

Length of Psychiatric Inpatient Stay: Comparison of Mental Health Care Outlining a Case Mix From a Hospital in Germany and the United States of America

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Abstract

Background: It is documented in the literature that inpatient stay is shorter in a general hospital in the USA compared to Germany. The aim of this study was to compare psychiatric inpatient stay in a hospital in the USA to a hospital in Germany, focusing on major psychiatric diseases and suggesting possible differences.

Methods: The data was collected from 1996 until 2001 at the Charity Hospital in New Orleans, United States of America and the Medical School of Hannover, Germany. The information regarding length of hospital stay was obtained from the hospital's internal database between 1996-2000 with a total number of 11937 in the USA and 5544 patients in Germany (study I). To focus on the possible cause additional data (study II) was collected from 12 patients on an inpatient ward in each country on demographic data.

Results: The average inpatient stay for mental health patients were significantly shorter in the USA, Charity Hospital compared to Germany, Medical school. In the USA the average stay for patients with schizophrenic disorders was 21(+5.42) days (Germany; 37 days +4.18), with bipolar disorder 15 +6.23 (40 +7.71) days and with major depression 11+3.37 (51+10.54) days. Nevertheless the data (study II) revealed that psychiatric patients in the USA were not discharged with severe psychopathology.

Discussion: Shorter length of stay is probably caused by cultural differences and discharging patients to aftercare facilities sooner. However, the main difference originated in the diversity of health system and the pressure on doctors to discharge patients much earlier (German J Psychiatry 2008;11: 40-44).

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Introduction

This study emphasizes on the difference between the length of stay of psychiatric patients in a hospital in Germany and the USA. In the USA, the average general inpatient treatment has been continually decreasing over the years after the introduction of case payment in the 1980's. In 1994, the duration of inpatient treatment ranked between 9-11 days (Heeren et al., 2002). In Germany

the average psychiatric inpatient stay in 1994 was approximately 45 (Bundesministerium für Gesundheit. 1997) and 33 days in 1997 (Bundesministerium für Gesundheit. 1999). In 1990, in the USA the length of stay was approximately 7.3 days and in Germany around 12.6 days (Stapf-Fine et al., 2003). The purpose of the study is to determine whether in psychiatric inpatient stay in the Charity Hospital and the Medical School were significantly shorter and to examine the possible cause. Three major psychiatric diseases were identified and examined for possible differences on psychological

testing, inpatient stay variables, and post-discharge aftercare. Therefore, the goal of this study is to determine whether the identified differences depend on the effect of variances in the health care systems, the psychiatric aftercare, the structure in the hospital, the sample of patients and the treatment or if it is a combination of all of these variables.

Methods

Detail Information was gathered concerning both health systems and psychiatric stay in general on the internet and published articles. The *International Classification of Disease*, 10th Revision (ICD-10) and the *Diagnostic and Statistical Manual of Mental Disorder*, Fourth Edition (DSM-IV) were used in this study. The data for this study was collected at the Charity Hospital in New Orleans, United States of America and the Medical School of Hannover, Germany. The data (study I) in New Orleans and in Hannover were obtained from the hospital's internal database from 1996 to 2001 (USA: N=11937 and Germany: N=5544). To focus on the more detailed reason for the differences additional data (study II) was collected on an inpatient wards (N=24) during two month in 2001 on demographic data in 2001. The first 12 patients admitted with the diagnosis of schizophrenia (N=4), major depression (N=4) and bipolar affective disorder (N=4) were included. Informed consent was obtained from those patients. The variables were age, gender, race and legal status, number of previous admissions, treatment, aftercare and length of stay. Patients with other disorders or primary substance abuse were excluded. Various psychiatric tests were used to describe the severity of illness on admission and before discharge.

Measures

For patients with a bipolar disorder (manic episode) the BRMAS (Bech-Rafaelsen Mania Scale) was used for patients with a depressed episode the MADRS (Montgomery Åsberg Depression Scale), HAMD (Hamilton Depression Scale), BRMES (Bech-Rafaelsen Melancholia Scale) were used. The BPRS (Brief Psychiatric Rating Scale) was used for each patient. The psychiatric rating scales were completed within the first two days of admission and before expected discharge. The statistical version of SPSS 9.0 (Statistical Package for Social Sciences) was used to divide the samples from each country into two groups.

