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Condom Use Among Deaf College Students

Jason J. Zodda, Ph.D.

Abstract

The overarching aim for the current study was to assess the prevalence of condom use among college students who are deaf and determine if it differed from their hearing peers. Prior to this study, the modest information available suggested that deaf adults were likely engaging in significantly more risky sexual practices than hearing adults. To elucidate this topic, a sample of deaf college students was recruited from a predominately deaf university and administered measures that assessed their current sexual behavior and utilization of condoms during vaginal, anal, and oral sex. Of the three types of sexual contact studied, the results indicated that deaf college students engage in significantly more risky sexual behavior (i.e., less consistent condom use) during vaginal intercourse than hearing young adults. The study concluded by suggesting how future research may explore the motivations and barriers for condom use among deaf young adults, a necessary first step for creating prevention and intervention programs precisely tailored to the needs of deaf college students.

Keywords: deaf, condom use, risky sexual behavior

The principal goal for the current study was to assess condom use among college students who are deaf. The most recent comprehensive investigation on use of prophylactics among deaf individuals was last conducted nearly two decades prior (see Doyle, 1995). More recent research (e.g., Anderson & Leigh, 2010; Klein, 2008; Monaghan, 2006) suggested that deaf young adults may be engaging in higher levels of risky sexual behavior and may be at a higher risk than hearing individuals for contracting sexually transmitted infections and for unplanned pregnancies.

Risky sexual behavior is a concern for all young adults, deaf or hearing. Perhaps the most accurate assessment of condom use among collegiate adults is conducted by The American College Health Association which administers the National College Health Assessment to a large sample of post-secondary students in the United States (American College Health Association [ACHA], 2010). The measure is administered to randomly

selected classrooms among postsecondary institutions in the United States and the data are published in a publicly available format (ACHA, 2010). The published information collected in 2010 included over 100 postsecondary institutions across the United States, sampling over 87,000 students—one of the most representative samples of postsecondary students' health behaviors in research to date (ACHA, 2010). The ACHA measure examines recent sexual behavior (behavior within the past 30 days), differentiated by type of sexual contact (oral, vaginal, and anal). Recent findings indicated that most US postsecondary students engage in sexual contact, though few consistently use a condom. For instance, ACHA (2010) indicated that only about half of the participants studied constantly used condoms during vaginal intercourse.

While the ACHA samples a wide breath of college students, it has not included any deaf students in their research, making it difficult to discern the prevalence of risky sexual behavior on campuses that primarily enroll deaf students. Since 1995, there has been no direct assessment of condom use among deaf young adults. To circumvent this lack of research, the prevalence of HIV within the deaf population may act as an estimate for condom use. Monaghan (2006) examined the data on every individual (deaf or hearing) tested for HIV at state-established centers in Maryland. The analysis of the data showed a stark contrast between deaf and hearing HIV-positive individuals in Maryland: proportionally, the deaf group had twice as many HIV-positive cases than the hearing group (Monaghan, 2006). When taking into account the estimates of deaf persons living in Maryland against the general population, the author predicted that deaf individuals were ten-times more likely to become infected with HIV than hearing individuals (Monaghan, 2006). Other studies (e.g., Gaskins, 1999; Heuttel & Rothstein, 2001; Kennedy & Buchholz, 1995; Mallinson, 2004; Peinkofer, 1994; Roberts, 2006) have explained through anecdotal evidence that adults who are deaf are at a higher risk for HIV infection. The prevalence of HIV is only an estimate of condom use, though it does suggest infrequent prophylactic use within the deaf population.

Although outdated, Doyle (1995) conducted one of the most direct assessments of condom use among the deaf population. Studying deaf college students, Doyle (1995) examined condom use, differentiated by type of sexual contact, vaginal, anal, and oral. The results—similar to patterns found in other studies of condom use among similar-aged and educated participants (e.g., ACHA, 2010)—indicated infrequent condom use among

the sample. With regard to vaginal, anal, and oral sex, only 50, 43, and 5%, respectively, reported using a condom during their last sexual encounter (Doyle, 1995). The results, while outdated, suggest that most young deaf adults are engaging in risky sexual behavior.

