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INVITED REVIEW

Approaches to Tobacco Use and Smoking Cessation in Primary Care: 5A and 5R Strategies

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Abstract

Despite our successful tobacco control campaign and the rapid increase in the number of smokers who have quit in recent years, smoking remains the most important public health problem in our country. All physicians should strongly advise every patient who smokes to quit because evidence shows that quitting with physician advice increases long-term success. Family physicians, who are the first point of access to health as primary care physicians and provide continuous and biopsychosocial comprehensive care to the patient, have a great role in the fight against smoking. The 5A-5R approach is a structured method that can be used by physicians in all smoking cessation interventions from brief physician intervention to more intensive clinical interviews. The withdrawal symptoms encountered during cessation can be overcome by adopting a healthy lifestyle, sharing these problems with the physician and seeking solutions, and adding pharmacological treatment when necessary.

Keywords: e-cigarettes, ENDS, ENNDS, HTPs, vaping

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Approaches to Tobacco Use and Smoking Cessation in Primary Care, 5A and 5R Strategies

Today, smoking is recognized as the most important preventable cause of death and the biggest epidemic. Every year, 7 million people around the world and 110,000 people in our country lose their lives to smoking-related diseases (ENSP, 2016).

Smoking-related diseases are the cause of 41.6% of deaths in our country. Smoking is the cause of one third of cancers and 90% of deaths due to lung cancer. Türkiye has become one of the leading countries in the world with its successful tobacco control struggle. Despite our successful tobacco control struggle and the rapid increase in the number of smokers who quit smoking in recent years, smoking continues to be the most important public health problem in our country. All physicians should strongly advise every patient who smokes to quit because evidence shows that physician-recommended quitting increases long-term success. The active role of family physicians in the prevention and treatment of smoking addiction will increase our success in tobacco control and tobacco addiction treatment in our country. Smoking cessation is a behavior change process. Behavioral change requires close monitoring of the patient, supporting and strengthening his/her competence. The family physician is in a strategic position in this context (Kurdak & Bozdemir, 2016).

Family physicians (GP), who are primary care physicians providing individual, comprehensive, continuous and holistic health services regardless of age, gender and disease, have a great potential for combating tobacco addiction. Primary prevention, which is defined as all kinds of interventions to eliminate existing risk factors that may lead to health problems, such as tobacco use, is an important component of the periodic health examination offered in family medicine. Since smoking addiction is a disease that is difficult to treat and is characterized by relapses as in all other addictions, prevention and measures to be taken to prevent smoking are of great importance and GP should take an active role in this regard. Like all other chronic diseases followed up by family physicians, tobacco addiction is a disease that requires long-term follow-up. Smoking cessation services in smoking cessation outpatient clinics are inadequate even if they

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are continued successfully. Smokers who have decided to quit smoking apply to smoking cessation outpatient clinics and there is no chance to intervene with other smokers. Family physicians have the chance to intervene in smokers who have not decided to quit or who are ambivalent about this issue. At the same time, access to GPs is much easier than access to smoking cessation outpatient clinics (Kurdak & Bozdemir, 2016).

An GP should inform and guide the patient about the opportunities offered by the health system, even if he/she is not adequately equipped for smoking cessation services.

It is possible for the GP to establish a long-term relationship with the patient and accumulate special knowledge about the patient over the years. Continuity in patient – physician communication creates a mutual commitment, and the frequency of contact also contributes to the formation of this bond. The family physician sees every contact with the patient as an opportunity for health promotion and disease prevention. This situation, combined with confidentiality and closeness, enables the smoker to trust his/her physician. As a result of all these features, follow-up and treatment in family medicine is a great advantage to achieve successful treatment results.

Smoking behavior has a complex structure and each patient's level of dependence, smoking characteristics and intention to quit smoking are different. Therefore, patients should be evaluated in detail before starting treatment. These factors make it such that, even though all doctors should continue providing smoking cessation services at all times and locations, the practice is more successful when it is implemented inside a system.

5A-5R STRATEGIES

The 5A-5R approach is a structured method that can be used by physicians in all smoking cessation interventions, from brief physician intervention to more intensive clinical interviews. We can use 5A techniques for patients who want to quit smoking and 5R techniques to prevent relapse in patients who do not want to quit or who have quit smoking. The general characteristic of brief interventions is to raise awareness and focus on recommendations for change (Table 1) (Erkmen, 2016; Karataş, 2016; Sengezer, 2016a).

