Clinical Medicine Journal
Vol. 4, No. 4, 2018, pp. 52-59
http://www.aiscience.org/journal/cmj
ISSN: 2381-7631 (Print); ISSN: 2381-764X (Online)

Clinical Effectiveness of Smoking Cessation Clinics at Primary Healthcare Facilities of Dubai Health Authority for the Period 2015-2017 Dubai, UAE

Hanan Ali Mubarak Obaid[1, *], Badreyya Ahmed Al Ehremi[2], Mohamed Ibrahim El Disouky[1], Salah Mohammed Ahmad Thabit[1], Laila Sulaiman Ismail[1], Irene Gocong Retuya[1], Olfat Zuhair Salem Ahmad[1], Salah Ahmed Mohamed Elbadawi[3], Nahed Abdul Khaleq Monsef[1], Moulham Saleh Ashtar[1]

[1]Health Affairs Department, Primary Health Care Services Sector, Dubai Health Authority, Dubai, United Arab Emirates
[2]Health Centers Department, Primary Health Care Services Sector, Dubai Health Authority, Dubai, United Arab Emirates
[3]Primary Health Care Services Sector, Dubai Health Authority, Dubai, United Arab Emirates

Abstract

Tobacco use is a leading preventable cause of non-communicable diseases. The current prevalence of smokers in UAE is (15.67%) in males and (2.40%) in females. Primary health care service sector in DHA started delivering smoking cessation services in January 2015 in two clinics by introduction of a cost effective smoking cessation package in order to help smokers to quit and consequently reduce its prevalence in Dubai. The package included counselling sessions with required investigations. An initial training of health care workers on Tobacco Cessation Management Guidelines prior implementation was conducted. Implementation was monitored by an annual audit against specific indicators and clinical outcomes, which include Smoking quitting rate. The main objective of the study was to monitor the clinical effectiveness of Smoking Cessation Clinics in improving quitting rate among tobacco users. A retrospective review of the electronic medical records of attendants of smoking cessation clinics from January 1st, 2015 until December 31st, 2017 was performed. All smokers who attended the clinics were included. The total number was 624. The audit used structured excel audit tool that included domains of sociodemographic data, smoking pattern, type of treatment received & quitting condition. Data was analyzed manually. Mean frequency and percentages were used for continuous data. The results showed that cigarette smoking was the most common type of tobacco used among smokers (64.9%), followed by pipe (18.1%) then by steam pipe (shisha) (7.3%). Counselling & Nicotine Replacement Therapy (NRT) was used in 42.1% compared to counselling & varenicline, which was used in 29.4%. Counseling alone was used in 28.5% of patients. Percentage of patients who attended the smoking cessation clinics increased from 31% in 2015 to 32% in 2016 and 37% in 2017. Quitting rate increased from 14% in 2015, to 16.3% in 2016 and to 16.6% in 2017. Quitting rate in smokers who received counseling without medicine treatment was 19%. In those who received counseling with medicine treatment was 40%, 28% with NRT and 53% with varenicline. In conclusion, an obvious increase in the percentage of smokers attendance to smoking cessation clinics in PHC is noted, with a progressive increase in quitting rate throughout the three years from 2015 until 2017. In recommendation, the results encourage expanding smoking cessation clinics in Dubai in order to combat the increasing numbers of smokers in the community and support smokers to quit.

Keywords

Smoking Cessation Services, Primary Health Care (PHC), Dubai Health Authority (DHA), United Arab Emirates (UAE), Nicotine Replacement Therapy (NRT), Varenicline

* Corresponding author
E-mail address: haobiad@dha.gov.ae (H. A. M. Obaid), msashtar@dha.gov.ae (M. S. Ashtar)

Received: October 20, 2018 / Accepted: November 20, 2018 / Published online: December 6, 2018

1. Introduction

Tobacco use is the leading preventable cause of mortality, disability and non-communicable diseases around the world, causing one in every five premature deaths. [1] In 2017, Ministry of Health and Prevention (MOHAP) in United Arab Emirates revealed that the prevalence of smoking in adults is (15.67%) among males and (2.40%) in females. [2] According to the Dubai Noncommunicable Diseases policy 2018, 16.1% of adults in Dubai are current smokers (20.1% males, 2.9% females). [3] As well and based on World Health Organization's NCD Countries profiles 2018, current tobacco smoking adults aged 15+in UAE is 38% in males and 1% in females. [4]. According to WHO NCDs country report 2018, it was obvious that the smoking trends in UAE is increasing over years and is projected to increase to more than 40% by the 2015. [4]

