

The Psychological Treatment Needs of Deaf Mental Health Patients in High-Secure Settings: A Review of the Literature

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A review of the literature relating to the psychological treatment needs of deaf mentally disordered offenders residing in high secure settings was conducted. Four literature searches were conducted relating to offending, mental illness, assessment and treatment with the deaf. The literature regarding these areas was found to be highly limited. Despite this, evidence suggests that deaf people are over represented in high secure facilities. It is also suggested that deaf offenders show higher levels of violent and sexual offences than their hearing counterparts. Most theories accounting for this difference in offending relate to the insufficient acquirement of social understanding however the finding may be an artefact of biases in the criminal justice system. Overall deaf people appear to experience similar levels of mental illness but greater levels of learning disability than hearing people. There are numerous sources of error when conducting assessments with deaf people. Similarly there are a number of challenges when delivering interventions with deaf people. These issues are discussed in terms of their implications for the psychological treatment needs of deaf mentally disordered offenders. Suggestions for future research include making use of systematic case studies to avoid some of the methodological challenges of researching this population.

Keywords: deaf, secure, treatment needs, mental health

There is a paucity of research into the needs of deaf patients in high secure psychiatric settings, a potentially serious limitation in effective service delivery (Slade, Phelan, & Thornicroft, 1998). In this article, we review the existing literature on the psychological needs of deaf patients in high secure settings relating to offending, mental health, assessment and interventions.

A variety of terms such as *deaf*, *Deaf*, or *hard of hearing* are used to describe individuals who have experienced hearing loss. Some of these terms denote a particular association with the Deaf community for an individual, or they can simply reflect the degree that communication has been affected by the loss of hearing (Denmark, 1994). Deaf (capitalized) is used to denote a minority group with a cultural and linguistic identity that is distinct from the hearing majority (Ladd, 1988), whereas deaf (lowercase) refers to a loss

of ability to hear sound and understand speech (Woodward, 1972).

There are currently two opposing perspectives on deafness. The *medical model* views deafness as a pathology that requires treatment, such as cochlear implantation, with the aim of individuals achieving the greatest level of hearing possible. The medical model of deafness is seen by many deaf people as oppressive, reducing them as individuals to a single measure of audiometric ability with an overemphasis on normalizing rather than maximizing their functioning (Munoz-Baell & Ruiz, 2000). Many Deaf people who hold similar beliefs to that mentioned above are likely to subscribe to the second account, the *cultural model* of deafness. The cultural model views deafness as a simple predominance of the visual sense in functioning, perceiving the world and communicating. This feature of visual predominance is itself a norm within Deaf culture. The *International Classification of Functioning, Disability and Health* (ICF; World Health Organization [WHO], 2002) conceptualizes deafness in terms of functioning. This may allow greater room for the Deaf cultural perspective in the way deafness is classified compared

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TABLE 1
Studies Identified for Review of the Literature Relating to the Needs of Deaf Mental Health Patients in Secure Settings

Category of Study	No. of Studies	Studies
Offending	13	Harry, 1984; Denmark, 1985; Harry & Dietz, 1985; Vernon & Rich, 1997; Vernon et al., 1999; Vernon & Greenberg, 1999; Young et al., 2000; Miller & Vernon, 2001; Young et al., 2001; Miller & Vernon, 2003; Iqbal et al., 2004; Miller et al., 2005; Vernon & Miller, 2005; Bramley, 2007
Mental Health	8	Altshuler & Baroff, 1962; Denmark, 1985; Young, et al., 2000; De Bruin & De Graaf, 2004; Iqbal et al., 2004; Cornes & Napier, 2005; Kvam, et al., 2007; Landsberger & Diaz, 2010.
Assessment	4	Dickert, 1988; Fellingner et al., 2005b; O'Rourke & Grewer, 2005; Connolly et al., 2006.
Treatment	5	Arana et al., 1978; Rothfeld, 1982; Sylvester et al., 1986; Guthmann & Sandberg, 1995; Bramley, 2007

to previous classifications defining deafness in terms of a disability or impairment.

The *Pajmans-Baines model* (Baines, 2007) situates diffuse categories of deafness alongside a continuum of deaf identity ranging from deafness as a condition (medical model) to deafness as an identity (cultural model). The categories of deafness are constructed from pairing three factors that are thought to cause variation between deaf individuals, the first being onset of deafness (prelingual, postlingual, or late), the second being severity of deafness (profound or partial), and third being family type (hearing or deaf). The framework is useful for conceptualizing deafness and assessing its psychological effects for deaf individuals (Baines, 2007). The framework may also be useful for guiding the assessment of patient needs in a number of mental healthcare environments including secure settings.

This review aims to provide a critical account of the current literature on deafness related to mental health, offending, treatment, and assessment relevant to high-secure settings. The literature will be examined for its relevance, whether it elucidates the particular presentations of patients and provides a framework for improving patient care in these highly specialized settings. Insight from the literature will be used to suggest possible psychological needs of patients in high-secure settings.

METHOD

Search Strategy

Relevant studies were identified by searching the computerized databases PsycINFO (1806–present) and Medline (1950–present). Key terms such as *deaf* and *hard of hearing* were paired with terms in the following searches, with all combinations and truncations included. In the first search key terms were entered to identify literature relating to deaf offenders, including *offenders*, *violence*, *high secure*, and *sex offenders*. Second, the key terms searched to identify literature relating to deaf mental health needs included *mental disorder* and *personality disorder*. Finally, key terms searched to identify literature relating to deaf treatment and assessment included *treatment needs*, *assessment*, and *interventions*. Ad-

ditional studies were identified through the reference sections from studies found in the initial searches.