The current study aimed to extend the work of Anderson and Leigh (2010), Klein (2008), and Monaghan (2006)—who found that persons who are deaf may be engaging in higher levels of risky sexual behavior—and update the data collected by Doyle (1995). Through this detailed assessment of condom use within the deaf population, the results could be compared to the greater collegiate population (i.e., ACHA, 2010). In an effort to have a low threshold for safe sexual behavior, the study broadly defined condom use as the use of any common protective barrier during sexual contact (e.g., male latex condoms, female latex condoms, and latex barriers). To assess sexual behavior in detail, the study differentiated sexual contact between vaginal, anal, and oral contact. Sexual contact in regard to vaginal sex indicated penis and vagina intercourse, in regard to anal sex indicated penis and anus intercourse, and in regard to oral sex indicated contact between the mouth and the penis, vagina, or anus. Lastly, the study recruited persons from any sexual orientation; it did not specifically refer to heterosexual or homosexual sexual behavior. By this process of having a low threshold for safe sex practices, inclusion of all sexual orientations, and differentiation of sexual contact, this study aimed to have the most current and detailed assessment of condom use among persons who are deaf and in such was able to appropriately compare the data to the greater collegiate population

Methods

The current study recruited 120 participants from Gallaudet University, a university that predominately enrolls deaf and hard-of-hearing young adults. At the time of data collection, the undergraduate student body was made up of 1,145 students (Gallaudet University, 2009), which indicated that this study sampled about 10% of the student body.

The inclusion criteria were quite broad to include most Gallaudet University undergraduate students: full-time undergraduate students between the ages of 18 and 25 years who identified themselves as deaf, Deaf, or Hard of Hearing. Participants who were married (regardless of sexual orientation) were excluded from the research.

All measures were converted to electronic questionnaires and uploaded to an encrypted server. All measures were completely anonymous, using an ID number to organize the collected data. No identifying participant information was collected. Basic background information was collected to assess the representativeness of the sample. All measures were evaluated by experts in deaf literacy to ensure they could be accurately administered to young adults who are deaf.

Following the approval of the Gallaudet University Institutional Review Board, participants were recruited via fliers, newsletter postings, and posters. Participants independently completed the electronic questionnaires in a confidential environment. Both a male and a female researcher were available to answer participant questions. Both researchers had graduate degrees in psychology, were fluent in American Sign Language, and understood the premises of the study and the functionality of the measures. Participants were given a small payment and offered free condoms and DVDs on safe sex practices in American Sign Language for their participation.

Results

Participants

The current study recruited 120 participants. One participant was excluded from the current study, having reported a latex allergy. The mean age was 21.24 years ($SD = 1.70$). Forty-eight participants identified as male and 71 as female. Proportionally, the participants' reported gender was not significantly different from the Gallaudet University (2009) campus population, $z = 1.16, p > .25$ for males and $z = -1.16, p > .25$ for females. Regarding racial/ethnic background, 15 participants identified as African American, 74 as Caucasian, 8 as Asian American, 8 as Hispanic, 4 as Latino, and 10 as Biracial. Proportionally, the participants in the traditionally underrepresented groups were not significantly different from the Gallaudet University (2009) campus population, $z = .20, p > .84$ for African Americans; $z = 0.86, p > .40$ for Asian Americans; and $z = 0.33, p > .74$ for Hispanics and Latinos. In contrast, a significant difference was found between Caucasian study participants and the Gallaudet campus, $z = 2.15, p = .03$, with the current sample including a smaller proportion of Caucasian participants. This result was unexpected, though it should not impact the applicability of the results given that the current study recruited nearly twice as many Caucasian participants as it did participants from traditionally underrepresented groups. It should be noted that Gallaudet

University does not collect data on participants who identify as biracial so the current study could not analyze these data. In general, the current sample matches the Gallaudet University population with regard to gender and racial/ethnic background, with the exception of Caucasian students (see Table 1).

