

City University of New York (CUNY)

## CUNY Academic Works

---

Dissertations, Theses, and Capstone Projects

CUNY Graduate Center

---

6-2023

### Caring for Individuals who are Experiencing Homelessness: An Audiologist's Toolkit

Jenna Marie Sparacio

*The Graduate Center, City University of New York*

[How does access to this work benefit you? Let us know!](#)

More information about this work at: [https://academicworks.cuny.edu/gc\\_etds/5310](https://academicworks.cuny.edu/gc_etds/5310)

Discover additional works at: <https://academicworks.cuny.edu>

---

This work is made publicly available by the City University of New York (CUNY).

Contact: [AcademicWorks@cuny.edu](mailto:AcademicWorks@cuny.edu)

CARING FOR INDIVIDUALS EXPERIENCING HOMELESSNESS:  
AN AUDIOLOGIST'S TOOLKIT

by

JENNA MARIE SPARACIO

A capstone research project submitted to the Graduate Faculty in Audiology in partial fulfillment  
of the requirements for the degree of Doctor of Audiology, The City University of New York

2023

Jenna Marie Sparacio

© 2023

JENNA MARIE SPARACIO

All Rights Reserved

Jenna Marie Sparacio

APPROVAL

Caring for Individuals who are Experiencing Homelessness:  
An Audiologist's Toolkit

by

Jenna Marie Sparacio

This manuscript has been read and accepted for the Graduate Faculty in Audiology in satisfaction of the capstone project requirement for the degree of Doctor of Audiology.

Approved: April 2023

Brett Martin, Ph.D., CCC-A, Advisor

Dorothy DiToro, AuD, Executive Officer

THE CITY UNIVERSITY OF NEW YORK

ABSTRACT

Caring for Individuals who are Experiencing Homelessness:  
An Audiologist's Toolkit

by

Jenna Marie Sparacio

Advisor: Brett Martin, Ph.D., CCC-A

National-level counts for individuals experiencing homelessness have been steadily on the rise. People experiencing homelessness face extraordinary barriers and challenges in accessing health care services, including hearing healthcare. Additionally, there is a high prevalence of self-reported hearing difficulties and hearing handicap among people experiencing homelessness. Hearing loss status and management is often not prioritized in healthcare settings, and treatment plans are not typically modified to best address the hearing needs of individuals who are homeless. This evidence-based toolbox for audiologists was developed to help understand and mediate healthcare barriers that people experiencing homelessness face, as well as to help improve their quality of life by creating hearing healthcare management and treatment plans that best benefit them.

CONTENTS

List of Tables .....	vi
List of Figures.....	vii
Introduction.....	1
Chapter 1	
<i>Homelessness</i> .....	2
<i>Healthcare Outcomes</i> .....	7
Chapter 2	
<i>Homelessness and healthcare barriers</i> .....	8
<i>Financial barriers</i> .....	8
<i>Accessibility barriers</i> .....	9
<i>Social/internal barriers</i> .....	10
<i>Administrative barriers</i> .....	11
<i>Provider barriers</i> .....	13
Chapter 3	
<i>Hearing status and homelessness</i> .....	15
<i>Hearing loss management</i> .....	16
<i>Hearing Aids</i> .....	17
<i>Assistive Listening System and Devices</i> .....	18
<i>Cochlear Implants</i> .....	19
<i>Over-the-Counter Hearing Aids</i> .....	21
Chapter 4	
<i>Audiologist's Toolkit with Discussion</i> .....	22
Conclusion.....	35
References.....	36
Toolkit.....	Suppl

TABLES

Table 1	Four Major Categories of Homelessness.....	1
Table 2	Four General Types of Homelessness.....	2
Table 3	Housing Services for Unhoused Individuals and Families.....	6
Table 4	Hearing Aid Styles.....	17
Table 5	The C.A.R.E. Approach to Counseling For Audiologists.....	22
Table 6	Diagnostic Audiology and Appointment Considerations.....	25
Table 7	Hearing Aid Style Considerations for Unhoused Individuals .....	31
Table 8	Communication Strategies for Individuals with Hearing Loss.....	33

FIGURES

Figure 1      Stressors for houseless individuals that affect health outcomes.....8



## INTRODUCTION

Unhoused individuals face numerous barriers when accessing healthcare on an individual, environmental, and institutional level. Health care providers, including audiologists, should be familiar with these challenges and implement best practices to benefit patients experiencing homelessness. This capstone explores the prevalence of homelessness, challenges that unhoused individuals must overcome in health care, and the presence of hearing loss among houseless individuals. The discussion presents a toolkit for audiologists working with unhoused individuals, which presents the C.A.R.E approach to counseling, diagnostic and treatment considerations, and a guide to choosing hearing aid styles. The goal of this capstone is to inform audiologists of the most current information about unhoused individuals' demographics, health outcomes, hearing status, and barrier to health care as well as providing audiologists with the tools for working with patients experiencing homelessness. Chapter 1 presents an overview of homelessness as well as healthcare outcomes for unhoused individuals. Chapter 2 presents various barriers that unhoused individuals may face when accessing health care. Chapter 3 presents an overview of the hearing status of unhoused individuals as well as the types of hearing loss management options that are available. Finally, Chapter 4 presents a toolkit for audiologists when working with patients experiencing homelessness as well as a discussion. The toolkit presented in the text is also available for download as a supporting document.

## Chapter 1

### *Homelessness*

Homelessness has been steadily on the rise in the United States in recent years, with a 30% increase in unsheltered homeless individuals since 2015 (National Alliance to End Homelessness, 2020). There are four categories of homelessness according to the Department of Housing and Urban development which are outlined in Table 1. The prevalence statistics of homelessness in America are thought to be significantly underestimated, due to the difficulty of obtaining reliable empirical data. For example, the number of people experiencing “hidden homelessness”, or individuals temporarily living with others without a guarantee of a long-term stay or immediate prospects for permanent housing, is thought to be severely underreported. An outline of the main types of homelessness can be found in Table 2.

Four Major Categories of Homelessness	
Category of Homelessness	Explanation
Strictly Unhoused	Lacking stable, consistent, and adequate housing
Immediate Risk of Being Unhoused	At immediate risk of losing stable, primary housing
Unhoused as defined by Federal Law	Individuals under the age of 25 or families with individuals under the age of 25 who lack

	stable housing for 60 days and are expected to continue in this way
Domestic Violence Attempted Escapee	Lacking stable housing or lacking resources for finding stable housing due to escaping or attempting to escape domestic violence

Adapted from

[https://files.hudexchange.info/resources/documents/HomelessDefinition\\_RecordkeepingRequirementsandCriteria.pdf](https://files.hudexchange.info/resources/documents/HomelessDefinition_RecordkeepingRequirementsandCriteria.pdf)

Four General Types of Homelessness	
Types of Homelessness	Description
Chronic homelessness	<ul style="list-style-type: none"> <li>- an unaccompanied homeless individual with a disabling condition who has been continuously homeless for a year or more, or has had a minimum of four episodes of homelessness in the previous three years</li> <li>- Lacking housing for one or more years</li> <li>- Lacking stable housing four times within a three-year period</li> <li>- Generally unaccompanied and with a disabling condition</li> </ul>

<p>Episodic homelessness</p>	<ul style="list-style-type: none"><li>- individuals who are currently homeless and have experienced at least three periods of homelessness in the previous year lacking stable housing at least three times in one year</li><li>- Currently unhoused</li></ul>
<p>Transitional homelessness</p>	<ul style="list-style-type: none"><li>- individuals that generally enter the shelter system for only one stay and for a short period; often recent members of the precariously housed population and have become homeless because of some catastrophic event, and have been forced to spend a short time in a homeless shelter before making a transition into more stable housing</li><li>- Those that have a short term stay at a shelter for unhoused individuals</li><li>- Typically individuals that have experienced a traumatic event that cause them to be temporarily unhoused</li><li>- Transitioning to stable housing</li></ul>

<p>Hidden homelessness</p>	<ul style="list-style-type: none"> <li>- individuals temporarily living with others (or ‘couch-surfing’) without a guarantee that they will be able to stay long-term and without immediate prospects for acquiring permanent housing</li> <li>- Temporarily housing with others due to lack of stable permanent residence</li> <li>- No assurance of long-term stay</li> <li>- No clear plan for finding imminent permanent residence</li> </ul>
----------------------------	---

Adapted from (“About Homelessness,” n.d.)

The majority of those experiencing homelessness (27%) are considered chronically homeless. (National Alliance to End Homelessness, 2021). Some people experiencing homelessness opt to use a housing service for homeless individuals, some of which are outlined in Table 3. Using these services can be of great assistance, but can also come with their own difficulties and challenges. Healthcare providers should be aware and have an understanding of various types of housing services that are available for individuals who are homeless to better craft treatment and management plans that can best benefit a patient who may be experiencing homelessness.

