

Uses of mobile text messaging to engage homeless persons in healthcare

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The New York Times

A Push to Connect Offline Americans to the Internet

“The Obama administration is concerned that 60 million Americans are shut out of jobs, government services, health care and education...”

(August 18, 2013 – Edward Wyatt)

Poll #1

The VA devotes financial and programmatic resources for homeless Veterans. Compared to other Veteran vulnerable groups, do you think the VA efforts for homeless are:

(select one)

- a) too little?
- b) about the right amount?
- c) too much?

Poll #2

Please estimate the percent of homeless Veterans who own a cell phone:

(select one)

- a) <20%
- b) 21%-50%
- c) 51%-70%
- d) 71% -100%

Collaborators

Study 1 - Survey

- Henry Anaya
- Karin Eyrich-Garg
- Gemmae Fix
- Allen Gifford
- Thomas Houston
- Thomas O'Toole
- Beth Ann Petrakis
- Sowmya Rao
- Leon Sawh
- David Smelson
- Jeffrey Solomon

Study 2 – Pilot Text Messaging

- Steven Asch
- Erin Johnson
- Allen Gifford
- Thomas O'Toole
- Beth Ann Petrakis
- Sowmya Rao

Session Overview:

- Study 1: Survey of Homeless Veterans Living in Massachusetts
 - 5 minutes for questions
- Study 2: Pilot Test of Appointment Reminders via Text Messaging
 - 10 minutes for questions



Background

- Health of homeless persons is poor
 - Mortality rates 5-9 times higher
 - Emergency Room (ER) use 3 times more often
 - Hospitalized 4 times more often
 - High prevalence of mental illness
 - High prevalence of substance use disorders

Veterans and homelessness

- 62,000 homeless veterans
- 200,000 homeless/unstably housed/at risk

(AJPH supplement 2013 covers homelessness



Study 1:

Survey of Homeless Veterans Living in Massachusetts

What we found....

- 89% had a mobile phone
 - (71% of these used texting)
 - (35% of phones were smart phones)
- 79% used the Internet

Methods

- Survey (2012-2013)
 - 5 sites in Massachusetts, recruited total of 106
 - Convenience sample
 - Paper and pencil interviewer administered survey

Recruitment numbers by organization type

Type of Organization (all had homelessness focus)	n
Multi-service organization	55
Domiciliary	22
Emergency shelters	14
Transitional housing	9
Grant per diem	6

Methods: questions

Survey Topics:

- Demographics
- Housing prior to current location
- Technology use
 - Access: mobile phone, Internet, etc.
 - Purposes for using technology
 - Willingness to use technology for communication with health system
 - Barriers to use

Sources: Pew, NCI's HINTS, Eyrich-Garg 2010 & 2011

Methods: qualitative

With subset of 30 of the 106 participants.

- 30 minute semi-structured interview
- Audio-recordings, field notes, transcriptions

Topics:

- Participant life experiences
- Health concerns
- Use of IT in general
- Use of IT related to health
- Perceptions of possible health related interventions with mobile phones

Method - Analysis

- Survey data
 - Frequency distributions and Chi-square/Fisher's exact tests
- Qualitative data – analysis of field notes
 - thematic analysis to identify themes and subthemes
 - Creation of codes, inter-rater reliability
 - Coding of 30 field notes

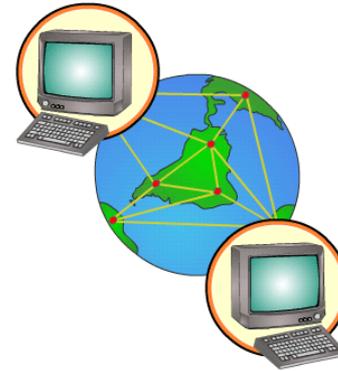
Results – Survey (n=106)

DEMOGRAPHICS & HOUSING	
Male	96%
Ages 50-69	72%
African American	22%
Current Housing	
Multi-service organization	52%
Domiciliary (VA)	23%
Emergency shelter	13%
Transitional housing (VA)	8%
Grant per diem	6%

