INTRODUCTION

Tobacco use is the single largest preventable cause of death and disability worldwide. Nearly 80% of these deaths occur in low- and middle-income countries [1]. Tobacco is one of the major causes of death and disease in India, accounting for nearly 900,000 deaths every year. About 53% of all deaths in India are caused by NCDs, for which tobacco use is one of the major risk factors. In India, 35% of all adults (275 million) aged 15 years and above are users of tobacco, according to the Global Adult Tobacco Survey.
India, 2009-10. India is the second largest consumer and third largest producer of tobacco and a plethora of tobacco products are available at very low prices [2]. Tobacco-related mortality in India is among the highest in the world [3]. Smoking among health care personnel, such as medical students, is an important public health issue. More effective measures to reduce tobacco smoking among medical students are needed worldwide [4]. Health professionals, while recognizing smoking as the leading preventable cause of death and disability, are not aware of their fundamental role in helping people quit smoking [5,6]. In some countries, the prevalence of smoking is higher among health professionals than among the general population [7,8].

Teaching about the effects of the use of tobacco and its related diseases is essential for undergraduate medical students, especially to counter the deadly effects of the same. Physicians occupy a key position in this regard, as they are uniquely placed to lead smoking cessation programs in the community [9]. In most developed countries where tobacco use has decreased, doctors often have set an example by being the first group to quit tobacco use [10]. Health professionals have an important role to play in the fight against tobacco. As individuals, health professionals can help educate the population; as community members, they can support anti-smoking policies; and at a societal level, they can influence national and global tobacco control efforts [11].

To date, very few studies had been conducted in India to understand the magnitude of knowledge of smoking as a public health problem among medical students. Medical students are better placed to understand and practice the latest developments in healthcare. Therefore, it is important to understand the factors affecting tobacco use among medical students and to know whether medical students perceive tobacco use as a public health problem. Hence, this study was undertaken to estimate the prevalence of tobacco use among medical students in Chennai and to measure the extent of attitude toward, behavior around and knowledge of tobacco usage among medical students.

**MATERIALS AND METHODS**

This cross-sectional study was conducted among 4 randomly selected medical colleges, comprised of one government and three private medical colleges from a total of three government and nine private medical colleges in and around Chennai, India. The study was conducted from September 2013 to August 2014. With the prevalence of 22.4%, as per Kumar et al. [12], at a 5% significance level and 20% allowable error, the sample size was determined using the formula \( n = \frac{4pqL^2}{L^2} \), which came to 340. Considering a 15% non-response rate, the sample size was rounded up to 400. The Global Health Professional Students Survey (GHPSS), a standardized college-based tool, was used to collect data among medical students [13]. This tool was administered in colleges during regular class sessions. The questionnaire was pre-tested in a pilot study to assess the feasibility of adopting the questionnaire, and it was adopted without modification. The protocol was submitted to the institution ethics committee and approval was obtained.

After obtaining the permission of heads of the institutions, students were briefed about the questionnaire and purpose of the study. Informed written consent was obtained from the students and the students were informed about the confidentiality of the data. Data regarding demographics, knowledge of, attitude toward and behavior regarding tobacco were collected. It was ensured that participants answered all questionnaire items.

Data was entered into Microsoft Excel 2010 spreadsheet and analyzed using Epi Info version 3.4.3. Descriptive analyses were conducted (means, percentages, proportions, and 95% confidence intervals) for demographic data. A Chi-square test of significance was used for analysis of categorical variables. p-values < 0.05 were considered significant.

**RESULTS**

This study was conducted among 479 third year medical college students at four medical colleges. The mean age of study participants was 20.46 years, with 200 (41.8%) males and 279 (58.2%) females.

The proportion of students who ever tried cigarette smoking was found to be 10.9% (males, 23.5%; females, 1.8%). The prevalence of current cigarette smoking among students was found to be 4.8% (males, 11.5%; females, 0%). The proportion of cigarette smoking on college premises during the past year was found to be 1.9%. The proportion of students...
who ever used smokeless tobacco (chewing tobacco, snuff) was found to be 1.9% (males 4.5%; females, 0%). The prevalence of current smokeless tobacco use among students was found to be 1.0% (males, 2.5%; females, 0%). The proportion of students using smokeless tobacco on college premises during the past year was 0.6%. The prevalence of exposure to tobacco smoke at home among students was found to be 34.2% (males, 49.5%; females, 23.3%). The prevalence of exposure to tobacco smoke at public places was found to be 50.3% (males, 58.5%; females, 44.4%; Table 1).