Housing Services for Unhoused Individuals and Families	
Type of Housing Service	Description
Basic Shelter	<ul style="list-style-type: none"> <li>- Extremely simple; basic needs are met (i.e. bathroom, place to sleep, roof over head, etc.)</li> <li>- Limited hours of operation</li> </ul>
Enhanced Shelter	<ul style="list-style-type: none"> <li>- Typically open all hours of day and night</li> <li>- Offer more resources (i.e. staff, showers, meals, place for belongings, etc)</li> <li>- Supporting individuals as they transition to more permanent residence</li> </ul>
Day and Hygiene Centers	<ul style="list-style-type: none"> <li>- Focus on providing hygiene related services (i.e. showers, toilets, laundry)</li> <li>- Offer areas to rest and do work</li> </ul>
Permitted Village/Encampment	<ul style="list-style-type: none"> <li>- Often temporary residence for those otherwise living in dangerous conditions</li> <li>- Typically offer all the resources in an enhanced shelter, but may have case workers as well to help with transitioning to permanent residence</li> <li>- May offer separated house-like structures and community based services</li> </ul>

Transitional Housing	<ul style="list-style-type: none"><li>- Typically for unhoused individuals who are escaping DV, in medical recovery, or youths</li><li>- Offers more assisted living and support services</li><li>- May be used as permanent housing for up to two years</li></ul>
----------------------	--

Adapted from [https://www.seattle.gov/documents/Departments/HumanServices/Homeless%20Services%20Terminology\\_Final.pdf](https://www.seattle.gov/documents/Departments/HumanServices/Homeless%20Services%20Terminology_Final.pdf)

### *Healthcare Outcomes*

There is abundant research that indicates the connection between homelessness and poorer health outcomes relative to those not experiencing homelessness (Baggett et al., 2010; Dennis et al., 1991; Oppenheimer et al., 2016; Schanzer et al., 2007). People experiencing homelessness have a significantly higher prevalence of many health conditions as compared to the general population of the United States including diabetes (22% vs. 11%), liver conditions (16% vs. 6%), drug dependency (15% vs. 1%), alcohol dependency (12% vs. 1%), and lung disease (41% vs. 28%), among others (Lebrun-Harris et al., 2013). Additionally, it was found that unhoused individuals are burdened with more mental health conditions than the general population such as depression (67% vs. 51%), anxiety (52% vs. 35%), and general psychological distress (68% vs. 41%). It is believed that health condition prevalence statistics are significantly underestimated due to the lack of consistent reporting. In one 2010 study by Baggett et. al, it was found that 73% of respondents reported at least one unmet health need and almost half of respondents had two or more unmet health needs. It was also found that unmet needs among homeless individuals were 6 to 10 times higher than the general US population.

## Chapter 2

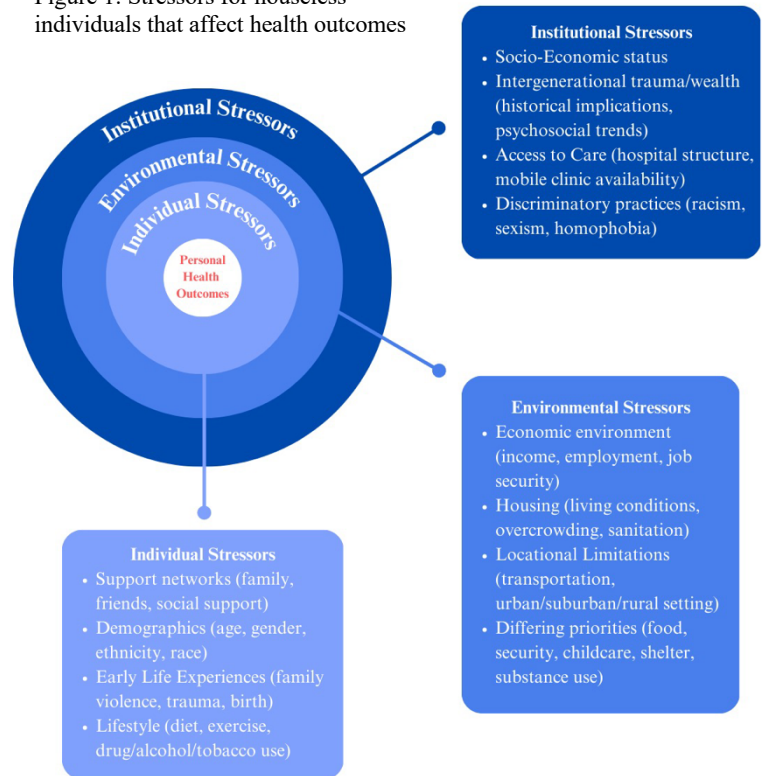
### *Homelessness and Healthcare Barriers*

The barriers that homeless individuals face in accessing healthcare has long been documented (Hwang, 2001; Kim et al., 2007; Kushel, 2015; Lester & Bradley, 2001; Lewis et al., 2003; Ramsay et al., 2019; Wojtusik & White, 1998). Homeless individuals face healthcare accessibility barriers that fall within the external locus and internal locus of control (Nickasch & Marnocha, 2009). Many of the barriers that will be outlined in the following sections fall into the “external locus of control”, or, events that will occur regardless of independent hard work or decisions. Figure 1 gives a brief outline of some of these barriers and how they affect individual health outcomes of people experiencing homelessness.

### *Financial Barriers*

The first type of barrier that people experiencing homelessness may face are financial barriers. The sources of income for people experiencing homelessness in the United States vary widely and include employment, General Assistance, food stamps, and supplemental security income, while some have no source of income (Wojtusik & White, 1998). Even with these sources of income, however, people experiencing homelessness have some of the highest rates of

Figure 1: Stressors for homeless individuals that affect health outcomes



Adapted from Davies & Wood (2018)



poverty. Often, homeless individuals may not have health insurance plans, or may have basic healthcare plans through their state government that offer limited coverage. Because of this, many homeless individuals opt to wait until they have a medical emergency before seeking medical care (Martins, 2008).

When seeking medical care, the vast majority of homeless individuals do not see a primary care physician (Martins, 2008; Wotjusik & White 1998). Many people will opt to, instead, go to the hospital emergency room or a community clinic, and typically only in an emergency; a study by Wotjusik & White found that 52% of participants reported using an emergency department as a primary source of care (Wojtusik & White, 1998). Individuals experiencing homelessness have reported that it can be a challenge finding a doctor that will see them with the insurance coverage that they have (if they have it), and that the costs of medicines or other treatment referral that they do receive may be too expensive if not covered (Martins, 2008; Wotjusik & White 1998). Preventative care and speciality medical care is of enormous importance in maintaining good health and well being.

### *Accessibility Barriers*

Another major barrier to healthcare that people experiencing homelessness face is accessibility. A trip to a primary care doctor, specialist, or even an emergency room visit come fraught with challenges for individuals experiencing homelessness. Often, these individuals may not own a car or a personal means of transportation due to financial reasons, which limits their ability to travel (Murphy, 2019; Wille et al., 2017). In more rural or even suburban areas, having a personal mean of transportation is often considered essential to commuting and this includes commuting to meet healthcare needs, especially if there is a shortage of healthcare services in the area (Bennett-Daly et al., 2022; Gelberg et al., 2004; Kertesz et al., 2014; Wille et al., 2017). In a

Jenna Marie Sparacio

2017 study looking at women veterans experiencing homelessness, it was found that the average driving distance to a Veterans Affairs Medical Center ranged from “42.9 miles for those in a metropolitan core area to 107.4 miles for those in an isolated rural area”(Gawron et al., 2017). People experiencing homelessness may rely on public transportation or simply walking for travel, which may limit the physical distance they can travel comfortably or requires reliance on potentially un-reliable public transportation (Gelberg et al., 2004; Kertesz et al., 2014). When taking all of this into consideration, it may be unrealistic for individuals that are homeless to seek out medical professionals simply due to distance, location, and the challenges of traveling.

Compounding the issue of distance and physical travel is the issue of clinic and healthcare availability. There is a systemic lack of diffuse mobile clinics that offer access to healthcare services for individuals experiencing homelessness. In fact, unhoused individuals are much more likely to use hospital emergency departments as their usual source of care in comparison to the general population (20% vs. 7%) (Lebrun-Harris et al., 2013). Additionally, there is an issue of crowding within existing clinics that are not supported or funded enough to meet the need of the population it is supposed to serve. This may be enough to ward off individuals that are homeless from seeking healthcare services due to long lines, crowding, and insufficient service. This may also encourage individuals to wait longer to address medical issues they deem “not enough of an emergency”, which may affect healthcare outcomes as addressed earlier.

### *Social/Internal Barriers*

Social and internal barriers are another prevalent challenge facing homeless individuals as they attempt to seek health care. For example, people experiencing homelessness may have less of a social support system from friends and family for a variety of reasons. Homelessness is

Jenna Marie Sparacio

a traumatic experience that can come with many personal challenges in addition to the loss of a home. Previous studies have shown that rates of childhood or past physical and sexual assault are much higher among homeless individuals, particularly for women and minority populations within the homeless community. This may affect a person's ability to build an effective and safe support system as well as affect their ability to build trust in and rapport with others, even if they are a medical professional.

