Rehabilitation of language and swallowing abilities in patients with severe brain injury: An online international survey

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Introduction

Patients with severe brain injury and disorders of consciousness (DOC) are unable to communicate and frequently experience severe dysphagia. The following survey, developed by the DOC |Special Interest Group of the International Brain Injury Association| (IBIA DOC-SIG) aims to identify the tools that are used by (speech-language) therapists, detect their needs and possibly | identify new practices to improve language and swallowing | rehabilitation in this challenging population.



Methods

We developed our survey based on the following structure: (1) Study presentation, (2) Socio-demographic information, (3) General questions regarding **speech and** |language therapies in post-comatose DOC, (4) Swallowing assessment and management in post-comatose patients, (5) Language/communication assessment and management in post-comatose patients, and (6) Conclusion. The **English questionnaire** was translated into **6 other languages**, transferred to the Alchemer platform, and massively diffused. We here describe preliminary data reported by **53 therapists**.



help!

PERCENTAGE OF THERAPISTS WHO..

including with families and friends

and potentially motivating stimuli

cation rehabilitation

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Language/communication assessment and management

nclude observation of communicative behaviors of patients in a range of settings,

Provide training to staff and families regarding opportunities for interactions

Create/adapt their own tools to assess language/communication abilities

Gather information from families and friends regarding patients' specific interests

Create/adapt their own reeducation tools to train residual language abilities

Assess post-comatose patients' ability to use alternative and augmentative

lave already managed language/communication abilities in post-comatose

Invite patients' relatives to actively contribute to the language/ communi-

Aphasia (BERA), Mississippi Aphasia Screening Test (MAST), Language Screening Test (LAST).

Provide AAC tools for patients showing physical ability to access them

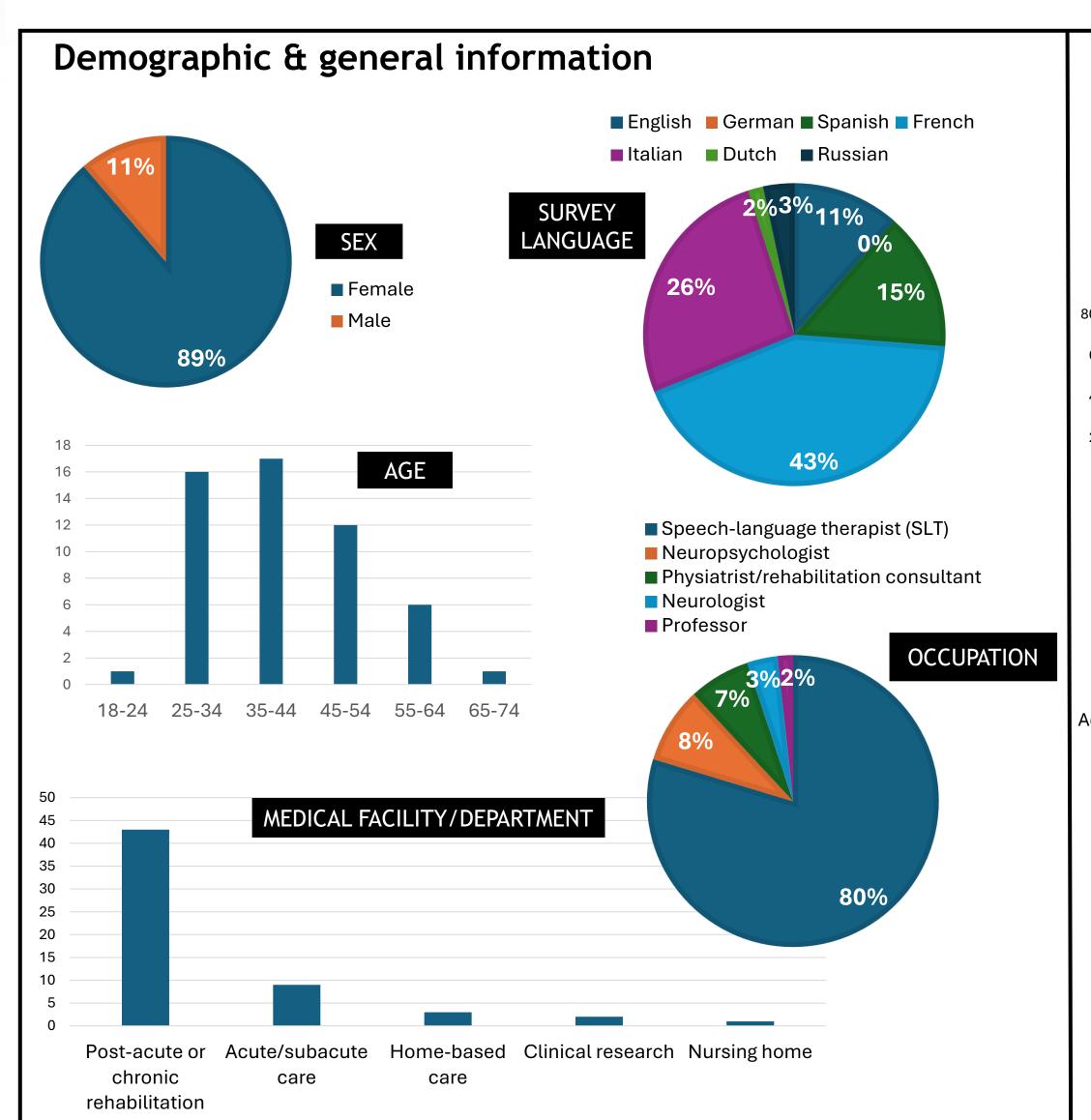
Regularly monitor for changes in communicative behaviors

