Mobile phone ownership among Nigerians with diabetes

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Abstract

Background: A survey was undertaken to determine the number of individuals who have access to Mobile phones among those attending our Diabetes clinic in order to explore whether this could replace or become an adjunct to street home address as contact information.

Method: An observer-based questionnaire was administered to capture parameters of interest at the weekly diabetes clinic in order to answer the survey question

Results: 130 individuals aged 15-80 years who attended the clinic in the month of May 2008 were surveyed. Eighty nine (89) patients had active Mobile phone and lines while 70.8% of these were females. Strikingly, 37% percent of the study populations were from across states boundaries and other geographic areas but majority reside in Ilorin metropolis where the facility is based.

Conclusion: The results indicate that over two thirds of those with diabetes attending the clinic had active Mobile phone line and this could be used as an adjunct to or replace street address as a contact particular between patients and their professional care givers.

Keywords: Mobile phone, diabetes, Nigerians, contact.

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Introduction

Communication between patients and their professional care givers is a routine matter that is usually taken for granted in countries with advanced health care systems[1], but this is not always the case in developing countries where interaction between physicians and their patients often involves traveling long distances on a matter that could be settled by a phone call.

In this regard, the starting point of this work was the persistent observation that addresses found in patients' case notes were often unhelpful in tracing them for a number of reasons. First, Residencies have traditionally been arranged by family compounds, but the rap urbanization process has resulted in haphazard street naming and non-sequential numbering in addresses. Hence, locating individuals using their stated address is often cumbersome and unrewarding. This is further compounded by the local custom which can make it difficult for strangers to trace individuals within the community without the blessing of community leaders/elders who may not always be available at the time of visit.

Second, many patients may need to contact their professional care givers before scheduled clinic visits for pressing health reasons but are often not able to do so because the clinic currently holds only on a weekly basis. Third, adherence to standard diabetes treatment plan that can positively influence outcome often tends to decline over time because of the difficult lifestyle adjustments required[2-6].

Incidentally, emerging reports[7,8] overseas now indicate that telecommunication devices such as internet and mobile phone can improve the situation within the context of HIV/AIDS. Specifically, mobile phones are now being increasingly investigated in Peru[7,8] as a means of promoting self – management of HIV/AIDS and facilitating social networking among those people living with HIV/AIDS in order to aid treatment decisions and improve access to available services.

These reports[7,8] raise the possibility that mobile phones can promote patient empowerment, improve social support and facilitate helping others with similar conditions in other chronic conditions such as type 2 diabetes which is now a major public health issue in Nigeria.

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Of note, over the last four years, there has been a phenomenal rise in mobile phone usage in Nigeria such that there are only very few areas in the country without network coverage.

Unfortunately, we are not aware of reports involving the use of mobile phones to enhance diabetes care particularly in Africa.

These considerations prompted us to explore the possibility of improving the quality of diabetes care through the use of emerging technologies. Specifically, a survey was undertaken to determine the number of patients attending our diabetes clinic with access to active Mobile phones.

Method

The setting and study population have been extensively described previously[2,3,9]. Essentially, our diabetes clinic holds every Wednesdays and the service is arranged in such a way that triaging begins 30 minutes before consultation. In particular, while patients are waiting to take their turn through consultation, a health talk is given as part of group activity by the Diabetic Nurse Educator (S.H.O) attached to the clinic. In the month of May 2008, patients were informed of the study and its purpose which was aimed at improving their access to diabetes health professionals in emergencies or in case they have a specific need related to their health and may need to reach their care providers outside scheduled clinic visits. Prospective subjects were encouraged to volunteer and were also informed of the procedures involved, time commitment required, and that no specific payments will be made or incentives given e.g. free medicines for participation. Prospective study participants were also informed that their identity and mobile phone numbers will be treated confidentially and will neither be disclosed to third party nor published. A modified questionnaire based on the work[7] of Curioso & Kurth 2007 was developed and was administered by the same observer to capture parameters of interest. Specifically, the study instrument involved acquisition of information on name, gender, age, mobile phone number, and residential address including state, duration of attending the clinic and hospital number for each subject. In addition, the interview guide included the following questions:

1. Do you know what this device is used for?
2. Do you have one?
3. If you do and it is here with you, please show it to me.
4. If you do not have, is there somebody who stays with you that has one that you use?
5. What do you usually use it for?
6. Can you use it alone or need help?

The data collection was done weekly in a secluded part of the waiting area by one of us S.H.O.

Volunteers who had their mobile phones with them had it verified as being active by either flashing the number or where the owners of the phone were numerically illiterate, S.H.O used such phones to call her personal line. In some cases[4], the patients themselves were not the owners of the mobile phone they had access to but were owned by their children or grandchildren who accompanied them to the clinic and also lived with them in the same house or family compound.

There were no exclusion criteria except those who declined participation. However, individuals scheduled for clinic visit on specific days who did not keep the appointment were not captured in the data uptake for that day.