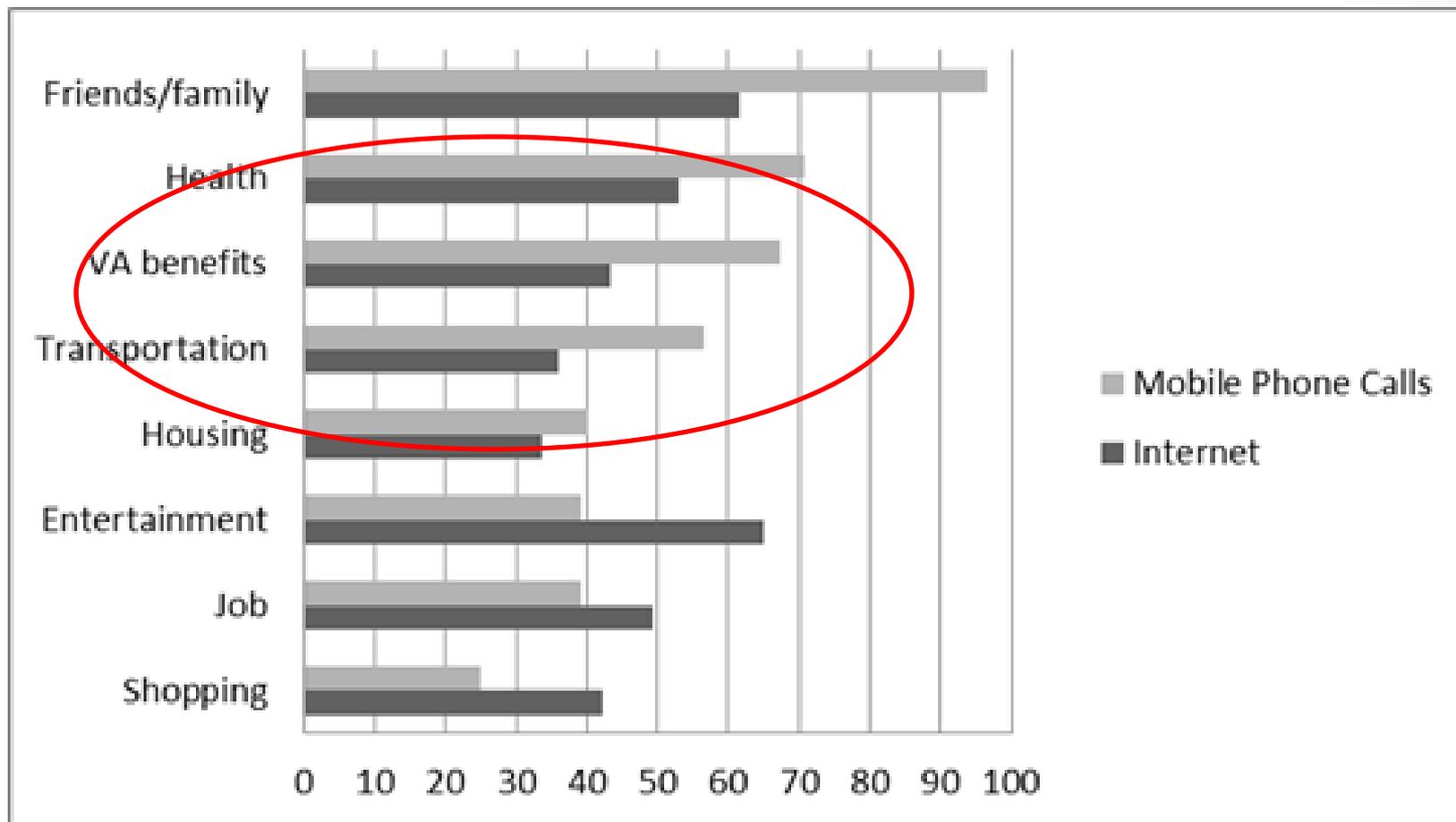
Access to Technologies

Findings:

- 89% have mobile phone
 - 70% use texting
 - 35% are smartphones
- 79% use the Internet
 - Half use the Internet daily
- 86% have an email address