According to the recommendation of a Canadian study on Best practices for smoking cessation interventions in primary care, "family physicians and nurse practitioners and other front-line health care professionals are well positioned to influence and assist their patients in quitting, thereby reducing the burden on both personal health and the public health care system". [5] The United States Preventive Services Task Force (USPSTF) recommends that clinicians ask all adults about tobacco use, advises them to stop using tobacco, and provide behavioral interventions and U.S. Food and Drug Administration (FDA) approved pharmacotherapy for cessation to adults who use tobacco. [6] Literature have established that behavioral and Pharmacotherapy Interventions for Tobacco Smoking Cessation in Adults showed reduction in smoking rates and increases in motivation to quit, quit attempts, and self-reported abstinence. [7] Whereas the magnitudes of harm caused by these approaches are insignificant and outweighed by the benefits. [6, 7] US National Adult Tobacco Survey, 2013 showed a higher smoking prevalence in adult men aged 25-44 years and stated that ppopulation-level interventions and enhanced access to help quitting are critical to reduce tobacco-related diseases and deaths in the United States. [8] Greatest population health improvement could be obtained from increasing utilization of clinical preventive services that address tobacco. Counseling to prevent tobacco initiation among youth, tobacco-use screening and brief intervention to encourage cessation among adults are among the highest-ranking services in improving population health. [9]

Primary Health Care Centers in Dubai Health Authority started regular smoking cessation services in 2015 to help people who want to quit smoking by addressing their individual problems and by giving them medical and psychosocial support. Smoking cessation services were provided by establishing two clinics, one in Albarsha primary health care center and the other in Altowar primary health care center. A comprehensive Guideline on tobacco cessation management was developed followed by training of health care workers on its implementation. Additional training was conducted on the policy and procedure of referral from PHC health centers to smoking cessation clinic.

Meanwhile, a cost effective service package was introduced to ensure that clients receive comprehensive medical care with minimum cost. The package included a minimum of four counselling sessions.

The first counselling session consisted of:

1. Fagerstrom Dependency Questionnaire to assess severity of nicotine dependency
2. HORNS self-test to assess the type of dependency.
3. General medical history, examination and basic laboratory investigations (Liver Function tests, Renal Function tests and Complete Blood Count).
4. Smoking history and readiness to quit assessment.
5. Electrocardiogram (ECG).
6. Chest x-ray.
7. Lung function tests.
8. Level of inhaled carbon monoxide (CO).
9. Explanation of types of medication.

The next counselling session included:

1. Evaluation of general patient condition.
2. Evaluation of investigations results.
3. Explanation of quitting benefits.
4. Assessment of readiness to quit smoking.
5. Discussion of obstacles and barriers solutions.
6. Setting patient approved quitting date.
7. Identification and enhancement of family role and psychosocial support.
8. Discussion of medication types, indications,

contraindications and side effects.

Later follow up counselling sessions included:

1. Assessment of withdrawal symptoms.
2. Assessment of medication side effects.
3. Assessment of family role and psychosocial support
4. Assessment of obstacles and barriers.
5. Assessment of medical compliance and quitting continuity.
6. Application of behavioural change models, motivational techniques and coping strategies.
7. Management of any related arising issue.

Well-trained family physicians and nurse case managers were assigned in the two clinics to ensure effective implementation of the guidelines and proper smokers' compliance follow up.

Implementation was monitored by an annual audit conducted against specific indicators. Follow up of clinical outcomes was on yearly basis.

Indicators used were as follow:

1. The percentage of patients attending smoking cessation clinic
2. The percentages of referrals based on sources of referrals to smoking cessation clinic
3. The percentage of quitting tobacco use among patients attending the two smoking cessation clinics.
4. The percentages of different types of tobacco use.
5. The percentages of different types of applied treatments
6. The percentage of quitting tobacco use.

2. Objectives

The objective of this study was to assess the clinical effectiveness of Smoking Cessation services offered in two smoking cessation clinics in primary health care centers in DUBAI. This was done by measuring the smoking quitting rate based on the intervention package provided to the smokers in these clinics.