Inclusion Criteria

Search results were screened for relevance to the clinical needs of deaf patients in secure settings. Due to the lack of research specific to high-secure psychiatric settings, studies relating to deaf individuals in low- and medium-secure and prison settings were also included. Studies with samples with all types of hearing loss (i.e., partial to profound) were included, with the exception of research investigating individuals with the loss of hearing and sight combined. Six studies with child samples were excluded. In addition, eight studies examining mental health service provision for the deaf were also excluded, as none were relevant to secure settings. Two studies using interventions with the deaf patients that were nonpsychotherapeutic (e.g., psychopharmacological) were also excluded.

RESULTS

The results are divided into four parts that we considered most relevant to the clinical needs of deaf mental health patients in high-secure environments: (1) The literature related to offending and deafness; (2) the literature related to mental health and deafness; (3) the literature related to the assessment of deaf patients; and, (4) the literature related to interventions and treatment with deaf individuals. Table 1 shows the relevant studies identified for the current review.

Deaf Offenders

A number of authors suggest that there is a dearth of research examining deaf offending populations (e.g., Young, Monteiro, & Ridgeway, 2000). Much of the research regarding deaf offenders has been concerned with identifying differences between this minority and the wider hearing offender population. Previous research has suggested that deaf offenders show a different pattern of offending compared to hearing offenders. Young et al. (2000) are critical of the reliability of much of the research that suggests that deaf people are more likely to commit offenses in general (e.g., Andrews &

Conley, 1977; Hentig, 1967) and particularly those offenses of a violent or sexual nature (e.g., Denmark, 1985; Harry & Dietz, 1985; Harry, 1984; Klaber & Falek, 1963).

There is a representation of the deaf in high-secure settings that is 12 times higher than the figure expected given the size of the deaf population (Young et al., 2000). Some accounts of this finding highlight situational factors such as inadequate service provision in conditions of lower security (Young et al., 2000) and biases in the criminal justice system. For example, only severe crimes leading to entry into the criminal justice system while less serious offenses are ignored (e.g., Hindley et al., 2000; Miller & Vernon, 2001). Other accounts highlight dispositional factors such as the misunderstanding of social norms (Andrews & Conley, 1977) and difficulties in perspective taking (Bachara, Raphael, & Phelan, 1980).

Some studies have reported a greater proportion of violent and sexual offenses for deaf prisoners. For example Miller, Vernon, and Capella (2005) compared the frequency and types of violent offenses committed by deaf prisoners in the state of Texas compared to their hearing counterparts. The results showed that 64% of deaf prisoners and 49% of hearing prisoners were incarcerated for a violent offense. They also reported that 32% of deaf offenders and 12% of hearing offenders had committed a sexual assault. This study highlights a possible difference in the pattern of offending between deaf and hearing offenders. Similar to the account above, it is possible that his finding is attributable to bias in the criminal justice system (e.g., Hindley et al., 2000).

There have been fewer studies that have investigated violent offenses in the deaf compared to other crimes such as sexual offending (see Table 2). Vernon, Steinberg, and Montoya (1999) compared a sample of deaf and hard-of-hearing offenders with a hearing sample that had all committed murder. It was suggested that the cause of deafness rubella was associated with this offense. Apart from this study there were no studies found that focused on deaf offenders that commit violent crime. However, there are a number of studies that refer to violent offenses committed by deaf offenders (e.g., Denmark, 1985; Young, Howarth, Ridgeway, & Monteiro, 2001; Miller et al., 2005). In a sample of inpatient and outpatient referrals to specialist deaf psychiatric services 21% of crimes committed involved assault (Denmark, 1985). This study did not have a hearing comparison sample. Another study with a sample of forensic referrals to three specialist psychiatric units showed that 46% of patients had committed either a murder or a violent offense. This study also did not have a hearing comparison sample. Vernon and Greenberg (1999) reviewed the literature related to violence in the deaf and hard of hearing. Their review suggests that the prevalence of brain damage, learning disability, communication disorders, and educational retardation results in higher rates of violence for this population. Other authors highlight cultural oppression as a possible cause for hostility for deaf people (Austen & Jeffery, 2007).

There have been a number of studies that have examined deaf sex offenders (see Table 2). The current research re-

lating to deaf sex offenders has been criticized for having small nonrepresentative samples and not differentiating violent offenders from sex offenders (Miller & Vernon, 2003). However despite these practical and methodological limitations there does appear to be a greater proportion of deaf sex offenders in deaf prison populations compared to sex offenders in hearing populations. Miller and Vernon (2003) examined a sample of 41 deaf sex offenders incarcerated in the state of Texas. Their results showed the percentage of sex offenders in deaf offender populations was four times higher than that of the hearing offender population (46% and 9%, respectively). Their results showed that 66% of the deaf sex offender sample and 65% of hearing sex offenders had committed sexual acts involving a child. As other studies have found similar results (e.g., Iqbal, Dolan, & Monteiro, 2004) this may suggest that deaf sex offenders do not commit more sex crimes against children than hearing sex offenders.

A number of possible causal factors have been suggested in the literature to account for the greater proportion of sex offenders in the deaf offender population. One suggestion is that the higher incidence of sexual abuse for deaf children than hearing children (e.g., Dennis & Baker, 1998) results in a greater proportion of deaf children going on to commit sexual offenses in later life (Freund, Watson, & Dickey, 1990). Another suggestion is that some of the causes of deafness, such as brain damage and childhood diseases, may be associated with reduced impulse control (Chess & Fernandez, 1980) and sexual disinhibition (Vernon & Rich, 1997). Another account suggests that the reduced social feedback regarding sexual behavior (Denmark, 1994) may contribute to the offending behavior of deaf offenders.

Deafness and Mental Health

Like much of the literature regarding deafness and offending, the literature concerning deafness and mental health (see Table 3) has also attempted to identify and attempt to explain any differences between this minority and the wider hearing population (Hindley, Hill, McGuigan, & Kitson, 1994). However, Connolly, Rose, and Austen (2006) suggest that it is important to examine the identification and assessment of mental health problems in deaf people before evidence from prevalence studies are considered.