A majority of the students (96.5%) supported a tobacco sales ban to adolescents, as well as a ban of tobacco product advertisements (91.6%). Most students agreed that smoking should be banned in restaurants (94.0%), in public places (93.7%) and in discos/bars/pubs (73.9%). Many students, 75.6% and 95.2%, indicated that health professionals should serve as a role model for patients and receive specific training on cessation techniques, respectively. The proportion of students who currently wanted to quit smoking cigarettes was 26.9%. The proportion of students who ever tried to stop smoking cigarettes during the past year was 34.6% and the proportions of students who stopped smoking cigarettes and using smokeless tobacco were 13.5% and 44.4%.

Table 1. Prevalence of tobacco use among medical students

| Tobacco items                                      | Male n=200 | Female n=279 | Total N=479 |
|---------------------------------------------------|------------|--------------|-------------|
| Ever tried cigarette smoking                      | 47 (23.5)  | 5 (1.8)      | 52 (10.85)  |
| Current cigarette smoking habit                    | 23 (11.5)  | 0 (0.0)      | 23 (4.80)   |
| Smoking cigarettes on college premises/property during past year | 8 (4.0)    | 1 (0.4)      | 9 (1.87)    |
| Ever used smokeless tobacco                        | 9 (4.5%)   | 0 (0.0)      | 9 (1.87)    |
| Current smokeless tobacco use habit                | 5 (2.5)    | 0 (0.0)      | 5 (1.04)    |
| Using smokeless tobacco on college premises/property during past year | 3 (2.0)    | 0 (0.0)      | 3 (0.6)     |
| Exposed to ETS at home during the past 7 days      | 99 (49.5)  | 65 (23.3)    | 164 (34.23) |
| Exposed to ETS in public places during the past 7 days | 117 (58.5) | 124 (44.4)   | 241 (50.31) |

95% CI: 8.11-13.69

Table 2. Attitudes of study population towards smoking and sale of tobacco products: distribution by gender

| Attitude                                                                 | Male n=200 (%) | Female n=279 (%) | Total N=479 | χ²        | p-value |
|--------------------------------------------------------------------------|----------------|-----------------|-------------|-----------|---------|
| Should tobacco sales to adolescents be banned?                           | 186 (93.0)     | 276 (98.9)      | 462 (96.5)  | 11.9      | 0.001   |
| Should there be a complete ban of the advertising of tobacco products?   | 179 (89.5)     | 260 (93.2)      | 439 (91.6)  | 2.0       | 0.150   |
| Should smoking be banned in restaurants?                                 | 180 (90.0)     | 273 (97.8)      | 453 (94.6)  | 13.9      | <0.001  |
| Should smoking be banned in discos/bars/pubs?                            | 123 (61.5)     | 231 (82.8)      | 354 (73.9)  | 27.3      | <0.001  |
| Should smoking in all enclosed public places be banned?                  | 181 (90.5)     | 268 (96.1)      | 449 (93.7)  | 6.1       | 0.013   |
| Should health professionals get specific training on cessation techniques? | 185 (92.5)     | 271 (97.1)      | 456 (95.2)  | 5.4       | 0.019   |
| Do health professionals serve as role models for their patients and the public? | 151 (75.5)     | 211 (75.6)      | 362 (75.6)  | 0.0       | 0.975   |
| Should health professionals routinely advise their patients who smoke to quit smoking? | 194 (97.0)     | 272 (97.5)      | 466 (97.3)  | 0.1       | 0.744   |
| Should health professionals routinely advise their patients who use other tobacco products to quit using these products? | 193 (96.5)     | 262 (93.9)      | 455 (95.0)  | 1.6       | 0.200   |
| Do health professionals have a role in giving advice or information about smoking cessation to patients? | 192 (96.0)     | 273 (97.8)      | 465 (97.1)  | 1.4       | 0.236   |
| Are a patient’s chances of quitting smoking increased if a health professional advises him or her to quit? | 152 (76.0)     | 239 (85.7)      | 391 (81.6)  | 7.2       | 0.007   |
| Do you feel that health professionals who smoke are less likely to advise patients to stop smoking? (n = 479) | 135 (67.5)     | 203 (72.8)      | 338 (70.6)  | 66.52-74.68 |
respectively. A majority of students, 59.6%, reported they received help or advice to stop smoking cigarettes.

