

Supplementary Online Content

Dixon PR, Feeny D, Tomlinson G, Cushing S, Chen JM, Krahn MD. Health-related quality of life changes associated with hearing loss. *JAMA Otolaryngol Head Neck Surg*. Published online May 14, 2020. doi:10.1001/jamaoto.2020.0674

eFigure 1. MEDLINE Search Strategy

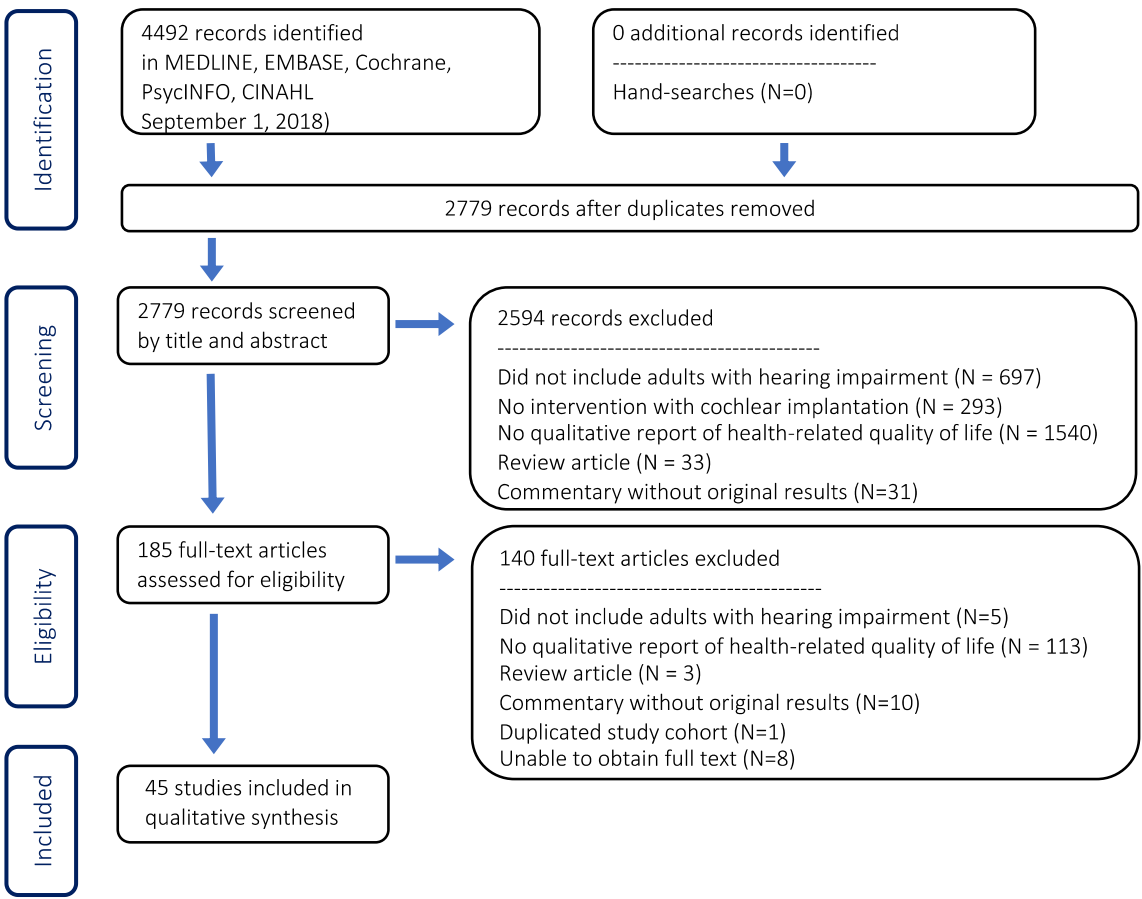
eFigure 2. Study Attrition Through Screening and Eligibility Assessment

eTable. Supporting Quotations for Sub-domains and Items Emphasized in Patient Semi-structured Interviews

This supplementary material has been provided by the authors to give readers additional information about their work.

