

Examining Barriers to Satisfaction in Adults Receiving Over-the-Counter Hearing Aids

Celine Auriemma, B.S.*, Yu-Hsiang Wu, Ph.D.** & Todd Ricketts, Ph.D.***

*Department of Speech and Hearing Science, University of Illinois at Urbana-Champaign, Champaign, IL

**Department of Communication Sciences and Disorders, University of Iowa, Iowa City, IA

***Department of Hearing and Speech Sciences, Vanderbilt University, Nashville, TN

INTRODUCTION

The Over-the-Counter Hearing Aid Act of 2017 eliminated the need for a medical clearance to obtain a hearing aid, and it required the Food and Drug Administration (FDA) to establish a rule for a new over-the-counter hearing aid category (Medical Devices, 2021). Although this proposed rule has yet to be finalized, it is anticipated that over-the-counter hearing aids will continue to increase in popularity for adults with perceived mild to moderate hearing loss who are unable to pay for or have access to the professional services typically bundled into the hearing aid price (Medical Devices, 2021).

Several studies have explored the satisfaction of adults obtaining hearing aids through different over-the-counter service delivery models (Humes et al., 2017; Humes et al., 2019; Tedeschi & Kihm, 2017). Although the results of these studies revealed reduced satisfaction in some adult participants obtaining over-the-counter hearing aids relative to those obtaining hearing aids from an audiologist, satisfaction was still high for a sub-set of participants obtaining over-the-counter hearing aids. Therefore, one can argue that an over-the-counter service delivery model may serve as a viable option for some adult patients. A key limitation of these previous studies is that the standardized outcome measures used to assess hearing aid satisfaction, such as the Hearing Aid Satisfaction Survey (HASS), were originally designed within the framework of an audiology best practice model. Specifically, the categories of factors addressed by the fixed set of items on each questionnaire are based on previously identified factors contributing to satisfaction in patients obtaining hearing aids from a hearing care professional (Cox et al., 1999). Therefore, we wanted to examine if a qualitative study design might provide additional insight into how the barriers to hearing aid satisfaction in an alternative service delivery model compare to those previously identified in traditional standard of care. Understanding these barriers may help audiologists to better support over-the-counter hearing aid adult patients with mild to moderate hearing loss, and it may allow audiologists to identify which patients are better suited for a full-service audiology best practice model vs. an over-the-counter model.

PURPOSE

The purpose of this project was to conduct a qualitative content analysis to identify **barriers to satisfaction** (herein referred to as "**dissatisfaction**") experienced by participants using hearing aids obtained through an over-the-counter service delivery model. The over-the-counter model used in this study consisted of appropriately pre-fitted hearing aids supported by a printed instruction manual and a website.

METHODOLOGY

Participants

Over-the-counter group: N=32 - *This is one of three groups in a larger study examining hearing aid service delivery models

Inclusion criteria:

- Mild to moderately-severe bilateral sensorineural hearing loss (PTA 25-55 dB HL at 0.5, 1, 2 and 4 kHz)
- No prior hearing aid experience
- 55-85 years of age

Data Analysis Approach & Rationale

- Qualitative analysis allows us to study the **nuances of human behavior**, and it also allows us to generate new theories and questions to ask in future studies (Knudsen et al., 2012).
- This project utilized a **qualitative content analysis approach** which is a systematic coding and categorizing approach used to analyze textual data (Laplante-Levesque, 2010).
- An **inductive** or "**bottom-up**" approach was taken due to the exploratory nature of this study (Vaismoradi et al., 2013).
- No hypotheses were made to avoid bias during data analysis.**

METHODOLOGY (CONT.)

- Meaning units** were extracted from participant responses to an interview question asked after 7-weeks of over-the-counter hearing aid use to identify **factors** related to dissatisfaction.

