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Negative Life Experiences, Substance Use, Well-Being, and Resilience: A Comparison of Deaf and Hearing Adults

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Abstract

Individuals who are deaf and use American Sign Language (ASL) as their primary mode of communication experience unique negative life experiences, such as lack of communication, limited access to services, marginalization, and discrimination, that can adversely impact resilience and psychological well-being. In addition, deaf individuals experience higher rates of intimate partner violence, poly-victimization, sexual, physical, and emotional abuse, and unemployment. These negative life experiences can sometimes be accompanied by maladaptive behaviors, such as substance use. Resilience and a positive sense of well-being can help to mitigate adverse life events. This survey research utilizes a sample of 206 deaf participants, whose primary language is ASL, and hearing participants to examine the relationships between negative life experiences, substance use, resilience, and well-being. Findings indicate: 1) deaf participants reported experiencing several negative life events significantly more often than their hearing counterparts, specifically being sent to jail or prison, having a serious physical illness, and sexual abuse by a partner than hearing participants; 2) deaf participants reported more experiences of having an abortion or miscarriage and parental separation or divorce as children than their hearing counterparts; 3) deaf individuals reported higher marijuana use than their hearing counterparts, but less use of stimulants, inhalants, and prescription drug abuse; 4) experiences of mental illness was significantly associated with resilience and well-being; and 5) deaf and hearing participants had similar scores in resilience and well-being. The author identifies strengths and limitations of the study and discusses implications for future research.

Introduction

The concepts of happiness, well-being, and resilience are linked to positive outcomes in physical and mental health. Happiness and well-being contribute to supportive functioning across multiple life domains, such as physical health, social relationships, positive work life, and marriage (Yildirim & Belen, 2019). However, negative life events and stressors can cause feelings of well-being and happiness to wane. Individuals with developed skills in adaptability, adjustment, and resilience have a greater likelihood to effectively cope with stressful or adverse life events and return to previous levels of well-being and happiness (Yildirim & Belen, 2019).

Resilience plays an important role in not only dealing with adversity, but also in establishing and maintaining stability in well-being and happiness. The following literature review includes sections defining subjective well-being, resilience, and negative life experiences. Sections about these constructs among deaf individuals as well as studies of negative life events follow.

Well-being is a subjective experience when individuals perceive their lives as going well. Factors, such as housing, employment, interconnectedness, and skills in resilience and coping, can positively impact one's sense of well-being. Well-being is the presence of positive emotions and moods, the absence of negative emotions, satisfaction with life, fulfillment, and positive functioning (Centers for Disease Control, 2021). There are many aspects of well-being, including: physical, economic, social, developmental, emotional, and psychological. A sense of well-being does not occur because of an absence of negative life experiences. Rather, experiences can affect individuals in unknown, unexpected, or negative ways; they are a part of being alive. A key factor in improving interpersonal well-being is to develop ways of mitigating the effects of adverse life events.

Negative life experiences are connected to a number of negative adult health outcomes, including a higher likelihood of substance use disorders and psychiatric disorders (Iacoviello & Charney, 2020; McKenzie & Reed, 2017). Trauma, especially childhood trauma, is associated with developing substance use disorders later in adulthood (Goodman, 2017). The most severe manifestations of trauma and negative life experiences are post-traumatic stress disorder (PTSD), depressive disorders, substance use disorders, and suicide (Embree, et al., 2017; Iacoviello & Charney, 2020). Negative life experiences, especially traumatic events, can have life-long residual effects on individuals unless they learn how to cope with them. Individuals who have developed positive mechanisms for coping (e.g., resilience) can mitigate the negative effects of adverse life events, thereby potentially reducing the need to use substances or other maladaptive coping strategies. Resilience skills are a key component to developing a sense of well-being.

Resilience is an interpersonal process of adaptation to stressful experiences and adversity (Mackenzie, et al., 2018). Resilient individuals have developed a set of adaptive characteristics that help them cope with and recover from stress and trauma (Iacoviello & Charney, 2020). There are a number of factors that contribute to the development of resilience (Harms, et al., 2016; Iacoviello & Charney, 2020). Psychosocial factors include flexible and adaptive cognitive and behavioral strategies that allow individuals to develop patterns of thinking and behaving that reduce the impact of negative life experiences, increase resilience, and enhance psychological well-being. Individual attributes, such as personal competence, tolerance of negative emotions, acceptance of change, secure relationships, sense of control, and spiritual influences, can promote resilience and well-being.

