

# Individual Differences in Perception of Emotion Induced by Speech Stimuli among People with Visual Disabilities

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## INTRODUCTION

People with visual disabilities can still take advantage of the remaining sensory modalities (e.g., hearing) to perceive emotions in other people. However, there is a lack of knowledge about emotion perception mechanisms of people with visual disabilities via a sense of hearing. This study focuses on exploring the degree to which people with visual disabilities perceive various emotions when given emotional stimuli via a sense of hearing but also relations with perceived loneliness.

## METHODS

Stimuli of emotional speech were voice-recorded (< 10 minutes in total) using the stories of people with visual disabilities – e.g., how they were visually impaired, what challenges they faced, and how they overcome them. The University of California Los Angeles (UCLA) loneliness scale was used to measure one's perceived loneliness.

This study included a convenience sample of 30 participants. The inclusion criteria were English speaking, 18 years old or older, community-dwelling, and visual acuity worse than 20/70 with the best possible correction. Participants were individually invited to an interview (~ 60 mins). After participants were exposed to the emotional speech stimuli, they reported emotions they perceived and the intensity of perceived emotions using a rating scale from 0 (*Not at all*) to 8 (*Strongly*). The perceived emotions were categorized in high/low-arousal positive/negative emotions. Participants also reported the perceived loneliness level using the UCLA scale.

## RESULTS

The number of and the intensity of perceived positive emotions were greater in participants living alone than their peers living with others as well as greater in participants with lower loneliness than their peers with higher loneliness. The perceived intensity of *high-arousal* positive emotions was greater in those with low loneliness than their peers with moderate loneliness as well as greater in those with late onset of vision loss than their peers with early onset. The perceived intensity of *low-arousal* positive emotions was greater in participants living with others than their peers living

alone as well as greater in African American participants than European American participants. Employed participants perceived more various *low-arousal* positive emotions compared to unemployed participants. More various low-arousal *negative* emotions were perceived by participants with severe visual impairment than their peers with blindness. No significance was found for high-arousal *negative* emotions.

## DISCUSSION

Although vision is significantly impaired, people can still rely on their remaining sensory modalities (e.g., hearing) to perceive a range of emotions while interacting with people, objects, and environments. Yet, there are individual differences depending on visual acuity levels and sociodemographic backgrounds. For example, this study found a difference in high/low and positive/negative emotion perceptions between participants living alone and living with others. Living with others would not guarantee that they are not lonely. Participants living alone might have been more actively engaged in social activities, probably resulting in perceiving positive emotions more often and intensively, compared to their peer participants living with others. In addition, participants with blindness tended to perceive low-arousal negative emotions less frequently, compared to their peers with visual impairment (or residual vision). It may hypothetically be argued that people with visual impairment and blindness might use different coping strategies for emotional events. Further research should be followed to investigate the relationships between emotional stimuli and vision loss with regard to coping strategies and emotion perceptions.

The research findings contribute to the foundation of knowledge about emotion perception mechanisms of people with visual disabilities. This advanced knowledge could, for example, help many researchers and professionals to develop social or technological interventions to adequately support people with visual disabilities, especially those who are at risk of experiencing emotional distress.

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