Table 1
Sample Demographics

| | | Sample Proportion | Gallaudet Proportion |
|--------------------------|---------------------|-------------------|----------------------|
| Gender | Male | 40.34% | 45.90% |
| | Female | 59.66% | 54.10% |
| Racial/Ethnic Background | African American | 12.61% | 11.94% |
| | Caucasian | 62.18% | 72.27%* |
| | Asian American | 6.72% | 4.66% |
| | Hispanic and Latino | 10.08% | 9.11% |
| | Biracial | 8.40% | - |

Note: * $p < .05$

The deaf population is heterogeneous and therefore a number of areas were assessed to gauge the generalization of the results to the greater deaf population. Regarding deaf identity, 77 participants (64.7%) identified as Deaf (i.e., culturally Deaf), 19 participants (16.0%) identified as deaf, and 22 participants (18.5%) identified as hard of hearing. Regarding communication, 107 participants (89.9%) identified their preferred method of communication as ASL, four participants (3.4%) identified another form of signed language (e.g., signed exact English), five participants (4.2%) identified spoken English, and three participants (2.5%) identified either another spoken language or could not specify a preferred method. Regarding severity of hearing loss, six participants (5%) reported a Mild loss, 26 participants (21.8%) reported a Moderate loss, 25 participants (21%) reported a Severe loss, 57 participants (47.9%) reported a Profound loss, and five participants (4.2%) were unsure of their level of loss.

Regarding family hearing status, 55 participants (46.2%) reported that they were not the only deaf or hard of hearing person in their entire family and 38 participants (31.9%) reported that at least one of their

parents was deaf. Regarding parent-child communication, 64 participants (53.8%) reported ASL, 36 participants (30.3%) reported spoken English, and 19 participants (16%) reported another signed language (e.g., signed exact English) or spoken language (e.g., Chinese). Regarding quality of communication with their parents, 57 (47.9%), 41 (34.5%), 17 (13.3%), and 4 (3.4%) participants reported “great”, “good”, “fair”, and “poor” communication, respectively. These results illustrate a participant group comprised of many persons whom were raised with other deaf persons and with fairly good communication with their parents, characteristics infrequently found in families with deaf children (Preston, 1995).

The study collected information on a number of variables related to participants’ sexual identity and partner history. Regarding sexual identity, the majority of the sample identified as heterosexual (90, 75.6%), and a minority identified as homosexual (19, 16%), bisexual (6, 5%), and other (4, 3.4%). More than half of the participants reported that their former sexual partners were mostly deaf (68, 57.1%), in comparison to hearing (26, 21.8%), hard of hearing (9, 7.6%), and other (i.e., mixed partners, never sexually active, or could not specify; 16, 13.2%). A similar communication profile was also found with more than half of the sample identifying they communicated with most past partners through ASL (81, 68.1%), not spoken English (21, 17.6%). These preference results indicate that most study participants identified as heterosexual and chose to have relationships with persons who are deaf and use ASL. When asked about current relationships, 52 (43.7%) participants reported being in a relationship with only one other person. Of this group, about half (31, 59.6%) reported that they had been with that partner for more than one year and a large majority reported having talked to their partner about STIs (42, 80.8%). In contrast to this group, 11 participants reported being in a current relationship with more than one other person, ranging from two to six partners.

Regarding their current and past health, 11 participants (9.2%) reported ever being diagnosed with an STI. Of these 11 participants, the endorsed infections included herpes, gonorrhea, syphilis, trichomoniasis, and human papillomavirus. In contrast to this low proportion, nearly half of participants (56, 47.1%) reported knowing someone who was HIV positive.

Condom Use

The current section aims to answer the following two-part question: What is the current use of condoms among college students who are deaf and does this frequency differ from condom use among hearing college students?

Participants first indicated if they had engaged in any type of sexual contact in the past 30 days. If they endorsed that they had, then they were asked to rate their use of condoms over the past 30 days on a five-point scale, from “never” to “always.” This scale matched the measure used by the above-mentioned American College Health Association (2010). Participants also reported how many sexual partners they had been with over the past 30 days. See Table 2, below, for a comparison of the results of reported current sexual contact and condom use differentiated by vaginal, anal, and oral sex.