Resilience and individual well-being are related constructs, both of which aid individuals in reducing the harmful effects of negative life experiences (Harms, et al., 2018; Satici, 2016). While resilience is a trait described as "bouncing back," it is also considered an imperative for psychological well-being. An individual who faces adversity has the capacity to develop resilience, create meaning of experiences, and enhance well-being. A positive sense of well-being can be an antecedent to resilience and vice versa (Harms, et al., 2016). Positive emotions can facilitate adaptive coping and promote greater resilience through flexible thinking and behavioral

adaptations. Well-being is associated with positive physical and mental health, social connectedness, productivity, and longevity (Centers for Disease Control, 2021). It is also associated with a number of positive outcomes, such as employment, socioeconomic stability, and family satisfaction. In general, resilience and well-being can be supported with good physical and mental health, positive social relationships, and access to basic resources, such as shelter and income.

Well-being, resilience, and negative life experiences are subjective; individuals from diverse groups will define and manifest these concepts in different ways. Members of diverse groups will interpret these terms through their own cultural frameworks. Similarly, deaf individuals, especially those who identify as members of a Deaf cultural group (signified with a capitalized letter D), may have unique life experiences that include attendance at residential schools for deaf children, participation in Deaf cultural activities (e.g., Deaf clubs, Deaf organizations, Deaf sporting events), socialization with other Deaf individuals, and adherence to Deaf cultural norms and mores (Siple, Greer, & Holcomb, 2021). However, deaf and hard of hearing individuals comprise a heterogeneous group of individuals, some of whom may identify with cultural membership while others may not, the use of lowercase “d” will be used to be inclusive of different types of deaf and hard of hearing people whose primary language is ASL.

Well-Being and Resilience among Deaf Individuals

Deaf individuals who use ASL as their primary language face multiple barriers that can impact well-being and resilience (Brice & Adams, 2011; Crowe, 2019a; Johnson, et al., 2018; Sheridan, 2001). They often experience discrimination and prejudice that prevent access to employment, housing, medical and mental health care, and community opportunities. Frequently they face micro-aggressions in society, such as audism, which give preference to the spoken word over visual/manual communication. When deaf individuals are part of a supportive social community, they report feelings of well-being (Brice & Adams, 2011; Crowe, 2019a). Psychosocial factors, such as having effective communication with family members and employers, positive relationships with friends, family, and coworkers, and adequate income, promote resilience and well-being in deaf people (Crowe, 2019a; Johnson, et al., 2018). Individual attributes, such as flexibility, autonomy, empathy, motivation, and a positive deaf identity can also promote resilience and enhance well-being (Brice & Adams, 2011; Johnson, et al., 2018; Sheridan, 2001). Access to information, services, and knowledge can provide a foundation upon which to build resilience. Deaf individuals who have communication access can learn about healthy behaviors, protective practices, personal and legal rights, and social accountability (Johnson, et al., 2018).

Negative Life Experiences and Substance Use among Deaf Individuals

Deaf individuals are more than twice as likely to experience trauma and negative life experiences than hearing individuals (Johnson, et al., 2018). These experiences include higher rates of child neglect and abuse, PTSD, interpersonal trauma, polyvictimization, and intimate partner violence. They often experience worse psychological and physical health outcomes compared to their hearing peers (Anderson, et al., 2018; Mousley & Chaudoir, 2018). Some deaf individuals, as a result of language deprivation as children, have a lack of agency and

knowledge about health and mental health issues (Johnson, et al., 2018). These experiences of language deprivation can interfere with the development of resilience, coping skills, and well-being.

In addition to acts of social discrimination, prejudice, oppression, and marginalization perpetuated against them, there are other deaf-related experiences that can adversely affect their lives (Crowe, 2019a; Johnson, et al., 2018; Mousley & Chaudoir, 2018). Many deaf individuals experience audism which refers to societal beliefs that being deaf is a physical handicap that needs to be fixed in order to live a happy and rewarding life (Johnson, et al., 2018). Many also experience linguisticism, which refers to a feeling of cultural superiority of spoken language over a signed language. Within the deaf community, some deaf people experience a phenomenon known as “crab theory,” which refers to the phenomenon of some deaf people who criticize or “pull down” the successes or achievements of other deaf people (Gallaudet University, 2020). This can take the form of malicious and negative gossip, grudges, or social rejection. In families, deaf individuals often have family members who cannot use ASL for communication. Childhood experiences in families where communication is absent or limited can create feelings of frustration, anger, and disappointment that linger throughout adulthood.