Additionally, rates of substance abuse are far higher among people experiencing homelessness compared to the general population (Des Jarlais et al., 2007; Nyamathi et al., 2012; Stein et al., 2008; Vangeest & Johnson, 2002; Welte & Barnes, 1992). A 2008 study by Johnson & Chamberlain found that two-thirds of unhoused individuals with substance abuse issues (N=1940) developed these issues after they became homeless (Johnson & Chamberlain, 2008). This is also known to affect the ability to create meaningful ties with others and increases an individual's vulnerability in times of stress. Previous studies have shown that social support can be extremely beneficial and help reduce stress, isolation, depression, and symptoms associated with various mental health issues, all of which are barriers to accessing healthcare in themselves and have higher rates among homeless individuals (Cummings et al., 2022; Goodman, 1991; Johnstone et al., 2015; Stein et al., 2008). Not having access to social support systems can compound challenges that people experiencing homelessness may already be facing, which presents another barrier to accessing healthcare.

#### *Administrative Barriers*

An often easily-overlooked barrier that may be more unique to individuals experiencing homelessness is administrative barriers. Patient intake often consists of multiple forms to fill out regarding background information, medical history, insurance information, privacy form, and

more (Hoshide et al., 2011; Wusinich et al., 2019). This can be extremely intimidating to individuals who may not necessarily have access to this information or are uncomfortable disclosing details (Wusinich et al., 2019). People experiencing homelessness often have a complex network of unmet healthcare needs, as well as poorer access to documents relating to their healthcare history, medical insurance information, and personal identification (Hoshide et al., 2011; Wusinich et al., 2019). Additionally, medical intake forms are not always available in multiple languages, and can be filled with medical jargon and written for high literacy levels, and this also extends to pamphlets given to patients regarding medical treatment options, test results, aftercare instructions, or medical reports (Davis et al., 2002; Horowitz & Kleinman, 2008; Parker, 2000). Health literacy levels are correlated with housing status, with lower health literacy levels seen among individuals experiencing homelessness (Farrell et al., 2020). In a 2019 study, it was found that, among people experiencing homelessness, higher health literacy levels were correlated with “better self-rated health” (Odoh et al., 2019). Lower health literacy levels combined with poorer access to documentation and information among people experiencing homelessness can create a cycle of misinformation or miscommunication that can compound with every new appointment or follow-up.

Individuals experiencing homelessness typically have a more chaotic lifestyle due to instability or differing priorities. For example, people experiencing homelessness may prioritize food, shelter, childcare, or substance use over keeping medical appointments (Gelberg et al., 1997; Schlosstein et al., 1991). In fact, Gelberg et al., found that, among individuals experiencing homelessness, those that frequently struggled to meet their basic needs were twice as likely to go without “needed medical care” (Gelberg et al., 1997). Having rigid and inflexible appointment times can be a challenge, and the lack of a stable mailing address, phone number, or

Jenna Marie Sparacio

email may make appointment reminders and follow-up care more difficult to manage (Canavan et al., 2012; Kertesz et al., 2014). Additionally, there may be less access for telehealth options for individuals experiencing homelessness, which requires a reliable internet connection, a private area for discussion, and a device that can support telehealth options (Cristofalo, 2021; C.-C. C. Lin et al., 2018).

### *Provider Barriers*

A major barrier that hinders access to healthcare for people experiencing homelessness is provider bias and stigma. Numerous studies have found that individuals experiencing homelessness often feel that they are labeled, stigmatized, dismissed, ignored, and treated with disrespect by medical professionals (Henderson et al., 2022; Martins, 2008; Reilly et al., 2022; Wen et al., 2007; Woith et al., 2017). Individuals experiencing homelessness that also experience mental illness or addiction consider perceived stigma by healthcare providers to be an important component when deciding to seek care, and often feel that they are more poorly treated by providers (Kim et al., 2007) (Gilmer & Buccieri, 2020) (Skosireva et al., 2014) as well as minority groups, women, and mothers experiencing homelessness (Crone et al., 2022; Kneck et al., 2021; Sznajder-Murray & Slesnick, 2011). Stigma among healthcare professionals can discourage people experiencing homelessness from seeking medical care and can lead to distrust and fear of clinicians. Studies have also found that perceived stigma from medical providers can be correlated with poorer health care usage, recovery times, and provider-patient communication, which could negatively affect healthcare outcomes for people experiencing homelessness (Clement et al., 2015; Earnshaw & Quinn, 2012; Gilmer & Buccieri, 2020; Hausmann et al., 2011; Reilly et al., 2022; Wang et al., 2018). In one 2014 study examining perceived discrimination among homeless adults with mental illness in healthcare settings, it was found

Jenna Marie Sparacio

that 30% of participants (N=550) reported perceived discrimination due to homelessness and poverty, and 32% of participants reported perceived discrimination due to substance use and mental health issues (Skosireva et al., 2014).

### **Chapter 3**

#### *Hearing Status and Homelessness*

Hearing loss is one of the most common disabilities in America, affecting approximately 48 million people (F. R. Lin et al., 2011). There is a lack of data in the literature about the hearing status of unhoused individuals. A study by Noel et al. (2020) showed that 40% of participants (N=100) who lived in homeless shelters in Toronto had hearing loss in the speech frequencies (the pure-tone average across 0.5, 1, 2 and 4 kHz), and 52% of the participants met the criteria for high-frequency hearing loss, which was indicated as the pure-tone average across 3, 4, 6 and 8 kHz (Noel et al., 2020). Rates of hearing loss were significantly greater in the participant group than in the general population. Another 2007 study by Saccone and Steiger sampled 132 adults living at a homeless shelter and found that 35.6% of subjects demonstrated having some level of hearing loss according to their mean binaural high frequency pure-tone average (B-HFPTA). 10.6% of subjects were identified as having a B-HFPTA greater than 45 dB and thus predicted to have demonstrated enough hearing loss to warrant needing a hearing aid (Saccone & Steiger, 2007). The study notes that they were unable to use a random sample for their methods, which limits the ability of the results of the study to be extrapolated to a larger scale. Additionally, a 2017 study of 350 adults over the age of 50 that were experiencing homelessness found that 35.6% of participants reported a hearing impairment, but only three participants total had a hearing aid (Brown et al., 2017).

While there are limited studies using objective measures to identify the prevalence of hearing loss among individuals who are homeless, there are a few studies that used subjective measures to create a fuller picture. In a 1998 study by Wojtusik and White, they conducted face-to-face interviews with 150 adults (persons over the age of 18) that were experiencing

Jenna Marie Sparacio

homelessness in San Francisco and noted that 18.8% of subjects reported hearing problems. Brown et al. (2012) conducted a similar study and noted that 29.7% of subjects (n=247) self-reported hearing difficulties (Brown et al., 2012). It should be noted that mean age of the target population of this study was 56 years. Hearing loss is highly correlated with age, with severity and intensity increasing as age increases.

There are a number of risk factors for hearing loss, with age being the most significant. 8.5% of people age 55-64 and 25% of people aged 65 to 74 experience disabling hearing loss (National Institute on Deafness and Other Communication Disorders, 2021). This cannot be overlooked when discussing the hearing status of individual experiencing homelessness. The Annual Homeless Assessment Report to Congress states that: “thirty percent of people in chronically homeless households were elderly or near elderly – age 55 or older – and 58 percent were age 45 or older” and “a quarter of all people in sheltered adult-only households were elderly or near elderly” (US Department of House and Urban Development, 2020).

### *Hearing Loss Management*

Effective communication and speech understanding are essential goals for managing hearing loss. There are many communication strategies, amplification options, and other assistive technology that have been developed to benefit individuals with hearing loss in various listening situations. Healthcare providers and patients should work together to find solutions that best benefit the patient by taking into account their hearing loss on the audiogram, perceived hearing impairment, patient comfort, and listening situations. The next section outlines the most common technological interventions recommended for individuals with hearing loss, including hearing aids, assistive listening systems and devices, cochlear implants, and over-the-counter hearing aids.



*Hearing Aids*

The most commonly suggested amplification intervention for individuals with hearing loss is hearing aids (Chisolm et al., 2007). The multitude of benefits that hearing aids offer individuals with hearing loss has been extensively researched and documented (insert all of these sources). The most prominent potential benefits of hearing aids can include improved speech intelligibility, increased overall audibility of sounds, overall improved quality of life, tinnitus reduction, and reduced listening fatigue. Hearing aids can be programmed by audiologists to fit a patient’s individual listening needs, and new digital hearing aids come with added features such as Bluetooth streaming, rechargeability, and apps to control hearing aids from the wearer’s smartphone. There are many types and styles of digital hearings aids – the most common are outlined in Table 4 along with their respective benefits and challenges for unhoused individuals.

Hearing Aid Style	Description	Uses
Behind-the-ear (BTE)	A hard plastic casing worn behind the ear attached via a slim, clear tube to an earmold shaped to the outer ear.	Can have a significant amount of power. Easy to manipulate. Good for children, people with dexterity issues, people with severe/profound hearing loss.
Receiver-in-the-canal (RIC)	A hard plastic casing worn behind the ear attached via wire to a dome earplug that is inserted in the ear canal.	A more open fit than a BTE – no tubes; uses domes. Plugs up the ear less. Less visible. Good for adults, fits mild to severe hearing loss.

