The National Hospital for Neurology and Neurosurgery and Functional Seizures: A Historical Perspective Using a Collective Case Analysis of Archived Records From 1895 to 1946

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Introduction:

Functional seizures are paroxysmal events characterized by altered states of consciousness, behaviour, or repetitive movements. Although their appearance may resemble other types of seizures, such as epilepsy or syncope, they are not the result of excessive neuronal hyper synchronization or cerebral hypoperfusion.

- Functional seizures are a commonly occurring type of functional neurological disorder frequently encountered in clinical practice.
- Functional seizures have a rich historical background, with documented cases dating back to ancient civilizations such as Babylon. They have been referred to by different names, including hysterical, psychogenic, or dissociative non-epileptic seizures.

Table 1: Historical Overview.

Time Period	Description
Ancient Times	Descriptions of seizures and possession in ancient texts e.g., Babylonian "Šurpu" texts; Ebers Papyrus; Edwin Smith Papyrus
Hippocratic Era	Hippocrates differentiates between "sacred" and "natural" diseases in his treatise "On the Sacred Disease"
Medieval Europe	Seizures attributed to supernatural causes, such as possession by demons or witches in the Malleus Maleficarum, a treatise on witchcraft
19th Century	Development of the concept of hysteria and the use of hypnosis to treat seizures by Jean-Martin Charcot and his colleagues at the Salpêtrière hospital
Early 20th Century	Proposed psychological and psychodynamic theories for functional seizures by Sigmund Freud, Pierre Janet, Georges Gilles de la Tourette
Mid-20th Century	Early studies on the neurophysiology and diagnosis of functional seizures by Stanley Cobb, Harold Wolff, Lord Brain
Late 20th Century 21st Century	Lack of attention and research on functional seizures Current research on diagnosis, treatment, and multidisciplinary approaches by Jon Stone, Markus Reuber, W. Curt LaFrance, Alan Carson, Laura H. Goldstein

Aims:

- To conduct a qualitative analysis of the archived records of patients with functional seizures from the National Hospital for Neurology and Neurosurgery (NHNN) between the years 1895 and 1946.
- To assess the historical approaches of clinicians to patients with functional seizures and to examine how these approaches evolved over time.
- To gain insights into the themes and patterns related to functional seizures from the qualitative analysis of the patient records.
- To contribute to the understanding and treatment of functional seizures by providing a historical perspective on the management of this condition.

Background:

- The National Hospital for Neurology and Neurosurgery (NHNN) was founded in 1859 as the first hospital in England exclusively dedicated to treating nervous system diseases.
- The NHNN has a rich history in the field of neurology, with many pioneers of British and European neurology based at the hospital.
- These pioneering neurologists provided care for patients with functional seizures, among other neurological disorders.
- While many of these historical figures published articles on functional seizures and other neurological disorders, the raw case files of their patients have not been systematically analysed.
- A systematic analysis of these historical case files could provide valuable insights into the diagnosis and treatment of functional seizures, as well as the history of neurology at the NHNN.

Fig. 1: Queen Square Consultants in 1906.

Fig. 2: Hospital Image.

Fig. 3: George Porter Ward.

General & Background Assessment	Family History	Previous History	Past Illnesses	Present Illness	Presenting Condition
Mental & Physical Assessment	Subjective Experience	Objective Observations	Senses, Cranial Nerves, Sensation & Reflexes	Internal Organs & Associated Systems	Others: Gait, Sphincters, Urine
Other Assessments & Extras	Observations of an Attack	Frequency of Seizures Table	Physical Measurements Chart	Additional Notes	Treatment Page

Table 2: Different assessments of patient data and characteristics undergone in the case file.

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The phenomenology of functional seizures

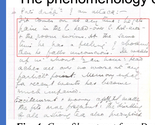


Fig. 4: Case file extract from Dr Bastian in 1901.

The phenomenology of functional seizures

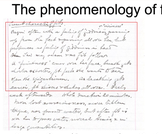
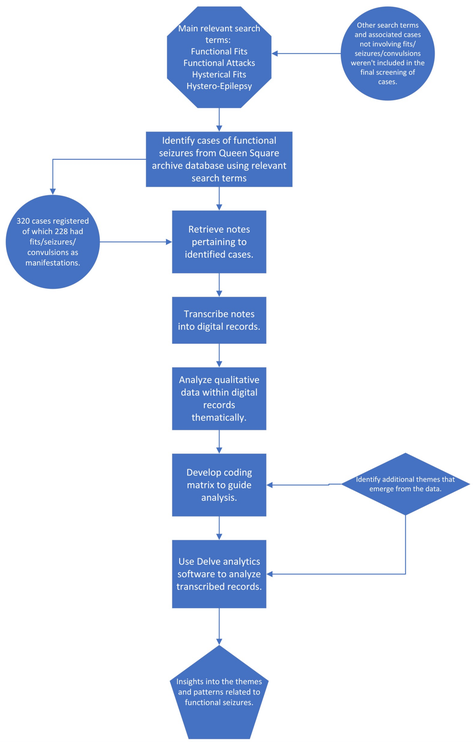


Fig. 5: Case file extract from Dr Beevor in 1896.

