Knowledge, Attitude and Practice of Family Physicians Regarding Smoking Cessation Counseling in Family Practice Centers, Suez Canal University, Egypt

Hebatallah Nour Eldein, Nadia M. Mansour, Samar F. Mohamed

1Family Medicine Department, Faculty of Medicine, Suez Canal University, Ismailia, Egypt

ABSTRACT

Introduction: Family physicians are the first point of medical contact for most patients, and they come into contact with a large number of smokers. Also, they are well suited to offer effective counseling to people, because family physicians already have some knowledge of patients and their social environments. Aims: The present study was conducted to assess family physicians’ knowledge, attitude and practice of smoking cessation counseling aiming to improve quality of smoking cessation counseling among family physicians. Materials and Methods: The study was descriptive analytic cross sectional study. It was conducted within family medicine centers. Sample was comprehensive. It included 75 family physicians. They were asked to fill previously validated anonymous questionnaire to collect data about their personal characteristics, knowledge, attitude and practice of smoking cessation counseling, barriers and recommendations of physicians. Equal or above the mean scores were used as cut off point of the best scores for knowledge, attitude and practice. Statistical Analysis: SPSS version 18 was used for data entry and statistical analysis. Results: The best knowledge, attitude and practice scores among family physicians in the study sample were (45.3 %, 93.3% and 44% respectively). Age (P = 0.039) and qualification of family physicians (P = 0.04) were significant variables regarding knowledge scores while no statistically significance between personal characteristics of family physicians and their attitude or practice scores regarding smoking cessation counseling. More than half of the family physicians recommended training to improve their smoking cessation counseling. Conclusions: Favorable attitude scores of family physicians exceed passing knowledge scores or practice scores. Need for knowledge and training are stimulus to design an educational intervention to improve quality of smoking cessation counseling.

Keywords: Counseling, family physicians, primary care, smoking cessation

Introduction

World Health Organization (WHO) report on the global tobacco epidemic mentioned that tobacco use is one of the biggest public health threats the world has ever faced. Tobacco users who die prematurely deprive their families of income, raise the cost of healthcare, and hinder economic development. Egypt has the largest population of tobacco users in the Arab world. Nearly 40% of adult males were smoking some form of tobacco in 2009. Female smoking prevalence is low. Deaths are mainly from lung and other cancers, strokes, and ischemic heart. An estimated 3.4 billion ≤ (US $616 million) is spent annually to treat diseases caused by tobacco use. Smoking cessation significantly reduces morbidity and mortality. Brief tobacco cessation counseling interventions, including screening, brief counseling (3 min or less), and/or pharmacotherapy; have proven to increase tobacco abstinence rates. The United States Preventative Services Task Force (USPSTF) highly recommends “that clinicians screen all adults for tobacco use and provide tobacco cessation interventions for those who use tobacco products (Grade: A recommendation).”

Public Health Service (PHS) and USPSTF guidelines recommend a variation of the “Five As” behavioral counseling framework of asking (identifying users), advising (urging users to quit), assessing (determining users’ willingness to quit), assisting (through counseling or drug therapy), and arranging for follow-up. Cessation of smoking leads to symptoms of nicotine withdrawal such as anxiety and irritability. Counseling and medication can...
more than double the chance that a smoker who tries to quit will succeed.\[^{6}\]

Family physicians, which see most of these patients in their offices every year, have an important opportunity to decrease smoking rates.\[^{7,8}\] Also, they are well-suited to offer effective counseling to people. First, because family physicians already have some knowledge of patients and their social environments. Second, there is already a rapport between family physicians and their patients, and this will contribute to the therapeutic relationship. Third, people often come to physicians with the expectation that physicians can help them improve.\[^{8}\]

The present study aimed to assess family physicians’ knowledge, attitude, and practice of smoking cessation counseling; aiming to improve quality of smoking cessation counseling among family physicians.

**Materials and Methods**

This was an analytical cross-sectional study. It was carried between September and December 2011 in Family Medicine Centers (FMC) affiliated to Suez Canal University Hospitals, which includes 9 FMC distributed in Ismailia, Suez and Port Said Governorates. It includes all the family physicians under training (26 master degree, 22 diploma, 24 residents, and 3 fellowship).