In-the-ear (ITE)	A hard, plastic hearing aid that is custom-molded to the shape of the ear and sits completely within the outer ear.	No behind the ear components – plugs up ear more. Good for adults with dexterity issues. Fits mild to severe hearing loss.
Canal hearings aids (ITC/CIC/IIC)	A hard, plastic hearing aid that is custom-molded to the shape of the ear and sits inside the ear canal. Can come in different sizes.	No behind the ear components and much less visible than an ITE. Can be more difficult to adjust/remove; small size reduced power output and may limit extra features (i.e. Bluetooth). Fits mild to moderately-severe hearing loss.

*Assistive Listening Systems & Devices*

An alternative (or additive) listening solution to hearing aids are Assistive Listening Systems. Assistive Listening Systems (ALSs) are technology that specifically help listeners better understand speech in background noise by increasing the signal-to-noise ratio (Begg, 2007). Some types of ALSs include Frequency Modulation Systems, Classroom Audio Distribution Systems, Hearing Loop Systems, and Infrared Systems (Brody 2020). Some of these devices can be worn on the body or be a separate microphone. While well-fitting, functioning, and properly programmed hearing aids typically offer significant benefit to their users that have hearing loss, ALSs can add extra benefit in particularly difficult listening situations.

In a study by Kochkin (2007), it was concluded that a significant reason that people return hearing aids is due to their poor performance in noise. Individuals with hearing loss may

Jenna Marie Sparacio

report that their hearing aids do not always help in listening situations with background noise. By increasing the signal-to-noise ratio, ALSs can fill in the gap in difficult listening environments where an individual's hearing aids may fall short. Using ALSs may help a listener having greater audibility and speech understanding to maximize their communicative benefit.

ALSs are a subset of Assistive Listening Devices (ALDs) that include other types of technology that do not necessarily seek to increase the signal-to-noise ratio, but do seek to improve hearing and communication. Some of these devices include captioned or amplified telephones, text captioning phone apps, alerting devices, and sensory/tactile devices. These devices may help individuals with hearing loss address specific communication needs and improve their overall quality of life. These are invaluable technology options that can be used in conjunction with other hearing devices or on their own to address concerns such as more clearly understanding phone calls, better participating in a work meeting, knowing when the doorbell rings, or being safely alerted about a smoke alarm.

### *Cochlear Implants*

For individuals with more severe to profound hearing loss, traditional hearing aids may not provide them with the benefit that they need. These individuals may consider a cochlear implant as a treatment, which comprises of an internal implanted magnet and electrode array that connects to an external sound processor. Gaylor et al. (2013) defines the function of a cochlear implant as follows:

“Cochlear implants replace the function of hair cells that are no longer able to generate electrical impulses in response to sound. Therefore, these devices may provide a viable alternative to hearing aids among adults with sensorineural hearing loss because they

bypass damaged hair cells by transmitting the electrical impulses directly to the acoustic nerve.” (Gaylor et al., 2013)

Since their induction, countless studies have indicated the benefits of cochlear implants on hearing, communication, speech intelligibility, and overall quality of life (Carlson, 2020; Gaylor et al., 2013; Green et al., 2007; Litovsky et al., 2004; Wooi Teoh et al., 2004). Cochlear implants have shown to have benefits on older adults as well, and links have been found between cochlear implant use in older adults and limiting age-related cognitive decline (Ramos et al., 2013; Sorrentino et al., 2020). The process of cochlear implantation surgery can be lengthy and costly, however, it has been found to be cost effective in the long run for most individuals (Cheng & Niparko, 1999). It has also been shown in research that cochlear implants are an effective treatment option for individuals with single-sided deafness (Arndt et al., 2017; Rahne & Plontke, 2016; Távora-Vieira et al., 2019; Vlastarakos et al., 2014) as well as a potential treatment for individuals experiencing unilateral tinnitus (Van de Heyning et al., 2008).

More recently, the U.S. Food and Drug Administration approved two cochlear implant companies (Cochlear and MED-EL) for use of cochlear implants to treat single-sided deafness. Additionally, knowing when to refer for cochlear implant evaluations has become clearer since a 2020 study that identified a 60/60 guideline stating that

“...patients should be referred if they demonstrate a best ear unaided monosyllabic word score less than or equal to 60% correct and if they demonstrate an unaided pure-tone average in their better ear that is greater than or equal to 60 dB HL” (Zwolan et al., 2020).

Audiologists should be up-to-date on candidacy guidelines for cochlear implants, and understand when to counsel and refer for a cochlear implant evaluation where applicable.

*Over-the-Counter Hearing Aids*

Over-the-counter hearing aids (OTCs) are the latest development in the hearing aid industry, marketed as being a more affordable and accessible option for individuals experiencing hearing loss. When thinking about this option for unhoused individuals, it is important for audiologists to consider both the benefits and drawbacks of OTCs. The most notable benefit of OTCs is the cost. For many people, hearing aids are an out-of-pocket cost that may be well in the thousands due to limited insurance coverage. For unhoused individuals that cannot afford this expense, OTCs may be a more affordable option, particularly if they do not have medical insurance. Additionally, OTCs do not require medical clearance or a medical exam (*Over-the-Counter (OTC) Hearing Aids | NIDCD, 2022*). This may be a considerable benefit for unhoused individuals who are unable to easily make and keep medical appointments, or for those that primarily use emergency departments or mobile clinics as their primary source of care.

There are several potential challenges that unhoused individuals may face when considering OTCs as an option. While OTCs may be less costly than prescription hearing aids, they may be less beneficial than other amplification devices such as a personal amplifier or a pocket talker which cost less than OTCs. For unhoused individuals who do have insurance, it may be in their best interest to pursue a prescription hearing aid because they may be able to receive one with no out-of-pocket cost under some managed Medicaid plans that partner with the third party company. Additionally, OTCs require the user to program, maintain, and control the devices themselves (Blustein et al., 2022). This may be a challenge for unhoused individuals who may not have the equipment needed to program (i.e. personal laptop and/or cellphone, Wi-Fi, power outlet, etc.).

## Chapter 4

### *Toolkit for Audiologists Working with Unhoused Individuals with Discussion*

Keeping in mind the health outcomes and audiological considerations of people experiencing homelessness, as well as barriers they face when seeking healthcare, it is important to create a toolkit for audiologists when approaching care, counseling, and treatment. When considering the most effective approach towards counseling individuals experiencing homelessness that have hearing loss, audiologists can use the acronym C.A.R.E. – Compassion, Accessibility, Resources, and Expertise. Using the C.A.R.E model of counseling, it allows audiologists to properly address the needs of individuals that are homeless and provide them with the most effective, patient-based counseling. Table 5 defines the basics of the C.A.R.E approach to counseling.

The C.A.R.E. Approach to Counseling for Audiologists	
<b>Compassion</b>	<p>Offering a non-judgmental, safe environment for patients and leading with an accepting, empathetic attitude. Creating a culture of inclusivity within your practice.</p> <p>Understanding the circumstances surrounding an individual and their personal needs and how that will affect their decision-making in regards to treatment. Encouraging patient-centered discussions as well as promoting self-efficacy.</p>

<p><b>Accessibility</b></p>	<p>Providing a flexible mode of care where possible (i.e. walk-in/drop-in slots, outreach programs, etc.). Eliminating administrative barriers when able. Ideally, coordinating health services when able in one location (i.e. mental health services, cerumen removal, ENT services, etc.).</p>
<p><b>Resources</b></p>	<p>Having up-to-date resources available in multiple modes (i.e. pamphlets, phone numbers, websites) for a number of services that may be applicable and helpful for patients experiencing homelessness. Understanding the best referrals to make in a given situation.</p>
<p><b>Expertise</b></p>	<p>Ensuring that you are offering the best possible care for every patient. Accepting that patient priorities may differ from typical expectations, and putting aside any personal biases to give expert-led and evidenced-based professional care. Leading with transparency and establishing patient-provider rapport. Continuing education on comorbidities, medications, complications, etc. as related to people experiencing homelessness.</p>

Leading with compassion in every patient interaction should be the foundation of providing the best audiological care. As mentioned previously, people experiencing homelessness may not have a good support system and may have distrust for medical professionals. Building a good patient-provider rapport can be fundamental to creating a welcoming environment. Communicating to the patient that they are in a safe, inclusive, non-judgmental environment is essential for people that may have felt slighted or marginalized in other similar medical environments. As shown by the many types of living experiences explored in the introduction, people experiencing homelessness can have varied backgrounds and lives, so it is important to be familiar with terms and definitions, and, most importantly, not to make generalizations or assumptions. Putting aside expectations and biases will allow the patient to feel as though they are being heard and understood. It is important to consider every patient interaction as potentially their first meeting with a healthcare professional.