- In contrast to prevailing clinical reports, a considerable repository of data exists within archives documenting patients' authentic experiences with seizures.
- It is important to acknowledge that each patient's unique circumstances and personal history may contribute to the development and manifestation of functional seizures.
- The aforementioned observations are underscored by two pertinent examples that demonstrate the diverse and complex symptomatology of embodied symptoms that can manifest in patients with functional seizures.

Methods:



Results:

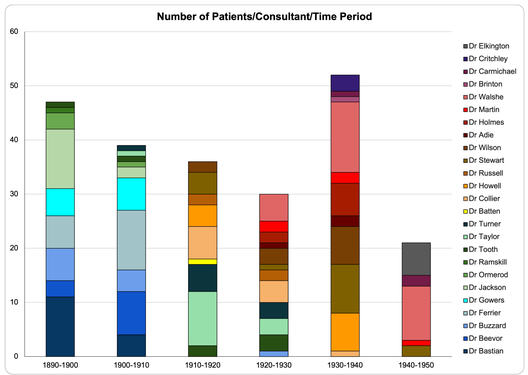


Fig. 6: Number of patients/colour-coded consultants in 6 distinct time periods from 1890 to 1950.

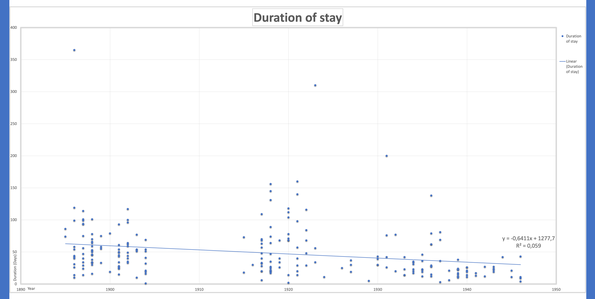


Fig. 7: Scatter plot of the duration of stay in hospital for each case with a linear trendline from 1895 to 1946.

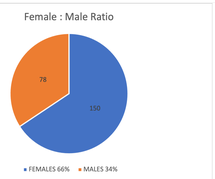


Fig. 8: Gender distribution of patients.

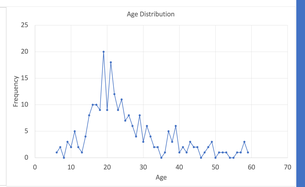


Fig. 9: Age distribution of patients.

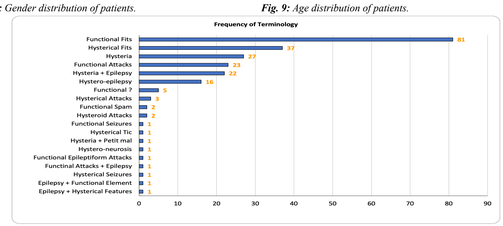


Fig. 10: Frequency of terminology used throughout the case files.

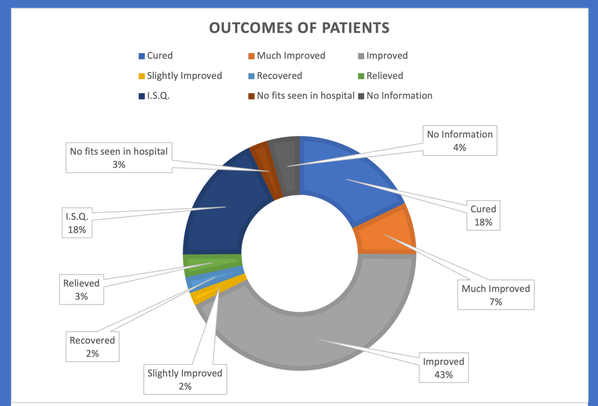


Fig. 11: Distribution of patient outcomes in the case files.

Conclusion

- Historical case files of functional seizures offer valuable insights into the evolution of medical understanding and serve as a rich data source for future research.
- Examining the historical context of functional seizures enhances our understanding of changing medical and societal attitudes towards this condition.
- The National Hospital for Neurology and Neurosurgery played a pivotal role in the development of British and European neurology, emphasizing the need for ongoing investment in functional seizure research and treatment.
- Our exploration of the history of functional seizures aims to increase awareness, empathy, and support for those affected by this condition.
- Our research highlights the relevance of historical records in advancing our understanding of neurological conditions and underscores the importance of collaboration between historians, clinicians, and researchers.

References:

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