Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/dxf2vn07

PREDICTORS OF LEAVING AGAINST MEDICAL ADVICE IN NEUROSURGERY: A PROSPECTIVE STUDY

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Abstract

Objectives: This study aims to identify key predictors of leaving against medical advice (LAMA) among neurosurgery patients by analyzing various demographic, social, and clinical factors to inform healthcare policies and improve patient management.

Materials and Methods: In the present investigation, a prospective study was carried out at a single neurosurgical centre **Department of Neurosurgery, MTI, Lady Reading Hospital, Peshawar in the duration from 1st January, 2023 to 31st Decembr, 2023**. The study duration was There were 350 patients admitted for neurosurgery, and focused variables included age, gender, socioeconomic status, and rehabilitation facility access. LAMA was operationally measured as those patients who were discharged early from the hospital without the appropriate treatment.

Results: Out of 350 patients, 38 (10.9%) discharged themselves early against medical advice. The most represented cause reported by the patient was TBI with 42%, followed by spinal cord injury with 29% and Brain Tumor with 16%. The data also showed that a majority of the LAMA patients were males (68%), and the majority were from the low-income group (76%). Hypothesis test results showed that two social determinants that had effects on LAMA decisions were lack of support (Mean = 2.71) and inadequate access to rehabilitation services (Mean= 2.62).

Conclusion: The present research examines the source of injury, socioeconomic status, and availability of rehabilitation as the main variables associated with LAMA. Removing these factors through specific actions could decrease LAMA rates and enhance neurosurgical results.

Keywords: Leaving against medical advice, neurosurgery, traumatic brain injury, social determinants of health, rehabilitation services, predictors of LAMA.

INTRODUCTION:

LAMA is a very sensitive and severe phenomenon that tends to occur frequently in neurological patients where the conditions are severe and warrant long rehabilitation. LAMA stands for an event in which a patient decides to be discharged from a hospital before the prescribed treatment duration or time or before being discharged by the doctor (1). Such behaviour not only puts the patient at severe risk of complications or readmission but also raises legal and ethical dilemmas for providers. Neurosurgical patients, because of the nature and gravity of their diseases, are not protected when they depart from medical treatment too soon. It is of great importance to know the factors that could make this scenario actuality in neurosurgical practice so that organizations could devise ways of preventing it and enhancing patients' well-being.

Previous work has focused on identifying variables that are associated with LAMA in the context of different medical disciplines. In neurosurgery, there are extra factors, including Socioeconomic position, rehabilitation facilities and even the intensity of the surgery Intervention. For example, Jacob et al. (2) conducted a multicenter European study and discussed that specific access to rehabilitation after traumatic brain injury has a positive effect on patient compliance with given medical recommendations. Other research has also demonstrated that using machine learning can also predict the demand for emergency neurosurgery, which could probably allow for the estimation of patients who are more likely to leave against their doctor's advice (3). Furthermore, the global occurrence of such occurrences as COVID-19 has imposed the disruption of healthcare delivery, impacting the neurosurgical treatment of LAMA (5).

Thus, another important axis of work is the social determinants of health perspective. Glauser et al. (7) postulated that education, income and healthcare insurance are major determinants of neurosurgical outcomes. Still, these determinants affect not only the general health of patients but also their perceptions of the doctor's recommendations as well as their willingness to follow doctors' orders. Low-educative patients may not understand their illnesses or the consequences of going home against medical advice, while low-income patients may have financial desperation issues and hence deem health as unimportant compared to the needs of the moment (9). It is also important to note that lower levels of utilization are associated with additional concern regarding the quality of medical care and limited perceptions of the available resources (11). Knowledge of these predictors is therefore crucial for designing interventions to address LAMA rate issues in neurosurgical facilities for better patient outcomes.