5A1: ASK/LEARN

Regardless of the reason for which the patient applies to the Family Health Center, he/she should be asked whether he/she smokes cigarettes and other tobacco products. Just as we record blood pressure, pulse rate and body weight data, we should also record data on tobacco use. While recording the patient, we should specify current smokers, ex-smokers and never smokers and we should evaluate the patients who have quit about relapse. A detailed smoking history should be taken as the information we obtain during history taking will help us a lot in planning our treatment and interventions during the smoking cessation process. The patient's first cigarette trial, the age at which he/she started to smoke regularly, the tobacco and/or tobacco products he/she uses, the duration and amount of use, the change over the years, withdrawal symptoms, the situations in which he/she smokes, the conditions accompanying smoking, previous cessation experiences and resumption of smoking, whether there are smokers in his/her family and workplace should be questioned and the patient's feelings should also be focused. Due to time constraints, this history can be completed not in a single interview but also during other interviews. For example, after determining the date of cessation, the history of relapse will provide useful information for the prevention of relapse after cessation.

Table 1.
5As Strategy

5As Strategy	
Ask	Ask all patients about smoking status
Advice	Advise patients who smoke to quit
Assess	Assess readiness to quit
Assist	Assist with making a quit attempt counseling and prescribing first-line smoking cessation medications
Arrange	Arrange follow-up

Suggest quitting to the patient we learnt that he/she smokes, congratulate former smokers for quitting, examine recent smokers in terms of relapse and strengthen their motivation, congratulate those who have never smoked and give brief information about passive smoking and third-hand smoke.

5A2: ADVICE

Every patient who smokes should be advised to quit. Smokers are more open to our recommendation to quit smoking when a connection is established with smoking, regardless of the health problems they present to us. Giving personalized messages, the burden smoking brings to the economy, the damage it causes to their children and being a role model, the improvements in their health and physical appearance when they quit, bad odor, improved sleep, and so on will be useful.

Clear and strong suggestions are more effective. If we give sample sentences (Erkmen, 2016; Karataş, 2016; Sengezer, 2016a):

- "I think it is very important for you to quit smoking right now and I can help you"
- "It is not enough to reduce the number of cigarettes only when you are ill"
- "Smoking occasionally or a few cigarettes does not reduce the danger
- "As your doctor, I want you to know that the best thing you can do now and in the future to protect your health is to stop smoking. I can help you with this."

5A3: ASSESS

After advising a user to quit smoking, the next step for the physician is to ask whether the patient would like to quit smoking.

- "How do you feel about quitting smoking?"
- "If you want to quit smoking, I can help you."
- "If you want to quit smoking, there are many things we can do to help you quit. Would you like to stop smoking?"

The Fagerström nicotine dependence test (FTND) is the most commonly used test to measure smoking dependence and measures nicotine dependence between 0 and 10 points with six questions (Table 2). The heaviness of smoking index (HSI) is a

Table 2.
Fagerström Nicotine Dependence Test

Fagerström Test		
1. How many cigarettes/day do you smoke?	10 or fewer	0
	11 – 20	1
	21 – 30	2
	31+	3
2. How soon after you wake up do you smoke the first cigarette?	Under 5 minutes	3
	6 – 30 minutes	2
	30 minutes+	1
3. Does it feel difficult for you to abstain from smoking in places where smoking is banned?	No	0
	Yes	1
4. Which cigarette would it be the most difficult for you to give up?	The first cigarette in the morning	1
	All the others	0
5. Do you smoke more frequently in the first hours after you wake up than in the rest of the day?	No	0
	Yes	1
6. Do you smoke if you are so ill that you are immobilized in bed most of the day?	No	0
	Yes	1

Score
0 – 2: very low tobacco dependence
3 – 4: low tobacco dependence
5: medium tobacco dependence
6 – 7: high tobacco dependence
8 – 10: very high tobacco dependence

