

# An Investigation Into the Length of Hospital Stay for Deaf Mental Health Service Users

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This study looked at the average length of hospital stay for inpatients in a specialist deaf mental health service over a 10-year period, in comparison to that of a general psychiatric hearing cohort. In addition, two case studies of deaf inpatients were carried out looking specifically at the prerequisite factors governing discharge. Finally, a comparison of the types of community-based services available to deaf and hearing service users was undertaken in order to establish whether there was now a similarity of provision for both groups. The conclusion reached was that deaf inpatients are likely to remain in hospital twice as long as their hearing peers, but explanations for this difference may not necessarily be solely of a clinical nature. There is some evidence to suggest that social factors (i.e., a lack of appropriate community support, rehabilitation services, and provision) may have a negative impact on length of hospital stay. It is suggested that an increase in community-based services and provision may well shorten the length of hospital stay for deaf service users in the future. It is also recommended that further research into the relative effects of clinical versus social factors is considered.

There are approximately 9 million deaf or hard-of-hearing people in the United Kingdom, 50,000–75,000 of these being profoundly deaf and whose first language is British Sign Language (BSL; Royal National Institute for Deaf People, 2003). With only three deaf mental health service units across the whole of the United Kingdom, the provision of an appropri-

ate service (i.e., one that can offer clients a signing environment and an appreciation and understanding of the culture and experience of deaf people) largely depends on geographical location. Prior to these services, deaf mental health service users were treated in hearing hospitals where a lack of resources, knowledge, and understanding of their life experiences, often with little or no communication, resulted in a very limited service provision with dire consequences for many.

For the purpose of this paper, all references to deaf people will use a lower case *d*. This is not out of disrespect of those who embrace deaf culture, who are generally referred to using an upper case *D*, but out of a personal preference by one of the authors who believes that his deafness should not separate him from any other human being.

Deaf people are considered to be generally more at risk of suffering long-term mental illness than hearing people (Hindley, Hill, McGuigan, & Kitson, 1994; Vernon & Daigle-King, 1999) and this, it could be argued, is demonstrated by a longer than average length of hospital stay for this cohort when compared with hearing mental health inpatients. However, Griggs (2004) suggested that the epidemiology of mental disorder among deaf people is complex. Misdiagnoses, lack of appropriate services, and deaf service users' mistrust of hearing professionals are some of the problems that result from a lack of awareness and understanding of the cultural aspect of deafness and mental health. Over the past 30 years, three

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specialist mental health service units for the deaf have been established in the United Kingdom. It is suggested that the impact of specialist services for deaf mental health service users should result in an improvement in the length of hospital stay of deaf inpatients.

Although past research has shown a relationship between being deaf and the length of hospital stay for mental health inpatients (Appleford, 2003; Basilier, 1973; Iqbal & Hall, 1991; Remvig, 1969; Timmermans, 1989), there has been considerable variation to the reported average length of hospital stay for this unique group. This variation was highlighted by Vernon and Daigle-King (1999) in their overview of inpatient care, which demonstrated conflicting reports ranging from no differences between the length of hospital stay for deaf and hearing mental health inpatients (Daigle, 1994; Robinson, 1978) to significant differences (Basilier, 1973; Denmark, 1985; Remvig, 1969; Timmermans, 1989). In addition, there would appear to be huge discrepancies in the actual average lengths of stay of deaf inpatients, ranging from 54 days (Appleford, 2003) to over 20 years (Basilier, 1973; Timmermans, 1989). However, the most commonly quoted figure is that reported by Timmermans who claimed that the average length of hospital stay for a Deaf inpatient was 19.5 years compared to 148 days for a hearing inpatient.

The principal objective of the current study therefore was to determine whether this extreme ratio between deaf and hearing mental health service inpatients' average length of hospital stay (i.e., that suggested by Timmermans, 1989) is still relevant 20 years later. In addition, a secondary objective of this study was to explore some of the factors governing the length of hospital stay for Deaf inpatients that may account for any difference.

Denmark House (based within Queen Elizabeth Psychiatric Hospital, Birmingham) now known as the National Deaf Mental Health Service (Birmingham), Birmingham & Solihull Mental Health Foundation Trust, is one of three tertiary mental health service units in the United Kingdom providing multidisciplinary assessment, inpatient treatment, and day care for deaf people aged between 18 and 65 years with mental health problems. It also runs outpatient clinics both in Birmingham and regional locations covering roughly one third of the United Kingdom.

## Methodology

We used the hospital database (E-pex) to establish our two cohorts (deaf and hearing) over a 10-year period between 1995 and 2005. The database is used to store a complete electronic record of all patients who are referred to the hospital (e.g., demographic information, personal information, all aspects of the treatment they receive, and personnel involved in their care). Our hearing sample was taken from general acute psychiatric wards and our deaf sample from Denmark House. In order to create comparable groups, we excluded all hearing patients from the high dependency ward, older adults, and specialty services (i.e., Mother and Baby Unit, Eating Disorders).