In total, 64 participants (53.8%) reported having vaginal sex over the past 30 days. Of this group, the majority of participants (31; 48.4%) reported that they “never” or “rarely” used condoms with their partners during vaginal sex. In contrast, 25 participants (39.1%) reported that they use condoms during vaginal sex “always” or “most of the time.” Regarding the number of current sexual partners, most responders (53; 82.8%) indicated that they were monogamous.

Of the sample of participants questioned, only 10 participants (8.4%) reported having anal sex over the past 30 days. While this number was quite small, the results indicated that most (70%) participants reported they use condoms during anal sex “always” or “most of the time” with the remainder (30%) reporting “never” or “rarely” using condoms. Of this group, the number of current sexual partners in a monogamous relationship was similar to vaginal sex, reportedly 70% (7 participants).

Among the participants questioned, 66 participants (55%) reported having oral sex over the past 30 days. Of these participants, the majority of participants (57; 86.4%) reported that they “never” or “rarely” use condoms during oral sex. In contrast, seven participants (10.6%) reported that they use condoms during oral sex “always” or “most of the time.” Again, the number of current sexual partners in a monogamous relationship was similar to vaginal sex, reportedly 86.4% (57 participants).

Table 2
Sexual Contact and Condom Use

| | Vaginal Sex | | Anal Sex | | Oral Sex | |
|------------------|-------------|------------|----------|------------|----------|------------|
| | N | Proportion | N | Proportion | N | Proportion |
| Current Contact | 64 | 53.8% | 10 | 8.3% | 66 | 55% |
| Never | 20 | 31.3% | 2 | 20% | 51 | 77.3% |
| Rarely | 11 | 17.2% | 1 | 10% | 6 | 9.1% |
| Sometimes | 8 | 12.5% | 0 | 0% | 2 | 3.03% |
| Most of the Time | 8 | 12.5% | 3 | 30% | 1 | 1.5% |
| Always | 17 | 26.6% | 4 | 40% | 6 | 9.1% |

As previously noted, the American College Health Association (ACHA) assesses condom use among college students across the United States—the largest assessment of risky sexual behavior in the country. Regarding vaginal sex, there was no significant difference in current sexual contact between the ACHA (2010) sample, 49.38%, and the current sample, 53.8%, $z = 0.96$, $p > .1$ (see Table 3, below). Regarding condom use, the ACHA (2010) combines responses from “most of the time” and “always” to indicate “consistent condom use.” Regarding consistent condom use during vaginal sex, participants in the current sample engaged in less consistent condom use, 39.1%, than what was reported by the ACHA (2010), 51.06%, $z = 1.94$, $p < .05$, indicating that deaf college students have significantly less consistent condom use during vaginal sex than hearing college students.

Regarding oral sex, there was no significant difference in current sexual contact between the ACHA (2010) sample, 61.91%, and the current sample, 55%, $z = 1.12$, $p > .1$. Regarding consistent condom use during oral sex, there was no significant difference in current use between the ACHA (2010) sample, 4.97%, and the current sample, 10.5%, $z = 1.45$, $p > .05$, indicating that deaf college students do not appear to have significantly less consistent condom use during oral sex than hearing college students. Finally, regarding participants who reported “never” using condoms during oral sex, significantly fewer participants from the current sample endorsed this response than those from the ACHA (2010) sample, $z = 2.16$, $p < .05$.

The current study aimed to compare the rate and condom use during anal sex between deaf and hearing college students. However, the limited number of participants (10) in the current sample who reported engaging in anal sex during the past 30 days was too small for an analysis between the current sample and the ACHA (2010).

