



On the feasibility of assessing social situations using Ecological Momentary Assessment - A comparison between Singapore and German test participants

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Perception of sound can differ between real life than the laboratory. Hence, it is important to also evaluate the performance of hearing aids in everyday life. This can be done using Ecological Momentary Assessment (EMA), a method comprising repeated real time evaluation in the usual environment of the test participant. However, validity of EMA results may be impacted by selection bias: While conversations are particularly important for hearing aid evaluation, these are often situations where test participants may find it impolite to answer questionnaires on their mobile phones leading to the underrepresentation of social situations in EMA studies. This has been shown for German test participants by Schinkel-Bielefeld et al 2020.

However, social norms can vary between nationalities. Singapore has a higher smart phone adoption rate than Germany and Singaporeans spend more than 50% more time surfing the internet on their smartphones than Germans. Thus, we wanted to see, if social situations are also underrepresented in randomly triggered EMA questionnaires for Singapore test participants.

We replicated the German study with 10 Singaporean test participants aged 47-73 years (average hearing loss: 57.5 dB HL). Over a period of two weeks, they were triggered at 8 random times per day to answer a questionnaire. If they did not answer within 15 minutes, they were politely asked for the reason. In addition, classification of the acoustic situation by the hearing aid has been collected continuously. While the exact nature of situations classified as speech in noise (SiN) is uncertain, often those correspond to group conversations or conversations in public.

In Singapore, subjects reported fewer instances of not answering questionnaires in social situations than in the German study. Consistent with this, the fraction of SiN-situations in Singapore did not differ between randomly triggered questionnaires and the entire wearing time. Such an effect was observed in Germany but diminished when only looking at the first two weeks of data. While Germans more often skipped an optional part of the questionnaire during group conversations, this was not observed in Singapore. However, similarly to German subjects Singaporeans often answered with some more delay in SiN situations. Thus, it could be beneficial to perform EMA studies with a special focus on social situations in a society where smart phone use in social situations is common and to allow participants to respond with some delay.