There have been a number of studies that have reported the prevalence of depression of deaf psychiatric patients (e.g., Denmark, 1985). There have been some studies, however, of the general deaf population (e.g., Werngren-Elgström, Dehlin, & Iwarsson, 2003). Until the late 1980s most authors reported lower levels of depression in deaf people (Kitson & Thacker, 2000). The results of Werngren-Elgström et al. (2003) showed higher levels of depressive symptoms in a mixed gender sample of prelingually deaf individuals aged above 64 years when compared to hearing controls. Pollard (1994) reported the diagnostic information for 343 deaf and hard-of-hearing patients and compared it against a total sample of 68,329 patients. It was found that there were 14% and

TABLE 2
Studies Relating to Offending and Deafness

Study	Control Sample	Deaf Sample	Methods	Sample Information	Prelingual or Postlingual Deafness/Communication	Type of Study/Country of Study	Results
Harry (1984)	-	1	Case Study	Male sex offender	Prelingual	U.S. study.	-Suggests case is example of sexual offenses resulting from altered psychosexual development.
Denmark (1985)	-	250	Within Sample. Descriptive	81 female, 169 male. Age range 4-72 years. Referrals to outpatient and inpatient psychiatric services for the deaf at Manchester, Preston and London	Prelingual-profound 74%, Prelingual-partial 15%, Post-lingual profound 4%, Adult onset profound 3%, Adult onset partial 1%, not deaf 2	UK study. Examines type and cause of deafness, method of communication, diagnoses (including problems related to deafness), demographics, place of admittance and discharge, and forensic/psychiatry histories.	-13% of total sample had been charged with criminal offense. -From this sample 21% of the crimes involved assault, 33% were sexual crimes, 42% were involved property (e.g., theft) and 3% was for breach of the peace.
Harry & Dietz (1985)	None	7	Within Sample. Descriptive	Profoundly deaf admittance to maximum security psychiatric facility for pretrial assessment 1971-1980	Profoundly deaf: 5 (71%) prelingual, 2 (29%) postlingual	U.S. study. Review of literature relating to hearing impairment and adult criminality/juvenile delinquency	-Prevalence of prelingual deafness in the psychiatric facility was 5.1 per 1,000. (1 per 1,000 for prelingual deafness in general population). -Duration of stay: 49 months for prelingually deaf and 1.5 months for the postlingually deaf.
Vernon & Rich (1997)	None	22	Within Sample. Descriptive	2 females, 20 males. Cases of deaf paedophiles over 45 years of author's practice. Males: Mean age 22.26	Males: 75% congenitally deaf, 10% prelingual, 10% congenitally hard of hearing, 5% progressive deafness. BSL: 40% fluent, 30% fair to competent, 30% Poor, none, or minimal.	U.S. study.	-35% showed brain damage. -60% sexually abused, 10% suspected, 30% no data. -50% Antisocial Personality Disorder, 40% Primitive Personality Disorder, 15% PTSD, 10% Schizophrenia. -61% met criteria for being referred to a specialist medium-secure facility had one been available.
Vernon et al. (1999)	Hearing murderer population.	28	Between Sample. Descriptive	1 female, 27 males. Deaf or hard-of-hearing murderers.	93% of sample were prelingually deaf. 82% were profoundly deaf.	U.S. study. Comparison with hearing murderer population. Examines host of variables.	-Diagnoses: 50% Antisocial Personality Disorder. -Mean IQ of sample: 100.7 (SD = 17.01) -64% of sample showed evidence of brain damage.
Vernon & Greenberg (1999)	-	-	-	-	Deaf and hard of hearing.	U.S. study. Review of literature relating to violence in deaf and hard of hearing people.	-The prevalence of brain damage, learning disability, communication disorders and educational retardation result in higher rates of violence.

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TABLE 2
Studies Relating to Offending and Deafness (Continued)

Study	Control Sample	Deaf Sample	Methods	Sample Information	Prelingual or Postlingual Deafness/Communication	Type of Study/Country of Study	Results
Young et al. (2000)	-	-	-	-	-	UK study. Review. Descriptive.	<ul style="list-style-type: none"> -Population overrepresented in prison. -Paucity of research highlighted. -Deaf people overrepresented in high-secure psychiatric facilities - 12.3 per 1000 (deaf population 1 per 1000). -Suggests the needs of this group are not met.
Miller & Vernon (2001)	-	-	-	-	-	U.S. study. Review. An examination of linguistic diversity in deaf defendants and its implications for due process.	<ul style="list-style-type: none"> - Due process rights of deaf people not met.
Young et al. (2001)	None	389	Within Sample. Descriptive.	33 females, 356 males. Forensic referrals to three specialist psychiatric units for the deaf in UK from 1968 to 1999.	-	UK study.	<ul style="list-style-type: none"> -Convicted or currently charged with: 39% sexual offense, 20% offense against children (violent or sexual), 8% homicide, 38% violent offense. -89% had recorded diagnostic assessment - 47% diagnosed with mental disorder (includes PD): 36% PD, 25% psychotic illness, 19% mental impairment/learning disability, 20% other.
Miller & Vernon (2003)	Texas Hearing Offender Population	41	Between Sample. Descriptive.	Deaf sex offenders in Texas Prison population.	90% used sign or gesture to communicate.	U.S. study. Comparison deaf and hearing sex offender population.	<ul style="list-style-type: none"> -66% committed sexual acts against children. -46% of deaf prisoners in Texas that are sex offenders compared to 9% for hearing offenders.
Iqbal et al. (2004)	None	137	Within Sample. Descriptive.	Deaf sex offenders referred to National Centre for Mental Health and Deafness (NCMHD) from 1969-2002. All male.	83% profoundly deaf. 16% partially deaf. 69% used BSL as primary language. 31% used oral methods.	UK Study. Case file review of offending histories, demographic and psychosocial factors and treatment received.	<ul style="list-style-type: none"> -69% of victims were children. -58% of sample had no diagnosis of mental disorder. Diagnoses: 47% depression, 5% pervasive developmental disorder, 5% schizophrenia/psychosis. -Approximately 20% had comorbid alcohol abuse. -26.8% had intellectual impairment.