Results

The United States spend a larger share of the GDP on health than does any other major industrialized country. In 2002 the United States devoted 14.7 percent (\$5,324 per capita) of the GDP to health compared to 10.6 percent (\$2,883 per capita) in Germany. In 2002 \$ 89,4 billion (7%) were spend

on mental health services (www.samhsa.gov) around 24% of these expenses were for inpatient settings, 34 percent in outpatient setting, 19 percent on retail purchases of prescription drugs, and 16 percent in residential setting. In 2003 the spending per capita on mental health treatment rose to \$345 in the USA (Mark et al, 2007). In 2002 in Germany 21,522 million Euros (9.8 %) were spend on mental health care, that is 260 Euro per capita (www.destatis.de). From these expenditures there are 59% spend on inpatient setting and 28% on outpatient setting but unfortunately the drugs are not counted separately in this statistic as in the USA (Statistisches Bundesamt).

In general, it is difficult to encounter the exact payment for psychiatric health services in both countries because there are so many different funding services, such as retirement services, private, insurance companies, the statutory sickness funds and general taxation.

There are approximately 5 inpatient beds for 10,000 inhabitants in Louisiana. In Lower Saxony, 6 beds are available for mentally ill patients. In the USA there are almost twice as many private psychiatrists working on an ambulatory basis than in Germany. Both Hospitals are teaching hospital.

Study I

11.937 patients were treated between 1996 and 2000 in the Charity Hospital with an average length of stay of 13 days, 946 (7.9%) were diagnosed with bipolar disorder, 700 (5.9%) patients were diagnosed with major depression and 1495 (12.5%) patients with a schizophrenic disorder. In Germany, 5544 patients were treated during the period 1996-2000 at the Medical School of Hannover, 319 (5.7%) patients were diagnosed with a bipolar disorder, 212 (3.8%) patients with a diagnosis of major depression and 586 (10.6%) patients with schizophrenia.

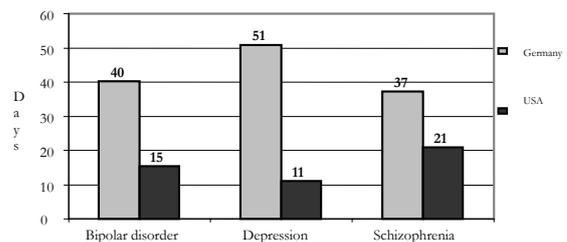


Fig. 1: Presentation of the average inpatient stays in mean days from 1996 until 2000 in the USA and Germany.

There was a significant difference in average stay for patients with schizophrenia in the USA (20.92 +5.42) and Germany (37.29 +4.18; $t=-6.011$, $p<0.000$). There is also a significant difference for patients with bipolar disorder in the USA (15.37+6.23) and in Germany (40.31 +7.71; $t=-7.948$, $p<0.000$). In addition there is a significant difference be-

tween patients major depression comparing the USA (11.14 +3.37) and Germany (50.85 +10.54; $t=-8.271$, $p<0.001$). The mean inpatient stay shows a significant difference in the length of stay when comparing the complete data from both countries ($t=-13.093$, $p<0.000$).

Study II

Additional information was collected from a smaller sample to provide more and detailed information on the status of patients during inpatient stay and to focus on the reason for this difference. Comparing the average inpatient stay including all three groups of schizophrenic, bipolar or depressive diagnosed patients, the average stay is 42,17 \pm 12,8 days in Germany and 14,67 \pm 7,46 days in the USA. This reveals a significant difference ($t=4,135$, $p<0,01$). A comparison of the average inpatient stay of patients in Germany ($n=12$) and the USA ($n=12$) reveals that the average stay is 42.17 \pm 12.8 days in Germany and 14.67 \pm 7.46 days in the USA. This reveals a significant difference ($t=4.135$, $p<0.01$). The smaller sample reveals almost the same length of stay as the internal database for each subdivision.