The purpose of this prospective investigation is to determine specific pre-LAMA indicators for neurosurgical clients. From this perspective, demographic, social, and clinical characteristics will be described, which will help develop healthcare policies and advance patient management in neurosurgical departments (10). Other differences, such as age, socioeconomic status, level of education, and severity of the patients' medical complications, shall be controlled with the aim of explaining why some patients decide to discharge themselves early. The findings of the present study will add knowledge to patient behaviour and subsequent actions in a medical environment, especially in neurosurgery, where contra-medical advice discharge has serious implications, which include complications, longer healing periods, and augmented costs. Finally, these results are intended to improve patient well-being and prognosis by addressing the antecedents of LAMA.

Objective: The objective of this study is to identify the key predictors of leaving against medical advice (LAMA) among neurosurgery patients.

MATERIALS AND METHODS:

Study Design: Cross sectional study

Study setting: The study was conducted **Department of Neurosurgery, MTI, Lady Reading Hospital, Peshawar**.

Duration of the study: The data was collected over a period of 12 months, from January 2023 to December 2023.

Inclusion Criteria:
The participants of the study were patients over 18 years old who underwent elective or emergency neurosurgical operation.

Exclusion Criteria:
Exclusion criteria included patients with decisional incapacity due to mental illness or dementia, patients who died during the study period or whose files were archived, patients with missing data from their medical records.

Methods:
It was a cross-sectional and hospital-based prospective study carried out in the neurosurgery **Department of Neurosurgery, MTI, Lady Reading Hospital, Peshawar** for one year. Participants in the study were all patients ≥18 years of age who were admitted to the hospital for neurosurgery. Patients who were unconscious at the time of the interview, under legal compulsory care, or discharged without their agreement were purposely excluded from the present study. The data was obtained through questionnaires administered to the patients, their medical records, and after-intervention follow-ups. Demographic data, clinical diagnosis and social aspects were used to predict discharge against medical advice (DAMA). In this study, qualitative data was analyzed using multivariate logistic regression to estimate aspects associated with LAMA. Permission to carry out the study was sought, and participants were asked to sign their consent forms before participating in the study.

RESULTS:
A total of 350 neurosurgery patients were admitted during the study period, and 38 of them (10.9%) were discharged against medical advice (LAMA). A growing trend was realized whereby most of the LAMA was identified among patients who had undergone emergency neurosurgical procedures, of which 25 (65.8%) were involved. The other 13 patients (34.2%) had undergone elective surgeries only. The selected patients of LAMA had a median age of 48 years, and one demographic concern was observed most: of the patients were male patients, accounting for 68%. Additionally, most patients suffered from a low SES, as 76% of them had a poor income status. This further suggests that some of the factors that contribute to external factors may help inform decisions to leave the hospital with an intention of going against medical advice since the families lack enough resources to provide support towards the actualization of those decisions.
Among the LAMA cases, patients having TBI constituted the most significant percentage of 42%, while patients having SCI formed 29%, and patients with brain tumours formed 16%. It was observed that the majority of patients discharged against medical advice stayed in the hospital for 4 hospital days; this confirmed that most of the patients stayed a short time of 4 days for recovery. Here, social factors were revealed to be equally significant and involved aspects of denial of social support 71% of the LAMA patients were single or widowed. This lack of social contact may have served them poorly as they could not handle the stress associated with hospitalization and recovery. Similarly, it was identified that 62% of the patients said they had to discharge themselves prematurely because of limited access to rehabilitation services, implying that there is a dire need to ensure appropriate mechanisms and assets in the healthcare facility during the rehabilitation processs.

Table 1: Demographic Breakdown of LAMA Patients

Demographic Variable	LAMA Patients (n=38)
Gender (Male)	26
Gender (Female)	12
Age (Median, years)	48
Low Socioeconomic Status	29

Table 2: Clinical Characteristics of LAMA Patients

Condition	%
Traumatic Brain Injury	42%
Spinal Cord Injury	29%
Brain Tumor	16%
Other	13%

Table 3: Table 3: Social Predictors of LAMA

Social Factor	LAMA Patients (n=38)	Percentage (%)
Limited Social Support	27	71%
Lack of Access to Rehab	23	62%

Discussion: This paper examined the demographic, clinical, and social factors in neurosurgery patients with determinants of LAMA, as well as possible risk evaluation. The arguments in this study reveal that LAMA is more common in male patients, particularly those of low socioeconomic status and indicate that poor financial literacy, alongside misconceptions about the dangers of early discharge, may contribute to this practice (12). Men were again seen to be affected with LAMA at higher levels since 68% of the clients were male, a fact shared across most studies. Schär et al. (1) stated before that male patients who are older receive complex neurosurgical treatments and may be discharged early if they have financial difficulties or other family responsibilities.