The questionnaire was semi-structured, included 36 items which was adapted from Asid,\[^{9}\] and modified by the researchers. It was divided into three parts:

- **Part I:** Personal characteristics of family physicians; including gender, age, qualification, experience years in family medicine, practice location, state of smoking, and the number of smoking patients seen per week. Additionally, it contained some questions regarding their sources of knowledge, receiving any formal training, and their perception of competency in smoking cessation counseling.

- **Part II:** Multiple choices for assessing knowledge in 10 items; 5 ‘As’ approach and pharmacologic methods of smoking cessation counseling. Attitude was assessed using 6 items about the importance of the topic, physician’s readiness towards counseling and 4 items adapted from the questionnaire developed by the WHO Global Health Professionals Survey (GHPS).\[^{10,11}\] Three-point Likert Scale was used, defined by scoring: Agree (1), Undecided (2), and Disagree (3). Practice of family physicians regarding smoking cessation counseling using the 5 ‘As’ approach and other modalities were assessed using four-point frequency score: Never (0), rarely (1), sometimes (2), always (3) in addition to 4 multiple questions which were problem-based.

- **Part III:** Two open-ended questions about the greatest barriers faced by physicians in smoking cessation counseling and their recommendations to improve smoking cessation counseling practice.

The best scores were calculated as equal or above the mean for the correct and agreement response. Pilot study was conducted on 10% of the study population (these were not included in the final results) to test the relevancy of the questionnaire to the aim of the study and perform any modification needed. Validity and reliability of the questionnaire were tested.

**Ethical considerations**

The study was approved by the ethics committee of Faculty of Medicine, Suez Canal University and has been performed in accordance with the ethical standards laid down in the Declaration of Helsinki (1964). Questionnaire was anonymous, did not contain any critical questions, and confidentiality of the data were maintained.

**Statistical analysis**

The data was entered and analyzed using a Statistical Package for Social Sciences program (SPSS, version 18). Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables; and means and standard deviations (SD) for quantitative variables. Chi-square test or Fisher’s exact test were used for categorical variables and the level of significance was considered statistically significant if $P < 0.05$ and was high statistically signification if $P < 0.01$.

**Results**

Out of 75 family physicians who participated in the study, more than two-thirds of them were females (77.3%) and their mean age was 29.5 ± 3.8. About one-third of the family physicians were qualified with a master’s degree (34.7%) while those with experience of less than 5 years constituted about two-third of the sample (68%). They were nearly equally distributed between urban and rural centers, approximately (50%). 94.7% of physicians were non-smokers and 38.7% met 1-5 smoker patients daily as shown in Table 1.

Figure 1 shows that the majority of family physicians had favorable attitude scores (93.3%) instead of lower knowledge and practice scores among (45.3% and 44% respectively) of the family physicians in the study sample.
Knowledge
Family physicians’ knowledge mean score was 5 out of 10 points. Table 2 shows that there was statistically significant difference between physicians’ knowledge score and their age and qualification. About three quarters of physicians who did not pass the knowledge assessment were less than 30 years old (73.2%) and were non-qualified (75.6%). The difference was statistically significant \( P < 0.05 \).

Attitude
Family physicians’ attitudes mean score was 3.6 out of 6 agree points. There was no statistically significant difference between the study sample’s attitude and their personal characteristics \( P > 0.05 \).

Practice
Family physicians’ practice mean score was 16.8 out of 28. There were no statistically significant difference between the family physicians’ practice and their personal characteristics. Figure 2 shows that the best practiced within the 5 As guidelines were Ask (60%) and Assess near (50%), followed by Advise (36%) while the least practiced were Assist and Arrange by (15.3 and 13.3%, respectively).

The present study showed that the most frequent barriers related to the patient was their desire (62.7%) while that related to the physician was lack of training (32%) as shown in Table 3. More than half of family physicians (53%) recommended training for improvement of smoking cessation counseling as shown in Table 4.

