

Clinical Short Communication

Short-term pilot feasibility study of a nurse-led intervention to improve blood pressure control after stroke in Nigeria



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ABSTRACT

Background: Given the paucity of neurologists in Sub-Saharan Africa (SSA), task-shifting post-stroke care to nurses could be a viable avenue for enhancing post-stroke outcomes. This pilot study assessed the feasibility and short-term impact of a nurse-led intervention to manage blood pressure (BP) control in recent stroke survivors in Nigeria.

Methods: A randomized pilot trial allocated patients within one month of an index stroke from two participating hospitals in Nigeria to either nurse-led group clinic or standard care for 14 days. Key study endpoints were successful execution of the protocol, subject retention, and short-term BP effects.

Results: There were no significant differences between the intervention ($n = 17$) and control ($n = 18$) groups at baseline. At the post-intervention clinic, patient retention rate was 100%. In the intervention group, both the systolic and diastolic BPs measured at home were lower than the clinic BPs post-intervention ($127 \pm 12.88/78.13 \pm 19.26$ mmHg versus $137.50 \pm 23.05/84.06 \pm 9.67$ mmHg; $p = 0.05$). However, there was no significant change in clinic blood pressure (BP) recordings in both the intervention and control groups.

Conclusion: It is possible to initiate a nurse-led group clinic intervention to address BP management among stroke survivors in SSA with good early retention of participants. A larger and longer-term trial is being planned.

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1. Introduction

Stroke is a major contributor to death, disability, and dementia in Sub-Saharan Africa (SSA) [1,2]. By far the most powerful modifiable stroke risk factor is hypertension (HTN) [3,4], and uncontrolled HTN after a stroke is a major predictor of recurrence [5–10]. Only 4 out of every 10 patients with HTN evaluated at least one month after stroke in a Nigerian study had good blood pressure control [11]. Sub-optimal HTN control poses a serious challenge for stroke prevention [12–14], thus achieving optimal blood pressure (BP) control needs to be at the center of any serious effort to lessen the burden of stroke in SSA.

However, control of stroke risk factors in many SSA countries is quite challenging due to uncoordinated care and a shortage in the number of qualified physicians, among other factors [15].

One potential solution to limited healthcare access in SSA is task-shifting, i.e. training non-physician healthcare workers to perform tasks traditionally undertaken by physicians [16] and our group has a recent evidence of its feasibility and utility in stroke care. Nurses may be potential alternatives to improve access to care in settings where physicians are few or not available [17]. In SSA, nurse-led care programs have been successfully implemented for chronic infectious diseases [18], and chronic non-infectious conditions such as epilepsy, asthma, diabetes, and HTN in primary care settings [19,20]. However, in spite of the huge burden of stroke in SSA, nurse-led clinics have not been tested for impact through controlled trials [21].

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The main aim of this pilot study was to assess the feasibility and preliminary short-term effects of implementing a nurse-led group clinician centered intervention, i.e. the Nurse Ushered Discussion Group Encounters after Stroke (NUDGES) protocol, in a SSA country to address blood pressure management after a recent stroke.

2. Methods

2.1. Patients and process

The NUDGES feasibility pilot study was a small randomized pilot trial of 35 recent stroke survivors seen at the two participating hospitals in Nigeria: University College Hospital (UCH), Ibadan and University of Ilorin Teaching Hospital (UITH), Ilorin. The two hospitals offer tertiary level care to stroke inpatients and outpatients through multidisciplinary teams of neurologists, nurses and physiotherapists. All consecutively consenting patients aged at least 18 years with a diagnosis of stroke, confirmed by either computed tomography (CT) or magnetic resonance imaging (MRI) scans and with a modified Rankin Score of at least 2 were recruited for the study. Exclusion criteria included cognitive