Deaf people who have negative life experiences related to access to communication accommodations and services, they may also struggle with positive identity development, resilience, and well-being. Stigma about impairment devalue deaf individuals and can create a cascade of negative life experiences (Mousley & Chaudoir, 2018). Systemic oppression contributes toward the erosion of well-being and resilience. As a result, this oppression can become internalized and part of the development of maladaptive ways of coping, such as substance use. Studies of substance use among deaf individuals suggest rates that are similar to hearing populations (Anderson, et al., 2018; Crowe, 2019b; Kushalnagar, et al., 2019). Some deaf individuals, along with their hearing counterparts, use substances to deal with negative life experiences, trauma, and physical and mental health problems (Crowe, 2019b; Anderson, et al., 2018). Societal barriers can add burdens on the lives of deaf individuals, which can lead to substance use as a maladaptive coping strategy. Lack of deaf community support can contribute to poorer mental health outcomes and substance use. Mental health problems in combination with substance use among deaf individuals increase the likelihood of suicide attempts (Embree, et al., 2017).

Overall, deaf populations are understudied compared to their hearing counterparts, which presents another form of social exclusion. Specifically, studies of negative life experiences, substance use, resilience, and well-being among deaf adults are lacking. Research involving deaf participants optimally involves investigators who are culturally knowledgeable and linguistically fluent in ASL. The purpose of this study is to investigate the concepts of well-being, resilience, negative life events, and substance use among deaf individuals who self-report using ASL as their primary language as compared to hearing individuals. In that spirit, the following research questions guide this study:

1. Is there a significant difference between deaf and hearing participants on a measure of well-being?
2. Is there a significant difference between deaf and hearing participants on a measure of resilience?
3. Is there a significant difference in substance use between deaf and hearing participants?

4. Is there a significant difference in the frequency of negative life events between deaf and hearing participants?

Method

After IRB approval, the researcher employed a non-random sampling strategy to recruit participants. Information about the study was posted on social media outlets and sent through deaf-related list-servs. For those who received emails, a brief message explained that the purpose of the study was to understand their life experiences among deaf individuals who use ASL as their primary language (note: Deaf cultural membership was not required nor self-reported by participants) and among hearing individuals. The email contained a Survey Monkey link to the questionnaire. Potential participants were allowed to include other known individuals who may be interested in the study by forwarding the link to the study. This link directed participants to a secure and anonymous online questionnaire that took approximately 10 minutes to complete. Data were analyzed using SPSS, version 26, to calculate inferential statistics, such as analysis of variance, the Mann-Whitney U test, and multiple regression.

Participants

The sample included 206 adults, including 146 women (70.9% of the sample), 53 men, and seven participants who declined to answer. Sixty-nine participants were deaf (33.5% of the sample); one hundred thirty-seven were hearing (66.5%). The majority of the participants were between the ages of 18 - 24 ($n = 95$, 46.1% of the sample), followed by 25 - 34 years ($n = 51$, 24.8%), 45 - 54 ($n = 21$, 10.2%), 35 - 44 ($n = 19$, 9.2%), 55 - 64 ($n = 11$, 5.3%), and 65 years and older ($n = 2$, 1.0%). The majority of the participants reported their race/ethnicity as white or Caucasian ($n = 150$, 72.8%), Hispanic or Latino ($n = 15$, 7.3%), Black or African American ($n = 14$, 6.8%), American Indian or Alaska Native ($n = 1$, 0.5%), Native Hawaiian or other Pacific Islander ($n = 1$, 0.5%), another race/ethnic group or biracial ($n = 10$, 4.9%), and two participants who did not answer.

Measures

The measures used for this study were originally written for adults whose primary language is English. The Flesch-Kincaid grade level of the entire instrument is grade 6.4. For individual subscales, the Flesch-Kincaid grade levels are indicated along with Cronbach's alphas, which measures statistical reliability. Average reading levels for the American general population is approximately 7th to 8th grade (Wylie Communications, 2021).