Among students who completed the questionnaire, 70.6% reported that health professionals who smoke are less likely to advise patients to stop smoking. Females were more likely than males to agree that health professionals should receive special training about smoking cessation techniques: 76% of males agreed that advice would enhance the possibility of patients quitting smoking compared to 87.5% of females. The difference in attitudes between males and females was significant (p = 0.007). The proportion of students who said health professionals who smoke are less likely to advise patients to stop smoking was 70.6% (Table 2).

Among the students who tried smoking/smokeless tobacco (n = 52), 29.8% and 34.6% wanted to quit smoking cigarettes and tried to stop smoking, respectively. The proportion of students who stopped smoking cigarettes and received help or advice to stop smoking cigarettes were 13.5% and 59.6%, respectively. The proportion of students who wanted to stop using smokeless tobacco was 44.4% (Table 3).

Table 4 depicts that more than 90% of the students reported they were taught about the dangers of smoking and learned to record tobacco use history as a part of a patient’s general medical history. Only 23.6% of the students reported that they received formal training in smoking cessation techniques. A majority of students, 57.6%, indicated that they discussed the reasons why people smoke with their classmates.

**DISCUSSION**

The current study was conducted to estimate the prevalence of tobacco use and to measure the extent of knowl-

| Table 3. Cessation behavior among the medical students who have ever tried cigarette smoking/smokeless tobacco |
|----------------------------------------------------------|-----------|-----------|-----------|
| Do you want to stop smoking cigarettes now? | Male (%) | Female (%) | Total (%) |
| [Yes] 14 (29.8) | 0 (0.0) | 14 (29.8) |
| Have you ever tried to stop smoking cigarettes during the past year? | 18 (38.3) | 0 (0.0) | 18 (34.6) |
| Students who stopped smoking cigarettes | 3 (6.4) | 4 (80.0) | 7 (13.5) |
| Have you ever received help or advice to stop smoking cigarettes? | 27 (13.5) | 4 (80.0) | 31 (96.9) |
| Do you want to stop using smokeless tobacco now? | 4 (44.4) | 0 (0.0) | 4 (44.4) |

| Table 4. Training and curriculum on smoking and tobacco use among male and female students |
|-----------------------------------------------------------------|-----------|-----------|-----------|-----------|
| Curriculum/Training | Male n = 200 (%) | Female n = 279 (%) | Total N = 479 (%) | χ² | p-value |
| During college, were you taught, in any of your classes, about the dangers of smoking? | 171 (85.5) | 264 (94.6) | 435 (90.8) | 11.6 | 0.001 |
| During college, did you discuss, in any of your classes, the reasons why people smoke? | 108 (54.0) | 168 (60.2) | 276 (57.6) | 1.8 | 0.175 |
| During college, did you learn that it is important to record tobacco use history as part of a patient’s general medical history? | 183 (91.5) | 272 (97.5) | 455 (95.0) | 8.7 | 0.003 |
| During college, did you receive any formal training in smoking cessation approaches to use with patients? | 58 (29.0) | 55 (19.7) | 113 (23.6) | 5.5 | 0.018 |
| During college, did you learn that it is important to provide educational materials to support smoking cessation to patients who want to quit smoking? | 143 (71.5) | 195 (69.9) | 338 (70.6) | 0.1 | 0.703 |
| Have you ever heard of using nicotine replacement therapies in tobacco cessation programs (such as nicotine patch or gum)? | 161 (80.5) | 215 (77.1) | 376 (78.5) | 0.8 | 0.366 |
| Have you ever heard of using antidepressants in tobacco cessation programs (such as bupropion or zyban)? | 107 (53.5) | 139 (49.8) | 246 (51.4) | 0.6 | 0.427 |
found that one-third of students smoked on college premises/property and 17.1% smoked in college buildings during the past year, respectively.

In the present study, the prevalence of smokeless tobacco ever used was found to be 1.9% and the prevalence of current smokeless tobacco use was found to be 1.0%. In contrast, a study by Joge et al. [26] reported the prevalence of smokeless tobacco was 5.8%, Selokar et al. [14] reported 10% and Surani et al. [18], 11.6%. In the present study, 2.5% of males and none of the females were current smokeless tobacco users, whereas Surani et al. [18] reported that 13.7% of males and 7.5% of females were current smokeless tobacco users. In our study, about 0.6% had used smokeless tobacco on college premises during the past year, whereas Surani et al. [18] found that 34.2% used smokeless tobacco on campus during the past year.