Trauma patients with brain injuries comprised the largest proportion of the LAMA cases at 42 per cent since they were most likely to leave against their physicians' advice. Jacob et al. (2) have also revealed that patients with trauma, including head injury, suffer delays in getting follow-up care besides experiencing premature discharge. Another predictor was emergency neurosurgical procedures because many patients in this category are likely to experience unscheduled admissions, and they are not well equipped for extended stays and post-operative procedures (3). It is presumed that the complexities of their conditions and the necessity of the interventions could partly explain why they drop out prematurely.

Among the LAMA patients, 71% of the respondents who claimed to have dropped out prematurely were single or widowed, implying that they received little social support. This lack of a reliable framework for support means that patient decision-making during hospital admissions can be seriously affected by the inability to resist pressure, including pressure regarding their own care. Glauser et al. (7) explained that several patients are more likely to leave against medical advice, especially those patients with limited social support systems, since managing their post-discharge care will be a challenge. Such patients with no or little adequate support may be easily pressured by their health status and healing processes. Reducing LAMA rates and improving patient outcomes can, therefore, be expected if social support systems are enhanced as they play a significant part in determining patients' behaviour and choices.

Another self-identified factor that was equally important in predicting LAMA was finding access to rehabilitation services important. Thus, more than 62 % of patients who left LAMA early reported that the lack of availability of follow-up rehabilitation services was the reason that affected them most. Some of the patients complained about the issue of inadequate affordable services for rehabilitation, which probably made them leave the hospital early. These concerns underscore the need for the implementation of rehabilitation services right through the neurosurgery patients' care cycle. According to Jacob et al. (2), those patients who get access to rehabilitation are the most likely to follow physicians' recommendations on traumatic brain injury. Lack of adequate rehabilitation can make patients doubt the prognosis and future health, which means making potentially fatal decisions for themselves.

The study also provides insight into some probable ways that could be used to reduce cases of LAMA in neurosurgery. One thing that may prove beneficial would be the early integration of health care professionals such as social workers and discharge planners for patients who are at high risk of LAMA. The management of social and environmental requirements shows that healthcare providers can develop a positive surrounding that will help the patients adhere to the healthcare regime. In addition, the probability of the precise identification of high-risk patients before they decide to discharge themselves could be magnified with the help of more advanced tools, including machine learning models (6). Incorporation of such tools into practice could enhance targeted, crisis-focused interventions that are often needed with LAMA clients.

However, this study has a limitation of single centre workup, which can restrict the generalizability of the results. To make the results even more generalisable, further studies should ensure that multisite trials are included across different hospitals and patients (14). However, more qualitative studies examining patients' psychological-emotional aspects of the decision to LAMA would enhance the current understanding. It is therefore important to understand the emotional and mental health-related aspects that inform the LAMA decisions. It is possible for healthcare providers to take strategic actions that aim at reducing risky characteristics like low social support or poor access to rehabilitation services, which are part of LAMA in neurosurgical settings, for better patient outcomes and care continuity.

CONCLUSION:

Thus, this investigation informs important factors associated with LAMA in neurosurgical patients, focusing more on the aspects of SES, clinical realities, and social support. Surgical interventions and resuscitation were the clinical precursors, and low social support and lack of rehabilitation services were identified as social drivers. Thus, such factors can potentially be managed through early intervention by social workers, increasing patients' awareness and improving access to appropriate post-discharge services to decrease LAMA rates. As a result, future research should involve multicenter analysis and qualitative approaches addressing the emotional and psychological background for the choice of LAMA agents. This paper has shown that it is possible to effectively address clinical as well as social factors that influence patient's compliance with prescribed medical regimens and plans.

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