Having a flexible practice as an audiologist and understanding the often chaotic lifestyle of individuals that are homeless can help improve accessibility. Some way to provide more options is to offer drop-in/walk-in time slots, mobile clinic hours, hearing aid outreach programs, or extended hours on select days. People experiencing homelessness may not be able to operate within the typical 9-5 structure or be able to travel to the office. Going into the community to run hearing tests/screenings and offering services at atypical hours is a way to possibly combat this. Also, making sure that ramps are available for going into the hearing booth as well as having pocket-talkers and translation services on hand are all good ways of expanding accessibility. Considering office set-up and dress code may be important as well to balance professionalism with feeling welcoming and attempting to offset white-coat syndrome.



Audiologists should have easily accessible resources on hand for those that need more information or external support centers. Having reading material about various services and technology in multiple languages can be very helpful. Additionally, having quick pamphlets on neighborhood resource centers for housing, mental health, social work, child services, lgbtq+ services, immigration, and domestic violence in the waiting area or in the office can build a more inclusive office. Wojtusik & White found that 36% of unhoused individuals in their study reported a lack of information as a major barrier to health care. People may not always be forthcoming about their living situations due to internal barriers mentioned earlier but knowing how to refer out to other medical professionals is also important.

When performing a diagnostic exam, audiologists should have an idea of ways to better shape their appointments for people experiencing homelessness. Table 6 outlines things that an audiologist should look out for and consider during an appointment.

Diagnostic Audiology and Appointment Considerations for Unhoused Individuals	
Case History/Intake	<ul style="list-style-type: none"><li>👂 Try to be understanding if the patient is not on time or reschedules.</li><li>👂 Help the patient fill out forms/limit the amount of information required on the forms.</li><li>👂 Is the patient uncomfortable?</li><li>👂 Can they hear and understand you clearly?</li></ul>

	<ul style="list-style-type: none"><li>👂 Do they have anyone with them at the appointment? Are they helpful and supportive?</li><li>👂 Is the patient a reliable historian?</li><li>👂 Clarify comorbidities/medications.</li><li>👂 Look out for signs of domestic violence (i.e. physical abrasions/bruising, not making eye contact, easily startled, etc.)</li><li>👂 Assure patients that you are there to help.</li><li>👂 Practice active listening – focus on the patient, not the intake form.</li><li>👂 Ask if they have ever worn hearing aids before/if they have helped.</li><li>👂 Ask about dizziness, falls, and head trauma.</li><li>👂 Asking about situations in which they have difficulty hearing.</li><li>👂 Look for signs of depression, anxiety, dementia, and dexterity issues.</li></ul>
During Testing	<ul style="list-style-type: none"><li>👂 Explain the tests clearly and simply.</li><li>👂 Have multiple headphone options.</li></ul>

	<ul style="list-style-type: none"><li>☞ Offer cerumen removal services if possible.</li><li>☞ Be aware of other disability (if any) and how they affect testing.</li><li>☞ Having speech testing word lists in multiple languages.</li><li>☞ Offer positive encouragement during testing,</li></ul>
<p>Results/Counseling</p>	<ul style="list-style-type: none"><li>☞ Be prepared for a range of emotions.</li><li>☞ Avoid medical jargon when explaining results.</li><li>☞ Counsel beyond the audiogram.</li><li>☞ Provide realistic expectations.</li><li>☞ Understand that hearing health may not be a priority for the individual.</li><li>☞ Show that you understand financial considerations/offer a range of options.</li><li>☞ Ask if they have any questions.</li><li>☞ Summarize statements and relate the results back to their initial concerns</li><li>☞ Reflect, paraphrase, and restate</li></ul>

	<ul style="list-style-type: none"><li>☞ Be non-judgmental regardless of what decision they make, even if it not typically considered the “best option”.</li></ul>
<p>Treatment Plan Considerations</p>	<ul style="list-style-type: none"><li>☞ Understand that amplification may not be a realistic option</li><li>☞ Include lower-cost options and resources (i.e. Costco, over-the-counter hearing aids, personal amplifiers etc.)</li><li>☞ Emphasize hearing protection (i.e. offer foam earplugs)</li><li>☞ Focus on hearing health and hygiene</li><li>☞ Offer hearing aid demo-ing in office</li><li>☞ Offer flexible follow-up appointments and walk-in times</li><li>☞ Discuss hearing health and brain health</li><li>☞ Always provide communication strategies</li><li>☞ Be a point of trusted contact/communication</li><li>☞ Make appropriate referrals where necessary</li></ul>

	<ul style="list-style-type: none"><li>👂 Discuss early intervention programs if applicable</li><li>👂 Advocate for the patient when needed to other medical professionals</li></ul>
--	---

Other things to consider in appointments is how hearing loss is going to affect the individuals' life. Taking down accurate contact information and checking in periodically with the patient to update it can be crucial for managing follow-up and long-term care. Hearing loss can also affect job prospects and increase social isolation, which may already be a concern for an unhoused individual. If traditional amplification is not feasible for the patient, consider offering a less expensive pocket-talker or table mic option that they can use in interviews or other important settings. Noise-induced hearing loss should be considered, particularly for those living in urban locations or in areas where noise reaches unsafe levels (i.e. subway stations/cars, construction zones, high-traffic areas, etc.) and offer foam ear plugs, earbuds, or earmuffs as low-cost options. Noise-induced hearing loss is also a concern among veterans, who make up approximately 10% of all people experiencing homelessness in the United States.

Knowing when to refer to other doctors and stressing the importance of referrals can also be helpful. Looking out for red flag signs such as asymmetrical hearing loss, asymmetrical tinnitus, or sudden hearing loss. Individuals who are homeless sometimes report that hygiene can be a challenge depending on the circumstance, so looking out for signs of infection or cerumen build-up during an otoscopic examination is essential. Cerumen-management is within an audiologist's scope of practice; offering a regular cerumen management program may also be a potential option, but if not then it is important to properly refer for it. Offering information about

Jenna Marie Sparacio

how to switch to managed plans (if they have insurance) that may offer better hearing aid coverage may be helpful as well.

If a patient experiencing homelessness does decide to move forward with traditional amplification, it is important to set standards and expectations. It may be helpful to have them demo in-office with a traditional hearing aid, and considering styles and options is important. If the patient is a veteran, it may be helpful to refer them to their nearest Veteran's Affairs center due to the hearing aid benefits that they offer. In other cases, audiologists should be aware of and inform patients of social assistance, vocational agencies, or disability support programs offered in their city or state, and refer patients to these resources if finances are a major factor. For those that do move forward with a hearing aid, it is essential to review trial period and warranty information, as well as basic care. Depending on the situation, it may be more cost-effective for the individual to offer hearing aid insurance to cover loss and damages, if that could be an issue that they encounter more frequently with their lifestyle. If the individual has a mild or moderate hearing loss, then it is possible that an over-the-counter hearing aid may be better suited to their financial needs, however, be sure to advise them that it may not come with follow-ups and repairs in the same way.

There are advantages and disadvantages to fitting unhoused individuals with different styles of hearing aids. Clinicians should understand that caring for hearing aids may be difficult for individuals experiencing homelessness. Keeping them dry, safe from the elements, charged, and clean may be challenging. If losing the hearing aids is a concern, it may be helpful to offer hearing aid clips or cords as an extra precaution and offering hearing aid dehumidifiers can help combat moisture build-up. In light of the Covid-19 pandemic, discuss different styles of face masks that may be more helpful if the hearing aid goes behind the ear. Consider in-the-ear styles

for individuals with dexterity concerns, and emphasize placing them into their case when they are not being worn. Table 7 outlines the benefits and limitations of different traditional hearing aid styles when considering the needs of individuals experiencing homelessness.

Hearing Aid Style Considerations for Unhoused Individuals	
Hearing Aid Style	Benefits and Limitations for Unhoused Individuals
Behind-the-ear (BTE)	<ul style="list-style-type: none"> <li>☞ Easier to locate, harder to lose among belongings</li> <li>☞ Durable with longer battery life for on-the-go lifestyle</li> <li>☞ Good for individuals with dexterity issues</li> <li>☞ Must keep track of batteries</li> <li>☞ Cerumen build-up and wear and tear of the mold may be more prevalent for this lifestyle, resulting in the need to have more visits for re-tubing and cleaning of HA; having new molds made due to damage may be unrealistic</li> </ul>
Receiver-in-the-canal (RIC)	<ul style="list-style-type: none"> <li>☞ Wire receiver is very durable</li> <li>☞ Comes in rechargeable option – may be a better option for shelter residents but worse for those that do not have access to outlets for charging. Must keep track of charger and cord/plug</li> <li>☞ Phonak Audeo - waterproof RIC option!</li> <li>☞ Maintenance included changing wax guards and domes, but may be more self-manageable and would likely require less office visits</li> </ul>

	<ul style="list-style-type: none"> <li>⦿ Less visible which may be an added benefit to discourage theft</li> </ul>
<p>In-the-ear (ITE)</p>	<ul style="list-style-type: none"> <li>⦿ Very visible, may encourage theft</li> <li>⦿ Rechargeable and battery powered options (same concerns as RIC option)</li> <li>⦿ Cleaning and maintenance may be a concern if there are issues with cerumen build-up, but if not, could be a good option due to limited maintenance</li> <li>⦿ Much less durable than BTE and RIC, can crack easily if dropped, which may be a concern for those not using a shelter</li> </ul>
<p>Canal hearings aids (ITC/CIC/IIC)</p>	<ul style="list-style-type: none"> <li>⦿ ITC – more visible than CIC/IIC. ITC may be easier to keep track of and see among belongings, whereas CIC/IIC may be much less prone to theft.</li> <li>⦿ Typically battery powered (Starkey offers rechargeable ITC option), but also typically smaller batteries (particularly size 10 battery for CIC), which may be more difficult to keep track of or change on-the-go</li> <li>⦿ IIC option does not typically offer manual volume control adjustment without use of another device which may be unrealistic</li> </ul>



	<p>👂 CIC and IIC typically have shorter battery lives and may not realistic if the individual has ear-related hygiene concerns</p>
--	--

Sometimes, hearing aids will not be plausible for a patient experiencing homelessness due to the aforementioned issues as well as others such as theft concerns, danger of bringing attention to themselves, or simply the inability to replace batteries frequently. Audiologists should have the compassion to understand this, and always present communication strategies as an option outlined in Table 8.