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TABLE 2
Studies Relating to Offending and Deafness (Continued)

Study	Control Sample	Deaf Sample	Methods	Sample Information	Prelingual or Postlingual Deafness/Communication	Type of Study/Country of Study	Results
Miller et al. (2005)	Texas Hearing Offender Population	99	Between Sample. Descriptive.	7 females, 92 males. All prisoners in the state of Texas.	Severe to profound hearing loss. 89% prelingually deaf.	U.S. study. Comparison of rates of violent crimes in deaf and hearing offending populations.	-64% of deaf and 49% of hearing prisoners were incarcerated for a violent offense. -32% of deaf offenders and 12% of hearing offenders committed a sexual assault.
Vernon & Miller (2005)	-	-	Case Study. Descriptive.	-	Profound.	U.S. study.	- Highlighting Primitive Personality Disorder (PPD) as a cause for injustice in the criminal justice system.
Bramley (2007)	-	-	-	-	-	UK study. Review. Descriptive. Deaf forensic mental health needs. Deaf sex offender treatment program.	-Deaf sex offenders differing from their hearing counterparts in important ways. -They require specific treatment.

Note. - = not applicable

15% diagnosed for mood disorders for the deaf or hard of hearing and total sample respectively. This difference was not found to be significantly different. These studies suggest that deaf people show similar levels of mood disorders such as depression but that they may have greater levels of depressive symptoms compared with the hearing population.

There is very limited research into the prevalence of anxiety in the deaf. Most of the articles come from inpatient populations or other unrepresentative samples (e.g., Denmark, 1985). Results from Checinski (1991; cited in Fellinger et al., 2005a) show a prevalence of anxiety disorder of approximately 10% in the general deaf population. This compares favorably to estimates for the general population of 16% (Goldberg & Lecrubier, 1995). Kvam, Loeb, and Tambs (2007) report a gender difference with deaf females showing more anxiety.

Altshuler and Baroff (1962) suggested that there was a similar prevalence of schizophrenia in deaf and hearing people. Their hospital sample showed a prevalence of schizophrenia in deaf patients of 3%. Even though this value is greater than the 1% prevalence rate estimated for the general population (Goldner, Hsu, Waraich, & Somers, 2002), Altshuler (1986) suggests this inflated value may be due to the longer hospital stays experienced by the deaf. Kitson and Thacker (2000) question whether the samples used in prevalence studies of schizophrenia with the deaf are representative. They suggest that there will need to be improvement in the mental health services for the deaf before an accurate estimate of prevalence can be gained.

Early accounts of the greater prevalence of personality disorder in deaf people have been discredited in subsequent

research (Young et al., 2000). It has been suggested in the literature that paranoid personality disorder is more prevalent in deaf than hearing populations (e.g., Lloret, 1933). However, other authors have suggested that any paranoid presentations observed are based in reality and do not represent a disorder of personality (Vernon & Andrews, 1990). This suggestion is supported by evidence of paranoia experienced by other oppressed groups such as ethnic minorities (Cromby & Harper, 2005). It has also been suggested in the literature that a schizoid personality disorder is more common in individuals where deafness resulted from rubella or a low birth weight (Vernon and Andrews, 1990). There is inconsistency in the literature regarding borderline personality disorder in the deaf. Some authors report, anecdotally from their own practice, a relative lack of this disorder in the deaf (e.g., Grinker, Werble and Dye, 1977) whereas others report having treated deaf patients with this disorder (e.g., Kitson and Thacker, 2000). It has been suggested that the prevalence of borderline personality disorder may be underreported as a result of inadequate mental health service provision for the deaf (Farrugia, 1992). Further, there are suggestions that family disturbances, experienced by many deaf children, as a result of their deafness, may predispose them to this disorder (Farrugia, 1992). Despite this recent studies sampling hearing and deaf psychiatric inpatients have shown lower rates of personality disorder for deaf patients (e.g., Landsberger & Diaz, 2010). Pollard (1994) found lower rates of antisocial personality disorder in a deaf and hard-of-hearing sample compared with a hearing sample. This finding was attributed to higher false-negative error rates resulting from communication barriers preventing thorough diagnostic interviews.

TABLE 3
Studies Relating to Mental Health and Deafness

Study	Control Sample	Deaf Sample	Methods	Sample Information	Type / Degree of Deafness	Type of Study/Country of Study	Results
Altshuler & Baroff (1962)	Hearing Population in state census.	11,000	Between Sample. Descriptive.	Deaf population in state wide census.	Unspecified	U.S. study. Including case studies.	-Prevalence of Schizophrenia in the hospitalized deaf estimated at 3%. -Similar to estimates for hospitalized hearing population. -Deaf schizophrenics present with a greater proportion of behavioral disturbances rather than the disorder of thought commonly seen in hearing schizophrenics.
Denmark (1985)	None	250	Within sample. Descriptive.	81 females, 169 males. Age range 4-72 years. Referrals to outpatient and inpatient psychiatric services for the deaf at Manchester, Preston and London.	Prelingual-profound 74%, Prelingual-partial 15%, Postlingual profound 4%, Adult onset profound 3%, Adult onset partial 1%, not deaf 2%	UK study. Examines type and cause of deafness, method of communication, diagnoses (including problems related to deafness), demographics, place of admittance and discharge, and forensic psychiatry offenses.	-Neurosis and personality disorder 10%, Schizophrenia 22%, Affective disorder 6%, Schizoaffective disorder <1%, Organic state 2%, Miscellaneous mental illness 1%, Developmental disorders of communication 19%, Problems related to deafness 23%, Miscellaneous 3%, No psychiatric abnormality 4%, Organic disease 1%, No final diagnosis 8%.
Young et al. (2000)	-	-	-	-	-	UK study. Review. Descriptive. Examines UK literature regarding deaf people with mental health needs in the criminal justice system.	-Deaf population in high-secure psychiatric facilities- 12.3 per 1000 (deaf population 1 per 1000). -Needs of this group are not being met.
De Bruin & De Graaf (2004)	None	214	Within Sample. Descriptive.	51% female, 49% male. Review of patient database of specialist deaf mental health service.	69% prelingually deaf, 3% postlingually deaf, 28% hard of hearing.	Netherlands study. Examines demographic variables and mental health problems.	-Cultural affiliation: 47% both hearing and deaf culture, 30% hearing culture, 23% deaf culture. -Gender difference found in communication mode use in different settings (e.g., school). -Diagnoses: Females had significantly more Psychosocial problems (females 50%, males 35%).