3. Methodology

A retrospective review of smoker's electronic medical records attending the two smoking cessation clinics during the period of January 1st 2015 until December 31st 2017 was performed. Structured excel audit tool was used to collect data. It included domains of sociodemographic data, smoking pattern, type of treatment received & quitting status. Trained nurses in assigned health centers did data collection. All smokers who attended the smoking cessation clinics during the period of January 1st 2015 until December 31st 2017 were included in the audit. No one excluded. Total number of smokers was 624 as follow: 390 (62.5%) from Altowar Health Center and 234 (37.5%) from Albarsha Health Center). Data Analysis was done using structured excel audit tool that included domains of sociodemographic data, smoking pattern, type of treatment received & quitting condition. Mean, frequency and percentages were used to express the data.

4. Results

Table 1 shows the sociodemographic characteristics of the study participants. The average age was 40 years with minimum age 14 years and maximum 87 years. Majority were male (94.2%) while only (5.8%) were female. Out of 624 participates 71.2% were UAE – national and 28.8% were Non- UAE national.

Table 1. Sociodemographic characteristics of the study participants (624 smokers).

Sociodemographic Characteristics	No.	(%)
Age		
Average	40 years	
Min.	14 years	
Max.	87 years	
Gender		
Male	588	-94.2
2015	183	-94.8
2016	189	-93.6
2017	216	-94.3
Female	36	-5.8
2015	10	-5.2
2016	13	-6.4
2017	13	-5.7
Nationality		
UAE nationals	444	-71.2
2015	138	-71.5
2016	133	-65.8
2017	173	-75.5
Non UAE nationals	180	-28.8
2015	55	-28.5
2016	69	-34.2
2017	56	-24.5

Table 1: Sociodemographic characteristics of the study participants

Figure 1 shows the percentage of patients who attended the smoking cessation clinics in every year of the study, calculated toward the 624 registered patients. It shows an increased from 31% in 2015 to 32% in 2016 then to 37% in 2017.

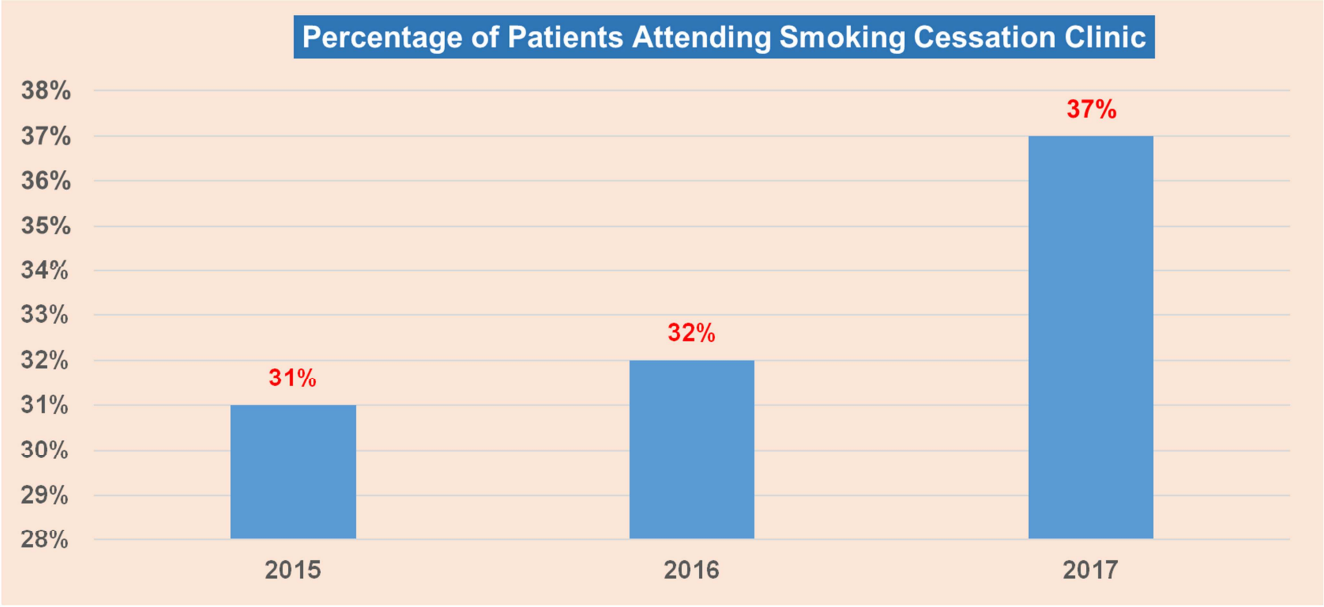

Figure 1. Percentage of Patients Attending Smoking Cessation Clinic.