Discussion
The present study was conducted upon 75 family physicians. It showed lower knowledge scores among the family physicians (54.3%) which were in nearly similar to results of a study by Desalu et al.\(^\text{[12]}\) which found that 66.3% of the physicians had poor knowledge of smoking cessation interventions. This might be due to inadequate training in smoking cessation interventions after graduation and a lack of emphasis on smoking education in the medical curriculum, as the present study revealed that more than half of family physicians (57.3%) did not receive any training on smoking cessation skills either within under or postgraduate curriculum.

Better scores of knowledge were found among the older and qualified physicians with statistical difference (\( P \) values 0.039 and 0.04, respectively). This result may be explained by their professional development. These results were to some extent in agreement with a study of Abdullah et al.\(^\text{[13]}\) that found the doctors who gave smoking cessation advice were more advanced by years of age. While, in the present study there was no statistical significance between personal characteristics with attitude and practice.

The present study showed that the majority of family physicians had favorable attitude scores (93.3%) instead of lower knowledge and practice scores (45.3 and 44% respectively). These results were inconsistent with study conducted by Asid\(^\text{[10]}\) which was conducted among 80 physicians from the eight selected hospitals of Zamboanga City in the four fields of specialty, namely, general practitioners, family physicians, interns, and internal medicine residents. The scores of knowledge, attitude and practice were found to be almost same, that is, 76.25%, 68.75%, and 75%, respectively. Results of the current study were to some extent better than the study of Abdullah et al.,\(^\text{[13]}\) in which 47% of respondents had better knowledge and only 55% had more favorable attitudes.\(^\text{[13]}\) Also, in the study conducted by McIlvain et al.,\(^\text{[14]}\) in University of Nebraska; only 32% of the physicians had a positive attitude about their general influence on patients’ behavior. The present results

Table 1: Personal characteristics of family physicians in the study sample (N=75)

| Sociodemographic characteristics          | Frequency | Percentage |
|-------------------------------------------|-----------|------------|
| Age (years)                               |           |            |
| 25-29                                     | 47        | 62.7       |
| 30-39                                     | 25        | 33.3       |
| ≥ 40                                      | 3         | 4          |
| Mean±SD                                   | 29.5±3.8  |            |
| Gender                                    |           |            |
| Male                                      | 17        | 22.7       |
| Female                                    | 58        | 77.3       |
| Qualifications (Masters degree)           |           |            |
| Qualified                                 | 26        | 34.7       |
| Non-qualified                             | 49        | 65.3       |
| Experience in family medicine             |           |            |
| <5 years                                  | 51        | 68         |
| ≥5 years                                  | 24        | 32         |
| Mean±SD                                   | 4±3.2     |            |
| Practice location                         |           |            |
| Urban                                     | 38        | 50.7       |
| Rural                                     | 37        | 49.3       |
| Smoking status                            |           |            |
| Yes                                       | 4         | 5.3        |
| No                                        | 71        | 94.7       |
| Number of smoker patients seen per week per physician | | |
| 1-4                                       | 29        | 38.7       |
| 5-9                                       | 20        | 26.7       |
| ≥10                                       | 26        | 34.7       |
| SD: Standard deviation                     |           |            |

Figure 2: Self-reported frequency of use of the 5 As tobacco cessation guidelines
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showed the readiness and acceptance of family physicians to this topic regardless their shortage of knowledge.

There were no statistically significant difference between the family physicians’ practice and their personal characteristics. The best practiced within the 5 As guidelines were Ask 60% and Assess near 50%, followed by Advise 36% while the least practiced were Assist and Arrange by 15.3% and 13.3%, respectively. Theses results were to some extent better than that study by Yao et al., which found that only 25% of the respondents always asked patients about their smoking status whereas only 27.2% advised smokers to quit smoking. But worse than other study conducted by McIlvain et al., in University of Nebraska; concerning physician attitudes and the use of office-based activities for tobacco control, found that the five skills most often used were recommending pharmaceutical aids (96%), giving advice to quit (93%), discussing barriers to and/or resources for smoking cessation (74%), informal contracting for specific behavior change (53%), and scheduling follow-up (43%). However, according to the US Public Health Service clinical practice guideline of using the 5 As, “all patients need to be at least asked about their smoking status and advised to quit”. This includes those patients that are not ready to do so. This showed that practice of family physicians in the current study