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TABLE 3
Studies Relating to Mental Health and Deafness (Continued)

Study	Control Sample	Deaf Sample	Methods	Sample Information	Type / Degree of Deafness	Type of Study/Country of Study	Results
Iqbal et al. (2004)	None	137	Within Sample. Descriptive	Deaf sex offenders referred to National Centre for Mental Health and Deafness (NCMHD) from 1969–2002. All male.	83% profoundly deaf. 16% partially deaf. 69% used BSL as primary language. 31% used oral methods.	UK Study. Descriptive. Case file review of offending histories, demographic and psychosocial factors and treatment received.	<ul style="list-style-type: none"> -Males had significantly more Anxiety disorders (females 6%, males 9%) and substance abuse/dependence (females 2%, males 8%). -The incidence of schizophrenia for the total sample was 4%. -69% of victims were children. 58% of sample had no diagnosis of mental disorder. -Diagnoses: 47% depression, 5% pervasive developmental disorder, 5% schizophrenia/psychosis. -Approximately 20% comorbid alcohol abuse. -27% intellectual impairment. -Treatment: 30% psychotherapy, 29% pharmacotherapy, 9% both.
Cornes & Napier (2005)	None	-	-	-	-	Australian. Descriptive. Examines issues for therapists and interpreters working with deaf people.	<ul style="list-style-type: none"> -Linguistic, interpreting and role challenges highlighted along with threats to the therapeutic alliance.
Kvam et al. (2007)	Hearing Controls	431	Between Groups. ANOVA, Multivariate Logistic Regression.	Deaf sample: (n = 431) 41% male, 59% female. Hearing sample: (n = 42,815) 47% male, 53% female.	77% were born deaf or lost hearing before age 4 years, 11% became deaf age 4–8 years, 4% age 9–18 years, and 8% were 19 years or older.	Norwegian. Between groups design.	<ul style="list-style-type: none"> -Females found to be significantly more anxious for both groups. -Females in the hearing group were significantly more depressed than male counterparts. -All three items for mental distress were significantly higher for the deaf group. -No within group differences found for the other two items. -Deaf people experience significantly more mental distress (either individual items or average of all 3) even after age and gender are controlled for.

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TABLE 3
Studies Relating to Mental Health and Deafness (Continued)

Study	Control Sample	Deaf Sample	Methods	Sample Information	Type / Degree of Deafness	Type of Study/Country of Study	Results
Landsberger & Diaz (2010)	Hearing Psychiatric Inpatients	30	Between Groups. ANOVA	Deaf and hard-of-hearing sample: ($n = 30$) 16 males, 14 females. Hearing sample: ($n = 60$) 28 males, 32 females.	67% were deaf, 3% deaf blind, 30% hard of hearing. Communication: 67% ASL only, 20% ASL and English, 7% English only, 7% gestures.	U.S. study. Between groups design. Comparison between Deaf/Hard of hearing and hearing psychiatric inpatients in terms of demographics and diagnoses.	<ul style="list-style-type: none"> -Groups not different in terms of gender. -Differed in terms of racial and ethnic composition. -Age and education were found not to be significantly different. -Higher rates of impulse control disorders and pervasive developmental disorders found. -Lower rates of substance misuse found. -Axis II: More mild mental retardation found but significantly less PD.

Note. - = not applicable.

The term *learning disability* as referred to below is equivalent to the ICD-10 definition of mental retardation, namely, "impairment of skills manifested during the developmental period, which contribute to the overall level of intelligence, i.e., cognitive, language, motor, and social abilities" (WHO, 1992, p. 176). Historically, deaf people were commonly diagnosed with a learning disability simply as a result of their deficit in verbal communication (Denmark, 1994). Issues of misdiagnosis, however, are still noted by authors (e.g., Monteiron & Neeney, 1992, cited in Young et al., 2001; Pollard, 1994). As previously mentioned many of the etiological causes of deafness, such as meningitis or maternal rubella, may also cause a learning disability distinct from the effects of deafness. Etiological research shows that individuals with a genetic cause for their deafness are the group least likely to have a co-morbid disability or disorder (Grundfast, 1992; Grundfast, Atwood, & Chuong, 1999). Studies have shown that the prevalence of disorders such as autism are higher in people who are deaf than the general population (Gordon, 1991). It has been estimated that 80% to 95% of individuals with Down syndrome have a co-morbid hearing loss (Cunningham, 1982). Following this inpatient psychiatric samples also appear to have greater levels of learning disability for deaf people compared to hearing (e.g., Landsberger & Diaz, 2010).

Griggs (2000) suggests that the most appropriate group to use for comparison for assessing the mental health of deaf people is not the hearing population but other deaf people. Connolly, Rose, and Austen (2006) suggest that the current evidence base of the mental health of deaf people is very limited and that there is a pressing need for clinically useful

research in this area. The issues identified above show the limitations of the current literature base that prevent an accurate picture of the psychological functioning of the deaf population as a whole.