It should be noted that many patients from both cohorts had more than one stay in the hospital during this period. For the purpose of this study, the average length of stay was specifically for one episode of stay and not the total time spent in the hospital. However, it was felt appropriate to combine the length of stay figures for any inpatient that had been discharged and then readmitted within a 7-day period.

There were a number of patients (hearing  $n = 5$ ; deaf  $n = 1$ ) with exceptionally long lengths of stay and these were examined individually. As a result, four of the hearing patients were excluded as they were found to have spent most of their stay on other wards and only a short duration of their length of stay on a general psychiatric ward. The final sample size after these exclusions were deaf ( $n = 397$ ) and hearing ( $n = 8,606$ ). In order to include present inpatients, it was considered appropriate to adopt the statistical method of "survival analysis" which is a time-to-event analysis. This method of analysis is predominantly used in biomedical science studies but has also proved to be a useful tool both in social sciences and industry (Allison, 1984).

## Results

Log rank test confirmed a significant difference in length of stay between the deaf and hearing group ( $p < .001$ ).

The results (see Table 1) showed that whether or not we took the mean or median figure (Timmermans, 1989, had used a mean figure), the pattern of difference for deaf inpatients hospital stay was approximately twice as long as that for hearing inpatients. It could be argued

**Table 1** Results—Log rank test

|                                | Median  | Mean    | Timmermans' (1989) mean    |
|--------------------------------|---------|---------|----------------------------|
| Hearing<br>( <i>n</i> = 8,606) | 22 days | 52 days | 148 days                   |
| Deaf<br>( <i>n</i> = 397)      | 42 days | 97 days | 19.5 years<br>(7,117 days) |

that in comparison to Timmermans' study, with ongoing improvements to mental health provision, disability discrimination legislation, and introduction of community care policies in the United Kingdom and other European countries over the last 20 years (Timmermans' deaf and hearing groups were taken from two different regions in and around Belgium), a reduction in the average length of hospital stay for both groups is expected. However, there still remains a significant difference in experience between the deaf and hearing group.

#### Pattern of Difference Versus Actual Experience

Although the figures give a clear indication of a significant relationship between "deaf" and "length of hospital stay," it is suggested that the statistical figures for both deaf inpatients (mean = 97 days) and hearing inpatients (mean = 52 days) average length of stay represent the pattern of difference between the two cohorts. However, due to the effects of outliers (very short hospital stays and very long hospital stays for both groups), this may not necessarily represent a true interpretation of experience. At the beginning of the study (July 2005), it was noted that of the nine service users resident at Denmark House, four had been inpatients for over 12 months (>366 days), representing 44% of the total inpatients. When a comparison was made of the number of deaf and hearing inpatients whose period of stay was over 12 months on a particular day in 2005 and 2006, the results were strikingly different. For both years, approximately half of the total deaf inpatients' length of stay exceeded 12 months in comparison to the hearing group

**Table 2** Deaf inpatients

| Date      | Inpatients | Period of stay >12 months | Long stay inpatients as % of inpatients |
|-----------|------------|---------------------------|---|
| July 2005 | 9          | 4                         | 44%                                     |
| May 2006  | 8          | 4                         | 50%                                     |

**Table 3** Hearing inpatient group

| Date      | Inpatients | Period of stay >12 months | Long stay inpatients as % of inpatients |
|-----------|------------|---------------------------|---|
| July 2005 | 109        | 8                         | 7%                                      |
| May 2006  | 106        | 2                         | 2%                                      |

where less than 10% of inpatients' length of stay exceeded 12 months (see Tables 2 and 3).

#### Experience of Mental Health Services: Two Case Studies

Although significant results concerning length of stay have been found, the reasons for this are not known. In order to generate further hypotheses, two case studies were performed at Denmark House. The inpatients were given an explanation of the study and reassurances that their identity would be protected. Permission to include these in the write-up was granted by both.

*Case study (Patient A).* Patient A is male, late 50s with schizophrenia. He is a BSL user. He spent 13 years in a hearing environment hospital with little access to sign language and a social worker who signed but could only visit once a month. Patient A was very institutionalized on admission to Denmark House. He was referred to the service only after assaulting a member of the staff. After 2 years on the unit, he was considered ready for discharge. Length of stay at unit: 4 years (see Table 4).

**Table 4** Case study (Patient A)

| Provision required to enable discharge from hospital                        | Factors which prevented discharge from hospital  |
|---|--|
| High level of support in long-term accommodation due to severity of illness | Only one suitable accommodation in local area with no vacancies  |
| Close to family network as relatives are elderly                            | Only two other options, one in the north of England and the other in the south of England. The latter two options were both old people's accommodation and not really specific to his needs. |

Finally, after 4 years in our specialized deaf mental health unit and 13 years in a hearing hospital, a suitable follow-on placement was found. Patient A has now been at this establishment for 3 years and has not returned as an inpatient. He is reported to be doing well.

*Case study (Patient B).* Patient B is male, early 50s with schizophrenia. He has been known to the mental health services for approximately 20 years but at the time of the study (2005) had been an inpatient for 2 years.

