

Cell Phone Use among Homeless Youth: Potential for New Health Interventions and Research

Eric Rice, Alex Lee, and Sean Taitt

ABSTRACT *Cell phone use has become nearly ubiquitous among adolescents in the United States. Despite the potential for cell phones to facilitate intervention, research, and care for homeless youth, no data exists to date on cell phone use among this population. In 2009, a survey of cell phone use was conducted among a non-probability sample of 169 homeless youth in Los Angeles, CA. Levels of ownership and use, instrumental uses (connecting to case workers, employers) and patterns of connecting to various network types were assessed (family, home-based peers, street-based peers). Differences in socio-demographic characteristics and cell phone ownership were assessed via *t* test and chi-square statistics. Sixty-two percent of homeless youth own a cell phone; 40% have a working phone. Seventeen percent used their phone to call a case manager, 36% to call either a potential or current employer. Fifty-one percent of youth connected with home-based peers on the phone and 41% connected to parents. Cell phones present new opportunities for intervention research, connecting homeless youth to family and home-based peers who can be sources of social support in times of need. Moreover, cell phones provide researchers and providers with new avenues to maintain connections with these highly transient youth.*

KEYWORDS *Mobile phone, Cell phone, Social media, Adolescents, Homeless, Social network*

INTRODUCTION

There are nearly two million runaway and homeless youth in the USA each year.¹ Relative to housed youth, these youth are at increased risk for a myriad of health and behavioral health problems, including substance abuse, sexually transmitted diseases, poor mental health outcomes, violence, and victimization.²⁻⁵ Recent work among homeless adults has suggested that cell phone technology may present unique opportunities for working with transient populations.⁶ As cell phones offer connections to others without the physical constraints of permanent dwellings, new communication patterns are feasible for homeless people, including access to social support, case management, and health professionals, which could in turn lead to improved health and behavioral health outcomes.⁶ To date, no data has been reported on the use of cell phone technology among homeless youth, although recent data has shown that 85% of homeless youth get online at least once a week, that they access a wide spectrum of network ties, and that connecting

Rice, Lee, and Taitt are with the University of Southern California, Los Angeles, CA, USA.

Correspondence: Eric Rice, University of Southern California, Los Angeles, CA, USA. (E-mail: ericr@usc.edu)

to family and home-based friends was associated with improved sexual health outcomes.⁷

Among housed youth, latest statistics from Pew Research Center⁸ found 71% of teens (13 to 17 years of age) and 93% of young adults (18 to 30 years of age) own cell phones. Housed youth are now connected to their networks in constant and immediate ways.^{9,10} Cell phones have changed the ways adolescents conceptualize belongingness and social connection,¹¹ creating new avenues for social support^{10,12} and coping with stressful life events.¹³ Young female adolescents and parents report increased feelings of security as a result of cell phones.^{14,15} Some research suggests that merely owning, and not actually using, a cell phone helped adolescents to feel socially connected.¹⁶ The purpose of this study was to conduct a preliminary examination of cell phone ownership and use among a sample of homeless youth, particularly the social and instrumental uses of cell phones which have implications for health outcomes.

METHODS

All procedures involving research on human subjects was approved by the university Institutional Review Board (IRB) and conformed to the principles embodied in the Declaration of Helsinki. A non-probability sample of 201 adolescents was recruited June 2009 in Los Angeles, California at one drop-in agency serving homeless adolescents. Clients age 13 to 24 years were eligible to participate. A consistent set of two research staff conducted all recruitment and assessment to prevent adolescents completing the survey multiple times. If a youth reported living in a housing situation (non-shelter and not on the streets) for 6 months or more they were excluded from the analyses, yielding the final sample of 169. The survey was anonymous and youth were read a consent form which they did not sign. Because homeless youth under the age of 18 are by definition unaccompanied minors, a waiver of parental consent was obtained for minors from the IRB. The survey was a computer-administered self-interview, delivered at the agency, lasting 60 minutes. Participants received a \$20 gift card.