Demographic Variables

Demographic variables, such as race, gender, and age were collected to describe the characteristics of the sample and because of their association in the literature with well-being, resilience, and negative life events (Abajobir, et al., 2017; Anderson, et al., 2018; Crowe, 2019a; Crowe, 2019b; Embree, et al., 2017; Iacoviello & Charney, 2020; Kushalnagar, et al., 2019; McKenzie & Reed, 2017; Wakeland, et al., 2017; Ziggi, et al., 2020). The Flesch-Kincaid grade level for the demographic questions is grade 3.4.

Well-Being/Happiness

Well-being (i.e., happiness) was measured using one-item, “Right now, how happy do you feel?” (Abdel-Khalek, 2005). The item from this happiness instrument was chosen because of its readability for deaf participants and because there are high positive correlations between happiness and subjective well-being (Medvedev & Landhuis, 2018). Though there is a trend in using multi-dimensional instruments to measure well-being and happiness, historically single-item scales have been used and can still be psychometrically sound substitutes for multi-item counterparts (Angulo-Brunet, et al., 2020; Moldovan, 2017; Ruggeri et al., 2020).

In addition, single-item happiness rating scales have been shown to be psychometrically sound and more convenient, (Moldovan, 2017). The original version included an 11-point anchor, but this version was administered using a 9-point anchor to be consistent with other questions in the instrument. To categories were collapsed to indicate moderate levels of unhappiness and happiness. This question is answered using a Likert scale response ranging from (1) extremely unhappy to (9) extremely happy. Higher scores indicate higher levels of well-being. This item was chosen because of its frequent use in well-being studies and because of its perceived understandability with the sample under study (i.e., readability) (Abdel-Khalek, 2005, 2008, 2011; Abdel-Khalek & Lester, 2012). In addition, this item has comparable validity with the Oxford Happiness Inventory (Abdel-Khalek, 2005); the single-item administration helped to keep the instrument with as few items as possible to increase response rate. The Flesch-Kincaid readability is grade is 3.6.

Resilience

Resilience was used using a single-item measure from the Brief Resilience Scale (Smith, et al., 2008). This scale was chosen because it is a simple, self-assessment tool with good reliability in other studies with multi-lingual populations (Chmitorz, et al., 2018; Rodriguez-Rey, et al., 2016; Smith et al., 2008). The original version of this scale is a six-item self-report questionnaire designed to measure resilience or the ability to recover after a stressful or distressing event.

A single item was chosen because to reduce the total items for the instrument as well as for its readability for deaf participants (i.e., it is the only item on the scale that is written in a direct positive statement rather than negative statement, such as “it is hard for me to snap back”). The single-item measure for this study was “I tend to bounce back quickly after hard times” and was rated by participants on a Likert Scale ranging from (1) strongly disagree to 5 (strongly agree). Cronbach’s alpha using the long- and short- forms of the BRS ranged from .80 to .91. Higher scores indicating higher resilience (Smith, et al., 2008). The Flesch-Kincaid readability for this item was 3.2.

Substance Use

This scale was as part of the National Survey on Drug Use and Health (SAMHSA, 2015). Substance use was measured by asking participants the frequency of use of 10 types of substances within the past year, including alcohol, marijuana, stimulants, prescription drugs, opioids, poppers, synthetic drugs, hallucinogens, inhalants, and

dissociate drugs. Responses were in a Likert scale ranging from (0) never used to (4) used frequently, one or more times per day. The Cronbach's alpha for this scale was .66. The Flesch-Kincaid readability level was grade 7.9 probably because of the slang words used to describe certain substances (e.g., flakka, methamphetamine, and oxycontin).

Negative Life Events

Negative life events were measured by the Stressful Life Events Screen Questionnaire (SLESQ; Goodman, et al., 1998). This instrument was selected because of its frequent use in studies and high reliability (Goodman, 1998; Gray, et al., 2004; Hooper, et al., 2011). In the original version, the SLESQ is a 13-item self-report measure for non-treatment seeking samples that assesses lifetime exposure to traumatic events. Eleven specific and two general categories of events, such as a life-threatening accident, physical and sexual abuse, witness to another person being killed or assaulted, are examined.

In the modified version for this study, rather than responses in yes/no and open-ended comments, participants were asked to indicate on a Likert scale whether they had no experiences of the event or a choice of: experienced the event and tried to get help from family or friends; experienced the event and tried to get help from a professional; experienced the event, but did not seek help. Cronbach's alpha for this administration was .722, which is comparable to Goodman, et al.'s (1998) findings. The Flesch-Kincaid readability was grade 5.2.

Results

Demographic Variables

There were no significant differences in race, gender, and age on the dependent variables.