Table 3.
The Heaviness of Smoking Index

Heaviness of Smoking Index		
1. How soon after you wake up do you smoke the first cigarette?	a. Under 5 minutes	3
	b. 5 – 30 minutes	2
	c. 31 – 60 minutes	1
	d. 60 minutes+	0
2. How many cigarettes/day do you smoke?	a. 30+	3
	b. 21 – 30	2
	c. 11 – 20 a day	1
	d. 10 and fewer	0

Score
1 – 2 = very low tobacco dependence
3 = low tobacco dependence
4 = medium tobacco dependence
5+ = high tobacco dependence

two-question test consisting of the first and fourth questions in the FNBT. According to this test, nicotine dependence is defined as strong if "the person smokes 15 or more cigarettes a day and smokes the first cigarette within the first half hour after waking up." Since it is practical, easily applicable and evaluable, it may be preferred by physicians with time limitation (Table 3) (Sağlam, 2016).

With the simple measurement technique of carbon monoxide (CO) in expired air, CO can be measured in the patient's breath and the patient can be informed about what it means. Carbon monoxide measuring devices are practical, handheld and easy to use and are important in determining whether the patient is a smoker or not. The unit of measurement for CO is ppm (parts per million) and the devices can convert it to carboxy hemoglobin equivalent. Especially in patients who come for control after quitting smoking, measurement and low values motivate the patients. In non-smokers and those who are not exposed to passive cigarette smoke, the normal value should be 0 – 1, but a high value is useful because it is a concrete indicator for patients about the harm of smoking (Sağlam, 2016).

The importance of the change to the individual can be measured using the importance scale. On a scale of 0 to 10 (0 = not at all important, 1 = very important), how important is quitting smoking to you? Please put a cross in the box below and ask the patient to number it. Our aim is to get the patient to talk about why he/she wants to change, i.e., quit smoking. Talk about the importance of change by asking why he/she gave this score and not a lower one ("why did you give 7 points and not 6?") (Figure 1).

Then ask them to rate and tick their confidence to quit smoking on a scale of 0 – 10 (0 = not at all confident, 10 = very confident). Our aim is to make the person understand what he/she needs to do to change. It allows us to discuss with the patient what is needed to give a higher score, how to increase self-confidence and the reasons that prevent self-confidence. For example, we can increase the self-confidence of a patient who has low self-confidence because he/she is afraid of withdrawal symptoms by telling that we will teach ways to cope with withdrawal, that we will be with him/her in this process, that we have the option to reduce withdrawal by talking about pharmacological treatment options (Figure 2).

With the patient who is determined to quit smoking, we continue on our way and help the patient. The patient who does not want to quit or who does not want to quit in the near future is given the 5R intervention. The fact that the smoker is at different stages such as not wanting to quit, thinking but not deciding or being determined to quit changes the intervention to be made. Approaches that accept everyone as ready for behavior change and do not take into account the steps of change result in loss of time and resistance to change develops. For example, providing information on how to cope with withdrawal symptoms to an individual who does not plan to quit smoking will not work. The transtheoretical model (TTM) developed by James O. Prochaska and Carlo DiClemente in 1982 has been translated as the stages of change model (Figure 3). The TTM, which is structured especially on smoking cessation behavior and then applied for many behavioral changes, is a model focused on stages of change in which cognitive and behavioral techniques are used to change the problematic behavior. The TTM describes a five-stage change process in the process of smoking cessation, each of these five different

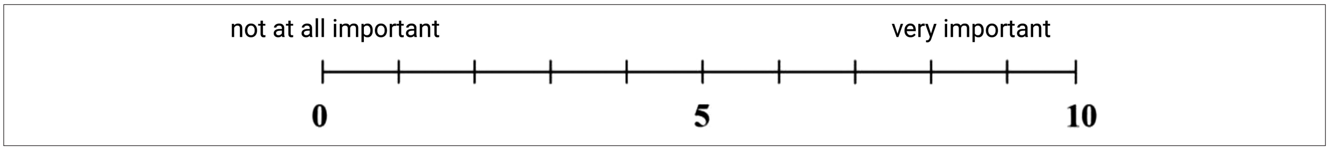

Figure 1. Impotance scale.

