



"The World is Designed for Fluent People"

Benefits and Challenges of Videoconferencing
Technologies for People Who Stutter



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Stuttering is a complex **neurodevelopmental** condition that is estimated to impact

1^[1] - 4^[2]% of the adult population

Stigmatization of stuttering undermines the **quality of life** for people who stutter (PWS):

- Frequent social rejections [3]
- Higher risk of mental health problem [4]
- More likely to be underemployed [5]
- 20 - 35% reduced earning [5]

[1] Xiaofan Lei. 2022. *What causes stuttering? A speech pathology researcher explains the science and the misconceptions around this speech disorder.* TheConversation.

[2] Stamma. 2022. [How Many Adults Stammer?](#)

[3] Constantino, C. D., Manning, W. H., & Nordstrom, S. N.. 2017. Rethinking covert stuttering. *Journal of Fluency Disorders.*

[4] Ashley Craig, Elaine Blumgart, Yvonne Tran, 2009. The impact of stuttering on the quality of life in adults who stutter. *Journal of Fluency Disorders.*

[5] Gerlach H, Totty E, Subramanian A, and Zebrowski P. 2018. Stuttering and Labor Market Outcomes in the United States. *J Speech Lang Hear Res*

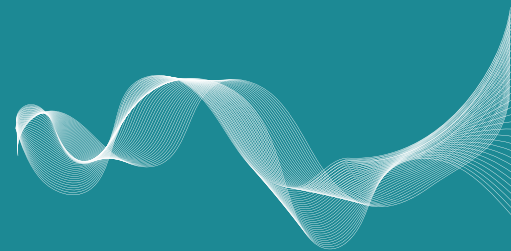
Stuttering and Videoconferencing

An interview study with 13 adults who
stutter from the US and UK.



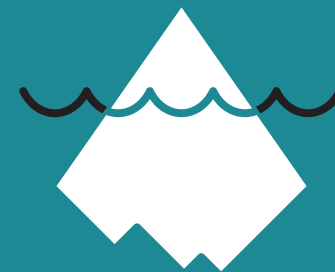
Context

Three things you should know about stuttering



Incurable yet highly variable

Stuttering in adulthood is incurable, but stuttering behaviors varies greatly across individuals, time, and situations [1].



Cognitive-affective challenges

Besides speech-behavior challenges that is observable, PWS also suffer from negative thoughts & feelings, poor self-image, and avoidance behaviors [2].



Fluency is NOT the goal

PWS find spontaneous speech - produced with little premeditation and effort - more enjoyable and meaningful, rather than fluent speech [3].

[1] Tichenor SE, Yaruss JS. 2021. Variability of Stuttering: Behavior and Impact. Am J Speech Lang Pathol

[2] O. Bloodstein, N.B. Ratner, and S.B. Brundage. 2021. A Handbook on Stuttering, Seventh Edition. Plural Publishing,

[3] Christopher Dominick Constantino, Naomi Eichorn, Eugene H. Buder, J. Gayle Beck, and Walter H. Manning. 2020. The Speaker's Experience of Stuttering: Measuring Spontaneity. Journal of Speech, Language, and Hearing Research

Benefits of VC for people who stutter

Reduce mental barriers to "show up"

I can **manage my energy a little bit better on VC**, because you are in your own environment... You just have **more control on VC** than in-person environment.

— P6

Easier to "mask" stutter

I felt a little **guilty** that **I spoke very fluently during the interviews by using the DAF app**, but showing stutter afterwards. [...] I wanted to be an **honest** person, but I was also worried that **my stutter would impact whether they give me the offer**.

— P4

Increased public empathy

Even fluent speakers have difficulties on Zoom, **having challenges of being heard is more understood now**".

— P3



Video calls were a nightmare for me, [...],
now I am getting used to this nightmare...



-- P4

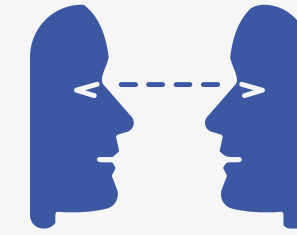
Challenges of VC for People who Stutter



Stressed by self-view



Difficulty in turn taking



Limited channels for non-verbal communications



[Self-view] is a curse.. you have to face your **worst fear** as a person who stutters. Before, when you talk to a person, you don't necessarily see your own face; **seeing your own face puts the person who stutter in a direct confrontation with your stuttering**".



-- P5

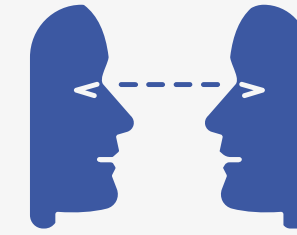
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Stressed by self-view



Difficulty in turn taking



Limited channels for non-verbal communications



As a stutterer, it is **harder to get your first sound out**. Body language is more visible in person. That's particularly challenging. I am trying to say something but before I can say something, somebody also already got the word out.

-- P6



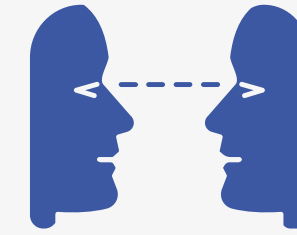
Challenges of VC for People who Stutter



Stressed by self-view



Difficulty in turn taking



Limited channels for non-verbal communications

“On Zoom, your **voice is so important** for you to communicate than before. **They can not see your body, your gestures.** [...] You have to impress people with your words. For someone who stutters, **videoconferencing is a disadvantage.**”

-- P5

Summary

1 Hidden cost of VC poses a structural barrier for people who stutter

2 Reflect and refute existing design assumptions

3 Unpack intersectionality



Questions?

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