Resilience and Well-being

There is a significant positive relationship between scores on the Brief Resilience Scale and Well-being ($r = .20$, $p = .01$).

Well-Being and Resilience by Hearing Status

A one-way ANOVA was conducted to compare differences on well-being and resilience between deaf and hearing participants; there were no significant differences between groups ($F = 2.01$, 1 , 204 , $p = .16$). The majority of participants used at least one to four substances within the past year ($n = 174$, 84.47%); twenty-four participants (11.7%) reported no substance use at all.

Substance Use by Hearing Status

A one-way ANOVA indicated significant differences in substance use mean scores by hearing status (deaf vs.

hearing) ($F = 9.59, 1, 203, p < .0001$). Bonferroni post-hoc analyses indicated:

- There were significant differences in marijuana use between groups ($p = .033$). Deaf and hard of hearing individuals reported higher marijuana use ($M = 1.38, SD = 1.68$) compared to hearing individuals ($M = .88, SD = 1.36, ES = .010$).
- There were significant differences in the use of stimulants between groups ($p = .009$). Hearing individuals reported more frequent use of stimulants ($M = .10, SD = .35$) than deaf individuals ($M = .01, SD = .12, ES = .020$).
- There were significant differences in the abuse of prescription drugs between groups ($p = .04$). Hearing individuals reported more frequent abuse of prescription drugs ($M = .47, SD = .99$) than deaf individuals ($M = .25, SD = .53, ES = .005$).
- There were significant differences in the abuse of inhalants between groups ($p = .05$). Hearing individuals report higher frequency of using inhalants ($M = .03, SD = .17, ES = .010$) compared to deaf individuals (none reported use of inhalants).

Negative Life Events by Hearing Status

A Mann-Whitney U test is a non-parametric test that is used when dependent variables are not normally distributed. This test does not require that assumptions for normal distribution be met. A Mann-Whitney U test was conducted to examine differences between deaf participants and hearing participants on experiences of specific negative life events. Deaf respondents reported the following experiences significantly more often than their hearing counterparts:

- Being sent to prison or jail ($p = .032$).
- Having a serious physical illness ($p = .013$).
- Being sexually abused by a partner ($p = .049$).
- Having an abortion or miscarriage ($p = .066$).
- Living with parents who separated or divorced ($p = .092$).

Post Hoc Analysis: Factors Related to Well-Being and Resilience

Post-hoc analyses were conducted to examine variables that were outside the original research questions and any relationship to the dependent variables, well-being and resilience. One negative life experience, having a mental illness, emerged as a significant predictor of well-being. A multiple regression was used to examine associations of mental illness and resilience. Out of the list of all negative experiences, only one independent variable, experiences of mental illness, was significantly associated with well-being ($r = -.23, p = .001$). and resilience ($r = -.20, p = .004$). There were no significant differences in experiences of mental illness between deaf and hearing participants.