impairment/dementia (Mini Mental State Examination (MMSE) score ≤ 24), severe global disability (modified Rankin Score ≥ 3) and any condition that would limit participation in follow up assessment. Only patients encountered in the neurology wards and clinics of the participating hospitals with a diagnosis of stroke were eligible for recruitment into the study. The research coordinator at each site scrutinized the case file of each patient to compile a list of potentially eligible participants. The list was reviewed with the site principal investigator to confirm eligibility. Following confirmation of eligibility, the research coordinator contacted the participants to provide information about the study and scheduled them for screening/recruitment, and obtained informed consent. To maintain equipoise, randomization of patients was done only after baseline data were collected and general health education on need for compliance with medication was done by the nurses on the team. At each site, balloting was used to randomize the participants to the intervention (NUDGES) arm and Standard Care arm (see Fig. 1). The two groups were assessed at baseline and at two weeks after randomization. This feasibility pilot study was approved by the Ethical Review Committees of UCH, Ibadan and UITH, Ilorin.

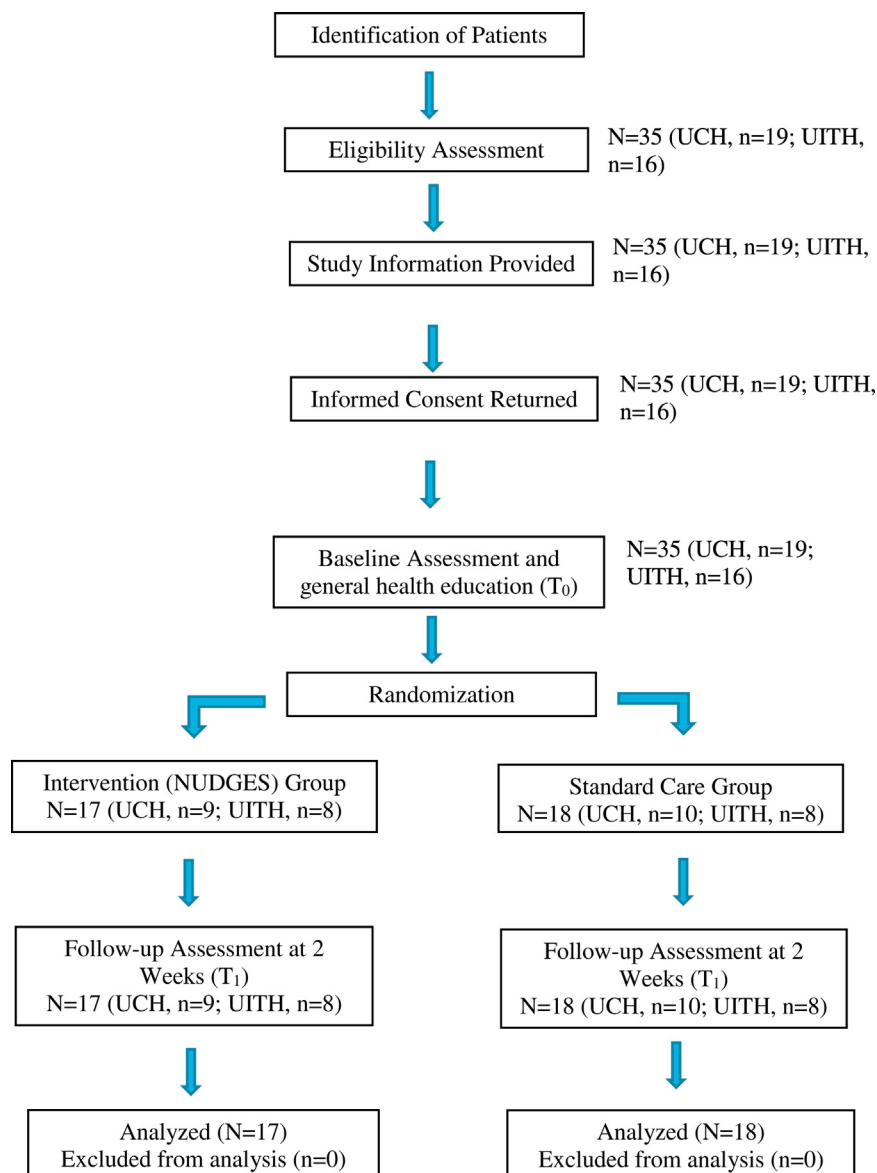


Fig. 1. NUDGES feasibility pilot design flow chart.

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