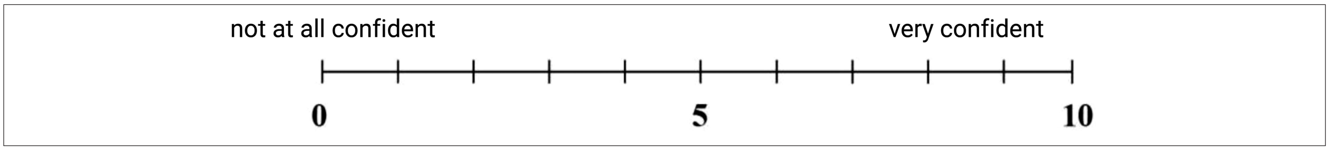

Figure 2. Self-confidence scale.

stages has certain tasks and processes that need to be done in order to achieve change (Anthenelli et al., 2020; Sengezer, 2016b).

Stage 1: Pre-contemplation

They do not see smoking as a problem and therefore do not need to change. They do not have sufficient knowledge about the harms of smoking or ignore the risks. Positive thoughts about smoking such as "I enjoy smoking, it is my only friend" predominate. They interpret unsuccessful quit attempts as lack of willpower and lack self-confidence.

For this stage, interviews should be conducted to provide accurate information, to attract the person to discuss the benefits of quitting smoking, to make them think about the effects on other people and to make them realize the contradictions between where they want to be and their current situation. 5R strategy should be used.

Stage 2: Contemplation

The person is aware that smoking behavior is a problem and intends to quit. However, they cannot take action. It is known that they can remain in this stage for years with conflicting feelings and indecision. They tend to underestimate the problem. The important thing is to make them make the decision to quit. This is the period when motivational interviewing works best. The advantages and disadvantages of quitting smoking and contradictions should be revealed.

Stage 3: Preparation

At this stage, the patient wants to quit within 1 month. It can be seen as a preparation period for the patient to move to the next quit phase. He/she is aware of the risks and his/her negative feelings toward cigarettes such as smoking spoils my health, I smell bad are at the forefront. He/she makes efforts to quit on his/her own. In this stage, a plan should be made together with

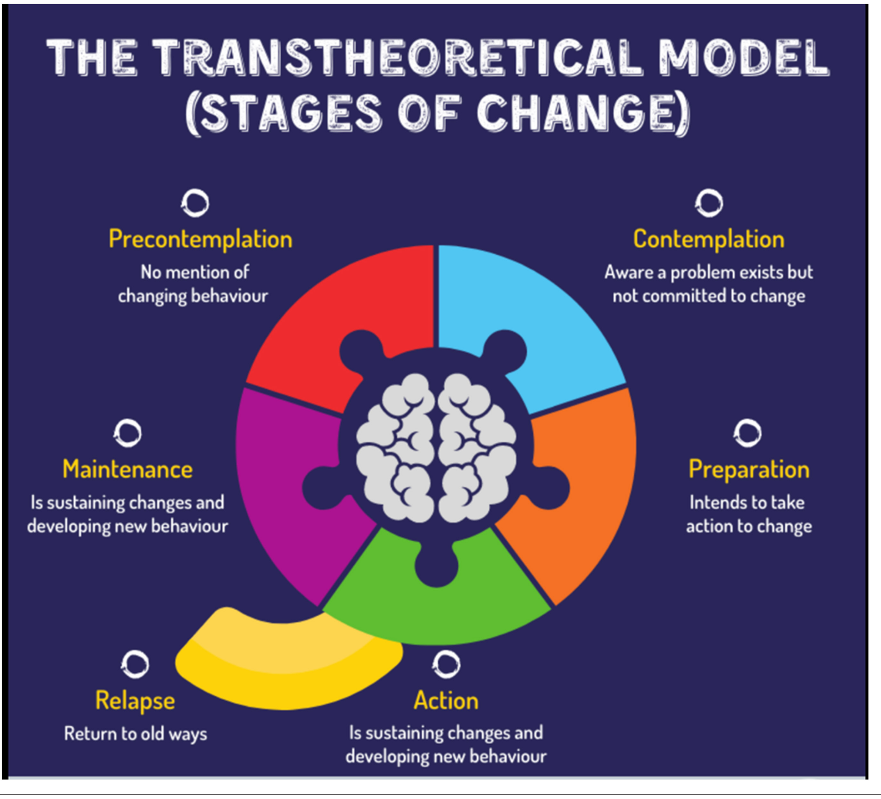

Figure 3. Prochaska ve Diclemente Transteoretik Model.

the patient, the patient should be encouraged and his/her self-sufficiency should be supported.

