RESEARCH ARTICLE

Health Impacts of mobile texting among undergraduate students of Health Care Professions

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ABSTRACT

Background: Mobile texting is used for both social interactions and educational purposes. Some recent studies reported various health problems associated with excessive texting habits. With this background, we would like to conduct a study among undergraduate students of various health care professions to determine the association between mobile texting and its health effects. Materials and Methods: A Cross-sectional study will be conducted at a reputed private university in Malaysia involving 377 undergraduate students of Pharmacy, Medicine and Dentistry to study the association between association between mobile texting and its health impacts. The sample will be selected by Stratified Random Sampling technique and data collection will be conducted for 3 months (1st August 2014 to 31st October 2014). A self-developed, expert validated, pre-tested and self-rated questionnaire will be used for data collection. The data collected will be tabulated and analyzed by using the statistical package for social sciences (SPSS) version 18.0 for Windows. Baseline data on categorical variables will be presented in the form of proportions and their 95% confidence intervals (CIs). Comparisons between two categorical variables will be done by using the Chi-square test. Odds Ratio and its 95% CIs will be used to study the strength of association between the exposures and outcomes. Multiple Logistic Regression analysis will be conducted to remove the confounders. In this study, p-value <0.05 will be considered as statistically significant. Results: Data collection is under process. Details of results are awaited.

Key words: Mobile, Texting, Chi-square, Multiple, Logistic, Regression, analysis

INTRODUCTION

Mobile texting are popular among undergraduate students. It is used for both social interactions and educational purposes. Some recent studies reported nausea, loss of appetite and migraine to be associated with excessive texting habits (Tokunaga, 2011). A study by Sami et al reported a significant association between excessive use of texting and holding of urine and defecation, postponing or skipping meals and sleep deprivation among undergraduate medical students. Significant association was also observed between feeling of isolation from family or society mobile texting activities (Sami, 2013). Though there are many negative health effects of texting, but it has the potential to be used as a learning tool in higher education in modern era. Electronic communication through texting was reported to be useful for students in the social and the academic aspects as it allows for interactive learning between students and facilitators in higher educational institutions (Vivian, 2011).

With this background, we would like to conduct a study among undergraduate students of various health care professions to determine the association between mobile texting and health effects. We hope to provide recommendations to improve the strategies to mitigate the negative health effects of mobile texting. In this study health science is defined as Pharmacy, Medicine and Dentistry.

Outcome of the present study will be useful in educating and motivating the undergraduate students of various health care professions to adopt healthy lifestyles and minimizing mobile texting in order to avoid the negative health effects.

Objective

To determine the association between mobile texting and health impacts in this population.

MATERIALS AND METHODS

Study design: A Cross-sectional study will be conducted at a reputed private university in Malaysia.

Study period: The data collection will be conducted for 3 months (1st August 2014 to 31st October 2014).

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Study Population: All the undergraduate students of Pharmacy, Medicine and Dentistry will be invited to participate.

Sample size: Undergraduate students pursuing their professional careers in Pharmacy, Medicine and Dentistry at the designated private university will be invited to participate in this study. The sample size was estimated for finite population with the help of statistical package EPI-Info version 5.0 for windows and verified by using the following formula -

$= \frac{t^2pq}{d^2}$ Here, the confidence level was taken as 95%.

t= Normal deviate corresponding to the required CI. Here, it was 1.96 for 95%CI.

p = Proportion of respondents with Textaphrenia was expected to be at least 50%.

q = (100-p).

d = Absolute precision of the estimate was set at 5%.

However, after applying probability sample size calculation formula for infinite population, considering 95% Confidence Interval, 5% absolute error of precision and 50% prevalence of negative health effects among heavy Facebook users and mobile text messages, the minimum required sample size is **377**. This sample should be distributed across various professional streams according to probability proportionate to sample size.

Inclusion criteria: Students enrolled in Health Sciences programmes of Pharmacy, Medicine and Dentistry at the designated private university will be invited to participate in this study.

Exclusion criteria: The eligible candidates who are not willing to participate in the study or fail to provide an informed written consent will be excluded.

Sampling technique: Stratified Random Sampling technique will be adopted in this study.

Study instrument: A self-developed, expert validated, pre-tested and self-rated questionnaire will be used (Annexure - A).

Operational definition of Texting addiction: Texting addiction is diagnosed to be present if any of the following symptoms are present: feeling of cutting down on texting habits; annoyed by people criticizing on texting habits; feeling bad or guilty about texting habits; texting is done as first thing in the morning to steady nerves or to get rid of a hangover.

Operational Definition of Health Impacts – The health impacts of texting include sleep deprivation, addiction to social media, electronic relationships, false sense of connection, lacking communication skills, holding back the urge of urination or defecation, postponing or skipping meals, poor well-being, feeling of isolation and depressive mood.

Ethical considerations:

1. Consent from the institutional research and ethics committee will be obtained prior to the data collection.
2. Informed written consent will be obtained from every participant in the study before the recruitment.
3. All information will be kept confidential and anonymity and privacy will be maintained throughout the study.