Table 1. Frequency Counts of Negative Life Events by Hearing Status

Event	Never Experienced % of sample (n)	Experienced and Sought Professional Help % of sample (n)	Experienced and Sought Help from Family or Friends % of sample (n)	Experienced, But Did Not Seek Help From Anyone % of sample (n)
Natural or Manmade Disaster	75.2 (103)* 71.0 (49)**	2.2 (3) 7.2 (5)	5.8 (8) 13.0 (9)	16.1 (22) 8.7 (6)
Serious Accident or Accident-Related Injury	59.1 (81) 47.8 (33)	15.3 (21) 20.3 (14)	13.1 (18) 23.2 (16)	11.7 (16) 8.7 (6)
Sent to Jail or Prison	98.5 (135) 92.8 (64)	0 (0) 1.4 (1)	0.7 (1) 4.3(3)	0.7 (1) 1.4 (1)
Close Family Member Sent to Jail or Prison	78.1 (107) 68.1 (47)	5.1 (7) 5.8 (4)	5.1 (7) 11.6 (8)	11.7 (16) 14.5 (10)
Foster Care or Given Up for Adoption	92.0 (126) 88.4 (61)	1.5 (2) 5.8 (4)	1.5 (2) 2.9 (2)	4.4 (6) 1.4 (1)
Parents Separated or Divorced While You Lived with Them	65.0 (89) 52.2 (36)	7.3 (10) 4.3 (3)	2.2 (3) 11.6 (8)	25.5 (35) 31.9 (22)
Experienced Your Own Separation or Divorce	86.9 (119) 91.3 (63)	2.9 (4) 2.9 (2)	3.6 (5) 5.8 (4)	6.6 (9) 0 (0)
Serious Money Problems	54.0 (74) 36.2 (25)	5.8 (8) 17.4 (12)	22.6 (31) 30.4 (21)	17.5 (24) 15.9 (11)
Serious Physical Illness	75.2 (103) 59.4 (41)	15.3 (21) 18.8 (13)	6.6 (9) 15.9 (11)	2.9 (4) 5.8 (4)
Serious Mental Health Problem	43.8 (60) 42.0 (29)	35.8 (49) 27.5 (19)	4.4 (6) 13.0 (9)	16.1 (22) 17.4 (12)
Emotional Abuse by Partner	62.8 (86) 59.4 (41)	9.5 (13) 4.3 (3)	2.2 (3) 18.8 (13)	25.5 (35) 17.4 (12)
Emotional Abuse by Parent or Caregiver	54.7 (75) 62.3 (43)	13.1 (18) 5.8 (4)	3.6 (5) 8.7 (6)	28.5 (39) 23.2 (16)
Physical Abuse by Partner	81.8 (112) 75.4 (52)	4.4 (6) 4.3 (3)	0.7 (1) 7.2 (5)	12.4 (17) 11.6 (8)
Physical Abuse by Parent or Caregiver	75.9 (104) 76.8 (53)	5.1 (7) 5.8 (4)	1.5 (2) 4.3 (3)	17.5 (24) 13.0 (9)
Sexual Abuse by Partner	81.0 (111) 68.1 (47)	2.2 (3) 5.8 (4)	1.5 (2) 2.9 (2)	15.3 (21) 23.2 (16)
Sexual Abuse as a Child by Parent, Caregiver, Family Member	79.6 (109) 81.2 (56)	6.6 (9) 5.8 (4)	0.7 (1) 1.4 (1)	12.1 (18) 10.1 (7)

Event	Never Experienced % of sample (n)	Experienced and Sought Professional Help % of sample (n)	Experienced and Sought Help from Family or Friends % of sample (n)	Experienced, But Did Not Seek Help From Anyone % of sample (n)
Witnessed Physical Abuse or Violence Between Parents	70.1 (96)	4.4 (6)	4.4 (6)	21.2 (29)
Abortion or Miscarriage	88.3 (121)	1.5 (2)	2.2 (3)	8.0 (11)
Someone Close Died Unexpectedly	78.3 (54)	5.8 (4)	2.9 (2)	13.0 (9)
Been Robbed, Mugged, or Physically Attacked by Stranger	43.1 (59)	10.2 (14)	19.0 (26)	27.7 (38)
Sexual Harassment at Work or School	36.2 (25)	13.0 (9)	27.5 (19)	23.2 (16)
	84.7 (116)	0.7 (1)	2.9 (4)	11.7 (16)
	81.2 (56)	4.3 (3)	4.3 (3)	10.1 (7)
	66.4 (91)	2.2 (3)	4.4 (6)	27.0 (37)
	66.7 (46)	2.9 (2)	13.0 (9)	17.4 (12)

*Sample of hearing participants (N = 137)

***Sample of deaf participants* (underlined and bold) (N = 69)

Discussion

Summary of Findings

Overall, the main findings of the study indicated that there were significant differences between deaf and hearing participants on a few variables:

- Deaf participants had a higher marijuana use, but less use of other substances than hearing participants;
- Deaf participants had a higher frequency of being sent to jail or prison, having a serious physical illness, and sexual abuse by a partner than hearing participants;
- Deaf participants had more frequent abortions or miscarriages than hearing participants;
- Deaf participants had more frequent parental separation or divorce during childhood than hearing participants.
- In both hearing and deaf participants, experience of mental illness was a significant predictor of lower well-being and lower resilience.

The following section presents a discussion of the results as they relate to the research questions guiding this study.

Are there significant differences between deaf and hearing participants on measures of well-being and resilience?