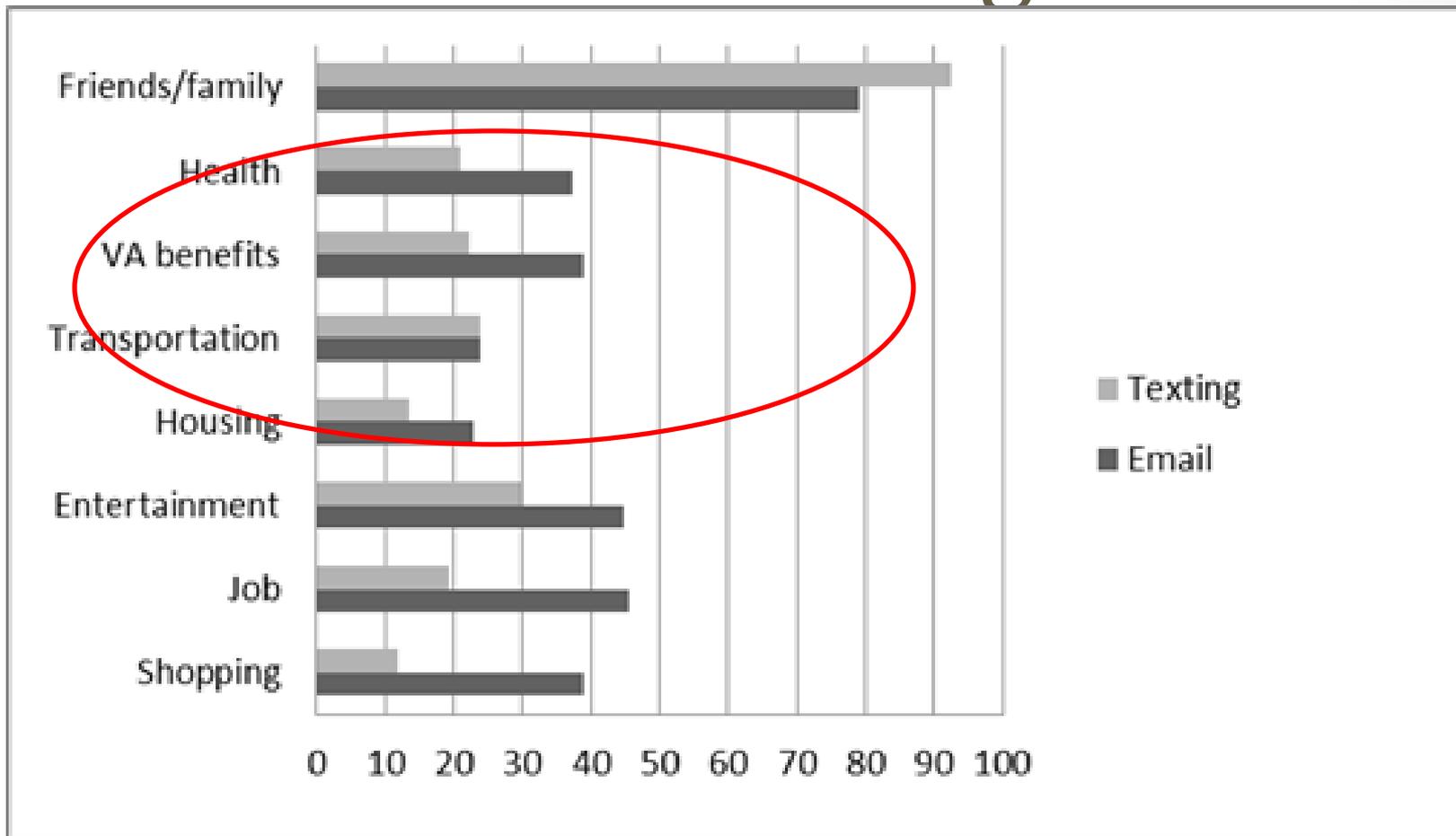


Use, Mobile Calls vs. Internet



Among those with mobile phone, and who use Internet, respectively

Uses: Email vs. Texting



Among those with email address, and who use texting, respectively

Association of Past Housing & Use of Texting

(among those with a mobile phone)

Where lived prior to current location	Use Texting
With relative/friend	92%
Own house or apartment	86%
Jail	67%
Hospital/Dom/Drug Tx/ Transitional	65%
Emergency Shelter	55%

P=0.07

Association of Current Housing & Use of Technologies (Internet & email)

	Use Internet	Have email
Multi-type organization	87%	89%
Domiciliary	86%	82%
Grant-per-diem	83%	100%
Transitional housing	56%	67%
Emergency shelter	50%	50%
	P=0.01	P=0.01

Barriers to IT Use, Past 12 months

Barrier	
Phone number change	45%
Phone broke	28%
Phone lost	20%
Phone stolen	17%

Multiple responses permitted,
Among n=101 with mobile phone in past 12 months

Barriers to IT Use, Past 30 Days

Barrier	
Phone out of power when wanted to use	35%
Ran out of minutes	16%
Reached limit of texts	6%
Forgot how to text	6%
Forgot how to call	4%

Multiple responses permitted

Among 94 with mobile phone; and for texting among 67 who used texting

Qualitative findings

- Mobile phone already used by some for health related
 - Reminder calls for appointments
 - Already connect with social worker, doctor,
 - *“They always check on me”*
- Some dislike automatic appointment reminder calls in VA
 - *“When you answer it you can’t shut it off and your stuck with it and it eats up all your time and you don’t know who it is”*
- Text message: *“Well you have something solid in front of you. You don’t have to write it down. You can save it and it’s there. I mean you have all the information right there.”*
- Like asynchronous nature of texting

Qualitative findings (cont.)