Meaning unit = a word, sentence or phrase that describes a specific phenomenon (Laplante-Lévesque et al., 2010)

- Meaning units were then grouped into **categories of factors** (Laplante-Lévesque et al., 2010; Knudsen et al., 2012).

PRELIMINARY FINDINGS

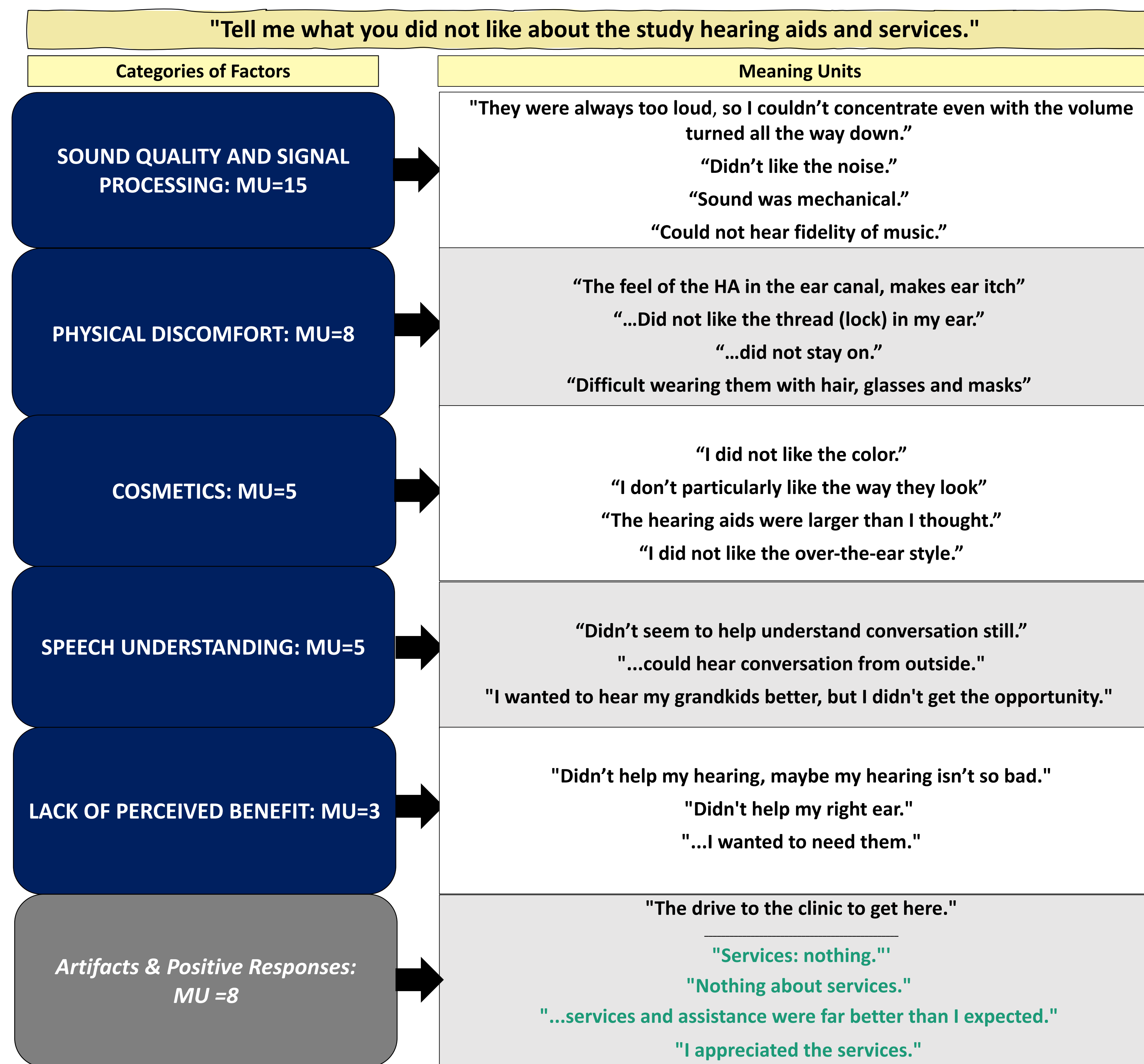


Fig 1. Displays the categories of factors that were created based on the meaning units extracted from the responses of participants assigned to the over-the-counter group. Examples of meaning units assigned to each category are also shown.