Table 3

Comparisons of Condom Use During Vaginal and Oral Sex

| | Vaginal Sex | | Oral Sex | |
|------------------|----------------|-------------|----------------|-------------|
| | Current Sample | ACHA (2010) | Current Sample | ACHA (2010) |
| Current Contact | 53.8% | 49.38% | 55% | 61.97% |
| Never | 31.25% | 29.12% | 77.3% | 88.55%* |
| Rarely | 17.2% | 9.28% | 9% | 4.27% |
| Sometimes | 12.5% | 10.54% | 3% | 2.20% |
| Most of the Time | 12.5% | 16.65% | 1.5% | 1.18% |
| Always | 26.6% | 34.41% | 9% | 3.79% |
| Consistent Use | 39.1% | 51.06%* | 10.5% | 4.97% |

Note: $p < .05$

Discussion

The overarching aim for the current study was to assess the prevalence of condom use among college students who are deaf and determine if it differed from the greater collegiate population. Prior to this study, little was known about the prevalence of risky sexual behavior among young adults who are deaf. The modest information that was available (*viz.*, Anderson & Leigh, 2010; Klein, 2008; Monaghan, 2006) indicated that deaf young adults were likely engaging in significantly more risky sexual practices than hearing young adults. To elucidate the need for possible intervention, this study collected data on the sexual history of 120 deaf young adults enrolled in a university that primarily enrolls deaf students, about 10% of the university's undergraduate student body. The results of this study were generated from a sample that was representative of the university's age, gender, and racial/ethnic background, allowing these results to be generalized to the greater deaf collegiate population.

Regarding sexual contact, the current study found that the frequency of vaginal and oral sexual contact did not differ between deaf and hearing

young adults. About 50% of young adults, deaf or hearing, were currently engaging in each type of sexual contact. Similarly, the current study did not find a significant difference in consistent condom use during oral contact between deaf and hearing young adults. While this may appear to be a promising finding, the reality is that neither group of young adults reported consistent use of protective barriers during oral contact. The current study found that only about 10% of deaf young adults consistently use a latex barrier during oral contact and 88% report that they “never” use protection during oral contact.

The most noteworthy finding of the current study was that hearing young adults appear to engage in safer sexual practices during vaginal intercourse. Consistent with past research (e.g., Klein, 2008; Monaghan, 2006) the results of this study indicated that deaf young adults appear to use condoms during vaginal intercourse significantly less consistently than hearing young adults. Specifically, only about 39% of deaf young adults report consistent use of condoms during vaginal intercourse and about 31% report that they “never” use condoms during vaginal intercourse. These findings indicate that deaf young adults are at a higher risk than hearing young adults for experiencing negative consequences of risky sexual behavior, namely sexually transmitted infections and unplanned pregnancies. The most severe consequent may be the transmission or acquisition of HIV. The results of the present study may help explain Monaghan’s (2006) findings which showed that persons who are deaf are significantly more likely to acquire HIV than persons who are hearing: less frequent condom use exposes individuals to greater opportunities to acquire and spread sexually transmitted diseases.

A special note should be taken into consideration when explaining condom use among young adults during vaginal intercourse. Deaf young adults use condoms less consistently than hearing young adults (39%), though hearing young adults also report inconsistent condom use (51%). A statistically significant difference in condom use between deaf and hearing young adults was found, though all young adults, deaf and hearing, frequently engage in high risk behaviors.

There are a number of possible explanations for the difference in condom use between deaf and hearing young adults during vaginal intercourse. The most frequently cited argument is a disparity in health literacy between deaf and hearing persons due to a lack of quality materials on safe sex practices

(Gaskins, 1999; Goldstein, Eckhardt, Joyner, & Berry, 2006; Heuttel & Rothstein, 2001; Kennedy & Buchholz, 1995; Mallinson, 2004; Roberts, 2006; Winningham, Gore-Felton, Galletly, Seal, & Thornton, 2008). The primary communication medium in the United States is spoken English and nearly everything designed to curtail risky sexual behavior (e.g., pamphlets on safe sex practices and television and radio advertisements) were designed for an audience that use spoken English (Gaskins, 1999; Goldstein et al., 2006; Heuttel & Rothstein, 2001; Kennedy & Buchholz, 1995; Mallinson, 2004; Roberts, 2006; Winningham et al., 2008). This has been changing with the rise of other spoken languages (viz., Spanish), though few materials on safe sex practices have been designed to meet the needs of persons who are deaf (e.g., Advocate Health Care, 2009). This lack of accessible materials may put the deaf population at a disadvantage and expose them to a greater degree of potential for risky sexual encounters. In a survey of over 400 deaf adults stratified over eight US states, Goldstein and colleagues (2006) found substantial gaps in knowledge of HIV transmission and prevention. Others have found that many deaf individuals believed printed HIV materials were incomprehensible, culturally inappropriate, and ineffective (Mallinson, 2004).

