Brief Report

Cell Phone Ownership and Service Plans Among Low-Income Smokers: The Hidden Cost of Quitlines

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Abstract

Background: Quitlines (QLs) are free, effective sources of treatment for tobacco dependence. Although the QL number is toll-free, the use of cell phones as the sole source of telephony may impose an unintended cost, in terms of cell minutes.

Objectives: To quantify the use of cell-only telephony among self-pay or Medicaid smokers, assess their calling plans, and estimate the impact of a typical course of QL counseling.

Methods: A survey of smokers age at least 18 years visiting an American urban emergency department from April to July, 2013.

Results: Seven-hundred seventy-three smokers were surveyed, of whom 563 (72.8%) were low-income, defined as having Medicaid or no insurance. All low-income smokers had at least one phone: 48 (8.5%) reported land-lines only, 159 (28.2%) land-lines and cells, and 356 (63.2%) cells only. Of the cell phone owners, monthly calling plans provided unlimited minutes for 339/515 (65.8%), at most 250 minutes for 124 (24.1%), and more than 250 minutes for 52 (10.0%). Another recent trial found that QL users make a median of 1 call lasting 28 minutes, with the 75th and 90th percentiles of calls and minutes at 3 and 4 calls, and 48 and 73.6 minutes, respectively. Thus, robust use of QL services could consume 11%–29% of a low-income smoker's typical 250 monthly cell minutes.

Conclusion: Among low-income smokers, cell phones are often the sole telephone. Robust use of the QL may impose a substantial burden on low-income smokers' calling plans, and therefore deter use of the QL. Exempting calls to QLs from counting against smokers' plans may help promote QL utilization.

Implications: Low-income individuals have high rates of smoking, and are more likely to own only cell phones, not landlines, for telephone access. Because cell phone calling plans often have limited numbers of monthly minutes, cell-only individuals may have to spend a substantial proportion of their monthly minutes on QL services. This may act as a deterrent to using an otherwise free, effective means of treatment for tobacco dependence. Exempting QLs from monthly calling plans may improve access for low-income smokers.

Introduction

Mobile health technologies have been proposed as an inexpensive, cost-effective, clinically efficacious way to improve health behavior. The ubiquity of cell phones in the United States and globally has resulted in an explosion of interest in the use of modalities such as short-message-service (SMS) texting and ecological momentary assessment. Smartphones, wearable biosensors, and other technologies promise to offer healthcare providers the ability to practice “automated hovering” over their patients,¹ and help manage individuals with a variety of health-compromising behaviors, including smoking.

Telephone quitlines (QLs) provide a free, effective source of behavioral and pharmacologic treatment for tobacco dependence. QLs have shown efficacy in a variety of real-world settings.^{2,3} For lower income smokers, who are disproportionately likely to smoke, QLs offer a convenient, “free” means of accessing effective tobacco dependence treatment. In the United States, there is a national toll-free number that serves as a portal (1-800-QUIT-NOW) to the state QLs, although individual US states may sponsor their own phone numbers. Low-income individuals, however, often use cell phones as their sole means of telephone access.⁴ Home-based landlines are becoming less common. Because cell phone minutes must be paid for from the callers’ plan, it is possible that the use of cell phones as the sole source of telephone use for low-income smokers may impose an unintended cost, in terms of time charged to the calling plan.

The objective of this study was to quantify the use of cell-only telephony among self-pay or Medicaid smokers in an urban hospital, summarize the calling plans, and estimate the impact of a typical course of QL counseling for these individuals.

Methods

We surveyed self-identified adult smokers visiting a single urban hospital emergency department (ED) in the northeastern United States. The ED is a busy, 90 000 adult visit/year unit in a level one trauma center that serves a racially, ethnically, and economically diverse catchment area. Subjects endorsing current every- or some-day smoking, and lifetime consumption of at least 100 cigarettes, were classified as smokers. Smokers were queried about telephone ownership (landline and wireless), use of wireless phones, and their enrollment in state and federal aid that would make them eligible for the Lifeline wireless program for low-income individuals. Recruitment was performed by trained research assistants with prior experience screening and recruiting subjects from the ED. All subjects gave written informed consent. Surveys were administered by the research assistants on scannable paper forms. Subjects were read the questions by the research assistant, but allowed to view the questions on the form.

Patients were eligible to complete the survey if they owned a cell phone or landline phone and (1) were age 18 years or over; (2) spoke and understood English; (3) were willing to give informed consent; (4) had smoked more than 100 cigarettes lifetime; and (5) were currently a daily or some-day smoker. Patients were excluded from the study if they were: (1) too ill or unable to consent; (2) not interested in participation; (3) actively psychotic or mentally ill and unable to give consent; (4) in police custody; or (5) residing in an extended care facility.

Data were exported from the tablets to SPSS 21.0. Summary results are presented with parametric or nonparametric statistics, as appropriate. Based on prior work, we chose to interview up to

800 subjects, which would yield at least 500 low-income smokers. As a proxy for household income, we considered all subjects with Medicaid or no health insurance to be low-income.

All subjects provided written informed consent. The study was approved by the Institution’s Human Investigation Committee, and is registered under <http://ClinicalTrials.gov> as NCT01820533.

Results

Between April and July of 2013, 834 smokers were approached. Sixty-one (7.3%) did not own a phone, and were excluded, leaving 773 who owned phones and agreed to be surveyed. All were patients who had registered for care at the hospital ED. Patient demographic and clinical characteristics are summarized in Table 1. Of all smokers 563 (72.8%) were low-income, defined as having Medicaid or no insurance.