Figure 2 shows the sources of referral of registered patients who attended the smoking cessation clinics he highest percentage of referrals to smoking cessation clinics was through Primary Health Care Centers (PHCSS), which reached 64.4%; there was noticeable increase in referral from 43% in 2015 to 64% in 2016 then to 86.2% in 2017. Smoker's self-referral to the services came as second most distinctive one by a percentage of 21.2% (35.9% in 2015, 22.5% in 2016 and 5.3% in 2017). Family referral percentage was 7.1% 3.6% and 9.8% in 2015, 8.0% in 2016 3.6% in 2017.

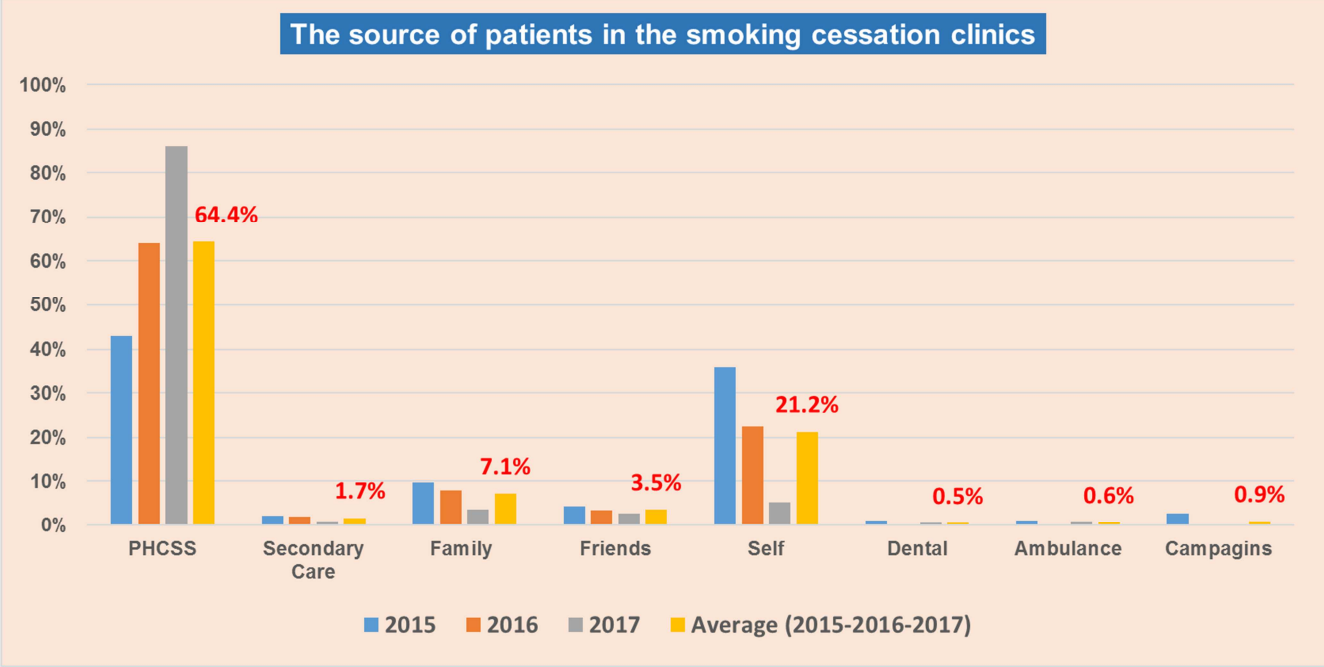

Figure 2. The source of patients who attended the smoking cessation clinics.