2. Exposure to environmental tobacco smoke

In our study, approximately one-third of the students had exposure to smoke at home. Nearly half of the male students and one-fourth of the female students had exposure to smoke at home. Similar findings were reported by AlKawari et al. [25], where 27.9% were exposed to smoke at home. In contrast, Sinha et al. [20] and Tacettin Inandi et al. [27] reported that upward of fifty percent of the students had exposure to smoke at home.

In the present study, approximately half of the participants had exposure to smoke at public places (58.5% among male students and 44.4% among female students). Similar findings were reported by AlKawari et al. [25] and Inandi et al. [27]. In contrast, studies by Sinha et al. [20] and Saade et al. [28] reported that two-thirds of the students were exposed to smoke at public places.

The study findings revealed that more medical students were exposed to environmental tobacco smoke than to active smoking among both males and females. This indicates the need for health education of families and the community about the health hazards of passive smoking.

Of the students in the study, 79.1% reported that their college has an official policy banning smoking in college buildings and clinics. A similar finding was reported by Inandi et al. [27], with 88.2% of students reporting that their college had an official policy banning smoking on col-
lege premises. In contrast, studies by Sinha et al. [20] in 2005-2011 and Saade et al. [28] found that only half the students reported that their college had an official policy banning smoking in college premises.

In the present study, two-thirds of the students said an official smoking ban in college buildings and clinics has been enforced. A slightly higher percentage of students reported a smoking ban was enforced in the studies done by Inandi et al. [27] with 87.2% and AlKawari et al. [25] with 88.1%. Surani et al. [18] found that a slightly lower number of students (53%) reported that there was official smoking ban enforcement in their medical school.

3. Attitude towards smoking and sale of tobacco products

In the present study, more than 90% of the students favored banning the sale of tobacco products to adolescents, banning the advertisement of tobacco products, and banning smoking in restaurants and in public places. Similar findings were reported by Sychareun et al. [29], Mehrotra et al. [30], and AlKawari et al. [25]. In the present study, nearly three-fourths of the students reported that smoking should be banned in discos/bars/pubs. Sychareun et al. [29] and Mehrotra et al. [30] reported that 70.5% and 66.9%, respectively, of students indicated smoking should be banned in discos/bars/pubs.

In our study, even though more than 90% of the students supported bans of tobacco products in public places and restaurants, sales to adolescents and advertisements of tobacco products, only three-fourths of the students believed that tobacco products should be banned in discos/bars/pubs. This finding was supported by other published studies [29,30]. In the present study, approximately three-fourths of the students reported that health professionals should serve as a role model for their patients. Similar findings were reported by Sinha et al. [20], where 73.8% of medical students believed that health professionals served as role models for their patients and the public. Thankappan et al. [31] reported that a slightly higher proportion (89%) of medical students believe that health professionals serve as role models for their patients and the public. In the present study, 95.2% of the students reported that health professionals should get specific training in smoking cessation.

Similar findings were reported by other investigators [24,32].

4. Behavior/cessation of smoking and smokeless tobacco

In the present study, one-third of students had ever tried to stop smoking. In contrast, the study done by other investigators found that more than 50% of medical students had tried to quit smoking [21,27]. In the present study, 59.6% of smokers ever received help/advice to stop smoking cigarettes. Similarly, studies conducted by other investigators found that more than half of smokers ever received help or advice to stop smoking cigarettes [18,27]. In our study, more than 70% of students reported health professionals who smoke are less likely to advise patients to stop smoking. Adeel Khan et al. [33] found that a slightly higher proportion of students (77.5%) reported that health professionals who smoke are less likely to advise patients to stop smoking.

5. Training/curriculum on smoking and tobacco use

In the present study, more than 90% of students reported they were taught about the dangers of smoking. In contrast, Adeel Khan et al. [33] reported that only 43.7% of students were taught about the dangers of smoking. In addition, in the present study, more than 90% of students were taught that it is important to record tobacco use as a part of a patient’s history. Similarly, Adeel Khan et al. [33] found that 88.9% of students were taught the importance of recording tobacco usage history.

In our study, one-fourth of students received formal training in smoking cessation for patients. In contrast, Adeel Khan et al. [33] found that 34.2% of students received formal training in smoking cessation. In the present study, nearly three-fourths of the students are taught that it is important to provide educational materials on smoking to patients. In contrast, Adeel Khan et al. [33] found that 58.5% of students were taught the importance of providing educational materials on smoking to patients.