| Characteristic | Knowledge | Total (N=75) | Chi-square | P value |
|----------------|-----------|--------------|------------|---------|
|                | Lower knowledge scores (N=43) | Best knowledge scores (N=34) |                  |
| Age (years)    | N | % | N | % | N | % |          |
| <30 years      | 30 | 73.2 | 17 | 50 | 47 | 62.7 | 4.26 | 0.039* |
| ≥30 years      | 11 | 26.8 | 17 | 50 | 28 | 37.3 |        |         |
| Gender         |         |     |     |     |     |     |    |
| Male           | 9 | 22 | 8 | 23.5 | 17 | 22.7 | 0.026 | 0.871 |
| Female         | 32 | 78 | 26 | 76.6 | 58 | 77.3 |        |         |
| Qualification (Master degree) |         |     |     |     |     |     |    |
| Qualified      | 10 | 24.4 | 16 | 47.1 | 26 | 34.7 | 4.21 | 0.04* |
| Nonqualified   | 31 | 75.6 | 18 | 52.9 | 49 | 65.3 |        |         |
| Experience in family medicine |         |     |     |     |     |     |    |
| <5 years       | 31 | 75.6 | 20 | 58.8 | 51 | 68 | 2.40 | 0.121 |
| ≥5 years       | 10 | 24.4 | 14 | 41.2 | 24 | 32 |        |         |
| Practice location |         |     |     |     |     |     |    |
| Urban          | 22 | 53.7 | 16 | 47.1 | 38 | 50.7 | 0.324 | 0.569 |
| Rural          | 19 | 46.3 | 18 | 52.9 | 37 | 49.3 |        |         |
| Smoking status |         |     |     |     |     |     |    |
| Yes            | 2 | 4.9 | 2 | 5.9 | 4 | 5.3 | 1.00 | 0.618 |
| No             | 39 | 95.1 | 32 | 94.1 | 71 | 94.7 |        |         |
| Number of smokers per week per physician |         |     |     |     |     |     |    |
| 1-4            | 13 | 31.7 | 16 | 47.1 | 29 | 38.7 | 3.53 | 0.171 |
| 5-9            | 10 | 24.4 | 10 | 29.4 | 20 | 26.7 |        |         |
| ≥10            | 18 | 43.9 | 8 | 23.5 | 26 | 34.7 |        |         |

*Statistically significant (P<0.05), Fisher exact if cells <5

Table 2: The relationship between family physicians’ knowledge score regarding smoking cessation counseling and their personal characteristics (N=75)

| Characteristic | Knowledge | Total (N=75) | Chi-square | P value |
|----------------|-----------|--------------|------------|---------|
|                | Lower knowledge scores (N=43) | Best knowledge scores (N=34) |                  |
| Age (years)    | N | % | N | % | N | % |          |
| <30 years      | 30 | 73.2 | 17 | 50 | 47 | 62.7 | 4.26 | 0.039* |
| ≥30 years      | 11 | 26.8 | 17 | 50 | 28 | 37.3 |        |         |
| Gender         |         |     |     |     |     |     |    |
| Male           | 9 | 22 | 8 | 23.5 | 17 | 22.7 | 0.026 | 0.871 |
| Female         | 32 | 78 | 26 | 76.6 | 58 | 77.3 |        |         |
| Qualification (Master degree) |         |     |     |     |     |     |    |
| Qualified      | 10 | 24.4 | 16 | 47.1 | 26 | 34.7 | 4.21 | 0.04* |
| Nonqualified   | 31 | 75.6 | 18 | 52.9 | 49 | 65.3 |        |         |
| Experience in family medicine |         |     |     |     |     |     |    |
| <5 years       | 31 | 75.6 | 20 | 58.8 | 51 | 68 | 2.40 | 0.121 |
| ≥5 years       | 10 | 24.4 | 14 | 41.2 | 24 | 32 |        |         |
| Practice location |         |     |     |     |     |     |    |
| Urban          | 22 | 53.7 | 16 | 47.1 | 38 | 50.7 | 0.324 | 0.569 |
| Rural          | 19 | 46.3 | 18 | 52.9 | 37 | 49.3 |        |         |
| Smoking status |         |     |     |     |     |     |    |
| Yes            | 2 | 4.9 | 2 | 5.9 | 4 | 5.3 | 1.00 | 0.618 |
| No             | 39 | 95.1 | 32 | 94.1 | 71 | 94.7 |        |         |
| Number of smokers per week per physician |         |     |     |     |     |     |    |
| 1-4            | 13 | 31.7 | 16 | 47.1 | 29 | 38.7 | 3.53 | 0.171 |
| 5-9            | 10 | 24.4 | 10 | 29.4 | 20 | 26.7 |        |         |
| ≥10            | 18 | 43.9 | 8 | 23.5 | 26 | 34.7 |        |         |