Figure 3 shows type of tobacco used by smoker. 64.9% of patients were cigarette smokers (61.4% in 2015, 66.8% in 2016 and 66.5% in 2017) which make it the most common type of tobacco used among smokers compared to other types of tobacco. 18.1% were pipe smokers (19.6% in 2015 and 17.4% in 2016-2017) and that was the second commonly used tobacco type, followed by shisha 7.3% (4.7%in 2015, 5.3% in 2016 and 12% in 2017). Using combined tobacco products was 9.1% (13.8% in 2015, 10.5 in 2016 and 3.1 in 2017). However, the other type of tobacco smoking (E cigarette, cigar and chewing tobacco) was only 0.5%.

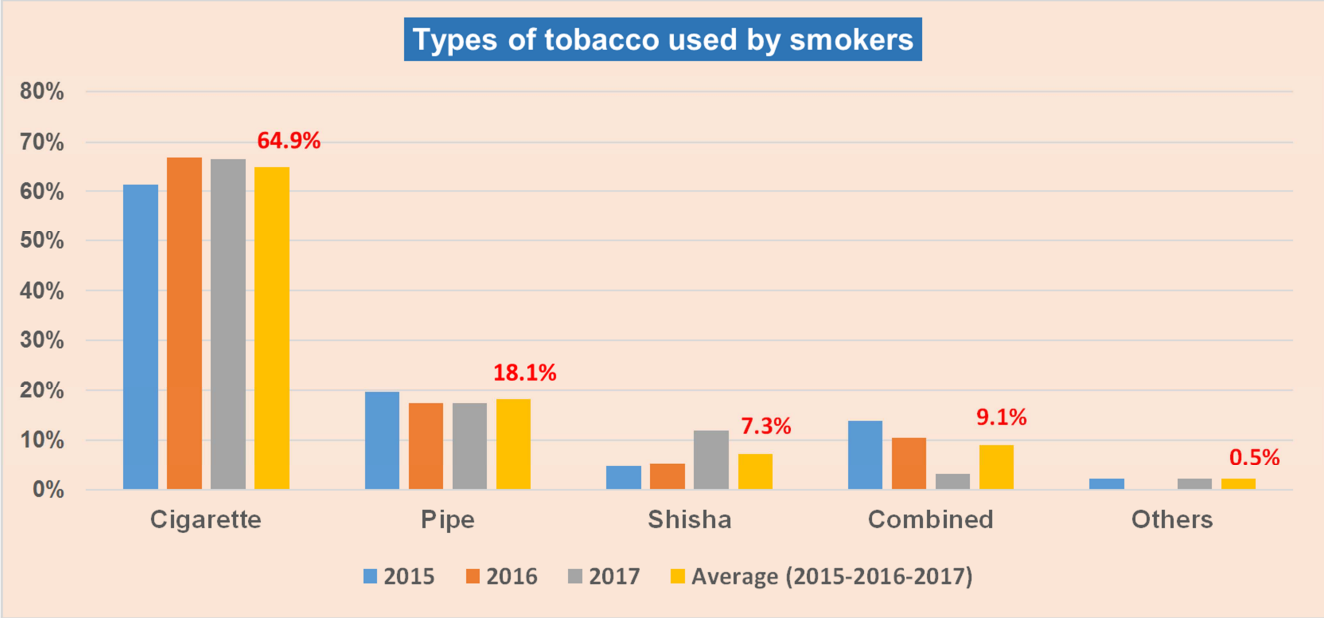

Figure 3. Type of tobacco used by smokers attending smoking cessation clinics in PHCSS.

Figure 4 shows the different types of treatment used to manage patients in smoking cessation clinics. The commonest type of treatment was counselling & Nicotine Replacement Therapy (NRT) 42.1% (51.2 in 2015, 33.7% in 2016 to 41.5% in 2017), then counselling & Varenicline 29.4% (21.3% in 2015, 30.7% in 2016, 36.2% in 2017). The third type of treatment was counselling alone 28.5% (27.5% in 2015, 35.6% in 2016, 22.3% in 2017)