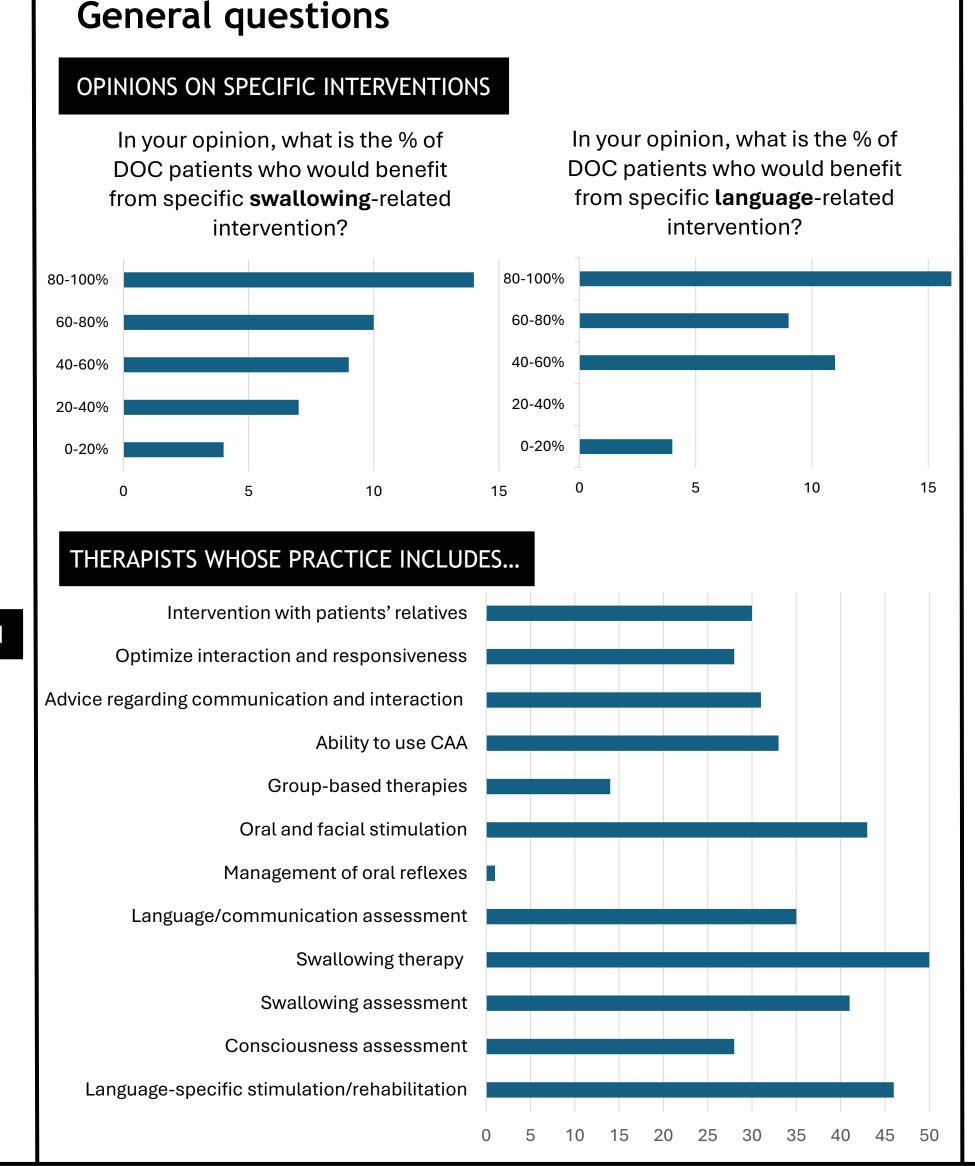
Have already assessed language/communication abilities