#	Searches	Results
1	Cochlear Implants/ or Cochlear Implantation/ or ((cochlea? or extracochlea? or intracochlea? or hearing or auditory) adj3 (prothes?s or implant\$)).tw,kf.	15459
2	((("semi-structured" or semistructured or unstructured or informal or "in-depth" or indepth or "face-to-face" or structured or guide) adj3 (interview\$ or discussion\$ or questionnaire\$)) or (focus group\$ or qualitative or ethnograph\$ or fieldwork or "field work" or "key informant")).ti,ab. or interviews as topic/ or focus groups/ or narration/ or qualitative research/	330013
3	Qualitative Research/ or Interview/ or Nursing Methodology Research/ or (theme\$ or thematic or questionnaire\$ or "ethnological research" or ethnograph\$ or "life stor\$" or "women\$ stor\$" or "social construct\$" or postmodern\$ or post-structural\$ or "post structural\$" or poststructural\$ or "post modern\$" or post-modern\$ or feminis\$ or interpret\$ or "action research" or "cooperative inquir\$" or "co operative inquir\$" or "co-operative inquir\$" or humanistic or existential or experiential or paradigm\$ or account or accounts or unstructured or open-ended or "open ended" or text\$ or narrative\$ or "life world" or life-world or "conversation analys?s" or "personal experience\$" or "theoretical saturation" or ((lived or life) adj experience\$) or cluster sampl\$).mp. or (qualitative or ethnonursing or phenomenol\$ or (grounded adj (theor\$ or study or studies or research or analys?s)) or emic or etic or hermeneutic\$ or heuristic\$ or semiotic\$ or theoretical sampl\$ or (purpos\$ adj4 sampl\$) or (focus adj group\$) or observational method\$ or content analysis or (constant adj (comparative or comparison)) or narrative analys?s).af. or ((data adj saturat\$) or "participant observ\$" or (field adj (study or studies or research)) or "human science" or "biographical method" or ((discourse\$ or discurs\$) adj3 analys?s) or heidegger\$ or colaizzi\$ or spiegelberg\$ or (van adj manen\$) or (van adj kaam\$) or (merleau adj ponty\$) or husserl\$ or foucault\$ or (corbin\$ adj2 strauss\$) or glaser\$).tw.	2017449
4	2 or 3	2064428
5	1 and 4	2174
6	(adolescent/ or exp child/ or exp infant/ or (adolescent\$ or child\$ or schoolchild\$ or infant\$ or girl\$ or boy\$ or teen? or teenager\$ or youth\$ or pediatr\$ or paediatr\$ or puber\$).tw.) not (exp adult/ or (adult\$ or man or men or woman or women).tw.)	1953246
7	5 not 6	1566
8	limit 7 to (english language and yr="1982 -Current")	1440

eFigure 1. MEDLINE Search Strategy. This search strategy was translated into the syntax of the other databases searched.



eFigure 2. Study Attrition Through Screening and Eligibility Assessment

eTable. Supporting Quotations for Sub-domains and Items Emphasized in Patient Semi-structured Interviews

Subdomain (item)	Quotations
Communication – receiving spoken messages	<p>"Women's voices seems to be a little bit easier to pick up for me."(male, age 50-59, bilateral CI)</p> <p>"Canada is so multicultural and you have so many different voice types. Some of the voice types I cannot understand" (female, age 60-69, bilateral CI)</p> <p>"I get the thread of the conversation when it starts and then other people put their five pennies in and then I just don't get it, and I just go blank and just smile a lot." (male, age 70-79, unilateral CI)</p> <p>"We don't talk much now because the noise of the tires." (male, age 70-79, unilateral CI)</p> <p>"One on one is fine but group settings I would avoid...group situations at a restaurant are the worst" (female, age 30-39, hearing aids)</p> <p>"When I'm with my friends...and I miss some of the conversation... and I feel bad for myself and people sometimes [who are] not happy to repeat" (male, age 80-89, hearing aids)</p>
Hearing (Warning sounds)	<p>"[Before my CI] I wouldn't know if somebody was at the door. Or, the phone was ringing. Or, the fire alarm was going off, especially at night-time, when you're in bed...you have no clue" (male, age 50-59, bilateral CI)</p> <p>"I think I noticed the safety kind of crept up on me. Like a fire alarm for example. So we got a fire alarm that lights up now" (male, age 50-59, unilateral CI)</p>
Hearing (Sound localization)	<p>"People would call my name, I'd actually do a 360 to see where people are calling from...you really don't have any idea." (male, age 50-59, bilateral CI)</p> <p>"Sound localization is impossible. I can't at all" (male, age 50-59, single-sided deafness)</p> <p>"Even crossing the street...you realize oh, geez, I got to be careful here" (male, age 50-59, unilateral CI)</p> <p>"An ambulance and stuff... it's not hearing it, it's pinpointing where it is and where it's coming from" (male, age 50-59, single-sided deafness)</p>
Hearing (Sounds on both sides)	<p>"Especially if the person was in a position slightly to the left across me or right beside me on the left-hand side...it would be very challenging to have any kind of a conversation." (male, age 30-39, single-sided deafness with CI)</p> <p>"It's one thing to hear from one side, but when you have the hearing on both sides, it just seems like it's, it's louder. It's clearer...I don't have all the words that can describe it." (male, age 50-59, bilateral CI)</p>