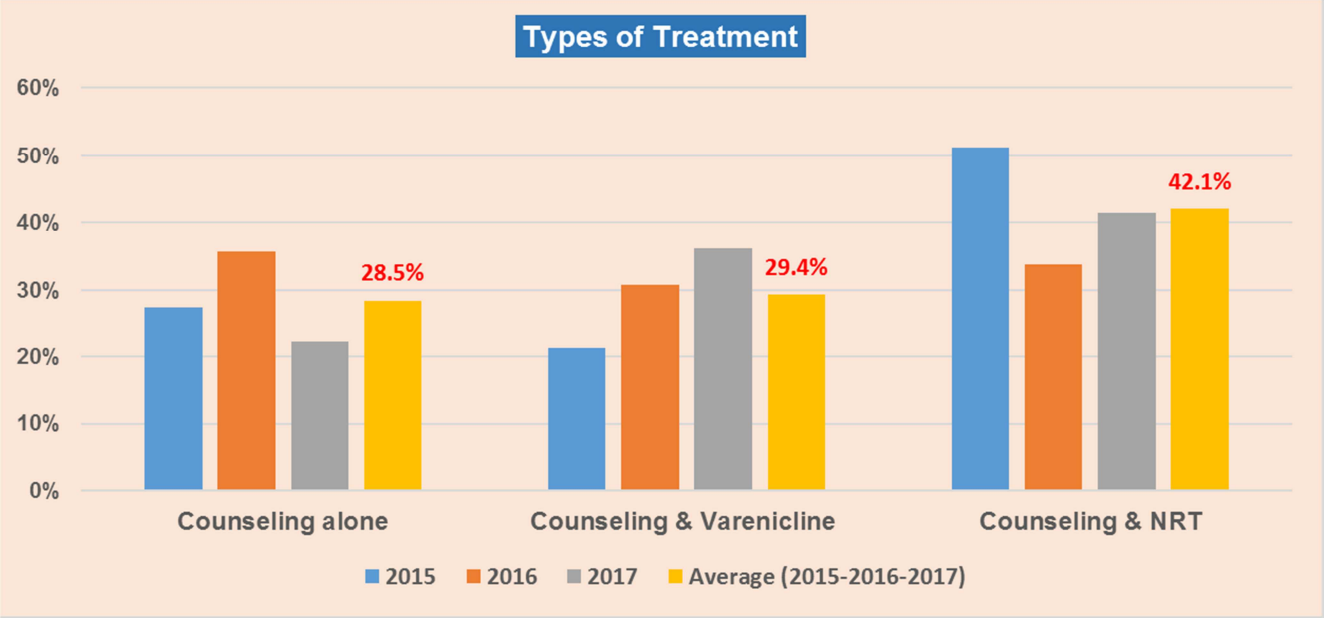

Figure 4. Different types of treatments used to manage the patients.

Figure 5 shows the percentage of quitting among smokers who attended Smoking Cessation Clinics. There was increase in quitting rate from 14% in 2015, to 16.3% in 2016 and then to 16.6% in 2017.