Results

During the study period, 164 patients attended the clinic. Of this number, 9 were new cases and 155 were old patients on appointments. Of this total (164), 33 individuals declined participation and 16 patients who had scheduled appointments defaulted. Only two of these latter called the phone number of S.H.O, one from Lagos a distance of about 400 km South – West of Ilorin to inform the clinic that she was hospitalized, while the other one could not keep her appointment for financial reasons. Therefore, only 130 of eligible subjects in the period under consideration participated in the study thereby giving a participation rate of 79.27%.

In particular, a total of 130 individuals with diabetes aged 15-80 years were involved and ninety six of whom i.e. 73.8% of respondents were females. Eighty nine (89) patients (68.5%) of respondents had mobile phones with an active line. Of these 89 patients with mobile phone line, 63 of them i.e. 70.8% were females while the rest (26) 29.2% were males. Strikingly, the patient population attending the clinic included those domiciled in states as far as Kogi, Niger, Oyo, Osun, Lagos and Kwara States but majority (82) of them reside in Ilorin metropolis. That is 63% were from Ilorin metropolis where the clinic is located.

Discussion

In commenting on the present observations, it is important to state that these findings are baseline and only establish the proportion of individuals with type2 diabetes that *have* access to a mobile phone line. These encouraging results, however, open a window of vast potentials for interventions involving mobile phone usage that can have profound effect on quality of diabetes care and impact on outcome. First, having a mobile phone contact can help healthcare providers remind patients about clinic visits or contact them when scheduled appointments are missed.

Second, it can also help patients and their family members contact the clinic in case of emergencies or during unexpected closure of hospital services as is so often the case during strike actions. Third, individuals with diabetes can use their mobile phone as reminders for clinic visit and other important events related to their health or as medication reminder. Four, specific health messages can be texted to mobile phone of those with diabetes to encourage their adherence to treatment plan.

However, as promising as these potentials are, they must await further investigations aimed at measuring patient's attitude to mobile phone use for contact with clinic; mapping of use patterns among patients and determination whether mobile phone usage can infringe *patients'* privacy and confidentiality when such devices are shared by family members or *associates* as was the case in four of the patients surveyed (see result section). It also needs to be established whether patients prefer calling or texting or whether cost of mobile phone and calls can deter the use of this technology among our patient population. These are questions that need to be explored in subsequent studies before deciding the proper role of mobile phone in the setting of diabetic care.

Nevertheless, the result of this survey is encouraging and shows that mobile phone density is about (68.5%) in our patient population. That is, over two thirds of the patients attending this diabetes clinic had access to mobile phone facility. The implication of this is that individuals with diabetes attending this clinic can contact their professional care givers outside the regular clinic setting *as was the ca*se *of the two women who contacted the clinic using their Mobile phone.*

Therefore, individuals lost to follow-up can also be traced and home-based care including health education can also be given and reinforced via mobile telecommunication. Further, individuals themselves can promptly reach their physician or diabetes nurse in-between appointments for issues related to their healthcare and this will certainly obviate the need to always physically trace patients which can be cumbersome, costly, time wasting and often unrewarding.

In addition to the foregoing, there are several observations in the present study that *require comment* First, there are no data in the literature on mobile phone density and usage among individuals with diabetes as a contact particular to compare the present observations. Nevertheless, the present study population of 89 females and 41 males is consistent with our previous data[2-6,9] which show that women outnumber men by nearly two to one in those who access their diabetes care through our facilities and indicate that the sample surveyed was representative of our patient population. Strikingly, 70.8% of females had ownership or access to active mobile phone line in contrast *to* only 29.2% of the males who had their mobile phone with them on the day of assessment. This is in contrasts to earlier reports among Nigerian drivers where 76.5% and 90.6% of those who use mobile phones while driving were males as reported by other investigators[10,11]. This could simply reflect the gender distribution in the two populations of interest (but could also suggest that more women *see their mobile phone as an indispensable tool of social communication than the men).*

In the light of these observations, the following recommendations *are germaine to the present discussion.* First, the existing case note for patient information could be redesigned in such a way as to capture patient's mobile phone number and possibly that of their next of kin. Second, individuals with diabetes can be encouraged to acquire a mobile phone and line as part of their self care kit in the same way as glucometer is routinely used in home monitoring of diabetes control for those who can afford it. *Therefore*, it is striking that over a third (37%) of the patient population came from across states boundaries, in some cases as far as 500 kilometres away and from locations where similar services as ours were in existence. This could suggest that this category of patients for reasons that are not entirely clear from this study prefers this clinic for their care over similar ones closer to their places of domicile as we have previously observed[2,3,9]. In *conclusion*, the present study, establishes baseline information and indicate that majority of our patients are familiar with and have access to mobile phone usage.

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This work is dedicated to the memory of Isaac Adaka Boro.

Conflict of interests

None of the authors of this work has any business interests or shares in any GSM Service providers or telecommunication companies in Nigeria or anywhere else.

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