Finding a suitable care/support package for Patient B proved problematic for various reasons. He could not be relied upon to take his medication at the correct time, so he needed a placement where a professional could monitor his medication. In addition to his housing needs, there were other services that were considered necessary for Patient B that were not accessible for deaf people (e.g., early intervention, crisis intervention, etc.). These services are not equipped to engage with deaf service users having little or no understanding of this group, their culture, their language, and so on, and the financial implications of providing the necessary training, equipment, and resources for a deaf client often hindered their implementation (see Table 5).

Eventually in 1996, Patient B was discharged and moved to supported accommodation locally. Unfortunately, this placement could not cope with his needs; Patient B became unwell and was returned to the unit after a couple of months. Another placement has been organized for Patient B, which, it is hoped, will prove to be more suitable. He is currently unwell, but once his condition stabilizes, he will be discharged. In total, Patient B has spent most of the last 5 years as an inpatient on our unit.

### Comparison of Services

Discharge for both Patient A and Patient B was delayed quite considerably due to difficulties in finding suitable placements and care packages within the community. In order to understand the clarity of the problem with regard to community-based provision, a brief investigation was carried out. Table 6 shows a comparison of community-based services available in the geographical area for deaf and hearing clients. Although it

**Table 5** Case study (Patient B)

| Provision required to enable discharge from hospital                               | Factors which prevented discharge from hospital   |
|--|---|
| Suitable accommodation with appropriate support/care package to meet clients needs | Patient was originally unwilling to accept a residential placement within a culturally appropriate environment as he wished to live independently   |
| Wanted to live in Birmingham area  | Support care package difficult due to large number of support services that would need to be involved, many of which do not cater for deaf service users (e.g., drug/alcohol team, early intervention, local mental health drug centers)<br>No financial backing from local authority for residential placement |

is meant as a comparison for deaf and hearing, it should be noted that the geographical areas represented for hearing and deaf service users are quite different, for example, hearing services users regional area is based just within the Birmingham and Solihull area, whereas deaf service users regional area covers approximately a third of the United Kingdom.

Table 6 shows a vast difference in services accessible to hearing service users compared to their deaf peers. It was noted that the only service available for deaf service users was one local mental health day center located in the Birmingham area. However, when consideration is given to the geographical coverage of

**Table 6** Comparison of services

| Community services             | Hearing | Deaf |
|--------------------------------|---------|------|
| Homelessness                   | Yes     | No   |
| Rehabilitation and respite     | Yes     | No   |
| Rapid crisis response          | Yes     | No   |
| Local mental health day center | Yes     | Yes  |
| Early psychosis intervention   | Yes     | No   |
| Assertive outreach team        | Yes     | No   |
| Alcohol/drug service           | Yes     | No   |

this service (i.e., a third of the United Kingdom), it cannot be described as “local,” this is very restricted due to numbers, and in many cases is inaccessible.

When considering the move toward a more community care approach to mental health that has occurred over the last 20 years, any reduction in the length of hospital stay would be expected to be a reflection of this approach. However, although the overall figures for both groups (in comparison to Timmermans, 1989) would indicate that there has been a reduction in the length of time an inpatient will spend on an acute ward, it appears that deaf service users’ community care provision remains inequitable.

### Summary

This study set out to discover whether the length of stay in acute psychiatric inpatient units is different depending on whether a person is deaf or hearing. It found a significant statistical relationship between the two cohorts. An investigation to generate hypotheses for this difference was sought by (a) looking at the experience of two deaf inpatients in a mental health setting and (b) by comparing the community-based services available for both groups. Although it is recognized that very often deaf mental health service users present to the mental health service with very complex acute psychiatric disorders, this study has identified quite significant differences with regard to access to mental health services both before and after admission to an acute psychiatric unit; therefore, it could be hypothesized that the reason for longer hospital stays may not necessarily be purely clinical.

### Conclusion

The conclusion reached is that deaf inpatients’ average length of hospital stay is twice that of hearing inpatients. There would appear to be strong evidence to suggest that the length of hospital stay for a deaf inpatient may not necessarily be for medical reasons per se, but the consequence of a shortage of appropriate community-based services that meet the specific needs of deaf mental health service users. There are serious implications resulting from deaf service users spending longer than is necessary in a mental health facility (e.g., institutionalization, bed

blocking, financial, and noncompliance of legal obligations both local and national). When comparing the results of this study with those of Timmermans (1989), it suggests that the impact of specialized mental health services, improvements in deaf awareness, and the introduction of social and disability discrimination legislation (e.g. Disability Discrimination Act 1995 etc) over the last 20 years may have led to an improvement in the experience of deaf mental health service users. Whereas Timmermans’ study attributed the differences in outcomes of the deaf and hearing groups (i.e., length of hospital stay) as being wholly a problem of communication and understanding during clinical processes, this study suggests that a lack of community-based social needs (both before and after admission into a specialized hospital) may well negatively impact the length of time spent as an inpatient. Further research is recommended to look at the anatomy of service users’ hospital stay, including availability of specialized posthospitalization placements. However, it is suggested that an increase in local resources/accommodation accessible to deaf people may go some way to reduce the difference between the length of hospital stay of deaf and hearing service inpatients.

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