There is a reduction in psychopathology of 53% in Germany and 50% in the USA. The mean score of the BRMAS on admission for both countries are similar (28.50 in the USA and 27.00 for patients in Germany). In the USA there is a reduction of psychopathology (44%) and in Germany a reduction of (47%). With the other test, namely, the HAMD, there is a reduction from 80% in Germany and 79% in the USA, but there is no significant difference ($p=0.05$) between the psychopathology of the patients in each country. In the USA 58.3% of the patients stay on a formal voluntary admission and 41.7% through judicial judgment. In Germany, around 66.7% of the patients stay on a voluntary status and 33.3% through judicial judgment. The average age of the patients at time of admission is 37 \pm 10.53 years in the USA and 45 \pm 17.48 years in Germany. In the United States 50% of the patients had numerous admissions in the past in comparison to 33.3% in Germany, but the difference was not significant ($t=-0.777$, $p=0.446$). In the USA 66.7% ($N=8$) and in Germany 8.3% ($N=1$) patients had a history of substance abuse. In the USA, 50% (Germany 25%) of the patients are discharged without any planned after care and 33% of patient of both countries were referred to an outpatient clinic. Comparing the setting on the ward, the study reveals there is a different way to handle smoking habits on the ward. In Germany, patients are allowed to smoke on the ward. Patients in the USA are not allowed to smoke on the ward, instead they receive a nicotine patch application. Patient in the USA are also not permitted to have overnight leave to evaluate if they feel comfortable enough to be discharge.

Discussion

This study reveals significant differences in the length of inpatient stay. But what is the reason for such a difference?

Is it at all possible to transfer some of the differences found in the USA to the German system of inpatient treatment? The WHO states that it is possible to compare the health system of the USA to countries like Germany, Luxembourg and Switzerland. Evaluating these two systems it reveals many ideas on how to transpose medical know-how into practice, how to secure matching quality in medical treatment, and how to have a responsible and a well informed patient who can take a part in his own treatment plan. However, it is generally not assumed that length of stay figures in hospitals can be used as indicators of efficacy of inpatient treatment alone (Richter, 2001). The results of this study demonstrate that the patient-related predictors (e.g. demographic information and scores on measures of psychopathology) of length-of-stay (comparing the USA and Germany) are consistent for both countries.

Another important question arises – is the difference of length of hospitalization due to diverse cultures or health system? Some studies make it clear that culture is fundamental both to cause and course of psychopathology and to the effectiveness of the system of healing. Mental health services in multicultural societies have followed different models that reflect specific histories of migration and ideologies of citizenship (Townsend et al., 1975). Townsend reviews the difference between Germany and the USA in several studies and concludes that German patients generally agree that mental illness is endogenous in origin, relatively incurable and less subject to environmental influence. In contrast, Americans generally believe that the individual is partially responsible for his condition and with the proper help and motivation he can improve. Generally, American psychiatrists tend to find environmental factors and patient motivation more important than do their European counterparts. The stereotypes of mental illness profoundly shape the symptoms of mental illness in the USA (Townsend et al., 1975). This could lead to the hypothesis that American patients ask the doctors to be discharged because they view their discharge as being their own choice and depending on individual motivation (Townsend, 1978). In the USA patients press the doctor to be discharge where in Germany the patients wait for the doctor to tell them that they are prepared to be discharge. Townsend states in his own studies that German patients believe only the doctor can decide whether or not a patient can be released. In the USA the patients are more or less responsible for their discharge. But another reason should be considered because patients in Germany have longer sick day entitlement. Focusing on sick day entitlement in the USA, the latest annual Compensation Data survey found that employees had an average of 8.4 sick days a year. This means they are more pressured to leave the hospital to go back to work. Analyzing this question further would be a subject for other studies. It is difficult to compare the difference in finance of mental health and expenditures per capita. The USA spends \$345 per capita on mental health and Germany 260Euro (= \$254) but interestingly Germany spends much more on inpatient setting then the US, which could indicate that there are more outpatient facilities available but this should be analyzed in further studies (Mark et al, 2007, www.destatis.de).

The difference in drug use may be due to the different metropolitan area because in New Orleans the use of substance