The limited amount and poor quality of printed material on HIV infection and prevention force many deaf individuals to turn elsewhere for information. Heuttel and Rothstein (2001) studied how deaf individuals attain knowledge of HIV infection and prevention, and then compared this to how hearing individuals learned about the virus. The results showed that deaf individuals relied more on their family and friends while hearing individuals learned primarily from printed material (Heuttel & Rothstein, 2001). Persons who are not experts in HIV infection and prevention will likely provide information containing factual errors, inaccuracies, and irrelevant information, in turn increasing opportunities for otherwise preventable HIV infections (Heuttel & Rothstein, 2001).

It may be tempting to think that updating the body of printed materials may close the gap in health disparities between deaf and hearing young adults. Newer and more accessible educational materials are needed, of course. However, it may be more fruitful to investigate more individualized aspects of behavior and motivation. There are numerous models that explain and predict risky sexual behavior (see Corby, Jamner, & Wolitski, 1996; Costa, Jessor, Donovan, & Fortenberry, 1995; Godin, Maticka-Tyndale, Adrien, Mason-Singer, Willms, & Cappon, 1996; Jessor, Costa, Jessor, & Donovan,

1983; Jessor, 1998). Two models stand out from the others because of their strong theoretical basis and a history of empirical research supporting them: problem behavior theory and the theory of reasoned action.

A number of studies (e.g., Costa et al., 1995; Jessor et al., 1983; Jessor, 1998) have found support for problem behavior theory, a three-factor model for predicting risky sexual behavior that focuses on personality, perceived environment, and behavior. Similarly, several studies (e.g., Corby et al., 1996; Godin et al., 1996) have found support for the theory of reasoned action, a three-factor model for predicting risky sexual behavior that focuses on intention, perceived norms, and perceived behavioral control. Given the results of the current study, the next step is to test these proven models of risky sexual behavior on persons who are deaf. This process could lead to the creation of interventions that are precisely tailored to the needs and accessibility of the deaf population.

There are several limitations of the current study that should be noted. First, the current study would likely have benefited from a larger sample. Granted, the composition mirrored about 10% of the Gallaudet undergraduate population, though the sample was not random, participants self-selected to join the study. A future study may benefit from a larger sample, composed of randomly selected participants from a number of geographic regions as it may generate results more generalizable to the greater deaf population.

A second limitation is the study's sample of what appeared to be heavily weighted with participants who come from families with deaf relatives. About 95% of deaf children are born to hearing parents (Preston, 1995); however, about one-third of the current study's sample reported having at least one deaf parent and about half reported having at least one deaf relative in their family. There are a number of possible reasons for this; all are speculative, though may become interesting future research topics. For instance, children born into deaf families may be more comfortable discussing their sexual history and therefore chose to participate more than persons from hearing families. A second possibility is that families who have deaf relatives may be more likely to send their children to schools that predominately enroll deaf students. Regardless of the reason, this limitation indicates that the results are less generalizable to the overall deaf population of the United States; the results are a representation of deaf young collegiate students.

Despite the two mentioned limitations, the current study updated the data on current condom use among deaf college students and identified a difference in consistency from the greater collegiate population. The results were disconcerting as they indicated deaf young adults are engaging in more risky sexual behavior than hearing young adults. As noted above, the next phase of research should be an exploration of individualized aspects of behavior and motivation that are unique to young deaf adults. Specifically, models of risky sexual behavior, with a history of empirical support and a theoretical foundation, should be applied to persons who are deaf in an effort to then design interventions tailored to young deaf adults.