Communication Strategies for Individuals with Hearing Loss	
Be in the same room as and face the speaker	Ask for specific information
Use proper lighting	Ask for important information in writing
Ask people to speak clearly, not loudly	Sit near the speaker
Minimize background noise	Use visual cues and context
Ask people to speak one at a time	Ask for clarification when needed

For individuals with severe to profound hearing loss, a cochlear implant referral may be warranted. However, audiologists should consider the pros and cons of a cochlear implant for an individual experiencing homelessness. If the individual does not seem like they will be able to do the necessary auditory rehabilitation and training or does not have the time to devote to post-op care, then it may not be the best option. Additionally, cochlear implant processors may be prone to theft and should be treated with care. Some cochlear implant companies are patient-

communication driven if the patient has a concern with loss or damage, which may not be plausible for some unhoused individuals. If the patient does not have a good support system, high motivation, or if their priorities lay elsewhere (i.e. food, shelter, etc.), then a cochlear implant may not be an appropriate treatment. Exploring other options such as sign language or alternative forms of communication may be more appropriate if a cochlear implant is not plausible.

Lastly, it is important for audiologists to consider themselves healthcare advocates for individuals experiencing homelessness. Hearing health is tied into brain health, quality of life, and other comorbidities. While it may not be an immediate priority for patients that have other more pressing, urgent concerns, it is in part the audiologist's job to educate patients and other healthcare professionals about the importance of hearing health. Additionally, audiologists should present themselves as a comfortable point of contact for patients experiencing homelessness and, where possible, try to build an inter-professional team to address a patient's needs. Audiologists should feel comfortable referring to otologists, mental health counseling, psychiatric services, otolaryngologists, social workers, and other healthcare professionals, and attempt to follow-up as best as possible with the patient to ensure needs are met.

## **CONCLUSION**

Audiological considerations for people experiencing homelessness is a topic that should be more readily researched. Considering the prevalence of hearing loss among individuals experiencing homelessness and the lack of hearing aid uptake within the community, more research such be done on methods of addressing the hearing needs of these individuals.

Additionally, audiologists should continue to be informed about the most up-to-date best practices and information related to people experiencing homelessness to best approach these patients with compassion and professionalism on their hearing healthcare journey.

References

- About Homelessness. (n.d.). *Partners Ending Homelessness*. Retrieved March 27, 2023, from <https://pehgc.org/connect-support-restore-housing-first/homelessness/>
- Arndt, S., Laszig, R., Aschendorff, A., Hassepass, F., Beck, R., & Wesarg, T. (2017). Cochlear implant treatment of patients with single-sided deafness or asymmetric hearing loss. *HNO*, *65*(2), 98–108. <https://doi.org/10.1007/s00106-016-0297-5>
- Baggett, T. P., O’Connell, J. J., Singer, D. E., & Rigotti, N. A. (2010). The unmet health care needs of homeless adults: A national study. *American Journal of Public Health*, *100*(7), 1326–1333. <https://doi.org/10.2105/AJPH.2009.180109>
- Bennett-Daly, G., Maxwell, H., & Bridgman, H. (2022). The Health Needs of Regionally Based Individuals Who Experience Homelessness: Perspectives of Service Providers. *International Journal of Environmental Research and Public Health*, *19*(14), 8368. <https://doi.org/10.3390/ijerph19148368>
- Blustein, J., Weinstein, B. E., & Chodosh, J. (2022). Over-the-counter hearing aids: What will it mean for older Americans? *Journal of the American Geriatrics Society*, *70*(7), 2115–2120. <https://doi.org/10.1111/jgs.17781>
- Brown, R. T., Hemati, K., Riley, E. D., Lee, C. T., Ponath, C., Tieu, L., Guzman, D., & Kushel, M. B. (2017). Geriatric Conditions in a Population-Based Sample of Older Homeless Adults. *The Gerontologist*, *57*(4), 757–766. <https://doi.org/10.1093/geront/gnw011>
- Brown, R. T., Kiely, D. K., Bharel, M., & Mitchell, S. L. (2012). Geriatric Syndromes in Older Homeless Adults. *Journal of General Internal Medicine*, *27*(1), 16–22. <https://doi.org/10.1007/s11606-011-1848-9>

- Canavan, R., Barry, M. M., Matanov, A., Barros, H., Gabor, E., Greacen, T., Holcnerová, P., Kluge, U., Nicaise, P., Moskalewicz, J., Díaz-Olalla, J. M., Straßmayr, C., Schene, A. H., Soares, J. J. F., Gaddini, A., & Priebe, S. (2012). Service provision and barriers to care for homeless people with mental health problems across 14 European capital cities. *BMC Health Services Research*, *12*(1), 222. <https://doi.org/10.1186/1472-6963-12-222>
- Carlson, M. L. (2020). Cochlear Implantation in Adults. *New England Journal of Medicine*, *382*(16), 1531–1542. <https://doi.org/10.1056/NEJMra1904407>
- Cheng, A. K., & Niparko, J. K. (1999). Cost-Utility of the Cochlear Implant in Adults: A Meta-analysis. *Archives of Otolaryngology–Head & Neck Surgery*, *125*(11), 1214–1218. <https://doi.org/10.1001/archotol.125.11.1214>
- Chisolm, T. H., Johnson, C. E., Danhauer, J. L., Portz, L. J. P., Abrams, H. B., Lesner, S., McCarthy, P. A., & Newman, C. W. (2007). A systematic review of health-related quality of life and hearing aids: Final report of the American Academy of Audiology Task Force On the Health-Related Quality of Life Benefits of Amplification in Adults. *Journal of the American Academy of Audiology*, *18*(2), 151–183. <https://doi.org/10.3766/jaaa.18.2.7>
- Clement, S., Schauman, O., Graham, T., Maggioni, F., Evans-Lacko, S., Bezborodovs, N., Morgan, C., Rüsch, N., Brown, J. S. L., & Thornicroft, G. (2015). What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. *Psychological Medicine*, *45*(1), 11–27. <https://doi.org/10.1017/S0033291714000129>
- Cristofalo, M. A. (2021). Telehealth, friend and foe for health care social work. *Qualitative Social Work*, *20*(1–2), 399–403. <https://doi.org/10.1177/1473325020973358>

Jenna Marie Sparacio

- Crone, B., Metraux, S., & Sbrocco, T. (2022). Health Service Access Among Homeless Veterans: Health Access Challenges Faced by Homeless African American Veterans. *Journal of Racial and Ethnic Health Disparities*, 9(5), 1828–1844.  
<https://doi.org/10.1007/s40615-021-01119-z>
- Cummings, C., Lei, Q., Hochberg, L., Hones, V., & Brown, M. (2022). Social support and networks among people experiencing chronic homelessness: A systematic review. *The American Journal of Orthopsychiatry*, 92(3), 349–363.  
<https://doi.org/10.1037/ort0000616>
- Davis, T. C., Williams, M. V., Marin, E., Parker, R. M., & Glass, J. (2002). Health Literacy and Cancer Communication. *CA: A Cancer Journal for Clinicians*, 52(3), 134–149.  
<https://doi.org/10.3322/canjclin.52.3.134>
- Dennis, D. L., Levine, I. S., & Osher, F. C. (1991). The physical and mental health status of homeless adults. *Housing Policy Debate*, 2(3), 815–835.  
<https://doi.org/10.1080/10511482.1991.9521073>
- Des Jarlais, D. C., Braine, N., & Friedmann, P. (2007). Unstable housing as a factor for increased injection risk behavior at US syringe exchange programs. *AIDS and Behavior*, 11(6 Suppl), 78–84. <https://doi.org/10.1007/s10461-007-9227-6>
- Earnshaw, V. A., & Quinn, D. M. (2012). The Impact of Stigma in Healthcare on People Living with Chronic Illnesses. *Journal of Health Psychology*, 17(2), 157–168.  
<https://doi.org/10.1177/1359105311414952>
- Farrell, S. J., Dunn, M., Huff, J., Psychiatric Outreach Team, & Royal Ottawa Health Care Group. (2020). Examining Health Literacy Levels in Homeless Persons and Vulnerably

