

What is the impact of vestibular difficulties upon functional communication skills?

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INTRODUCTION

- People with vestibular disorders can experience symptoms which affect their functional communication skills and therefore their ability to participate in daily activities
- Anecdotal reports from clinicians indicate that a number of aspects can be affected in adults who do not have a diagnosed communication disorder
- The most common report is of slower processing of verbal information and increased difficulty with word finding
- There is no published literature on the incidence and prevalence of these difficulties, nor on the implications thereof
- The extent to which it can impact an individual or exacerbate the communication difficulties of people with an acquired concomitant communication disorder, such as aphasia or cognitive-communication disorder, is unknown.

There therefore exists a discrepancy between clinical experience that vestibular difficulties impact on communication, and a lack of research investigating this.

This poster presents the methodology of an exploratory study, currently underway, to explore the link between communication and vestibular difficulties.

BACKGROUND

Vestibular system:

- Neuroanatomically and functionally divided into peripheral and central systems
- Helps the body maintain balance, posture and spatial orientation.
- Peripheral system:
 - located in the inner ear and has two main components: the body and membranous labyrinths.
 - Also includes the vestibular portion of the vestibulocochlear nerve.
- Central vestibular system:
 - a complex network of neural structures located in the brainstem, cerebellum, and cerebral cortex
 - responsible for processing and integrating sensory information related to cognition, memory, balance, posture, and spatial orientation.

A failure of the vestibular system leads to:

- Obvious neuro-vestibular symptoms of vertigo, motion sickness, imbalance and falls
- Symptoms such as situational anxiety, avoidance, presyncope, difficulty coping with crowded places, headache, neck pain, limping, word finding difficulty, dream bizarreness, blurred vision, dyslexia-type symptoms, difficulty hearing speech in background noise, derealisation, depersonalisation and brain fog
- These symptoms can be misdiagnosed and so not appropriately treated

24. How frequently do you experience the following difficulties with understanding information you hear? -
An answer is required for each item

	Never	Sometimes	Rarely	Often	Always
I have difficulty understanding what is being said	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty hearing what is being said	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it hard to hear what is being said	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty understanding what is being said	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty understanding what is being said	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty understanding what is being said	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty understanding what is being said	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty understanding what is being said	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty understanding what is being said	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty understanding what is being said	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26. How frequently do you experience the following difficulties with talking? -
An answer is required for each item

	Never	Sometimes	Rarely	Often	Always
I have difficulty starting to speak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty speaking clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty speaking clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty speaking clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty speaking clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty speaking clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty speaking clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty speaking clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty speaking clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty speaking clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28. How frequently do you experience the following difficulties with reading? -
An answer is required for each item

	Never	Sometimes	Rarely	Often	Always
I have difficulty reading what is on the page	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty reading what is on a page or website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty understanding what I am reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it hard to remember what I have just read	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty reading information on a page or website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty reading what I am reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty reading what I am reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty reading what I am reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty reading what I am reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

30. How frequently do you experience the following difficulties with writing? -
An answer is required for each item

	Never	Sometimes	Rarely	Often	Always
I have difficulty writing in a straight line	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty creating sentences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty writing down my thoughts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty finding the words I need to write down	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty writing what I am writing with my eyes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty writing what I am writing with my eyes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty writing what I am writing with my eyes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty writing what I am writing with my eyes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty writing what I am writing with my eyes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

INTERPLAY BETWEEN VESTIBULAR, COGNITION AND COMMUNICATION

COGNITION can be affected in vestibular disorders (1,2,3,4,5), with variable levels of difficulty with

- visuospatial ability,
- short-term memory,
- executive function,
- processing speed and attention.

As demonstrated in MacDonald's (6) model of cognitive communication competence, these same cognitive skills are foundational for successful COMMUNICATION, including:

- comprehension
- speech
- expressive language
- reading and writing functions
- social and non-verbal communication.

Therefore, a very plausible link exists between vestibular, cognition and communication.

STUDY OBJECTIVE

- To explore the effect of vestibular difficulties upon functional communication skills in those with and without a diagnosed communication disorder, and:
- To assess the impact in relation to undertaking daily activities amongst people living with a vestibular disorder.

METHOD

This study is currently undergoing ethical approval with Sheffield Hallam University, and primarily involves data collection through an online survey.

Survey

A 30-item anonymised online survey was devised, with questions on:

- respondent demographics,
- medical, vestibular and communication diagnoses,
- communication symptoms and impact of communication difficulties.

Participant information sheets and consent forms were integrated into the online form and ensured that informed consent would be gained prior to the participant commencing the study.

Examples of some of the survey questions are displayed throughout the poster.

RECRUITMENT

The survey will go live in May 2023. Recruitment will take place across the UK using purposive and convenience sampling and it will be advertised via:

- Vestibular Interdisciplinary Working Group website <https://www.viwig.co.uk>
- vestibular, communication and rehabilitation organisations
- professional bodies and related special interest groups
- support groups for people with vestibular issues

Impact of communication difficulties in daily life

32. To what extent have your communication difficulties affected the following? -
An answer is required for each item

	Not at all	Very slightly	Somewhat	Quite a bit	Very much
Communicating with family and friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicating at work/university/college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicating my healthcare needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulties speaking with strangers, e.g. Ordering food or drink	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doing every day errands, e.g. managing utility bills, following a recipe, shopping in a supermarket	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meeting new people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mood / mental health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being able to return to work / university / college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using the computer/tablet or smartphone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using public transport	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

ANALYSIS

Descriptive statistics will be used to examine responses to closed questions. Qualitative analysis of open-ended questions will be undertaken using thematic analysis. Correlation statistics will be employed to examine the association between the items of interest, primarily the vestibular diagnoses, vestibular symptoms, communication symptoms and impact of communication difficulties.

IMPACT

This study will provide a starting point for gathering evidence regarding the incidence and prevalence of communication difficulties for people with vestibular difficulties. The findings will be disseminated on the Vestibular Interdisciplinary Working Group website, across the organisations involved in the recruitment and through conference, presentations and journal articles.

The findings will contribute to the development of a Vestibular Communication Questionnaire Assessment for use in clinical practice.

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The Vestibular Interdisciplinary Working Group (VIWG) includes over 10 different health professions working together to investigate, research and provide resources for professionals working with and for individuals with a vestibular disorder. The members have had a key role in the development of the study.

INTERESTED TO KNOW MORE?

- Have a look at our website <https://www.viwig.co.uk>
- Scan QR Code for details of authors on VIWG website
- Contact Sylvia Taylor-Goh at s.taylor-goh@shu.ac.uk