Deaf Patient Assessment

Much of the literature on assessments (see Table 4) is concerned with pointing out the lack of assessments available for use with the deaf that have been standardized for this population (e.g., Blennerhassett, 2000). Much of the literature is also concerned with pointing out the many difficulties in modifying hearing measures for use with the deaf (Spragins, Blennerhassett, & Mullen, 1993). Much of this difficulty results from many prelingually deaf people having severely delayed or reduced language skills irrespective of the mode of communication (Goldin-Meadows & Mayberry, 2001). Other authors also point out the difficulty communication barriers cause when assessing the deaf (e.g., Pollard, 1994). As a result much of the literature is also critical of the accuracy of deaf assessments cautioning high false-positive or false-negative diagnostic error rates (e.g., Monteiro & Neeney, 1992, cited in Young et al., 2001). This diagnostic error has also been examined experimentally by Dickert (1988). O'Rourke and Grewer (2005) suggest that unreliable assessment have a negative impact on formulation and treatment.

In terms of issues with forensic assessment, O'Rourke and Grewer (2005) review a range of measures for their utility for assessing people who are deaf. They suggest that in general the use of semi-structured interviews is preferable

TABLE 4
Studies Relating to Assessments and Deafness

Study	Control Sample	Deaf Sample	Methods	Sample Information	Prelingual or Postlingual Deafness	Type of Study/Country of Study	Results
Dickert (1988)	80*	-	Matched Participant Design. ANOVA	Mental Health professionals. Half worked in psychiatric program for the deaf ($n = 40$) and were matched with workers in general psychiatric treatment settings ($n = 40$).	-	U.S. Study. The psychiatric evaluations of descriptions of four, progressively more mentally ill, patients were recorded. The psychiatric evaluations were of degree of mental ill health, chemotherapy prescribed, supervisory care advised and the general attitudes towards patients. Half of each group received identical descriptions but with the addition that the patients were deaf. The evaluations across the Deafness and Professional factors were compared using t tests after interaction effects were ruled out.	-Both groups recommended higher doses of medication, for three of the four deaf patients, than hearing counterparts. - Younger, more educated staff that worked with the deaf expressed more positive attitudes toward the deaf.
Fellinger et al. (2005b)	None	236	Measure Validation	Deaf population in north Austria. Participants were able to read German.	Profoundly deaf and hard of hearing.	Austrian Study. Comparison of reliability of WHO-QOL, GHQ-12 and BSI using administration involving video signing with written German. Reliability was also compared with hearing versions of measures.	-Cronbach's alpha values for measures: WHO-QOL subscales ranged from 0.57-0.64. GHQ 0.64. BSI subscales ranged from 0.74-0.81.
O'Rourke & Grewer (2005)	-	-	-	-	-	UK study. Review of Deaf forensic mental health patient literature and research priorities. Discussion of assessment issues with this patient group.	-There are various sources of diagnostic error when assessing this patient group. -Important to understand cultural norms. -Unreliable assessment impact formulation and treatment. -Certain items in risk measures for the hearing are inappropriate for the deaf.
Connolly et al. (2006)	-	-	-	-	Prelingually Deaf.	UK study. Review of literature relating to assessment of depression in prelingually deaf.	-Hearing cut off scores commonly used. -Finding a representative sample is problematic because of the variability of Deaf population.

Note. - = not applicable.

*Non-Deaf Sample.

to the use of questionnaires for use in forensic settings, but issues of informed consent arise especially in relation to phallometric assessment. Risk assessment is discussed in terms of being hampered by the lack of risk research for people who are deaf. O'Rourke and Grewer (2005) also suggest that certain items on risk-related measures such as the Hare Psychopathy Checklist-Revised (Hare, 2003), HCR-20 (Webster, Douglas, Eaves, & Hart, 1997), and Violence Risk Appraisal Guide (Quinsey, Harris, Rice & Cormier, 2006) may not be appropriate for people who are deaf. For example, all three of the measures take into account childhood behavior problems; however, the hearing dynamics within the family make it more likely that a deaf child's behavior problems will be recorded (O'Rourke & Grewer, 2005). Further, assessing certain risk factors require the subtle examination of communication, which is not always possible when communicating via an interpreter.

The use of an interpreter has been highlighted by a number of authors of increasing the complexity and therefore difficulty of any assessment situation (e.g., Farooq & Fear, 2003; Hoyt, Siegelman, & Schlesinger, 1981). Indeed, due to the scarcity of interpreter provision it is common for the role of interpreter to fall to family members of the deaf individual with the possible effect of reducing disclosure of important diagnostic information for example, as a result of its sensitivity (Harmer, 1999). However, this may be less likely to occur in forensic settings for ethical and legal reasons. Since the Americans with Disabilities Act (1990), interpreter provision is a legal requirement in the United States. Researchers have noted, however, that many deaf people still progress through the criminal justice system without adequate interpreter provision (Vernon & Miller, 2005).

Authors have pointed out that there are currently three options available to researchers and clinicians in relation to the standardized assessment of the deaf (e.g., Connolly, Rose, & Austen, 2006). The first option is to use the current assessments that have been validated for the hearing with the deaf. The second is to modify those existing measures such as converting into simpler language or into sign. Third, new assessments could be developed specifically for the Deaf community.

Deaf Patient Interventions

Much of the limited literature on the treatment of the deaf relates to substance abuse (e.g., Guthmann, Lybarger, & Sandberg, 1993; Guthmann & Sandberg, 1995; Rothfeld, 1982; Sylvester, 1986) and sex offending (e.g., Bramley, 2007; Dennis & Baker, 1998) (see Table 5). Very little of the literature on the treatment needs of deaf people discusses needs within secure environments (O'Rourke & Grewer, 2005). One reason for the treatment needs of deaf mentally disordered offenders not being addressed may be as a result of inadequate mental health screening on admission to prisons (Miller & Vernon, 2001; Vernon & Miller, 2005; Young et al., 2000).