Of the 563 low-income smokers: 48 (8.5%) reported land-lines only, 159 (28.2%) land-lines and cells, and 356 (63.2%) cells only (Table 2). Of the 515 cell phone owners, 138 (26.8%) had Medicaid-issued phones, which provide 250 minutes of calls per month.

Using data from our clinical trial,⁵ callers who engaged in QL services used their phones for a median of 38 minutes (for all QL phone time), with the 75th and 90th percentiles of minutes used at 56 and 86.2 minutes, respectively. Hence, subjects with monthly limits of 250 minutes might use 15% (38/250) of their monthly minutes for QL services. For heavier users, 22%–34% (56–86.2/250) of monthly minutes might be devoted to QL calls.

Discussion

In this survey of smokers visiting a single urban ED in the northeast United States, we found that all owned or had access to phone service. Nearly two-thirds of the low-income smokers had cell phones only. Of the low-income cell phone users (with or without landlines), one-quarter had limited monthly calling plans.

These results have important implications for the ability of some low-income smokers to access telephone QLs, and use them in a sustained fashion. QLs provide an important, accessible, confidential, cheap, efficacious, and cost-effective approach to tobacco

Table 1. Characteristics of 563 Low-Income Smokers

Variables		
Age, years, mean		41.1
Daily cigarette consumption, median		8 (IQR 4, 15)
Sex, N (%)	Male	272 (48.3)
	Female	291 (51.7)
Race/ethnicity, N (%)	Hispanic	103 (18.3)
	African American	201 (35.7)
	White	355 (63.1)

IQR = interquartile range.

Table 2. Phone Ownership and Minutes for Low-Income Subjects

Phone ownership, N (%) (N = 563)	Landline only	48 (8.5)
	Landline + cell	159 (28.2)
	Cell only	356 (63.2)
Monthly cell minutes, N (%) (n = 515)	Unlimited	339 (65.8)
	<250 minutes	124 (24.1)
	>250 minutes	52 (10.0)

dependence treatment. QLs are available in all 50 states, along with Washington, DC and Guam. They offer two evidence-based means of treatment: counseling and, often, medication in the form of nicotine replacement therapy. Most QLs offer multi-call programs, and quit rates appear higher with greater use of the QL. Some state QLs, like the Connecticut QL used in this study, limit the distribution of nicotine replacement therapy to smokers who enroll in the multi-call program.

We previously reported, in a cohort of low-income smokers, that the probability of biochemically confirmed tobacco abstinence increased in proportion to the number and total duration of QL calls. For all subjects who called the QL, the cumulative median duration of use was 38 minutes, with the 75th and 90th percentiles of use at 56 and 86.2 minutes, respectively. Thus, robust use of QL services could consume 22%–34% of the 250 monthly cell minutes available to a smoker with a restricted calling plan.

This may represent an important economic barrier to low-income smokers' using the QL. This is especially salient, given the disproportionate prevalence of smoking among low-income populations.⁶ Although we did not ask subjects directly, a well-established body of evidence describes the tradeoffs often made by low-income individuals among healthcare and housing, food, and the like.⁷ Given the need of these cell phone-only individuals to maintain contact with family and friends, employers, and, likely, public officials from agencies addressing criminal justice, child welfare, employment, public benefits, and healthcare, it would appear likely that use of a cell phone for QL-based tobacco counseling might be of lower priority.

Our findings suggest a policy solution: exempting calls to QLs from counting against an individual's monthly calling plan. A reasonable place to start would be with publicly issued phones, like those provided by Medicaid. This would necessitate coordination among QL vendors and large providers of cell phone service. Conversely, a simple technical approach could be possible. For example, calls placed to the national QL phone number—1-800-QUIT-NOW—as well as state QL numbers—could be recognized by cell providers and exempted from calling plans. Given the high prevalence of smoking among low-income individuals, this policy change might have great impact in improving the accessibility of an important means of tobacco dependence treatment. Although there are other types of hotlines that might benefit from a similar policy (eg, suicide prevention, domestic violence, and sexual assault hotlines), smokers often require repeated contact with a QL to maximize the latter's efficacy. To our knowledge, such policies do not exist at present, although the US Federal Communications Commission does require all cell phone service providers to route emergency calls through the 911 system, irrespective of calling plan.⁸

Limitations

We studied a convenience sample of smokers at a single ED in the northeastern United States. These subjects may not be representative of the larger population of smokers. However, our sample has good racial and ethnic diversity, and substantial representation by lower socioeconomic status individuals, for whom smoking remains prevalent.

Similarly, our study subjects were able to access the services of our state's QL. Although each state (along with Washington, DC and Guam) has its own QL, with slightly different hours and range of services, Connecticut's QL offers services comparable to that of these other QLs.

Finally, we did not specifically ask study subjects if their monthly calling plans would represent, or have represented, a barrier to using the QL. Similarly, in our prior trial of ED-initiated tobacco dependence treatment,⁵ we did not ask subjects at follow-up if their calling plans inhibited their use of QL services. That was not an aim of either study.

Conclusion

Among low-income smokers, cell phones are often the sole means of telephone access, with many individuals having calling plans that limit the number of available minutes. Therefore, robust use of QLs may impose a substantial financial and logistical burden on low-income smokers, and may deter QL use.

A policy change exempting calls to QLs from counting against smokers' cell phone calling plans may help to promote QL utilization. This should be the subject for further study.

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Declaration of Interests

None declared.

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