

# Cell Phone Use: Health and safety concerns among college students

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<http://apha.confex.com/apha/138am/webprogram/Session30901.html>



# **Presenter Disclosures**

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(1) The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

“No relationships to disclose”

# ABSTRACT

Cell phone use is emerging as an addiction problem that has the potential to affect the health of university students. Despite the advantages of cell phones in our daily lives, reservations still exist on the use of cell phones and their impacts on the psychological health of the individual.

This study examined the relationship among sleep, depression, social interaction, dependence and cell phone use in college students. The cross sectional study involved 171 college students. This study increased our awareness of health and safety issues associated with high cell and text messaging including addiction (high use and dependence), safety (driving and texting), text message injury as well as sleep deprivation. More studies need to be conducted so that health professionals can tailor programs to target these areas of concerns.

# INTRODUCTION

- ✓ Cell phone use is increasing by leaps and bounds
- ✓ Online survey conducted by Harris Interactive , 2008 (N= 9,132)
- ✓ 89% of adults have wireless or cell phone, 77 % increase from October 2006 to 2008
- ✓ Cell phone use and anxiety, depression, insomnia, fatigue, headache and loneliness

# INTRODUCTION

- ✓ The National Highway Traffic Safety Administration (NHTSA)
- ✓ Cell phone use associated with high anxiety and insomnia in college students (Jenaro, Flores, ET. Al,2006)
- ✓ Cell phone use among high school adolescents, associated with depressive symptoms, social isolation, alcohol and drug abuse, academic failure and cell phone dependency (Sanchez – Martinez, Otero, 2009)

# PURPOSE

To identify the health and safety concerns related with high cell phone use (calling and texting) on

- sleep
- depression
- social interaction
- dependence

# PROCEDURES

## STUDY DESIGN

- ✓ Cross sectional study conducted fall 2009
- ✓ Non-randomized, convenience sample

## SUBJECTS

- ✓ Undergraduate students (N= 362)
- ✓ University in South Central United States
- ✓ General education classes
- ✓ 18 to 32 years of age

# DEMOGRAPHICS (N=362)

## ✓ Respondents

Fall 2009      n= 171              Fall 2010    n= 191

## ✓ Gender (%)

Female            56.5

Male              43.5

## ✓ Education (%)

Freshmen        64.7

Junior            11.1

Sophomore      21.7

Senior            2.3

## ✓ Country of origin (%)

United States    87.6

Other             5.1



# DATA COLLECTION

- ✓ HSRB approval
- ✓ Paper and pencil anonymous questionnaire
- ✓ Questions addressed cell phone use (calling and texting)  
and effects on:
  - sleep
  - depression
  - social interaction
  - dependence

# RESEARCH INSTRUMENT

- ✓ Health Belief Model and Theory of Planned Behavior
- ✓ 38 questions
  - 3 demographics
  - 12 cell and texting
  - 23 items addressing constructs
    - outcome expectancy
    - barriers
    - motivation to comply
    - self efficacy
- ✓ The 5 point Likert scale responses
  - 4 = strongly agree to 0 = strongly disagree

# RESEARCH INSTRUMENT

## CELL PHONE USE

- ✓ I use my cell phone daily to make calls
- ✓ I use my cell phone daily to send text messages

## SLEEP DISTURBANCE

- ✓ I go to sleep late at night because I like to talk/text message from my cell phone
- ✓ Talking on the cell phone at night affects my sleep
- ✓ I wake up at night at least once to check my cell phone for missed calls or text messages

# RESEARCH INSTRUMENT

## DEPRESSION

- ✓ I feel depressed when I don't receive any calls within 3 hours
- ✓ Talking on the cell relaxes me

## SOCIAL INTERACTION

- ✓ Cell phone use has reduced get together with friends
- ✓ I am more comfortable talking on the cell than face to face
- ✓ I call to avoid personal interaction

## CELL DEPENDENCE

- ✓ I feel safe when I have my cell phone with me
- ✓ I keep my cell phone beside me when I sleep
- ✓ I feel I am dependent on the cell phone

# RELIABILITY OF MEASURES

Scale	Items	Mean Range	Cronbach's Alpha
Sleep Scale	3	1.45 1.28 – 1.66	0.62
Depression Scale	3	1.32 0.88 – 1.84	0.75
Social interaction Scale	4	0.62 0.06 – 1.39	0.42
Cell dependence	3	2.79 2.06 – 3.19	0.62