- Housed Persons with Mental Health Disorders. *Community Mental Health Journal*, 56(4), 645–651. <https://doi.org/10.1007/s10597-019-00525-2>
- Gawron, L. M., Pettey, W. B. P., Redd, A. M., Suo, Y., & Gundlapalli, A. V. (2017). Distance to Veterans Administration Medical Centers as a Barrier to specialty care for homeless women Veterans. *Studies in Health Technology and Informatics*, 238, 112–115.
- Gaylor, J. M., Raman, G., Chung, M., Lee, J., Rao, M., Lau, J., & Poe, D. S. (2013). Cochlear Implantation in Adults: A Systematic Review and Meta-analysis. *JAMA Otolaryngology–Head & Neck Surgery*, 139(3), 265–272. <https://doi.org/10.1001/jamaoto.2013.1744>
- Gelberg, L., Browner, C., Lejano, E., & Arangua, L. (2004). Access to Women’s Health Care: A Qualitative Study of Barriers Perceived by Homeless Women. *Women & Health*, 40, 87–100. [https://doi.org/10.1300/J013v40n02\\_06](https://doi.org/10.1300/J013v40n02_06)
- Gelberg, L., Gallagher, T. C., Andersen, R. M., & Koegel, P. (1997). Competing priorities as a barrier to medical care among homeless adults in Los Angeles. *American Journal of Public Health*, 87(2), 217–220.
- Gilmer, C., & Buccieri, K. (2020). Homeless Patients Associate Clinician Bias With Suboptimal Care for Mental Illness, Addictions, and Chronic Pain. *Journal of Primary Care & Community Health*, 11, 2150132720910289. <https://doi.org/10.1177/2150132720910289>
- Goodman, L. A. (1991). The relationship between social support and family homelessness: A comparison study of homeless and housed mothers. *Journal of Community Psychology*, 19(4), 321–332. [https://doi.org/10.1002/1520-6629\(199110\)19:4<321::AID-JCOP2290190404>3.0.CO;2-8](https://doi.org/10.1002/1520-6629(199110)19:4<321::AID-JCOP2290190404>3.0.CO;2-8)

Jenna Marie Sparacio

Green, K., Bhatt, Y., Mawman, D., O'Driscoll, M., Saeed, S., Ramsden, R., & Green, M. (2007).

Predictors of audiological outcome following cochlear implantation in adults. *Cochlear Implants International*, 8(1), 1–11. <https://doi.org/10.1002/cii.326>

Hausmann, L. R. M., Hannon, M. J., Kresevic, D. M., Hanusa, B. H., Kwoh, C. K., & Ibrahim,

S. A. (2011). Impact of Perceived Discrimination in Healthcare on Patient-Provider Communication. *Medical Care*, 49(7), 626–633.

<https://doi.org/10.1097/MLR.0b013e318215d93c>

Henderson, M. D., McCurry, I. J., Deatrick, J. A., & Lipman, T. H. (2022). Experiences of Adult

Men Who Are Homeless Accessing Care: A Qualitative Study. *Journal of Transcultural Nursing*, 33(2), 199–207. <https://doi.org/10.1177/10436596211057895>

Horowitz, A. M., & Kleinman, D. V. (2008). Oral Health Literacy: The New Imperative to

Better Oral Health. *Dental Clinics of North America*, 52(2), 333–344.

<https://doi.org/10.1016/j.cden.2007.12.001>

Hoshida, R. R., Manog, J. D., Noh, T., & Omori, J. (2011). Barriers to Healthcare of Homeless

Residents of Three Honolulu Shelters. *Hawaii Medical Journal*, 70(10), 214–216.

Hwang, S. W. (2001). Homelessness and health. *CMAJ: Canadian Medical Association Journal*,

164(2), 229–233.

Johnson, G., & Chamberlain, C. (2008). Homelessness and Substance Abuse: Which Comes

First? *Australian Social Work*, 61(4), 342–356.

<https://doi.org/10.1080/03124070802428191>

Johnstone, M., Parsell, C., Jetten, J., Dingle, G., & Walter, Z. (2015). Breaking the cycle of

homelessness: Housing stability and social support as predictors of long-term well-being.

*Housing Studies*, 31, 1–17. <https://doi.org/10.1080/02673037.2015.1092504>



- Kertesz, S. G., McNeil, W., Cash, J. J., Desmond, R., McGwin, G., Kelly, J., & Baggett, T. P. (2014). Unmet Need for Medical Care and Safety Net Accessibility among Birmingham's Homeless. *Journal of Urban Health : Bulletin of the New York Academy of Medicine*, 91(1), 33–45. <https://doi.org/10.1007/s11524-013-9801-3>
- Kim, M. M., Swanson, J. W., Swartz, M. S., Bradford, D. W., Mustillo, S. A., & Elbogen, E. B. (2007). Healthcare Barriers among Severely Mentally Ill Homeless Adults: Evidence from the Five-site Health and Risk Study. *Administration and Policy in Mental Health and Mental Health Services Research*, 34(4), 363–375. <https://doi.org/10.1007/s10488-007-0115-1>
- Kneck, Å., Mattsson, E., Salzmänn-Erikson, M., & Klarare, A. (2021). “Stripped of dignity” – Women in homelessness and their perspectives of healthcare services: A qualitative study. *International Journal of Nursing Studies*, 120, 103974. <https://doi.org/10.1016/j.ijnurstu.2021.103974>
- Kushel, M. (2015). The First Step is the Hardest: Overcoming Barriers to Primary Care. *Journal of General Internal Medicine*, 30(7), 868–869. <https://doi.org/10.1007/s11606-015-3279-5>
- Lebrun-Harris, L. A., Baggett, T. P., Jenkins, D. M., Sripipatana, A., Sharma, R., Hayashi, A. S., Daly, C. A., & Ngo-Metzger, Q. (2013). Health Status and Health Care Experiences among Homeless Patients in Federally Supported Health Centers: Findings from the 2009 Patient Survey. *Health Services Research*, 48(3), 992–1017. <https://doi.org/10.1111/1475-6773.12009>

Jenna Marie Sparacio

- Lester, H., & Bradley, C. P. (2001). Barriers to Primary Healthcare for the Homeless: The General Practitioner's Perspective. *European Journal of General Practice*, 7(1), 6–12.  
<https://doi.org/10.3109/13814780109048777>
- Lewis, J. H., Andersen, R. M., & Gelberg, L. (2003). Health Care for Homeless Women. *Journal of General Internal Medicine*, 18(11), 921–928. <https://doi.org/10.1046/j.1525-1497.2003.20909.x>
- Lin, C.-C. C., Dievler, A., Robbins, C., Sripipatana, A., Quinn, M., & Nair, S. (2018). Telehealth In Health Centers: Key Adoption Factors, Barriers, And Opportunities. *Health Affairs*, 37(12), 1967–1974. <https://doi.org/10.1377/hlthaff.2018.05125>
- Lin, F. R., Niparko, J. K., & Ferrucci, L. (2011). Hearing Loss Prevalence in the United States. *Archives of Internal Medicine*, 171(20), 1851–1852.  
<https://doi.org/10.1001/archinternmed.2011.506>
- Litovsky, R. Y., Parkinson, A., Arcaroli, J., Peters, R., Lake, J., Johnstone, P., & Yu, G. (2004). Bilateral Cochlear Implants in Adults and Children. *Archives of Otolaryngology–Head & Neck Surgery*, 130(5), 648–655. <https://doi.org/10.1001/archotol.130.5.648>
- Martins, D. C. (2008). Experiences of Homeless People in the Health Care Delivery System: A Descriptive Phenomenological Study. *Public Health Nursing*, 25(5), 420–430.  
<https://doi.org/10.1111/j.1525-1446.2008.00726.x>
- Murphy, E. R. (2019). Transportation and homelessness: A systematic review. *Journal of Social Distress and Homelessness*, 28(2), 96–105.  
<https://doi.org/10.1080/10530789.2019.1582202>

National Alliance to End Homelessness. (2020). *State of Homelessness: 2021 Edition*. National Alliance to End Homelessness. <https://endhomelessness.org/homelessness-in-america/homelessness-statistics/state-of-homelessness-2021/>

National Alliance to End Homelessness. (2021, March). *Chronically Homeless*. National Alliance to End Homelessness. <https://endhomelessness.org/homelessness-in-america/who-experiences-homelessness/chronically-homeless/>

National Institute on Deafness and Other Communication Disorders. (2021, March 25). *Quick Statistics About Hearing*. NIDCD. <https://www.nidcd.nih.gov/health/statistics/quick-statistics-hearing>

Nickasch, B., & Marnocha, S. K. (2009). Healthcare experiences of the homeless. *Journal of the American Academy of Nurse Practitioners*, 21(1), 39–46. <https://doi.org/10.1111/j.1745-7599.2008.00371.x>