There are few studies that discuss the delivery of interventions with deaf patients; however, some including those mentioned above provide insight into particular issues when delivering interventions with deaf people. The literature suggests that when delivering interventions with the deaf treatment expectations have to be adjusted (Arana et al., 1978), group work is most effective with deaf peers (Guthmann & Sandberg, 1995), a range of visual methods should be used (Guthmann & Sandberg, 1995; Rothfeld, 1982; Sylvester et al., 1986), extra time is required to fill gaps in knowledge (Bramley, 2007). Despite the dearth of articles in the literature related to the treatment of deaf people there are books that outline culturally affirmative treatment for the Deaf (e.g., Glickman, 2003). For example, a video explanation of the Mental Health Act (1983) described by Klein (2005) would be an example of a culturally affirmative method.

A number of researchers highlight the lack of appropriate deaf sex offender treatment (Bramley, 2007; Miller & Vernon, 2003; Miller, Vernon, & Capella 2005), sex education (Getch, Branca, Fitzgerald, & Fitzgerald, 2001) and prevention programs (Sullivan et al., 1987) in both the United States and Europe. Bramley (2007) describes the first sex offender treatment program (SOTP) designed specifically for deaf British Sign Language (BSL) users in Europe. Bramley (2007) also points out that there is a lack of research into the assessment and treatment of deaf sex offenders. The article also provides guidance regarding the delivery of an SOTP for the deaf with much of this input also applicable to other interventions.

The literature also suggests that interpreters may be particularly vulnerable to vicarious trauma (Austen & Jeffery, 2007) and overidentification (Napier & Cornes, 2004). This may be of particular relevance to secure environments given the challenging behavior sometimes exhibited or turbulent life histories discussed in therapy, of some patients in these settings. Due to the subtle communicational dynamics and speed of communication of hearing groups and differing cultural knowledge base, Glickman (2003, p. 8) warns against the "illusion of inclusion" when an interpreter is provided for a deaf patient in a hearing group program.

DISCUSSION

The proper identification of patient psychological need is a key consideration in resource allocation. One of the factors making identification of such psychological need difficult in this patient group is the various distinct and overlapping terminology used to describe this population. With categorization made difficult from the outset for this reason it follows that assigning particular areas of psychotherapeutic need to imprecise subgroups within a population becomes a challenge. Researchers could overcome this challenge by ensuring that key variables such as severity and onset of deafness

TABLE 5
Studies Relating to Treatment and Deafness

Study	Control Sample	Deaf Sample	Methods	Sample Information	Prelingual or Postlingual Deafness	Type of Study/Country of Study	Results
Arana et al. (1978)	-	1	Case Study	Deaf female psychiatric patient	Prelingual	U.S. study. Case study illustrating difficulties in treatment and review of literature concerning deaf developmental issues.	-Treatment expectations have to be adjusted to accommodate the extra time required.
Rothfeld (1982)	-	1	Case Study	Deaf male psychiatric patient	Prelingual	U.S. study. Case study and description of new treatment program for the deaf.	-Deaf patients comprehend little in hearing groups. -Suggests group work is most effective with deaf peers.
Sylvester et al. (1986)	-	-	-	-	-	U.S. study. Descriptive. Review of literature relating to the treatment of alcoholics who are deaf.	-Only three empirical studies were found. -Recommends use of film with subtitles rather than films translated by an interpreter.
Guthmann & Sandberg (1995)	-	-	-	-	-	U.S. study. Descriptive. Review of barriers to substance misuse treatments for Deaf and hard of hearing adolescence. A Minnesota-based chemical dependency treatment program for this group is described.	-Integrating deaf people into hearing programs using interpreter provision does not work for most. -Emphasizes the importance of using visual methods.
Bramley (2007)	-	-	-	-	-	UK study. Review. Descriptive. Deaf forensic mental health needs. Deaf sex offender treatment program.	-Questions need to be framed in a concrete way. -No assumptions must be made about the understanding of social norms. -Clarification and repetition are vital. -Significant time must be taken to fill gaps in knowledge.

Note. - = not applicable.

and cultural affiliation are always reported in studies. Cultural affiliation is an important consideration in terms of identifying deaf patient need because patients may prescribe to the Deaf cultural model of deafness or the medical model. This may be predictive of certain attitudes or opinions that may impact on interventions and patient care. In relation to this the Pajmans-Baines Model (Baines, 2007) may prove useful in further describing this cultural affiliation in a way that may predict certain points of disagreement or contention that may arise during a patient's stay in secure facilities or during interventions. This may also be a useful resource to aid in case formulation and therefore guide the treatment of deaf patients.

The review of the literature of offending and deafness suggested that the deaf appear to be overrepresented in conditions of high security. It was also suggested that this may be as a result of inadequate care provision in conditions of lower security. If this assertion is correct then it obviously points to a need of certain patients in high-secure settings to be relocated to settings that are more congruent with their current risk level. Another consideration that follows from this is that certain patients may have undue restriction placed on them, which may impact negatively on the speed of their progress. If there are patients identified that may be more suitable in conditions of medium security then every effort must be made to ensure the stability of their current progress

so they may be transferred to appropriate settings as soon as they are available.

The research that suggests that deaf patients may be over-represented in offending populations as a result of the insufficient transfer of social information during development may point to a general patient need in high-secure settings to provide patients with that information (e.g., social norms, the law, etc.). It is likely that interventions would benefit from focusing their attentions on this area of weakness highlighted in the literature.

The research that suggests there are higher rates of violent offending, particularly sex offenses, in deaf offenders compared with hearing offenders may point to a particular treatment need of patients in high-secure settings. This may suggest a need to develop adequate violent offender and particularly sex offender treatment programs for the deaf. More research however, is required in this area as it is possible that this different pattern of offending shown is a result of differing treatment for the deaf in the criminal justice system. For example, the paternalistic treatment of deaf offenders identified in the literature (Hindley et al., 2000) may result in deaf individuals who commit lesser severe crimes to not enter the criminal justice system. This may have the effect of inflating the relative proportion of sex offenders in deaf offending populations, as currently evident in the literature. This interpretation has also been argued by other authors (e.g., Miller & Vernon, 2001).