In the present study, more than three-fourths of students have heard of using nicotine replacement therapies in tobacco cessation programs. Lam et al. [15] found a slightly higher proportion (90.8%) in their study. In contrast, Iradi [24] reported that only 18.4% have heard of nicotine replace-
ment products. In the current study, more than half of the students are aware of the use of antidepressants in tobacco cessation programs. Jradi [24] found that a slightly higher proportion (63%) of students were aware of the use of anti-depressants in tobacco cessation programs.

CONCLUSION

In our study, less than 5% of medical students were current smokers, but upward of one-third to one-half were exposed to environmental tobacco smoke at home and in public places. This indicates that a health awareness campaign for the prevention and control of smoking at home and public places must be intensified. As indicated by the majority of the participants, medical students need to receive formal training in smoking cessation techniques and this training must be included in the medical curriculum so that students can instruct or counsel patients.

REFERENCES

1. World Health Organization (WHO): Tobacco Fact Sheet. 2014 May [cited 2014 Aug 14]; Available from: http://www.who.int/mediacentre/factsheets/fs339/en.
2. WHO India: Tobacco. c2016 [cited 2014 Aug 14]; Available from: http://www.searo.who.int/india/topics/tobacco/en/.
3. Murthy P, Saddichha S. Tobacco cessation services in India: Recent developments and the need for expansion. Indian J Cancer 2010;47:69-74.
4. Smith DR, Leggat PA. An international review of tobacco smoking among medical students. J Postgrad Med 2007;53:55-62.
5. Fiore MC, Epps RP, Manley MW. A missed opportunity. Teaching medical students to help their patients successfully quit smoking. J Am Med Assoc 1994;271:624-6.
6. Zwar NA, Richmond RL. Role of the general practitioner in smoking cessation. Drug Alcohol Res 2006;25:21-6.
7. Ficarra MG, Gualano MR, Capizzi S, Siliquini R, Liguori G, Manzoli L, Briziarelli L, Parrato A, Cucurullo P, Bucci R, Piat SC, Masanotti G, de Waure C, Riciardi W, La Torre G. Tobacco use prevalence, knowledge and attitudes among Italian hospital healthcare professionals. Eur J Public Health 2010;21:29-34.
8. Ruiz-Canela M, Martinez-Gonzalez MA, Lopez-del Burgo C, de Irala J, Beunza JJ, Bes-Rastrollo M. Are smoking habits changing among Spanish health professionals? Results from the SUN Cohort 1999-2008. Tob Use Insights 2009;2:17-24.
9. Roche AM, Ecleiston P, Sanson-Fisher R. Teaching smoking cessation skills to senior medical students: a block-randomized controlled trial of four different approaches. Prev Med 1996;25:251-8.
10. Glynn T, Pertschuk M, Saloojee Y, editors. Tobacco control strategy planning guides. Union for International Cancer Control; (cited 2016 Apr 24) Available from: http://www.uicc.org/tobacco-control-strategy-planning-guides.
11. WHO: Tobacco Free Initiative (TFI) Website. WHO; c2016 [Cited on 2006 Oct]. Available from: http://www.who.int/tobacco/en/.
12. Kumar GS, Subba SH, Unnikrishnan B, Jain A, Badiger S. Prevalence and factors associated with current smoking among medical students in coastal south India. Kathmandu Univ Med J 2011;36:233-7.
13. Warren CW, Jones NR, Chauvin J, Peruga A. Tobacco use and cessation counseling: Cross-country data from the Global Health Professions Student Survey (GHPSS), 2005-2007. Tob Control 2008;17:238-47.
14. Selokar DS, Nimbarte S, Kukde MM, Vasant VW. Tobacco use amongst the male medical students, Wardha, central India. Int J Biol Med Res 2011;2:378-81.
15. Lam TS, Tse LA, Yu IT, Griffiths S. Prevalence of smoking and environmental tobacco smoke exposure and attitudes and beliefs towards tobacco control among Hong Kong medical students. Public Health 2009;123:42-6.
16. Alsheedi M, Haleem A. Knowledge, attitude and behavior of medical and dental students towards smoking habit In Saudi Arabian universities ‘a comparative study’. Int Dent J Stud Res 2012;1:1-16.