MOST REPORTED TOOLS TO ASSESS LANGUAGE

- 5 IRCCS Fondazione Don Carlo Gnocchi ONLUS, Florence, Italy
- 6 Department of Experimental and Clinical Medicine, University of Florence, Florence, Italy We need your
 - 7 Post-Coma Unit, IRCCS and Neuroreabilitation, Fondazione Santa Lucia,
 - 8 Research Institute, Casa Colina Hospital and Centers for Healthcare, Pomona, CA, USA
 - Department of Psychology, Psychology and Cognitive Neuroscience Research Unit, University of Liège, Belgium
 - 10 IRENEA-Instituto de Rehabilitación Neurológica, Fundación Hospitales Vithas, Valencia, Spain
 - 1 Neurorehabilitation and Brain Research Group, Institute for Human-Centered Technology Research, Universitat Politècnica de València, Valencia, Spain
 - 12 SRH Fachkrankenhaus Neresheim, Neresheim, Germany
 - 13 Clinical and Research Institute of Urgent Pediatric Surgery and Traumatology, Moscow, Russia

Results





Swallowing assessment and management PERCENTAGE OF THERAPISTS WHO.. Advise patients' relatives on swallowing management 90% Regularly monitor for changes in swallowing ability 80% Have already assessed swallowing abilities Have already managed swallowing abilities Create/adapt their own tools to assess swallowing abilities ELEMENTS OF PATIENTS' MEDICAL HISTORY TO CONSIDER Etiology, localization of brain lesions, previous endotracheal intubation and its duration, current and/ previous level of consciousness, tracheostomy and its duration, type of feeding, pre-existi otolaryngological history prior to the accident, otolaryngological medical history since the acciden ongoing or recent lung infections, respiratory kinesiotherapy, medication that may affect the consciousness level, swallowing function or blood albumin assay. ELEMENTS TO CONSIDER DURING BEDSIDE CLINICAL ASSESSMENT OF SWALLOWING Awake time, absence of agitation, head position, support and mobility, ability to sit upright, initiation of mouth opening spontaneously, upon imitation or command, tongue propulsion, initiation of saliv

swallowing reflex, spontaneous swallowing frequency, latency of swallowing reflex triggering upo stimulation, gag reflex, cough reflex, tracheostomy and/or breathing aids, bronchial congestion and requency of aspirations, trisma or bruxism, oppositional behavior.

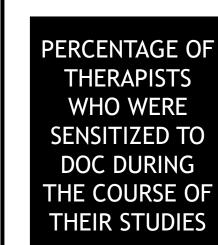
RELEVANT GOALS FOR DYSPHAGIA MANAGEMENT

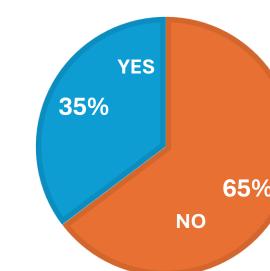
Improve oro-facial comfort and saliva management, stimulate swallowing frequency, limit sensory deprivation and/or improve oro-facial sensitivities, support good oral hygiene, encourage good mobility and tonicity of the different oro-pharyngeal structures, breath and voice control, tracheostom management, pleasure or nutritional oral feeding, prevention of oro-buccal lesions and/or infections

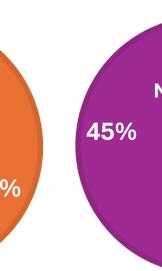
MOST REPORTED TOOLS

Assessment based on the Facial Oral Tract Therapy (FOTT), Facial Oral Tract Therapy Swallowing Assessment of Saliva (FOTT-SAS), Swallowing Assessment in Disorders Of Consciousness (SWADOC) Mann Assessment of Swallowing Ability (MASA), Dysphagia Outcome and Severity Scale (DOSS), Guggin Swallowing Screen (GUSS), Fiberoptic Endoscopic Evaluation of Swallowing (FEES). Rehabilitation based on the Multisensory and proprioceptive stimulation, Vibratory stimulation, Manua

therapy, FOTT, Therapeutic feeding and Behavioral Change Techniques (BCTs)

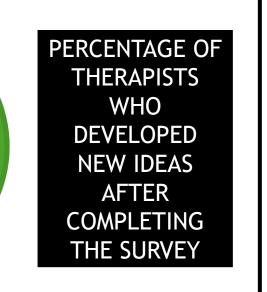






lasgow Coma Scale (GCS), Full-Outline of UnResponsiveness scale (FOUR), Coma Recovery Scale-Revised

(CRS-R), Simplified Evaluation of CONsciousness Disorders (SECONDs), Brief Evaluation of Receptive



Conclusion

This survey highlights the lack of training and guidelines for speech-language therapies in patients with severe brain injury. Early and long-term assessment and management of both language and swallowing abilities should be improved, notably by providing and/or adapting new clinical tools.



Conflicts of interest

The authors have no potential conflict of interest to declare. This study is supported by the International Brain Injury Association DOC Special Interest Group, the University and University Hospital of Liège, the Belgian National Funds for Scientific Research (FRS-FNRS) and the Fondation Léon Frédéricq.