Subdomain (item)	Quotations
<p>Sensations associated with hearing and vestibular functions (Tinnitus)</p>	<p>"Tinnitus was at the level [of the sound] that a helicopter made." (female, age 50-59, single-sided deafness with CI)</p> <p>"Tinnitus is always, always, always there...I'm living with the damn noise [of] my tinnitus" (female, age 50-59, single-sided deafness with CI)</p> <p>"A few occasions I hear whooshing, something like that and it stops and I forgot all about it" (male, age 80-89, hearing aids)</p> <p>"[Tinnitus?] I never had that." (female, age 40-49, bilateral CI)</p> <p>"In the beginning, it would wake me up but I since sort of gotten used to it and I can sleep now...so that has been something to kind of befriend, if I can say so, because it's not going away and there's nothing I can do about it." (female, age 40-49, bilateral profound hearing loss)</p> <p>"it's most noticeable in a quiet environment because that's what you hear most in the quiet because it's just --it's always there " (female, age 50-59, unilateral CI)</p>
<p>Attention (Listening effort)</p>	<p>"if I had a long day, like, at work or, something, I would come home and, I would be exhausted...Because you're spending a lot of time focusing." (male, age 50-59, bilateral CI)</p>
<p>Recreation and leisure (Pleasure of listening to music)</p>	<p>"It just doesn't sound the same anymore. I used to play the piano and then I started thinking, why am I making all these mistakes? ... when I wasn't." (female, age 60-69, bilateral profound hearing loss)</p> <p>"I would try to put on a CD and oh, it just – it sounds like garbage" (male, age 50-59, unilateral CI)</p> <p>"I have my left ear with some natural slightly distorted hearing and then I have my brain which remembers what the music should sound like and I have my new cochlear implant system and between the three of them I think of it as a triangle of support" (male, age 50-59, unilateral CI)</p> <p>"I like to drive with music, I can't anymore...if there's music, there's no conversation. If there's conversation there's no music" (male, age 20-29, single-sided deafness)</p>
<p>Using communications devices and techniques (Conversing on the telephone)</p>	<p>"I'm a pharmacist. I couldn't take phone calls. I couldn't speak to doctors on the phone. I really couldn't interact with staff." (male, age 50-59, bilateral CI)</p> <p>"Telephone, I tell all the people that want to speak to me to text me because I do have a telephone at home and if I do answer it I put it on speaker phone, and most of the time I can sort of muddle away at it and make out what it is." (male, age 70-79, unilateral CI)</p>

Subdomain (item)	Quotations
Products and technology for communication	<p>"I have to carry around like the case with me all the time and then I always worry about the battery. Like if I have to do a presentation, I'm like oh no, what happens if I the battery dies?" (female, age 30-39, hearing aids)</p> <p>"I have to take my hearing devices out if I want to go in the water...so to go in a swimming pool and the beach... it's going to be horrible because I can't hear" (female, age 70-79, unilateral CI)</p> <p>"I'm not the least bit embarrassed wearing cochlear implants...I just put them on and forget about them" (female, age 50-59, bilateral CI)</p> <p>"I just don't like being reliant on a contraption." (female, age 30-39, hearing aids)</p>
Informal social relationships and Intimate social relationships	<p>"I was at times actually withdrawing from kind of regular friend activities. You know, going out with some friends to play pool and have a beer. I had periods of time where I just knew I wasn't going to be functional to have the kind of regular conversations " (male, age 50-59, unilateral CI)</p> <p>"I play hockey with a group of guys. Some of them I've known for many years. That got tough too because you know, just chatting with people in the dressing room, just the kind of normal just became impossible" (male, age 50-59, unilateral CI)</p> <p>"My daughter...She just started middle school...we have a very tight relationship but it's limited now because I can no longer hear everything she has to tell me, all the stories she has to say from school, from her friends, what happened to her, that sort of thing, so sometimes she just gets frustrated and says 'oh mom, it's okay don't worry about it'." (female, age 40-49, bilateral profound hearing loss)</p> <p>"if I don't hear enough of a person to know what they're like [and] I can't laugh at somebody's joke if I don't hear it...there's no interaction between people if you can't hear them, so there's no affinities going on, no likes or dislikes." (female, age 60-69, bilateral CI)</p> <p>"Even intimacy...you're alone with your partner and, when you don't hear anything, it's almost like you're with a dead body...it's probably not an area people discuss, but, I'm being honest." (male, age 50-59, bilateral CI)</p>
School education and Renumerative employment	<p>"...in Grade 9 I had another bit of a hearing loss and you know how teenagers are, they start getting self-conscious and all that and it's amplified if you don't hear what other people are saying, so I'd just get bad grades..." (female, age 60-69, bilateral CI)</p> <p>"...as a data analyst... it will require a lot more meetings and so I don't really want to do that, in part because of my hearing and you have to learn things very quickly verbally." (female, age 30-39, hearing aids)</p>