abuse is higher than in Hannover. Another possible reason for leaving the ward sooner could be that patients in the USA feel under pressure due to craving for cigarettes. Heiligenstein et al. found that nonsmokers compared to heavy smokers report substantially poorer well-being, greater symptom burden, and more functional disability (Heiligenstein et al., 2006). There is no significant difference between the psychological testing of the three groups of psychiatric patients in Germany and the USA. That means that even though the psychiatric patients in the USA have shorter inpatient stays, the psychopathology of the patients reveals no significant difference. This indicates that another reason may be found to explain why patients in Germany are hospitalized longer than those in the USA. One possible difference between the two health systems is that during the inpatient stay in the USA the patients are transferred faster to aftercare facilities and therefore long waiting time can be avoided. On the other hand, in the USA 50% of the patients were discharged without any planned after care (Just 25% in Germany). But then in the USA there are almost twice as many private psychiatrists working on ambulatory basis. This study reveals also a difference in the availability of social work. In the USA two social workers take care of the same number of patients as compared to one social worker in Germany. In the United States 50% of the patients had numerous admissions in the past, in comparison to Germany with only 33.3%. It appears that patients from the USA are admitted into hospital more often than patients in Germany. This finding suggests that the shorter inpatient stay influences re-admission to a psychiatric hospital. The relationship between length of stay and readmission risk has gained considerable interest and should be reviewed in a larger number of patients in future studies. Short inpatient stays lead to a higher risk of re-admission and other negative effects, like extended number of suicides and subjective feeling of not having time to recover. On the other hand, extended inpatient treatment has not only positive effects on the health status of each patient and considering the economic consequences, there is a need for further discussion (Richter, 2001).

Conclusion

The study has several possible limitations because the sample of study II is too small to reveal any significant results and can just discuss trends in those hospitals. Secondly, it is doubtful if those two hospitals can be compared at all because of the different population while in New Orleans there are more patients with a dual diagnosis. And even though this study tries to outline the difference in length of inpatient stay it should not be forgotten that it is not always possible to decide which form of therapy is indicated -long-term - or short-term therapy - by the consideration of nosography alone. The medical system in the USA is typically restricted by guidelines specifying optimal outpatient treatment times and delineating times for inpatient treatments. On the contrary, the German medical system is characterized by fragmentation which is caused *inter alia* by partially autonomous compensation systems of medical care which often provoke

intrinsic inefficiency. In additional studies, the readmission of shorter inpatient stays should be reviewed.

Most of the time the discussion centers upon the most efficient way to reduce costs, this study reveals that if countries want to shorten their length of stay they should employ more social workers on the ward to enable a faster transfer to after care facilities. Due to the higher number of private psychiatrists in the surrounding district in the USA, it is possible to link patients better to after care. Therefore this should also be considered to decrease length of stay in psychiatric hospitals. But future research should highlight the effect of other after care facilities such as outpatient clinics even further.

References

- Bundesministerium für Gesundheit. Daten des Gesundheitswesens. Schriftenreihe des Bundesministeriums für Gesundheit Bd. 122. 1997. Baden-Baden, Nomos.
- Bundesministerium für Gesundheit. Daten des Gesundheitswesens. Schriftenreihe des Bundesministeriums für Gesundheit Bd. 122. 1999. Baden-Baden, Nomos.
- Heeren O, Dixon L, Gavirneni S, Redenold W. The association between decreasing length of stay and readmission rate on a psychogeriatric unit. *Psychiatr Serv* 2002; 53(1):76-79.
- Heiligenstein E, Smith SS. Smoking and mental health problems in treatment-seeking university students. *Nicotine Tob Res.* 2006 Aug;8(4):519-23.
- Mark T, Levit K, Buck J. Mental Health Treatment Expenditure Trends, 1986–200. *Psychiatr Serv* 58:1041-1048, August 2007.
- Mechanic D, McAlpine D.D., Olfson M. Changing patterns of psychiatric inpatient care in the United States 1988-1994. *Arch Gen Psychiatry* 1998; 55:785-791.
- Richter D. Die Dauer der stationären psychiatrischen Behandlung. *Fortschr Neurol Psychiat* 2001; 69:19-31.
- Statistisches Bundesamt, Zweigstelle Bonn, Gruppe VIIIA-Gesundheit, Bonn. www.destatis.de.
- Townsend JM. Cultural conceptions, mental disorders and social roles: a comparison of Germany and America. *Am Sociol Rev* 1975; 40(6):739-752.
- Townsend JM. Cultural conceptions and mental illness. A controlled comparison of Germany and America. *J Nerv Ment Dis* 1975; 160(6):409-421.

Townsend JM. Cultural conceptions and the role of the psychiatrist in Germany and America. *Int J Soc Psychiatry* 1978; 24(4):250-258.

United States Department of Health and Human Services, Substance Abuse and Mental Health Service Administration (SAMHSA). www.samhsa.gov