17. Goyal SR, Kiran U, Srinath D, Nageswari AD, Goyal D. Smoking scenario amongst medical and nonmedical youth: Fads, facts and effects. Lung India 2013;30(5):5-16.
18. Surani NS, Pednekar MS, Sinha DN, Singh G, Warren CW, Asma S, Gupta PC, Singh PK. Tobacco use and cessation counseling in India-data from the Global Health Professions Students Survey, 2005-09. Indian J Cancer 2012;49:425-30.
19. Bartwal J, Awasthi S, Rawat CMS, Arya A. Awareness and Pattern of Tobacco Use among the Medical Students of Government Medical College. Ind J Comm Health 2014;26:155-9.
20. Sinha DN, Rinchen S, Palipudi KM, Naing Shein N, de Silva P, Khadka BB, Pednekar M, Singh G, Pitayarangsarit S, Bhattad VB, Lee KA, Asma S, Singh PK. Tobacco use, exposure to second-hand smoke, and cessation training among the third-year medical and
dental students in selected Member States of South-East Asia region: A trend analysis on data from the Global Health Professions Student Survey, 2005-2011. Indian J Cancer 2012;49:379-86.
21. Abdulghani HA, Alrowais NA, Alhaqwi AI, Atrashheed A, Al-Zahir M, Al-Madani A, Al-Eissa A, Al-Hakmi B, Takroni R, Ahmad F. Cigarette smoking among female students in five medical and nonmedical colleges. Int J Gen Med 2013;6:719-27.
22. Ramakrishna GS, Sankara Sarma P, Thankappan KR. Tobacco use among medical students in Orissa. Natl Med J India 2005;18:285-8.
23. Saulle R, Bontempi C, Baldo V, Boccia G, Bonaccorsi G, Brusaferro S, Donate F, Firenze A, Gregorio P, Pelissero G, Sella A, Siliquini R, Boccia A, La Torre G. GHPSS multicenter Italian survey: smoking prevalence, knowledge and attitudes and tobacco cessation training among third-year medical students. Tumori 2013;99:17-22.
24. Jradi H, Al-Shehri A. Knowledge about tobacco smoking among medical students in Saudi Arabia: Findings from three medical schools. J Epidemiol Glob Health 2014;4:2-6.
25. AlKawari MM. Tobacco use, exposure to secondhand smoke and cessation counseling among health professions students: Kingdom of Bahrain, global health professions student survey (GHPSS), 2009. WHO;2010. Available from: http://www.emro.who.int/images/stories/tfi/documents/GHPSS_FS_MED_BAH_2009.pdf?ua=1.
26. Joge US, Malkar VR, Choudhari SG, Raut MM, Ughade HM. Prevalence and the factors associated with tobacco smoking among students of a medical teaching institute. Int J Med Health Sci 2013;2:23-9.
27. Inandi T, Caman OK, Aydin N, Onal AE, Kaypmaz A, Turhan E, Erguder T, Warren WC. Global Health Professions Student Survey – Turkey: second-hand smoke exposure and opinions of medical students on anti-tobacco law. Cent Eur J Public Health 2013;21:134-9.
28. Saade G, Warren CW, Jones NR, Mokdad A. Tobacco use and cessation counseling among health professional students: Lebanon Global Health Professions Student Survey, 2005. J Med Liban 2009;57:243-7.
29. Sychareun V, Hansana V, Chommanivong M, Nathavong S, Chaleunvong K, Durham J. Cross-sectional survey: smoking among medical, pharmacy, dental and nursing students, University of Health Sciences, Lao PDR. BMJ Open. 2013;3:e003042. Available from: https://dx.doi.org/10.1136/bmjopen-2013-003042.
30. Mehrotra R, Chaudhary AK, Pandya S, Mehrotra KA, Singh M. Tobacco use by Indian medical students and the need for comprehensive intervention strategies. Asian Pacific J Cancer Prev 2010;11:349-52.
31. Thankappan KR, Yamini TR, Mini GK, Arthur C, Sairu P, Leelamoni K, Sani M, Unnikrishnan B, Basha SR, Nichter M. Assessing the readiness to integrate tobacco control in medical curriculum: experiences from five medical colleges in southern India. Natl Med J India 2013;26:18-23.
32. Ferrante M, Saulle R, Ledda C, Pappalardo R, Fallico R, La Torre G, Fiore M. Prevalence of smoking habits, attitudes, knowledge and beliefs among Health Professional School students: a cross-sectional study. Ann Ist Super Sanita 2013;49:43-9.
33. Khan AAM, Dey S, Taha AH, Huq FS, Moussawi AH, Omar OS, et al. Attitudes of Cairo University medical students toward smoking: the need for tobacco control programs in medical education. Journal of the Egyptian Public Health Association 2012;87:1-7.