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References

- Advocate Health Care. (2009). *HIV/AIDS*. Oak Brook, IL.
- American College Health Association. (2010). *American College Health Association-National College Health Assessment II: Reference Group Data Report Spring 2010*. Linthicum, MD: Author.
- Anderson, M. L. & Leigh, I. W. (2010). Internal consistency and factor structure of the revised conflict tactics scales in a sample of deaf female college students. *Journal of Family Violence, 25*, 475-483. doi: 10.1007/s10896-010-9308-6
- Corby, N. H., Jamner, M. S., & Wolitski, R. J. (1996). Using the theory of planned behavior to predict intention to use condoms among male and female injecting drug users. *Journal of Applied Social Psychology, 26*, 52-75.
- Costa, F. M., Jessor, R., Donovan, J. E., & Fortenberry, J. D. (1995). Early initiation of sexual intercourse: The influence of psychosocial unconventionality. *Journal of Research on Adolescence, 5*, 93-121.
- Doyle, A. G. (1995). AIDS knowledge, attitudes and behaviors among deaf college students: A preliminary study. *Sexuality and Disability, 13*, 107-134. doi: 10.1007/BF02590060
- Gallaudet University. (2009). *2009 Enrollment Report*. Washington, DC.
- Gaskins, S. (1999). Special population: HIV/AIDS among the deaf and hard of hearing. *Journal of the Association of Nurses in AIDS care, 10*, 75-78. doi: 10.1016/S1055-3290(06)60301-4
- Godin, G., Maticka-Tyndale, E., Adrien, A., Mason-Singer, S., Willms, D., & Cappon, P. (1996). Cross-cultural testing of three social cognitive theories: An application to condom use. *Journal of Applied Social Psychology, 26*, 1556-1586.
- Goldstein, M. F., Eckhardt, E., Joyner, P., & Berry, R. (2006). An HIV knowledge and attitude survey of deaf US adults. *Deaf Worlds 22*, 163-183.

- Heuttel, K. L. & Rothstein, W. G. (2001). HIV/AIDS knowledge and information sources among deaf and hearing college students. *American Annals of the Deaf*, 146, 280-286.
- Jessor, R. (1998). New perspectives on adolescent risk behavior. In R. Jessor (Ed.), *New Perspectives on Adolescent Risk Behavior* (pp 1-10). New York, NY: Cambridge University Press.
- Jessor, R., Costa, F., Jessor, L., & Donovan, J. (1983). Time of first intercourse: A prospective study. *Journal of Personality and Social Psychology*, 44, 608-626.
- Kennedy, S. & Buchholz, C. L. (1995). HIV and AIDS among the deaf. *Sexuality and Disability*, 13, 145-158. doi: 10.1353/aad.2012.0067
- Klein, L. S. (2008). *The Relationship Between Perceived Parenting Style and Sexual Health in Deaf and Hard of Hearing College Students*. (Unpublished master's thesis). Washington, DC: Gallaudet University.
- Mallinson, R. K. (2004). Perceptions of HIV/AIDS by deaf gay men. *Journal of the Association of Nurses in AIDS Care*, 15, 27-36. doi: 10.1177/1055329004267338
- Monaghan, L. (2006). Maryland 2003 HIV infection statistics for hearing and deaf populations: Analysis and policy suggestions, *Deaf Worlds*, 22, 83-110.
- Peinkofer, J. R. (1994). HIV education for the deaf, a vulnerable minority. *Public Health Reports*, 109, 390-396.
- Preston, P. (1995). *Mother Father Deaf: Living Between Sound and Silence*. Cambridge, MA: Harvard University Press.
- Roberts, G. S. (2006). Sexuality and HIV/AIDS education among deaf and hard of hearing students. *Deaf Worlds* 22, 111-139.

Winningham, A., Gore-Felton, C., Galletly, C., Seal, D., & Thornton, M. (2008). Lessons learned from more than two decades of HIV/AIDS prevention efforts: Implications for people who are Deaf or Hard of Hearing. *American Annals of the Deaf*, 153, 48-54.