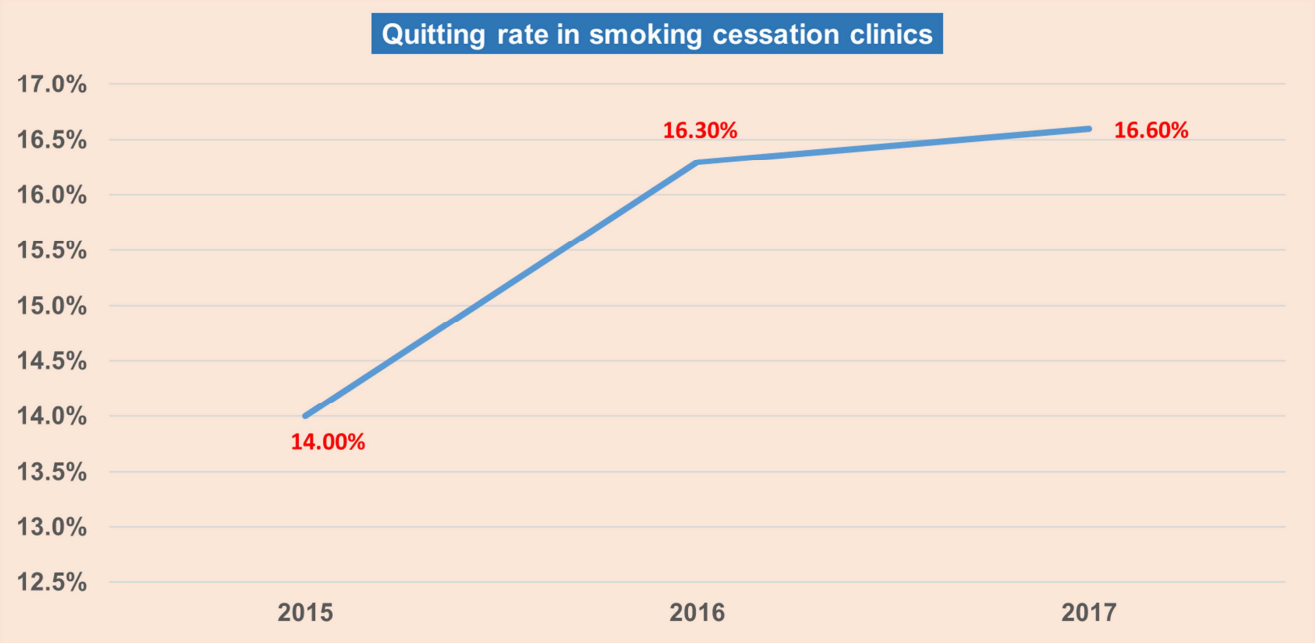

Figure 5. Quitting rate in smoking cessation clinics in PHCSS.

Figure 6 shows the percentage of quitting among smokers who attended Smoking Cessation Clinics based on management type. Smokers offered Counselling only without medication showed a quitting rate of 19% (22% in 2015, 15% in 2016 and 21% in 2017). Those offered counseling with Nicotine Replacement Therapy (NRT) showed a quitting rate of 28% (30% in 2015-2016 and 24% in 2017). Those offered counseling with Varenicline showed the best quitting rate of 53% (48% in 2015 and 55% in 2016-2017). In general, patents offered counseling with any type of medical treatment showed 40% quitting rate (39% in 2015, 42% in 2016 and 39% in 2017) compared to 19% quitting rate with counseling alone.

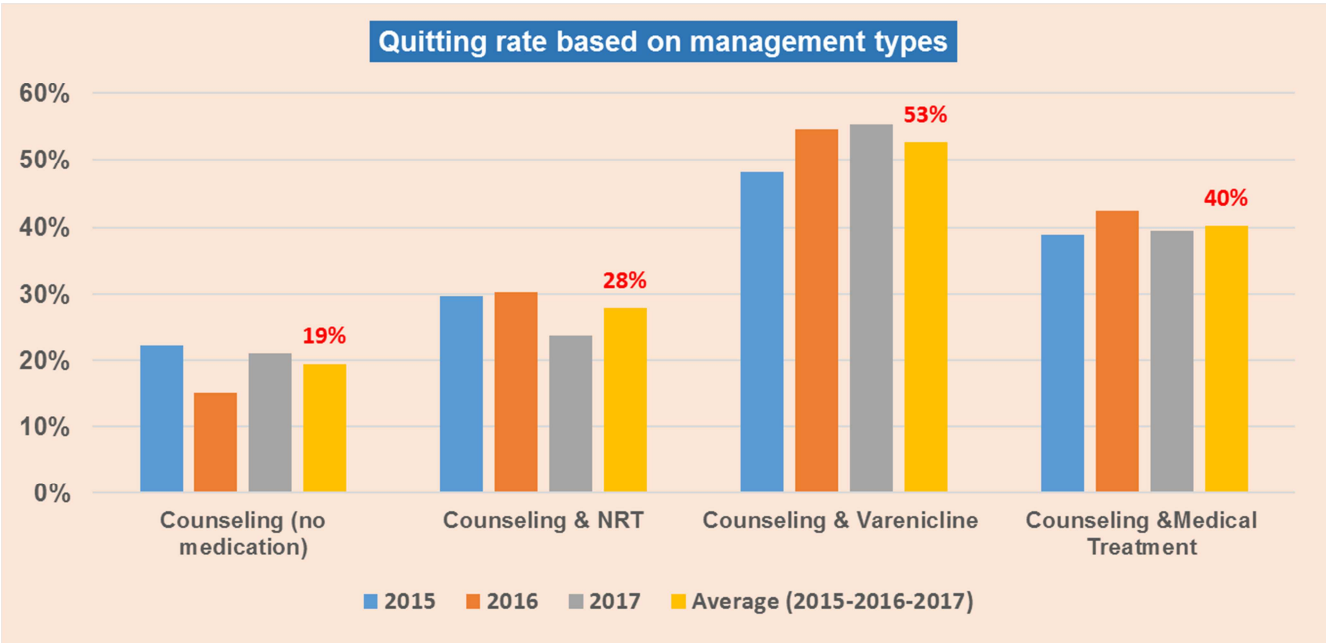

Figure 6. Quitting rate based on management type.