Noel, C., Mok, F., Wu, V., Eskander, A., Yao, C., Hwang, S., Lichter, M., Reekie, M., Smith, S., Syrett, I., Zirkle, M., Lin, V., & Lee, J. (2020). Hearing loss and hearing needs in an adult homeless population: A prospective cross-sectional study. *CMAJ Open*, 8, E199–E204. <https://doi.org/10.9778/cmajo.20190220>

Nyamathi, A., Marfisee, M., Slagle, A., Greengold, B., Liu, Y., & Leake, B. (2012). Correlates of Depressive Symptoms Among Homeless Young Adults. *Western Journal of Nursing Research*, 34(1), 97–117. <https://doi.org/10.1177/0193945910388948>

Odoh, C., Vidrine, J. I., Businelle, M. S., Kendzor, D. E., Agrawal, P., & Reitzel, L. R. (2019). Health Literacy and Self-Rated Health among Homeless Adults. *Health Behavior Research*, 2(4), 13. <https://doi.org/10.4148/2572-1836.1055>

- Oppenheimer, S. C., Nurius, P. S., & Green, S. (2016). Homelessness History Impacts on Health Outcomes and Economic and Risk Behavior Intermediaries: New Insights from Population Data. *Families in Society : The Journal of Contemporary Human Services*, 97(3), 230–242. <https://doi.org/10.1606/1044-3894.2016.97.21>
- Over-the-Counter (OTC) Hearing Aids* | NIDCD. (2022, November 14). <https://www.nidcd.nih.gov/health/over-counter-hearing-aids>
- Parker, R. (2000). Health literacy: A challenge for American patients and their health care providers. *Health Promotion International*, 15(4), 277–283. <https://doi.org/10.1093/heapro/15.4.277>
- Rahne, T., & Plontke, S. K. (2016). Functional Result After Cochlear Implantation in Children and Adults With Single-sided Deafness. *Otology & Neurotology*, 37(9), e332. <https://doi.org/10.1097/MAO.0000000000000971>
- Ramos, A., Guerra-Jiménez, G., Rodriguez, C., Borkoski, S., Falcón, J. C., & Perez, D. (2013). Cochlear implants in adults over 60: A study of communicative benefits and the impact on quality of life. *Cochlear Implants International*, 14(5), 241–245. <https://doi.org/10.1179/1754762812Y.00000000028>
- Ramsay, N., Hossain, R., Moore, M., Milo, M., & Brown, A. (2019). Health Care While Homeless: Barriers, Facilitators, and the Lived Experiences of Homeless Individuals Accessing Health Care in a Canadian Regional Municipality. *Qualitative Health Research*, 29(13), 1839–1849. <https://doi.org/10.1177/1049732319829434>
- Reilly, J., Ho, I., & Williamson, A. (2022). A systematic review of the effect of stigma on the health of people experiencing homelessness. *Health & Social Care in the Community*, 30(6), 2128–2141. <https://doi.org/10.1111/hsc.13884>

Jenna Marie Sparacio

- Saccone, P. A., & Steiger, J. R. (2007). Hearing handicap among adult residents of an urban homeless shelter. *Journal of Health Care for the Poor and Underserved, 18*(1), 161–172. <https://doi.org/10.1353/hpu.2007.0018>
- Schanzer, B., Dominguez, B., Shrout, P. E., & Caton, C. L. M. (2007). Homelessness, Health Status, and Health Care Use. *American Journal of Public Health, 97*(3), 464–469. <https://doi.org/10.2105/AJPH.2005.076190>
- Schlossstein, E., St Clair, P., & Connell, F. (1991). Referral keeping in homeless women. *Journal of Community Health, 16*(6), 279–285. <https://doi.org/10.1007/BF01324513>
- Skosireva, A., O’Campo, P., Zerger, S., Chambers, C., Gapka, S., & Stergiopoulos, V. (2014). Different faces of discrimination: Perceived discrimination among homeless adults with mental illness in healthcare settings. *BMC Health Services Research, 14*(1), Article 1. <https://doi.org/10.1186/1472-6963-14-376>
- Sorrentino, T., Donati, G., Nassif, N., Pasini, S., & Redaelli de Zinis, L. O. (2020). Cognitive function and quality of life in older adult patients with cochlear implants. *International Journal of Audiology, 59*(4), 316–322. <https://doi.org/10.1080/14992027.2019.1696993>
- Stein, J. A., Dixon, E. L., & Nyamathi, A. M. (2008). Effects of Psychosocial and Situational Variables on Substance Abuse among Homeless Adults. *Psychology of Addictive Behaviors : Journal of the Society of Psychologists in Addictive Behaviors, 22*(3), 410–416. <https://doi.org/10.1037/0893-164X.22.3.410>
- Sznajder-Murray, B., & Slesnick, N. (2011). ‘Don’t Leave Me Hanging’: Homeless Mothers’ Perceptions of Service Providers. *Journal of Social Service Research, 37*(5), 457–468. <https://doi.org/10.1080/01488376.2011.585326>

Jenna Marie Sparacio

Távora-Vieira, D., Rajan, G. P., Van de Heyning, P., & Mertens, G. (2019). Evaluating the

Long-Term Hearing Outcomes of Cochlear Implant Users With Single-Sided Deafness.

*Otology & Neurotology*, 40(6), e575. <https://doi.org/10.1097/MAO.0000000000002235>

US Department of House and Urban Development. (2020). *The 2018 Annual Homeless*

*Assessment Report (AHAR) to Congress Part 2: Estimates of Homelessness in the United States*.

Van de Heyning, P., Vermeire, K., Diebl, M., Nopp, P., Anderson, I., & De Ridder, D. (2008).

Incapacitating Unilateral Tinnitus in Single-Sided Deafness Treated by Cochlear

Implantation. *Annals of Otology, Rhinology & Laryngology*, 117(9), 645–652.

<https://doi.org/10.1177/000348940811700903>

Vangeest, J. B., & Johnson, T. P. (2002). Substance Abuse and Homelessness: Direct or Indirect

Effects? *Annals of Epidemiology*, 12(7), 455–461. <https://doi.org/10.1016/S1047->

2797(01)00284-8

Vlastarakos, P. V., Nazos, K., Tavoulari, E.-F., & Nikolopoulos, T. P. (2014). Cochlear

implantation for single-sided deafness: The outcomes. An evidence-based approach.

*European Archives of Oto-Rhino-Laryngology*, 271(8), 2119–2126.

<https://doi.org/10.1007/s00405-013-2746-z>

Wang, K., Link, B. G., Corrigan, P. W., Davidson, L., & Flanagan, E. (2018). Perceived provider

stigma as a predictor of mental health service users' internalized stigma and

disempowerment. *Psychiatry Research*, 259, 526–531.

<https://doi.org/10.1016/j.psychres.2017.11.036>

- Welte, J. W., & Barnes, G. M. (1992). Drinking among homeless and marginally housed adults in New York State. *Journal of Studies on Alcohol*, 53(4), 303–315.  
<https://doi.org/10.15288/jsa.1992.53.303>
- Wen, C. K., Hudak, P. L., & Hwang, S. W. (2007). Homeless People’s Perceptions of Welcomeness and Unwelcomeness in Healthcare Encounters. *Journal of General Internal Medicine*, 22(7), 1011–1017. <https://doi.org/10.1007/s11606-007-0183-7>
- Wille, S. M., Kemp, K. A., Greenfield, B. L., & Walls, M. L. (2017). Barriers to Healthcare for American Indians Experiencing Homelessness. *Journal of Social Distress and the Homeless*, 26(1), 1–8. <https://doi.org/10.1080/10530789.2016.1265211>
- Woith, W. M., Kerber, C., Astroth, K. S., & Jenkins, S. H. (2017). Lessons from the Homeless: Civil and Uncivil Interactions with Nurses, Self-Care Behaviors, and Barriers to Care. *Nursing Forum*, 52(3), 211–220. <https://doi.org/10.1111/nuf.12191>
- Wojtusik, L., & White, M. C. (1998). Health status, needs, and health care barriers among the homeless. *Journal of Health Care for the Poor and Underserved*, 9(2), 140–152.  
<https://doi.org/10.1353/hpu.2010.0379>
- Wooi Teoh, S., Pisoni, D. B., & Miyamoto, R. T. (2004). Cochlear Implantation in Adults with Prelingual Deafness. Part I. Clinical Results. *The Laryngoscope*, 114(9), 1536–1540.  
<https://doi.org/10.1097/00005537-200409000-00006>
- Wusinich, C., Bond, L., Nathanson, A., & Padgett, D. K. (2019). “If you’re gonna help me, help me”: Barriers to housing among unsheltered homeless adults. *Evaluation and Program Planning*, 76, 101673. <https://doi.org/10.1016/j.evalprogplan.2019.101673>
- Zwolan, T. A., Schwartz-Leyzac, K. C., & Pleasant, T. (2020). Development of a 60/60 Guideline for Referring Adults for a Traditional Cochlear Implant Candidacy Evaluation.

Jenna Marie Sparacio

*Otology & Neurotology: Official Publication of the American Otological Society,  
American Neurotology Society [and] European Academy of Otology and Neurotology,*  
41(7), 895–900. <https://doi.org/10.1097/MAO.0000000000002664>