Data collection procedure: Data collection date and time will be confirmed from respective programme coordinators. Every effort will be made not to disturb any teaching and learning activities at the designated private university. All the participants will be briefed about the procedure to register their responses in the self-rated questionnaire before data collection. If a selected student is absent on the first day of data collection, another two attempts will be made to contact him/her on two separate occasions. However, if the investigators fail to contact an eligible candidate on three separate occasions for data collection then the designated person will be excluded from this study.

Data analysis:

- The data collected will be tabulated and analyzed by using the statistical package for social sciences (SPSS) version 18.0 for Windows.
- Quantitative analysis: Baseline data on categorical variables will be presented in the form of proportions and their 95% confidence

intervals (CIs). Comparisons between two categorical variables will be done by using the Chi-square test. Odds Ratio and its 95% CIs will be used to study the strength of association between the exposures and outcomes.

- In this study, p-value <0.05 will be considered as statistically significant.

Annexure

SECTION A: SOCIO-DEMOGRAPHIC PROFILE [Please encircle or tick (√)whichever is appropriate]

Socio-demographic Correlates:	**Response**	***Office Code***
1. What is your gender?	Male[2] / Female[1]	
2. What is your age (in completed years)? _____ years		
3. How many siblings do you have? _____		
4. What is your ethnicity?	Malay [1] / Chinese [2] / Indians [3] / others [4] _____	
5. Which School do you belong? Medical [1] / Pharmacy [2] / Dentistry [3]		
6. What is your father's highest level of education? _____		
7. What is your mother's highest level of education? _____		
8. What is your living condition?	Living with both parents [5] / Living with only one of the parents [4] / Living with relatives [3]/ living with friends [2] / living alone [1]	
9. Number of close friends	_____	
10. Preference of spending most of the leisure time in company of:	Family Members / Relatives / Friends /Alone	
11. Habit of smoking cigarettes at least one packet (10 cigarettes) per week	Yes / No	
12. Habit of alcohol consumption at least one peg (60 ml) per week	Yes / No	

SECTION B: TEXT MESSAGING [Please encircle or tick (√)whichever is appropriate]

Sl. No.	***Questions on Texting***	***Response***	***Office Code***
1a	Do you use any mobile phone or smart device for texting messages?	Yes/No **[If "No", skip questions 1b to 18]**	
1b	If **YES,** what type of phone or smart device do you use?	Multiple responses if applicable: Smart phone [1] / smart pad [2] / i-phone [3] / i-pod [4] / i-pad [5] / simple mobile with no internet access [6] / others [7] _____	
1c	How many months are you using your mobile phone or smart device for texting messages?	_____ months	
2	How many times (on an average) do you text message in a day?	_____ times	
3	Who do you text for most of the time in a day?	Multiple responses if applicable: Parents [5] / Relatives [4] / Colleagues [3] / Boy or Girlfriend [2] / Lecturers [1]	
4	Do you text message every night even after 11pm?	Yes [1] / No [2]	
5	Do you feel sleepy and tired the next day when you keep texting till late at night?	Yes [1] / No [2]	
6	Do you skip classes due to texting late at night?	Yes [1] / No [2]	
7	Do you always crave for texting to someone?	Yes [1] / No [2]	
8	Do you feel anxious or irritated when you text someone, but fail to receive any response on time?	Yes [1] / No [2]	
9	Do you check your mobile/smartphone for text messages very frequently (every 5-10 minutes)?	Yes [1] / No [2]	
10	Do you still hear the tone of text messages even after keeping your mobile/smartphone in silent mode?	Yes [1] / No [2]	
11	Do you feel that you are not getting good sleep due to your over text habits?	Yes [1] / No [2]	

SECTION B: TEXT MESSAGING (continued) [Please encircle or tick (√)whichever is appropriate]

Sl. No.	***Questions on Texting***	***Response***	***Office Code***
12	Did your friends / colleagues complain about your over text habits?	Yes [1] / No [2]	
13	Do you feel uncomfortable if you are not allowed to use your smart devices for an hour during plenary sessions?	Yes [1] / No [2]	
14	Do you feel cheerful and in good spirits when you do texting?	Yes [2] / No [1]	
15	Do you feel calm and relaxed when you do texting?	Yes [2] / No [1]	
16	Do you feel active and vigorous when you do texting?	Yes [2] / No [1]	
17	Do you wake up fresh and rested after doing texting at night?	Yes [2] / No [1]	
18	Do you feel that your life is interesting as you do texting?	Yes [2] / No [1]	
19	Have you ever felt you should cut down on your texting habit?	Yes [1] / No [2]	
20	Have people annoyed you by criticizing your texting habit?	Yes [1] / No [2]	
21	Have you ever felt bad or guilty about your texting habit?	Yes [1] / No [2]	
22	Have you ever done texting first thing in the morning to steady your nerves or to get rid of a hangover?	Yes [1] / No [2]	

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