# RESULTS

- ✓ 98.3% of students owned their own cell phone
- ✓ 54.3% owned a cell phone  $\leq$  5 years
- ✓ 45.7% owned a cell phone  $>$  5 years
- ✓ 85.9 % called 5-10 people in a day
- ✓ 71.7 % text 5-10 people in a day
- ✓ Combined cell and text use ranged from 0 to 10+ hours daily

# MEASURES AND CELL PHONE USE

Scale	$\leq 1$ hour (Mean)	$>1$ hour (Mean)	P value
Sleep Scale	0.19	0.75	0.000
Depression Scale	.59	.47	0.360
Social interaction Scale	.58	.43	0.349
Cell dependence Scale	1.11	1.36	0.115

# MEASURES WITH GENDER

Scale	Males (Mean)	Females ( Mean)	P value
Sleep Scale	1.06	0.59	.005
Depression Scale	0.57	0.48	.412
Social interaction Scale	0.79	0.48	.020
Cell dependence Scale	1.35	1.36	.093



# MEASURES WITH EDUCATION STATUS

Scale	Freshman Mean	Others Mean	P value
Sleep Scale	0.56	1.07	.002
Depression Scale	0.57	0.47	.340
Social interaction Scale	0.51	0.74	.068
Cell dependence Scale	1.27	1.47	.069

# TEXTING AND DRIVING

Texting	Males (%)	Females (%)	P value
Fall 2009 (55.3%)	63.4	48.9	0.080
Fall 2010 (34.9%)	45.6	27.1	0.013



# CONCLUSIONS

- ✓ Almost all the respondents used cell phones
- ✓ High cell phone and text use
  - 38.7% calling 1+ hours a day
  - 83.9% texting 1+ hours a day
- ✓ 52.3% combined cell and text use of 1+ hours a day

# Conclusions

- ✓ Significant differences were found on the sleep scale and social interaction scale
- ✓ Mean sleep scales scores were significantly higher for individuals who used the cell phone for more than an hour a day than those who did not ( $p = .000$ )
- ✓ Mean sleep scales scores were significantly higher for males than female ( $p = .005$ )

# Conclusions

- ✓ Mean social interaction scale scores were significantly higher for males than female ( $p=.020$ )
- ✓ Mean sleep scales scores were significantly higher for returning students than freshmen ( $p= .002$ )
- ✓ Significant reduction in texting while driving occurred in 2010

# IMPLICATIONS

- ✓ This study increased our awareness of health and safety issues associated with high cell and text messaging including addiction (high use and dependence), safety (driving and texting), as well as sleep deprivation
- ✓ More study needs to be conducted so that health professionals can tailor programs to target these areas of concerns

# IMPLICATIONS

- ✓ Develop health promotion activities and awareness programs to address the excessive use of cell phone among college students
  - 59.6% affects my health
- ✓ Policies in classroom settings
  - 64.6% if my professor says so
  - 44.7% strict university policies
- ✓ Laws helpful to reduce texting while driving

# REFERENCES

- Ha, H. J., Chin, B., Park, D. H., Ryu, S. H., Yu, J., (November 6, 2008). Characteristics of excessive Cellular Phone Use in Korean Adolescents. *CyberPsychology and Behavior* , Volume 6.
- International Telecommunication Union*. (2008, April 7). Retrieved November 4, 2009, from ITU.com.
- Jenaro, C., Gomez-Vela, M., Flores, N., Gonzalez-Gil, F., & Caballo, C., (2007). Problematic internet and cell-phone use: psychological behavioral, and health correlates. *Addiction Research and Theory* , 309-320.
- Khan, M. M., (2008). Adverse Effect Of Excessive Mobile Phone Use. *International Journal of Occupational Medicine and Environmental Health* , 289-293.
- Needa. (March 2007). A Study in Kuwait of Health Risks Associated With Using Cell Phones. *College Student Journal* , Volume 41, Issue 1, 187-202.
- Reid. (2007). Text or Talk? Social Anxiety, Loneliness and Divergent Preference for Cell Phone Use. *Cyber Psychology and Behavior* , Volume 10, Number 3.
- Sanchez-martinez, M., & Otero, A., (November 2, 2009). Factors Associated with Cell Phone Use in adolescents in the Community of Madrid (Spain). *CyberPsychology and Behavior* , Volume 12.
- Driver cell Phone Use in 2007*. (2007, July). Retrieved December 4, 2009, from Barren River Health Department: [www.barrenriverhealth.org](http://www.barrenriverhealth.org)