Most of these categories of factors were consistent with the recent MarkeTrak 10 survey results that outlined categories of factors contributing to satisfaction in adult patients obtaining hearing aids from a hearing care professional (Picou, 2020). However, additional meaning units related to service were also evident. There were more meaning units categorized as factors relating to **service delivery** than any other category. There were no comments regarding dissatisfaction with the services in the audiology best practice group. Only participants in the over-the-counter group indicated dissatisfaction with the services.

PRELIMINARY FINDINGS (CONT.)

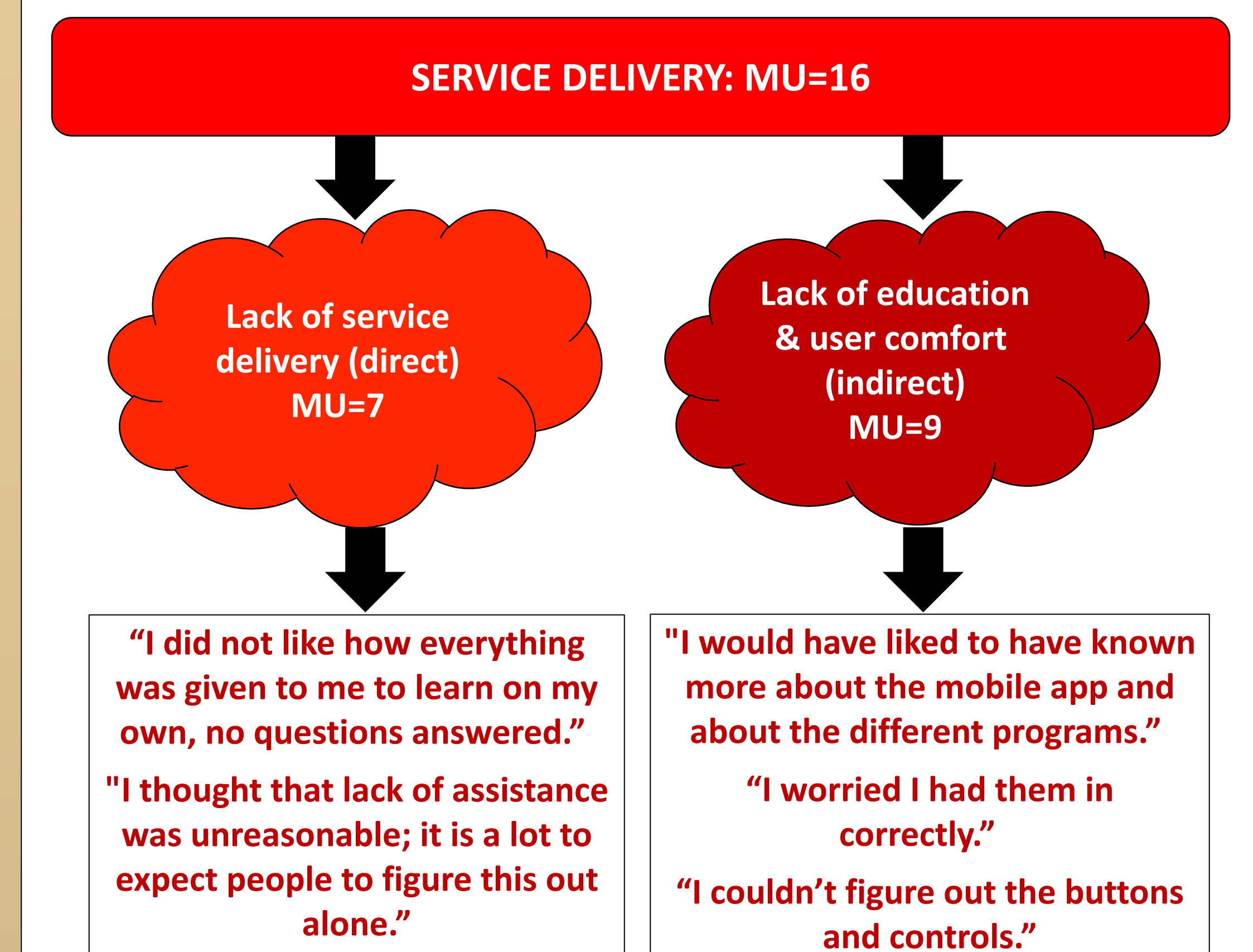


Fig 2. Displays examples of meaning units assigned to the category of "Service Delivery".

Therefore, one can conclude that lack of service delivery is a significant barrier to satisfaction that may be unique to over-the-counter patients. While factors related to service delivery have been previously identified in an audiology best practice model (Cox et al., 1999; Picou, 2020), the current meaning unit data may reflect an increased emphasis on issues related to service delivery for over-the-counter patients. It is also important to highlight that there were still positive comments from participants in the over-the-counter group regarding the services received. This indicates that lack of service delivery is not a significant barrier to satisfaction for all participants receiving over-the-counter services with this model.

CONCLUSION & FUTURE DIRECTIONS

These preliminary findings support the need for future studies exploring barriers to satisfaction experienced by patients utilizing over-the-counter hearing aid services.

ACKNOWLEDGEMENTS

