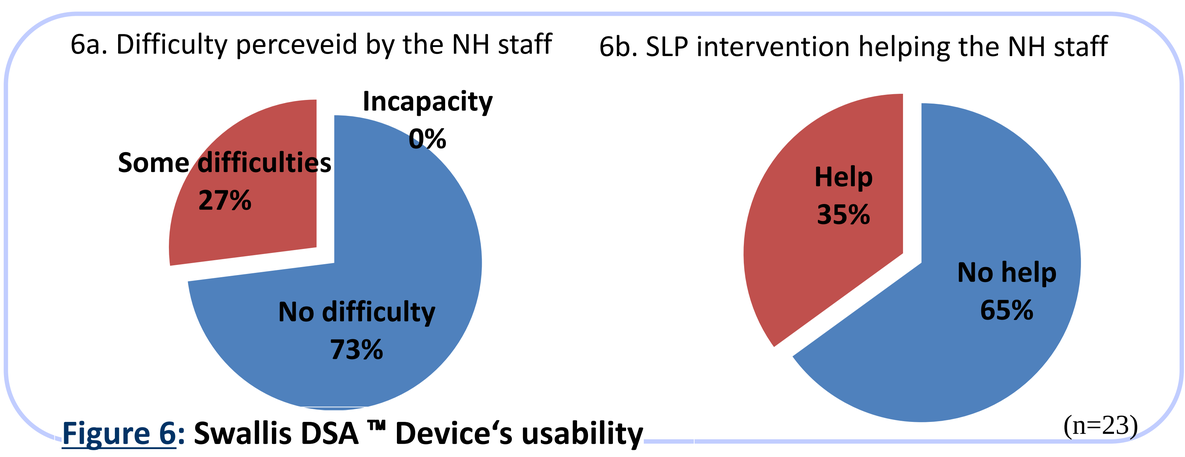

Figure 6: Swallis DSA ™ Device's usability

Table 1: Bivariate analysis Training staff-Usability of device

For NH staff	No prior training	Prior Training	p	1st use	>1 use	p
N (%)	10 (43 %)	13 (56 %)		13 (56 %)	10 (43%)	
Difficulties to use device	4 (40%)	2 (16%)	**0.229**	5 (39%)	1 (11%)	**0.178**
Needs help to use device	7 (70%)	1 (7%)	**0.003**	8 (61%)	0 (0%)	**0.003**

(n=23)

Conclusion

- **Clinical assessment of dysphagia over telehealth technology using the Swallis DSA™ Device is a feasible alternative to face-to-face evaluation.**
- **Training of the NH staff provided by SLP is necessary to use the device for the 1st time over a 2 hours session.**
- **The next step will be the analysis of the reproducibility between the present assessment and the remote assessment by SLP.**

*GIR = Groupement Iso Rzessource, GIR 2 =The older person is confined to bed or a chair, need help for activities of daily living.

(1) Estupiñán Artiles, C., Regan, J., Donnellan, C., 2021. Dysphagia screening in residential care settings: A scoping review. Int. J. Nurs. Stud. 114, 103813.

(2) Engh MCN, Speyer R. Management of Dysphagia in Nursing Homes: A National Survey. Dysphagia. 2021 Mar 4. PMID: 33660070.

Gaelle Soriano
g.soriano@swallismedical.com