5. Discussion

The study reviewed 624 registered smokers in two smoking cessation clinics in primary health care centers in Dubai Health Authority. The average age of all participants was 40 years. Majority of the study participants (71.2%) were UAE national and 28.8% were Non- UAE national (table 1). Our finding in this regard is similar to study conducted in

kingdom of Bahrain in 2017, the mean age of participants was 37.2 years, the majority of participants were Bahraini (80.6%), and the rest were other Arab and South Asians. [10]

A percentage of cigarettes smokers in this study is found to be much higher (64.9%) as compared to similar studies conducted in USA [11]

The presence of smoking cessation clinic in primary health care premises facilitated access of patients to the service, as the majority of patients (64.4%) were referred from PHC health centers.

In addition, patients were familiar with their health center and primary care physicians, as a result an annual increase in patients attending smoking cessation clinic, from 31% in 2015 to 32% in 2016 and 37% in 2017 was noted (figure 1).

The study showed that the highest percentage of referrals to smoking cessation services was through Primary Health Care Centers (64.4%), followed by smoker's self-referral (21.2%), and then by family referral (7.1%), (figure 2). This finding is different from the Bahrain study where friends, wives and physicians referred the majority of the patients (96.9%) to quit tobacco clinics. [10]

Nicotine Replacement Therapy (NRT) is the most commonly used medication in smoking cessation clinics in Dubai (figure 4) and in Bahrain study as well [10]. In our study the commonest type was counselling & NRT (42.1%), followed by counselling & Varenicline (29.4%), then followed by counselling alone (28.5%). Whereas in Bahrain study, counseling alone was not assessed, and out of 194 participants 181 received NRT (93.29), while 3.6% had either Bupropion or Varenicline. One person used traditional herbal treatment to quit tobacco. [10]

The smoking cessation services of counselling combined with medicines showed to be an important factor to help in the reduction of tobacco use in Dubai. This finding has also been demonstrated in the study conducted in Bahrain as well [10], and in another one conducted in the United States. [11]. Bahrain study, study showed that quit tobacco clinics contributed to an increase in tobacco cessation among consulted patients, and that increasing counselling sessions helped to reach a quitting rate of 56.5% considering that the majority of participants were offered counseling with medicine. [10]

On the other hand, the United States study recommended that it is of paramount importance to identify all smokers and interact with them regarding their smoking behavior on each visit, and that with minimal intervention by the physician, and use of appropriate pharmacotherapy, significant reductions in tobacco epidemic can be expected. [12].

Indeed, smoking cessation clinics in PHC at DHA helped identifying smoker and interacting with them, and facilitated prescribing medical treatment when indicated. This resulted in increasing quitting rate as from 14% in 2015 to 16.3% in 2016 and 16.6% in 2017 (figure 5).

Additionally, the effect of prescribing medicine with counseling was obvious in increasing quitting rate among smokers. Quitting rate among smokers offered counseling with medicine prescription was 40%, 28% with NRT and 53% with varenicline, while quitting rate with counseling alone was 19% only (figure 6).

6. Conclusion

There is increase in number of smokers attending the smoking cessation clinics in Primary Health Care, majority of them were males. Cigarette was the most common type of tobacco used among smokers compared to other types of tobacco.

A progressive increase of quitting rates among those smokers was observed with provision of smoking cessation services that include psychosocial counseling and medication support.

7. Recommendations

Expanding smoking cessation services in Dubai is recommended to combat the increasing numbers of smokers in the community and to support achievement of Dubai Plan 2021 objectives to prevent diseases, promote healthy lifestyle and reduce the burden of non-communicable diseases (NCD). Although the quitting rate is increasing in yearly basis, more efforts are needed to increase the overall quitting rate.

Conflict of Interest

The authors declare that they do not have any conflict of interest.

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