Exact wording for cell phone use variables are reported on Table 1. All variables in Table 2 were based on self report. Chi-square and *t* test statistics were used to assess differences between cell phone owners and non-cell phone owners across demographic, substance use (from the CDC's Youth Risk Behavior Survey,¹⁷ a reliable instrument),¹⁸ mental health (Beck's Depression Inventory¹⁹ and Beck's Anxiety Inventory,²⁰ both validated instruments), and housing characteristics (using the typology created by Tsemberis and colleagues).²¹

RESULTS

Overall 62% of youth owned a cell phone: 40% owned a working phone, 15% owned a phone with no minutes, and 7% shared a phone with a friend. Moreover, 62% of youth reported using a cell phone at least once a day. Only 22% reported having no cell phone access at all. The most common route of procurement was from money earned at a job, followed by receiving a phone as a gift, and acquiring money through pan-handling. Youth reported using their cell phones to connect to a wide array of social network ties. The most frequently endorsed tie type was friends from home, followed by parents, siblings, and street-based peers. Of particular interest is the number of youth using their phones for instrumental purposes: 17% reported using a cell phone to contact case workers, social workers, or staff at youth

TABLE 1 Cell phone access among homeless youth (n=169), Los Angeles, CA 2009

	Number	Percent (%)
Right now, pick the sentence that best describes your cell phone access?		
I have my own cell phone and use it every day	67	39.64
I have my own cell phone, but no minutes	26	15.38
I share a cell phone with a friend	12	7.10
I don't have my own cell phone, but I can borrow one from a friend or associate	26	15.38
I don't have a cell phone and I cannot borrow one	38	22.49
Missing responses=0		
How often do you use a cell phone?		
Several times a day	87	51.48
Once a day	17	10.06
Once every couple of days	7	4.14
About once a week	4	2.37
Less than once a week	16	9.47
Never, I don't have any access to a cell phone	38	22.49
Missing responses=0.		
What kind of cell phone plan do you have?		
I buy minutes	39	23.35
I have a contract, so I pay a bill each month	64	38.32
I don't have a cell phone	64	38.32
Missing responses=2		
How did you get your cell phone?		
It was a gift	30	18.18
From money I saved or earned at a job	44	26.67
Money I got from spanging, begging, or street performing	9	5.45
Other means	18	10.91
I don't have a cell phone of my own	64	38.79
Missing responses=4		
Who do you use a cell phone to talk to? ^a		
Parents (including foster family or step family)	70	41.42
Brothers, sisters, cousins, or other family members	72	42.60
Friends or associates you know from the streets of Hollywood	64	37.87
Friends or associates you know from home (before you came to Hollywood)	86	50.89
Friends or associates you met online	39	23.08
Case workers, social workers, or staff at youth agencies	29	17.16
Potential employers, looking for work	41	24.26
Boss or employer at your job	20	11.83
Missing responses=0		

Table presents exact wording of questions and responses.

^aMultiple responses allowed

Note: Spanging is street slang for begging for spare change.

agencies; 24% reported using their cell phone to contact a potential employer; and 12% to a current employer.

As presented in Table 2, there were almost no significant differences between those youth who owned a cell phone and those who did not with respect to demographic characteristics, life experiences, recent substance use, or mental health.

TABLE 2 Characteristics of homeless youth by cell phone ownership (*n*=169) Los Angeles, CA 2009

	Total sample		No cell phone		Owns cell phone		Chi-square	<i>p</i> value
	<i>n</i> =169	Percent, %	<i>n</i> =64	Percent, %	<i>n</i> =105	Percent, %		
Race								
African American	54	32.0	16	25.0	38	36.2	5.27	0.26
Latino	22	13.0	7	10.9	15	14.3		
White	45	26.6	23	35.9	22	21.0		
Mixed race	29	17.2	11	17.2	18	17.1		
Other/non-identified	19	11.2	7	10.9	12	11.4		
Gender								
Male	111	65.7	45	70.3	66	62.9	0.98	0.32
Female	58	34.3	19	26.7	39	37.1		
Sexual orientation								
Gay/lesbian/bisexual/unsure	54	32.0	13	20.3	41	39.1	6.42	0.01
Heterosexual	115	68.1	51	76.7	64	61.0		
Current living situation								
Literal homelessness								
Shelter	24	14.7	11	37.4	13	62.6	7.74	0.02
Street or abandoned building	60	36.8	29	47.5	31	30.4		
Temporary housing	79	48.5	21	34.4	58	56.9		
Currently employed	35	20.7	10	15.6	25	24.3	1.78	0.18
Enrolled in school	45	26.8	15	23.4	30	28.9	0.59	0.44
High school graduate	105	62.1	41	64.1	64	61.0	0.16	0.69
History of foster care	71	42.0	24	37.5	47	44.8	0.86	0.35
Gang member	40	23.7	11	17.2	29	27.6	2.40	0.12
Substance use past 30 days								
Drank 5+ alcoholic drinks at once	93	55.7	37	58.7	56	53.9	0.38	0.54
Used marijuana	117	70.0	48	76.2	69	66.4	1.81	0.18
Used heroin	21	12.6	12	18.8	9	8.7	3.60	0.06
Used cocaine	39	23.5	13	20.3	26	25.5	0.59	0.44