There were no significant differences between deaf and hearing participants on either resilience and well-being. Despite experiences of societal prejudice, marginalization, and oppression by many deaf individuals (Crowe,

2019a; Johnson, et al., 2018; Mousley & Chaudoir, 2018), they did not report lower resilience or well-being. One possible explanation for this may be that as legislation for individuals with disabilities has progressed and requirements for accessibility are expected, deaf individuals may have more opportunities for visibility and accessibility (Wardle, 2017). Increased awareness and advocacy, captioning services, social media presence, access to online education, and other such efforts may help individuals who have historically experienced marginalization to learn adaptive strategies and coping skills to overcome these negative life experiences (Kimball, et al., 2016; Wardle, 2017). With increased availability of resources for parents of children with disabilities, advocacy skills may have been socialized early in life by parental role models (Brice & Adams, 2011; Kimball, et al., 2016; Sheridan, 2001, 2008). These skills can be incorporated in contemporary pedagogy and social opportunities and include strategies of reducing stigma through education and collective action experiences.

Is there a significant difference in substance use between deaf and hearing participants?

Deaf individuals reported higher marijuana use than their hearing counterparts, but less use of stimulants, inhalants, and prescription drug abuse. Studies of alcohol and substance use report similar rates to hearing counterparts (Anderson, et al., 2018; Crowe, 2019b; Guthmann & Kolvitz, 2021; Kushalnagar, et al., 2019). Deaf and hard of hearing individuals report being regular marijuana and heavy alcohol users more frequently than hearing individuals (Anderson, et al., 2018). Another possible explanation is that the deaf participants in this sample reported higher levels of well-being and resilience, thereby reducing the need for use of “harder” drugs. The specific reasons for deaf respondents using only marijuana more frequently than other substances are unclear.

Is there a significant difference in the frequency of negative life events between deaf and hearing participants?

Deaf participants reported experiencing several negative life events significant more often than their hearing counterparts, specifically being sent to jail or prison, having a serious physical illness, and sexual abuse by a partner disproportionately higher than hearing participants. There are several issues that can compound a deaf individual’s situation when the individual comes into contact with the criminal justice system. There are significant communication barriers that a deaf offender can face. There may be translation difficulties, problems with English literacy, and lack of professional knowledge and understanding of these issues (Wakeland, et al., 2019). Criminal justice and law enforcement professionals may have false assumptions about a deaf offender’s communication ability. They can misunderstand the deaf person’s needs or misinterpret gestural behavior as aggressive or sexual acts.

The finding that deaf individuals have a higher frequency of physical illnesses than their hearing counterparts is supported by other literature. Deaf children have a higher prevalence of additional physical disabilities (Abrams, 2017; Dammeyer & Chapman, 2017). Research findings suggest that there is a higher proportion of neurodegenerative and neurological disorders in the deaf population compared to the general population (Crump & Hamerdinger, 2017; Fellingner, et al., 2012; Mohamed, et al., 2019). Genetic syndromes as well as underlying neurological issues can lead to problems with cognitive processes and language expression. In addition, deaf

adults are at greater risk of both physical and mental disorders (Dammeyer & Chapman, 2017; Diaz, et al., 2013; Fellingner, et al., 2012).

The finding that deaf individuals experience sexual abuse more often than their hearing counterparts is also supported by the literature (Anderson, et al., 2018; Johnson, et al., 2018; Mousley & Chaudoir, 2018; Wakeland, et al., 2017). Other factors, such as witnessing violence, intimate partner physical and emotional violence, childhood neglect, physical abuse, and emotional abuse are associated with lower resilience and lower levels of well-being in other studies of deaf individuals (Abajobir, et al., 2017; Anderson, et al., 2018; Mousley & Chaudoir, 2018; Wakeland, et al., 2017); however, this study only found sexual abuse to be a significant factor. The reasons for this are unclear and need further follow-up.

Though exploratory and interpreted with caution, deaf participants reported more experiences of an abortion or miscarriage and childhood parental separation or divorce than their hearing counterparts. The reasons for this are unclear. Studies of abortions among deaf individuals are absent from the literature. However, the finding of deaf participants experiencing parental separation or divorce in childhood is supported by the literature. The birth of a child with disabilities can be stressful and impact the marital and family relationships (Chowdhury, 2018; Perlowski & Wright, 2019; Shahrier, et al., 2016). Diagnosis, severity of the disorder, parental coping strategies, resources, and community support can impact the degree to which a marriage can be sustained. Parents who have children with disabilities report higher levels of stress, anxiety, and depression (Shahrier, et al., 2016).