- Openness to text messaging health:
 - Appointment reminders
 - Reminders to get lab work done
 - Medication refill reminders
 - Outreach “How are you doing? We haven’t seen you lately”
 - Notification that lab results ready (not so sure)
- Downsides of mobile phone and text messages:
 - Too many texts
 - Cost of text and calls
 - Don’t check inbox often enough
 - Lack text messaging skills

Discussion

- Access to mobile phones and Internet.
- Barriers to continuous contact.
 - Change phone #
 - Lost, broken, stolen phone
- Give out phones for interventions?
- What other interventions to consider?



Poll #3

What areas of health should encourage more use of cell phone for the homeless:

(select 2)

- a) Text message medication taking reminders
- b) Text message appointment reminders (e.g. for clinic visits)
- c) Mental health therapy sessions conducted via smartphone
- d) For alcohol abusers, GPS triggered support text messages when he/she nears a liquor store.
- e) Patients using a text message system to regularly report blood pressure or blood glucose levels to VHA.

Study 2:

Pilot Test of Appointment Reminders via Text Messaging

Problems of Continuity of Care for Homeless Veterans

- Relatively high amount of missed visits
 - As high as 44% in some VA settings
- Reasons:
 - Forgetting, unaware of visit, transportation, competing needs (e.g. shelter, food, job)

Technology to Assist with Continuity

- Systematic review shows 40% - 60% of homeless have mobile phones.
- Our survey of homeless and recently homeless veterans found 89% with mobile phone



Pilot Study of Text Messaging: Objectives

- Can text messaging improve appointment attendance?
- Pilot study to assess
 - Feasibility
 - Acceptability
 - Usability
 - Usefulness
 - Measures



Intervention

- Send text messages 5 days and 2 days prior to scheduled appointments
- *“Remember: Thurs, October 25th, at 9 AM you have an appointment at Providence VA. If you have questions or need to cancel call xxx xxx-xxxx. Thanks”*
- One-way messaging only
- Via Message-Media web-based messaging software

Intervention Delivery

- 8 week period for each patient
- Any scheduled outpatient visit at the VA medical center
 - Primary care
 - Specialty care (cardiology, endocrinology, etc.)
 - Social work
 - Mental health, etc.
- Excluded: daily recurring visits, home care visits, etc

Site & Participants

- Providence Rhode Island VA Medical Center
 - Homeless Primary Care Clinic
- Participants:
 - Users of the homeless clinic
 - Owned mobile phone
 - Used text messaging
 - Received \$15 for baseline survey; \$25 for follow-up

Results

Participants

- 21 veterans enrolled
- 20 received text messages
- 16 completed follow-up interview

Demographics & Housing, N=21

Male	81%
Ages 50-69	76%
White	62%
Income < \$12,000	62%
Health Fair/Poor	62%
Current Housing	
- Own house/appt.	33%
- Friend/relative	43%
- Transitional Housing	10%
- Motel/Shelter	10%
- Car or street	5%

Usability & Usefulness

- Usability
 - good for most;
 - one had some difficulty finding messages in inbox
- Usefulness –
 - most found it useful
 - *“If I didn’t have this I’d be walking around with a lot of papers in my pocket”*
 - All but one indicated they would continue if it were offered.