TABLE 2 *Continued*

	Total sample		No cell phone		Owns cell phone		Chi-square	p value
	n=169	Percent, %	n=64	Percent, %	n=105	Percent, %		
Used methamphetamine	39	24.2	18	29.0	21	21.2	1.27	0.26
	Mean	SD	Mean	SD	Mean	SD	T-stat	p value
Age	20.91	2.1	20.42	2.4	21.20	1.9	2.35	0.02
Age at first homelessness	16.87	3.3	16.83	3.1	16.89	3.4	0.10	0.92
Beck's Depression Inventory Sum	11.26	11.4	12.32	11.8	10.60	11.2	0.93	0.35
Beck's Anxiety Inventory Sum	32.88	14.7	31.81	13.7	33.58	15.5	0.69	0.49

The exception was that significantly more lesbian/gay/bisexual/unsure youth owned phones relative to heterosexual youth, youth sleeping on the streets reported less cell phone ownership than youth in shelters or in temporary housing, and youth who owned phones were slightly older on average.

DISCUSSION

These data include several novel findings. First, 62% of homeless youth sampled had a cell phone and a comparable number reported using a cell phone at least once per day. Only 22% of the youth sampled reported having no access to a cell phone. While this level of use and ownership is less than that reported among housed adolescents,⁸ the rates are high. We caution readers that these results come from a non-probability sample collected at one drop-in agency in Los Angeles, and should not be generalized to dissimilar settings. Second, as was the case with homeless adults,⁶ there were not many socio-demographic differences in the backgrounds of persons who reported cell phone ownership relative to those who did not. An important exception was that more youth who reported staying in shelters or temporary housing also reported owning a cell phone relative to youth actively sleeping on the streets. Our conjecture is that access to financial resources is the salient issue, but as we did not collect information on income, we can only proffer this as a possible explanation.

Youth used their cell phones to access a spectrum of different network ties. Approximately half of youth used their phones to connect to home-based peers and approximately 40% connected with parents and other family members via their phones. Cell phones may enable homeless youth to more effectively access family and home-based support networks in times of need or crisis. Social support has well established connections to a wide array of positive physical and behavioral health outcomes.²² Using a cell phone to access support networks has been documented among housed youth^{12,13,23} and these data suggest that while the life circumstances of homeless youth differ, they are also using their cell phones to access networks which have the potential to provide social support.

These data also show that youth are using cell phones for instrumental purposes related to homelessness. Many youth reported using a cell phone to communicate with a case manager or social worker, and to contact potential or current employers. Cell phone access is not merely a resource unto itself, but a relatively cheap resource which can enable youth to pursue higher level resources, such as housing and employment. We challenge the reader to imagine trying to secure a job or a place to live without access to a phone. Homeless youth are no different. Having a cell phone allows these youth to more effectively search for jobs and housing, which in turn can lead to stability. Thus, cell phones may provide new opportunities for linking youth to resources and care which can improve their physical and behavioral health outcomes.

Limitations to the study included self-reported cell phone use, cross sectional data, and a non-probability sampling strategy. Also, we do not differentiate between face-to-face and cell phone-accessed networks, and face-to-face networks may be more important sources of support and influence.

While preliminary, these data suggest new opportunities for research and service delivery for homeless youth. Many of these youth have mobile phones and as such, there are new opportunities for case managers and social workers to maintain sustained contact with them despite their transient life-styles. Moreover, that youth are using their cell phones to access networks which can provide social support in times of need opens the possibility for developing intervention programs for

homeless youth which focus on accessing these possible sources of support. Typically, interventions for homeless youth ignore their ongoing relationships to family and home-based peers,²⁴ yet research has demonstrated that sexual risk taking and substance use are reduced when youth continue to access these networks.^{7,25} Cell phones may be a way to keep these youth more regularly and more meaningfully engaged with these physically distant but emotionally close relationships, which could promote positive health outcomes.