Experiences of mental illness was significantly associated with resilience and well-being. The greater the impact of mental illness, the less resilience and well-being. These findings are well-supported in the literature (Crowe, Averett, & Glass, 2016; Machado, 2019; Ziggi et al., 2020). Increased symptomology of mental illness is associated with higher levels of stress, anxiety, difficulty functioning, lower resilience, and lower levels of well-being. Because deaf and hearing participants reported similar rates of well-being and resilience, this particular finding applies to both groups in that higher distress related to mental health led to lower levels of resilience and well-being.

Strengths and Limitations

This study contributes to the inclusion of diverse groups by including findings of deaf individuals in the literature. A strength of the study was the ability to compare results for both deaf and hearing individuals, which can be sometimes difficult to obtain. The study was implemented by researchers who were knowledgeable of deaf culture and fluent in ASL, which helps, in particular, to apply findings in a meaningful and practical way.

The demographic diversity in terms of race and ethnic group did not reflect the population proportions. Specifically, members of diverse race and ethnic groups were underrepresented. In addition, the sample sizes of deaf and hard of hearing participants compared to hearing participants were not balanced. A stratified sampling strategy is recommended to ensure proportionate samples of diverse participants as well as deaf and hearing individuals.

Results should be interpreted with caution because of the potential impact of the instruments that were used to measure constructs. Though Cronbach's alphas were used to measure internal consistency, other forms of reliability, such as split-half and inter-rater, were not evaluated. Single-item scales, in general, may have problems with content validity, sensitivity, and lack of a measure of internal consistency. Thus, the single-item scales used in this study may lack the ability to fully represent the constructs of well-being (happiness) and resilience.

In particular, written instruments that were designed for individuals whose first language is English may not be conceptually or linguistically equivalent with deaf individuals, particularly those whose first language is ASL. As with instruments that are designed for individuals in one language and administered to individuals who use another language, questions of validity may arise. Therefore, it is important for researchers and practitioners to understand the limitation of the validity and reliability estimates for the instruments.

Implications for Future Research and Practice

In order to adequately represent members of diverse racial and ethnic groups, specific recruitment strategies to encourage participation should be employed. Recruitment strategies can include seeking diverse deaf participants through nationally recognized professional organizations, such as the National Black Deaf Advocates (NBDA), National Hispanic Latino Association of the Deaf (NHLAD), National Asian Deaf Congress (NADC), and Asian Pacific Islander Association (APIA). The underrepresentation of members of diverse groups limits the generalizability of findings and has implications for the validity of any study design. Understanding an individual's experiences using a lens that includes cultural diversity and cultural humility is especially important in professional practice. As researchers and practitioners strive to be culturally competent, they must allow diverse clients to explore and frame their own narratives rather than apply the findings of any particular study onto their experiences.

This study found that sexual abuse, as opposed to physical, psychological, or financial abuse, was a significantly higher for deaf individuals than their hearing counterparts; these findings differ from other studies of deaf individuals. Though the reasons for this are unclear, ensuring that there are proportionate representatives of groups may allow more thorough analysis in neglect and abuse experiences. Abuse in particular sub-groups of the deaf community were not studied specifically; yet it may be more prevalent in particular sub-groups within the deaf community (e.g., deafblind individuals, LGBTQ+ individuals, individuals who have more profound deafness). Researchers can delve deeper into the experiences of deaf individuals in sub-groups to better understand the protective and risk factors that are unique to a particular group. In addition, this study found there to be more deaf individuals who experienced an abortion or miscarriage than their hearing counterparts. There are no current studies that specifically address this; future research should include this variable. Finally, marijuana use was significantly higher for deaf participants. The reasons for this are unclear and may be a result of the increasing legalization of marijuana use for medical and recreational purposes. This finding does not necessarily point to a higher prevalence of substance abuse disorders in the deaf community. Rather, more substance-specific studies may be helpful to better understand particular substance use in the deaf community. For practitioners, understanding the frequency, duration, and reasons for using substances are an important part of substance use

assessment and treatment. There are many areas for further research into substance use by deaf individuals. Studies of prevalence, risk factors, communication accessibility, and treatment of substance use are lacking and could greatly improve assessment and treatment of deaf people (Guthmann & Kolvitz, 2021). Similarly, there are very few studies of deaf people who are incarcerated, even though many incarcerated individuals have substance abuse issues that can co-occur with mental health issues (Guthmann & Kolvitz, 2021).

Compliance with Ethical Standards

Study design was approved by the Institutional Review Board at Gallaudet University prior to data collection. Subjects' participation was obtained with informed consent. The author has no conflicts of interest to disclose.

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