This research was supported by a research grant from the National Institutes of Health (NIH-NIDCD R01 DC015997-01A1) with additional support provided by NIH NIDCD T35DC008763 Research Traineeship.

REFERENCES

- Cox, R.M., Alexander, G.C. (1999). Measuring satisfaction with amplification in daily life: The SADL scale. *Ear and Hearing, 20*(4), 306-320.
- Humes, L.E., Kinney, D., Main, A.K., Rogers, S.E. (2019). A follow-up clinical trial evaluating the consumer-decides service delivery model. *American Journal of Audiology, 28*(1), 69-84. doi: 10.1044/2018_AJA-18-0082
- Humes, L.E., Quigley, T., Main, A., Kinney, D., Herring, C. (2017). The effects of service-delivery model and purchase price on hearing aid outcomes in older adults: A randomized double-blind placebo-controlled clinical trial. *American Journal of Audiology, 26*, 53-79. doi: 10.23641/asha
- Knudsen, L.V., Laplante-Lévesque, A., Jones, L., Preminger, J.E., Nielsen, C., Lunner, T., Hickson, L., Naylor, G., Kramer, S.E. (2012). Conducting qualitative research in audiology: A tutorial. *International Journal of Audiology, 51*, 83-92.
- Laplante-Lévesque, A., Hickson, L., Worrall, L. Factors influencing rehabilitation decisions of adults with acquired hearing impairment. *International Journal of Audiology, 49*, 497-507.
- Medical Devices; Ear, Nose and Throat Devices; Establishing Over-the-Counter Hearing Aids. 86 Fed. Reg. 58150 (October 20, 2021) (to be codified at 21 C.F.R. pts. 800, 801, 808, & 874).
- Picou, E.M. (2020). MarkeTrak 10 (MT10) survey results demonstrate high satisfaction and benefit from hearing aids. *Seminars in Hearing, 41*(1), 21-36.
- Tedeschi T.J., Kihm J. (2017). Implications of an over-the-counter approach to hearing health care: A consumer study. *Hearing Review, 24*(3), 14-22.
- Vaismoradi, M., Turunen, H., Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing and Health Sciences, 15*, 398-405.