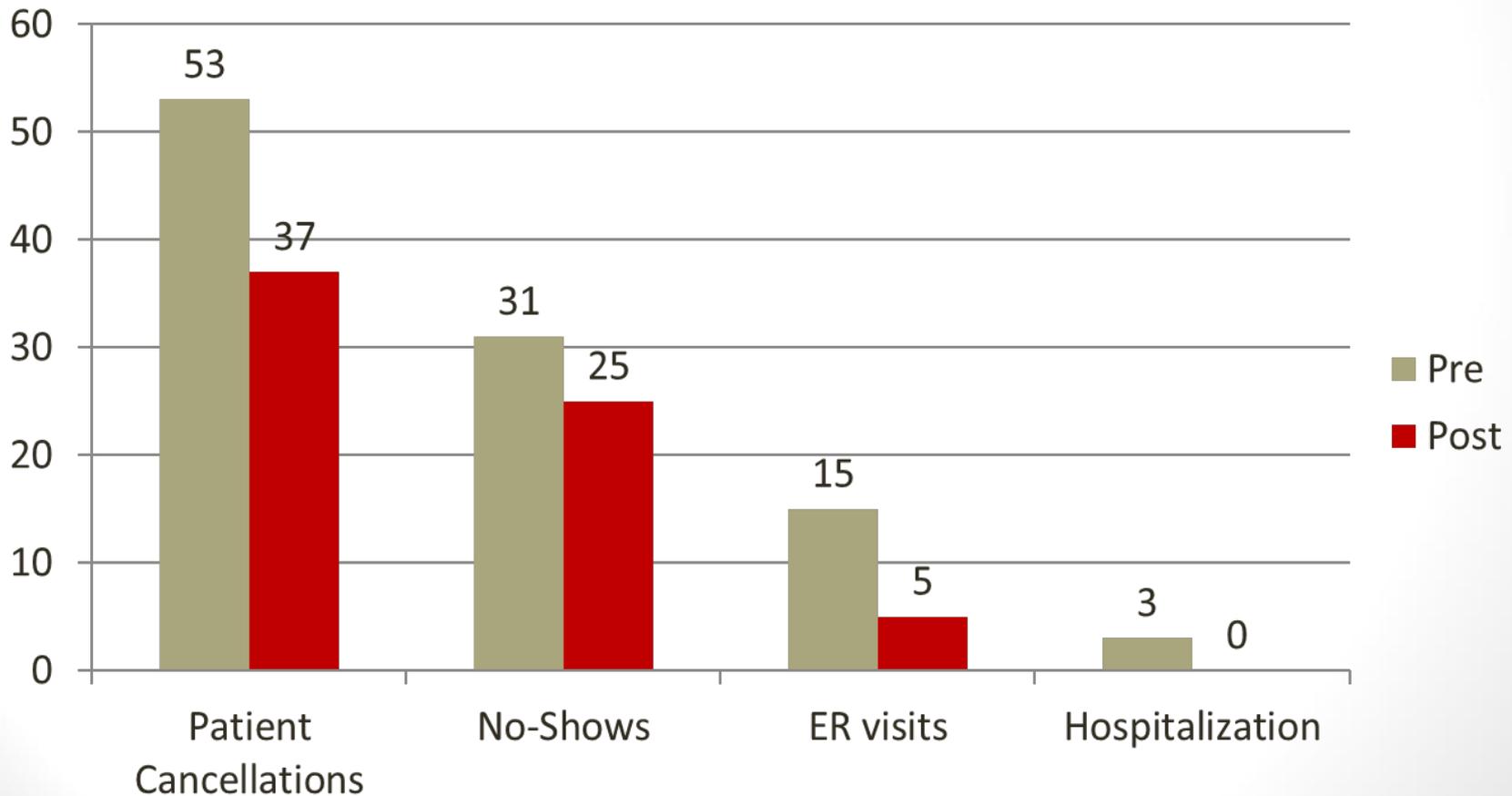
Quote - Usefulness

“Every time I received a text message it was a blessing. I'd get voicemails from the automated system and a lot of times my voicemail wouldn't go through or it would, [but] it would be all scrambled and I couldn't understand it. The great thing about the texts is it's all laid out in text form that I can save.”

Feasibility

- Found participants with cell phone who knew how to text
- Most participants seemed to have continuous service
- One veteran lost service for 3 weeks

Utilization Changes Pre- vs. Post- Intervention (n=20)



Challenges

- Patients enrolled, but couldn't continue (jail, hospitalization, etc.)
- Some never completed follow-up interview
- Time consuming manual examination of schedules
- Manual editing of text messages
- Not known if message opened and read

Conclusion

- Texting is feasible, usable, and useful with this population
- Larger, controlled study needed to:
 - Confirm there are changes in behavior/utilization
 - Determine how large the changes are
 - Evaluate whether effects diminish over time
- Consider other areas of engagement and behavior change

(additional study details in: McInnes et al. 2014 *AJPH*)

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Questions?

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