University of Ibadan, but APN is yet to start in Nigeria. Although APN has received global attention, in Nigeria, the reverse is the case as the recognition of APN is still slow, under-recognized, and underutilized due to substandard nursing education in Nigeria, the resistance of nurses to change and professional development, low budget allocation, shortage of nurses, low research interest, and interprofessional rivalry (2).

The health system in Nigeria is weak, and this results from poor access to healthcare in rural areas, shortage of doctors, inadequate cost-effectiveness, and increased waiting time in the hospital (4), which makes the country to be in the 187th position out of 195 member nations of the World Health Organization (WHO) (5). APN has been proposed to improve the Nigerian health indices (6). This paper will highlight the potential impact of APN on Nigeria's health system and the strategies to sustain the anticipated positive changes.

### *Nigeria's national health system*

The Nigeria National Health System is a 3-tier structure with responsibilities for federal, state, and local governments (7). Statistics show that health institutions rendering health care in Nigeria have 11,395 (33%) private health facilities and 23,028 (67%) government health facilities. Altogether, 30,345 (88%) are primary health facilities; 3,993 (11.6%) are secondary health facilities; and 85 (0.25%) are tertiary health facilities (8).

Despite having the biggest economy and most people in Africa, Nigeria's healthcare performance is poor compared to its West African neighbors. The Nigerian health system is faced with problems that can be related to the lack of competent care providers.

### *The APN in primary health care (PHC) delivery*

Nurse practitioners emerged in many developed countries to extend the approach to care delivery for the underserved and vulnerable people, especially in rural areas in the primary healthcare (PHC) setting. In Nigeria, a shortage of health workers, alongside poor funding, has also been reported in primary healthcare centers in Nigeria (9,10). World Health Organization (WHO) Global Health Observatory reported 0.4 physicians per 1000 population and 1.6 nurses per 1000 population in Nigeria, with gross inequity in rural–urban distribution in terms of both number and skill range (11,12). This is lower than the Sustainable Development Goal (SDG) index threshold of 4.45 doctors, nurses, and midwives per 1000 population (13). In many PHC settings, the few nurses and midwives available only have basic training and are supported by community health extension workers (CHEWs) who even have lesser clinical competencies. Both groups of professionals usually need doctors to make an accurate diagnosis of illnesses, order for and interpret laboratory or radiological investigations and initiate proper treatment plans or referrals where necessary. Going by the density, however, the populace cannot have these essential services rendered because of the lack of doctors in these centers (14).

Meanwhile, nurses and CHEWs contribute substantially to tasks successfully shifted from physicians in rural areas. Still, more is needed to improve non-physician healthcare worker competence in treating non-communicable diseases and preventive care. Current evidence suggests that nurses can successfully manage hypertension and other chronic diseases; hence task-shifting should be scaled up (15). Advanced knowledge and practice exposure is needed for this much-needed scale-up. Despite the massive shortage of health professionals, which is a global phenomenon, the relative population strength of the nursing workforce can be harnessed in primary care delivery. This approach is not without considering the shortage of nurses but in utilizing the currently available numerical strength of the Nursing workforce to meet

the dire need for competent practitioners in primary care centers.

Furthermore, nurses in Nigeria are traditionally trained in Colleges of Nursing and Universities to carry out nursing roles, and the APN innovation will not contest that established framework. In this case, nurses who are interested and meet the criteria of at least a bachelor's degree will be allowed to advance in education and practice competencies to provide independent primary care services. They can make an accurate medical diagnosis, order laboratory and radiological investigations and initiate standardized treatment plans (16). This also means an improvement for the profession as the current master's degree program in nursing, which focuses on academic advancement with no significant clinical competencies for these trained Nurses, will be upgraded. This model would also have a ripple effect of impact on the job satisfaction of nurses and consequently promote retention in the health system, especially for younger nurses (1). This model has proven to be efficient in developed nations where they serve the population with a shortage of physicians (17) and even in developing countries like Botswana (4).

### *APN in secondary and tertiary health facilities in Nigeria*

The Clinical Nurse Specialists (CNS) model represents an excellent opportunity to grow the tertiary health system in Nigeria. It is obtained through master's and doctorate studies. These nurses are not trained to replace doctors; they are to improve current nursing practice by integrating academic knowledge into clinical nursing practice. Currently, in Nigeria, the highest recognized degree in clinical Nursing practice is the bachelor's degree. The system does not adequately integrate the knowledge chunk amassed in universities into bedside practice. This limits innovation and career advancement for Nurses and reduces the chances of promoting patient outcomes and safety.

CNS is very much needed in Nigeria, where the cost of only consultation with a general practitioner is above the minimum wage of a civil servant (17). Current evidence in nations where APNs have been operationalized suggests that it is cheaper to train APNs than doctors, and the services of APNs are more cost-effective (18).