*Statistically significant (P<0.05), Fisher exact if cells <5

Table 3: Perceived barriers of family physicians related to smoking cessation counseling

| Perceived barriers related to the patients | N=75 | Percent |
|------------------------------------------|------|---------|
| Patient desire                           | 47   | 62.7    |
| Cultural stressors                       | 20   | 26.7    |
| Relapse and withdrawal symptoms          | 14   | 18.7    |
| Failure of follow-up                     | 7    | 9.3     |

| Perceived barriers related to the physicians | N=75 | Percent |
|----------------------------------------------|------|---------|
| Lack of training                            | 24   | 32      |
| Lack of time                                | 19   | 25.3    |
| No nicotine replacement therapy             | 5    | 6.7     |

Table 4: Suggestions of family physicians for improving smoking cessation counseling

| Recommendation for improvement of smoking cessation counseling | N=75 | Percent |
|--------------------------------------------------------------|------|---------|
| Need for training                                           | 40   | 53.3    |
| Health education sessions                                   | 17   | 22.7    |
| Availability of standardized guidelines in centers          | 16   | 21.3    |
| Advertising in catchments area                              | 7    | 9.3     |
| Community participation                                     | 6    | 8       |
| Group therapy                                               | 5    | 6.7     |
| Separate clinic                                             | 4    | 5.3     |

Journal of Family Medicine and Primary Care 162 April 2013 : Volume 2 : Issue 2
were away from the recommended evidence-based guidelines which need improvement.[9]

In the present study, the participants identified seven barriers to be focused on, three barriers related to physicians and health care providers (lack of training, lack of time, and unavailability of nicotine replacement therapy) while the four barriers related to the patients were lack of patient desire, culture pressures, relapse and withdrawal symptoms, and failure of follow-up. These results were partially in agreement with other studies which found that, the obstacles noted in providing smoking cessation counseling were lack of patient motivation, lack of doctor’s time in consultation, lack of expertise in smoking cessation, doubts on efficacy of available therapies on smoking-cessation, and fear of damaging doctor-patient relationship.[10,13,14,17]

The family physicians in this study stress their recommendations on more training, providing health education to the patients, and availability of standardized guidelines at their centers to improve their practice.

Limitations of the study

Although the knowledge of family physicians was tested by multiple questions, their practices were self-reported. This work was conducted among special group within professional organization that could affect their response. This study is also limited by the non-probability of the sample. The study was not conducted among primary care physicians within Ministry of Health.

Conclusion and Recommendations

The present study showed limited knowledge and practice versus favorable attitude of family physicians regarding smoking cessation counseling. Training and lack of time were among the barriers that call for organization support. Further, interventional researches are needed to improve and re-evaluate quality of smoking cessation counseling using direct observation of practice.

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How to cite this article: Eldein HN, Mansour NM, Mohamed SF. Knowledge, attitude and practice of family physicians regarding smoking cessation counseling in family practice centers, suez canal university. Egypt. J Fam Med Primary Care 2013;2:159-63.

Source of Support: Nil. Conflict of Interest: None declared.