REFERENCES

1. Ringwalt CL, Greene JM, Robertson M, et al. The prevalence of homelessness among adolescents in the United States. *Am J Pub Heal.* 1998; 32: 1325–1329.
2. Kipke MD, Montgomery S, Simon TR, et al. Substance abuse disorders among runaway and homeless youth. *Subst Use Misuse.* 1997; 32: 969–986.
3. Whitbeck LB, Hoyt DR. *Nowhere to Grow: Homeless and Runaway Adolescents and Their Families.* Hawthorne, NY: Aldine de Gruyter; 1999.
4. Tyler KA, Whitbeck LB, Hoyt DR, et al. Predictions of self-reported sexually transmitted diseases among homeless and runaway adolescents. *J Sex Res.* 2000; 37: 369–377.
5. Rice E, Milburn NG, Rotheram-Borus MJ, et al. The effects of peer group network properties on drug use among homeless youth. *Am Behav Sci.* 2005; 48: 1102.
6. Eyrich-Garg KM. Mobile phone technology: a new paradigm for the prevention, treatment, and research of the non-sheltered “Street” homeless? *J Urban Health.* 2010; 87: 365–380.
7. Rice E, Monro W, Barman-Adhikari A, et al. Internet use, social networking, and homeless adolescents’ HIV/AIDS risk. *J Adolesc Health.* 2010; 47:610–613.
8. Lenhart, A. Teens and mobile phones over the past 5 years: pew Internet looks back | Pew Internet & American Life Project. Pew Resea Cen Int & Am Life Proj. 2009. <http://www.pewinternet.org/Reports/2009/14-Teens-and-Mobile-Phones-Data-Memo.aspx?r=1> Accessed August 23, 2010.
9. Auter PJ. Portable social groups: willingness to communicate, interpersonal communication gratifications, and cell phone use among young adults. *Int J Mob Com.* 2007; 5: 139–156.
10. Madell DE, Muncer SJ. Control over social interactions: an important reason for young people’s use of the Internet and mobile phone for communication? *Cyberpsychol Behav.* 2007; 10: 137–140.
11. Pearson JC, Carmon A, Tobola C, et al. Motives for communication: why the millennial generation uses electronic devices. *J Comm Spe Thea Ass N D.* 2009; 22.
12. Thulin E, Vilhelmson B. Mobiles everywhere: youth, the mobile phone, and changes in everyday practices. *J You Res.* 2007; 2007: 15.
13. Leung L. Stressful life events, motives for internet use, and social support among digital kids. *CybPsysc Behav.* 2007; 10: 204–214.
14. Walsh SP, White KM, Yong RM. Over-connected? A qualitative exploration of the relationship between Australian youth and their mobile phone. *J Adoles.* 2008; 32: 77–32.
15. Pain R, Grundy S. So long as I take my mobile: mobile phones, urban life, and geographies of young people’s safety. *In J Urb Reg Res.* 2005; 29(4): 814–830.
16. Wei R, Lo VH. Staying connected while on the move: cell phone use and social connectedness. *N Med Soci.* 2006; 8: 53–72.
17. Grunbaum JA, Kann L, Kinchen S, Ross J, Hawkins J, Lowry R, Harris WA, McManus T, Chyen D, Collins J. Youth risk behavior surveillance—United States, 2003. *MMWR. Surveillance Summaries: Morbidity and Mortality Weekly Report. Surveillance Summaries/CDC* 2004; 53(2): 1–96. <http://www.cdc.gov/HealthyYouth/yrbs/index.htm> Accessed May 10th, 2010.
18. Brener ND, Collins JL, Kann L, Warren CW, Williams BI. Reliability of the youth risk behavior survey questionnaire. *Am J Epidemiol.* 1995; 141(6): 575–580.

19. Beck AT, Steer RA, Brown GK. *Beck Depression Inventory-II (BDI-II)*. Antonio, TX: Psychological Corporation; 1996.
20. Beck AT, Epstein N, Brown G, Steer RA. An inventory for measuring clinical anxiety: psychometric properties. *J Consult Clin Psychol*. 1989; 56(6): 893–89.
21. Tsemberis S, McHugo G, Williams V, Hanrahan P, Stefancic A. Measuring homelessness and residential stability: the residential time-line follow-back inventory. *J Community Psychol*. 2007; 35(1): 29–42.
22. Uchino BN, Cacioppo JT, Kiecolt-Glaser JK. The relationship between social support and physiological processes: a review with emphasis on underlying mechanisms and implications for health. *Psychol Bull*. 1996; 119: 488–531.
23. Mandell D, Muncer S. Back from the beach but hanging on the telephone? English adolescents' attitudes and experiences of mobile phones and the internet. *CybPscy Behav*. 2004; 7: 359–367.
24. Arnold EM, Rotheram-Borus MJ. Comparisons of prevention programs for homeless youth. *Prev Sci*. 2009; 10: 76–86.
25. Rice E, Milburn N, Rotheram-Borus MJ. Pro-social and problematic social network influences on HIV/AIDS risk behaviours among newly homeless youth in los angeles. *AIDS Care*. 2007; 19: 697–704.