In the United States, CNS is of significant influence and have been successful in enhancing the prognosis of patients by generating and executing a critical care pathway, decreasing hospital stays, educating people with debilitating illnesses, streamlining the queue process in hospitals, especially in the absence of/a few physicians, and at the same time boost patient satisfaction (19). These pieces of evidence suggest that investing in the APN program in Nigeria might improve our health system and promote the health of individuals and populations.

Though the APN program is more pronounced in developed countries such as the United States, it is uncommon or nonexistent in some low and middle-income countries; this is because some of these nations have not achieved the advanced educational requirements of the ICN APN guidelines and because there is no regulation (licensure) for APN roles (20).

### *Anticipated challenges and solutions*

Kurt Lewin's change management model provides insight into the way forward for APNs in Nigeria. It involves three steps: Unfreezing, Change, and Refreezing (21). Unfreezing involves the identification of what is obtainable in the health care delivery system at present (status quo), why APN should be incorporated, what needs to be changed, how support (such as finance) can be harnessed from the public, and private sectors, stakeholders and government, creation of a change vision and strategy, propagation of the essence of APN in the

promotion of patient's care, among others. Change involves the implementation of the change process. When implementing APN in Nigeria, the plan involved should be disseminated, stating the importance and how it can benefit the populace. Nurses should improve their skill set and get involved in training; they should acquire the essential certifications to make the practice successful. Likewise, collaborations with crucial organizations and stakeholders should be ensured. Refreezing is the final step identified. At this stage, the change process should be seen as the new status quo, which will be maintained by sustainability and reinforcement (21).

The model also indicated that 'before a change can occur, the forces driving the change must be greater than the forces resisting the change' (21). In Nigeria, the reverse is the case. The International Council of Nurses observed that the APN program would have been launched in Nigeria through collaboration between the University of Maryland, the United States, and three Nigerian universities in 2011 but was stalled due to financial and policy issues (1). Likewise, chronic inter-professional conflict is another identified challenge. In 2012, the APN role that emerged in the University College Hospital, Ibadan, was later canceled due to the rivalry between the doctors and nurses as the doctors claim they 'own' the patients and only have the right to bear the title 'consultant' (22).

Two strategies will help solve these issues. First is the shared leadership style. From Nigerian history, doctors have always led the health team. Nurses decried this as they lamented in a qualitative study that the health system is built only around the doctor (6). This is important as rightly noted that no individual clinician is an expert in all aspects of care needed for the patient (23). It is worth reiterating that the first nurse practitioner program was designed through the efforts of a nurse leader, Dr. Loretta Ford, and a physician, Dr. Henry Silver, at the University of Colorado (24,25). This move had birthed more than 355,000 licensed nurse Practitioners as of 2022. According to the American Association of Nurse Practitioners (AANPs), this number is estimated to increase by 36% by 2026 (26). A nurse practitioner can diagnose and treat patients accordingly without a physician's direct intervention and supervision. This is "collaboration," which is one of the methods of conflict resolution in Kilman's model of conflict resolution, which emphasizes finding a win-win solution that satisfies the concerns of both parties (27). Doctors and nurses in Nigeria need to settle the differences and emerge from the storming stage to the performing stage, as highlighted in the team development model (28)

The initial step should be to convince the policymakers by providing evidence about the APN program and its beneficial effects on the populace (19). Furthermore, the Nursing and Midwifery Council of Nigeria (NMCN) should collaborate with relevant stakeholders to develop the APN curriculum while also upgrading the current post-basic diploma program into postgraduate programs. An excellent approach to achieving this is embedding the existing post-graduate (master's and doctoral) academic careers into clinical practice.

To solve the funding issue, it is suggested that a cue can be taken from the collaborative funding efforts of the Nigerian government, WHO, and the United Nations Children's Fund (UNICEF), which culminated in the establishment of the first Department of Nursing in Nigeria in the year 1965 (29). Local and international support can be obtained to support the funding of the APN program, as it is already a global phenomenon of change in healthcare.

To sustain this program, Nigerian Departments of Nursing and various nursing associations should unite to advocate for APNs in Nigeria, like the

American Association of Colleges in Nursing (AACN), which is the national voice for baccalaureate and graduate nursing education in the United States. Also, collaboration can be made with other agencies to support APN programs, as there is currently no organized body serving as a united front to advocate for APNs in Nigeria. Also, the NMCN should develop curriculum and influence policies that enable APN practice in Nigeria (12).

## Conclusion

There is an urgent need to make primary care and specialized healthcare services available to the majority Nigerian population living below the poverty line and many other at-risk children and youths, rural community dwellers, and the elderly. Upscaling the nurses' competencies through investment in APNs will reduce the burden of chronic illnesses on individuals, families, and communities through the delivery of health promotion and chronic disease prevention services. The nursing profession in Nigeria can be better positioned to make this much-needed transformation to our health system when nurses have access to graduate education with advanced clinical training as its focus. This will be a profitable investment for the teeming population needing quality healthcare.

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