Even if this finding is simply a result of a differing treatment by the criminal justice system the various theories identified in the literature, to account for this different pattern of offending, may still be a useful starting point in guiding the development of specific interventions for the deaf. For example, the higher incidence of sexual abuse identified in the deaf as a possible contribution to offending behavior in deaf sex offenders (Freund, Watson, & Dickey, 1990) may represent a specific treatment need. In addition, interventions could focus on providing deaf patients in high-secure settings with alternate strategies for impulse control (Chess and Fernandez, 1980). In addition, treatments could focus on patient understanding and recognition of social feedback regarding sexual behavior (Denmark, 1994). However, there is still a limited evidence base if adequate treatment for deaf offenders is to be developed. Miller and Vernon (2003) warn against the simple generalization of "hearing" offending theories to the deaf. Even though the above causal factors are similar to those regarding theories of hearing sex/violent offending causation they may require different treatment approaches.

Further research is required as to the presentation of mental illness in the deaf. Lane (1993) suggests that the contradictory findings from prevalence studies represent "diagnostic mayhem" that leads to inappropriate categorization of deaf people that causes difficulty in service provision for this population. Deaf people appear to show similar levels of depression, anxiety, schizophrenia, and possibly personality

disorder. As a result there will be a need for any centralized specialist deaf psychiatric service, including high secure, to have staff familiar with these disorders. There will need to be adequate training for staff so as a team there is adequate depth and breadth of knowledge and skills. There is a pressing need for more research into how the spectrum of mental illness interacts with deafness, the impact on presentation, and subsequent care needs. There appears to be a particular need for the deaf in terms of learning disability as a result of a higher prevalence in this population. This need could be addressed with the extended assessments of cognitive functioning, using deaf norms or repeated measures, as well as individualized treatment pathways.

The literature suggests that the assessment of the deaf is challenging as a result of a number of factors and impacts greatly on the areas of research discussed above. Researchers and clinicians should be aware of a number of sources of measurement error when assessing deaf. These sources of error arise from the limited language ability of patients, subtle semantic and grammatical differences between most naturally occurring sign languages and the local spoken/written language, interpreter complications, cultural differences, and many other sources. There is an evident need to develop new or successfully modify existing measures ensuring that reliability and validity are adequately established. Even if this need was met it is advisable when assessing the deaf to triangulate a number of sources of evidence when making decisions that impact patient care, to avoid being misled by the manifest sources of error present in deaf assessments. This point is particularly pertinent when considering, in high-secure settings, that psychometric assessments can impact on decisions that decide if people are to remain incarcerated. For example, there is a pressing need to research static risk factors for the deaf as it is likely that current risk measures (e.g., HCR-20, PCL-R) may over- or underestimate levels of predicted risk. It has been pointed out in the literature that diagnoses, while being useful methods of categorization, can also function as instruments of social power when misused (Austen & Jeffery, 2007). The deaf would appear still to be at a particular risk of suffering the consequences of misdiagnosis.

There is a very limited literature relating to interventions with the deaf. This limited literature may result from a reluctance of correctional facilities to embrace the provision of mental health treatment. The literature suggests that treatment expectations should be adjusted to accommodate the extra time required. This extra time may be required to fill gaps in knowledge across a number of domains and to facilitate translations when interpreters are required. The literature suggests that group programs are most effective for the deaf when they are delivered with other deaf peers. This supports the centralization of specialist deaf services as the literature suggests that placing deaf patients in hearing groups is ineffective. This evidence is largely anecdotal, however, as to date there have been no randomly controlled trials for

psychological treatments with deaf patients. There are particular issues of vicarious trauma when delivering interventions with deaf offenders as the disclosure of the details of crimes or abuse can be more distressing for facilitators, other group members, and interpreters, as a result of the visually expressive nature of sign language (e.g., use of mime). This may be a potential problem for groups with deaf and hearing patients and also those with deaf patients only. It is also suggested that the performance of offenders in group should be compared in different settings possibly as a result that evasive behavior can be easily mistaken for a communication difficulty.

From the above review of the literature it could be argued that there are two main factors that impede the development of an adequate knowledge base regarding deaf mentally ill offenders. The first is the complexity of problems experienced by this patient group. This complexity stems from the subtle interaction of psychosocial, physical, neuropsychological, communicational, and cultural factors that culminate in the distinct presentation of each member of this patient group. This complexity means that deriving an adequate case formulation, from the evidence presented, that can be used to effectively guide treatment is very challenging. The second challenge is the small population of individuals that are deaf, mentally ill, and currently reside in secure settings. This means that providing adequate sample sizes and suitable control samples for rigorous empirical investigation is not possible. It is true that the complexity of presentation and inadequate sample size are common themes in clinical research; however, in the case of this population they are arguably at an extreme. As a result of this extreme it can be seen that much of the current literature base examined here relies on descriptive and anecdotal accounts. However, there are some authors who have examined these problems for clinical/forensic research whose suggestions may ameliorate some of the challenges of researching this population. For example, Fisherman (1999) argues for the use of systematic case studies in applied psychological fields that can be used as practical resources for guiding interventions. This approach would emphasize the importance of the individual experience of Deaf patients and the minutiae of each case. It may be that a more qualitative approach rather than attempting to identify the general characteristics of this group, when there is insufficient order in the data available to achieve this, may be more useful to clinicians. "The group so flippantly referred to as 'deaf' is actually a patchwork of people with such wide-ranging physical, psychological and social experiences that any definition of deafness is virtually arbitrary" (Baines, 2007, p. 30). Given this it may be that a systematic case study approach is a viable future avenue for research into Deaf mentally disordered offenders.

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