Stage 4: Action
He/she has changed his/her behavior by quitting smoking. In fact, it would be more accurate to say that the change in behavior has begun, because at this stage returning to the old behavior is common. Half of them return to their old behavior in the first 2 – 3 weeks. Interviews in this period are important. It is very effective to teach the individual how to struggle with the difficulties they may encounter at this stage and approaches to reward positive behavior.

Stage 5: Maintenance
Has quit smoking at least 6 months ago. Increased self-confidence, less affected by risky situations. Studies have shown that on average 15% of smokers regress to the non-thinking stage and 85% to the thinking and preparation stages. Successful smokers are usually those who have quit before and then smoked again, and have gone through the abovementioned stages three to four times on average. In this process, smoking one to two times is defined as "lapses." Lapses are the harbinger of relapse. Past smoking cessation and relapse stories and how to cope with relapses should be discussed with the patient and he/she should be prepared for this situation. Afterward, the patient will either continue not smoking and enter the exit phase or start smoking again and relapse.

The above stages of the smoking cessation process do not always proceed linearly or in a specific order. For example, a person may repeatedly go through the preparation stage and then return to the intention stage before moving to the action stage. Also, when a person moves to the maintenance stage, he or she may return to the intention stage over time, the important thing is that the cycle continues continuously.

5A4: ASIST
Physicians who will lead their patients should feel knowledgeable and confident about their patient counseling skills and treatment options. With appropriate recommendations and pharmacotherapy options, you can ensure that the cessation is successful.

A withdrawal plan should be developed together with the patient. Remembering that addiction treatment is not a garment but a tailor's job, a personalized quit process plan should be made. Before deciding on a quit day, behavioral support should be given by working on rituals, automated behaviors and habits that should be dealt with together with smoking addiction. The patient is given some homework and asked to comply with them. Examples of cognitive and behavioral interventions in the smoking cessation process (Sengezer, 2016a; 2016b):

- Record keeping,
- Determine a quit day (it can be a special day),
- Support from family and friends,
- Make a list of the reasons why you want to quit smoking,
- Make a list of the benefits of quitting smoking,
- Postpone smoking,
- Change the brand of cigarettes you use,
- Stay away from smokers and smoking places for a while,
- Do not smoke indoors,
- Do not take a cigarette with you when travelling for short periods of time,
- Do not buy a new cigarette before you have finished smoking,
- Carry a limited number of cigarettes,
- Throw the cigarette away when you have smoked half of it,

Activities that are unlikely to be carried out at the same time as smoking behavior are recommended:

- Showering,
- Run,
- Doing sports,
- Brushing your teeth,
- Chewing gum,
- Occupation of the hands (key ring, stress ball, handicraft),
- Drink plenty of fluids (water, fruit juices, herbal teas),
- Do physical exercise,
- After quitting smoking, it is recommended that you save the money you spend on weekly or monthly cigarette purchases and use this money to buy a gift for yourself or your loved ones, or to reward yourself by going out for a meal or entertainment.

Withdrawal symptoms encountered during the withdrawal period can be overcome by adopting a healthy lifestyle and sharing these problems with the physician and seeking solutions, adding pharmacological treatment when necessary. Adequate sleep, exercise, a balanced diet with healthy foods, a stress ball, breathing exercises, yoga, or other self-discovered occupations that are good for you will help you to relax and reduce stress. A hot bath, a new book, a film that the person wants to watch will help both with relaxation and the desire to smoke.

For some addicts, the thought that "once I quit smoking I will never be able to smoke again" causes anxiety and may increase stress. This thought may even lead to avoidance behavior. This is an erroneous thought, because if he/she wants to, he/she can easily access, buy and smoke cigarettes. It is his/her choice not to smoke, he/she is in control. A person who thinks that he/she is in control and can choose to smoke if he/she wants to feel powerful and is more likely to choose not to smoke (Sengezer, 2016a).

In addiction treatment, our aim is to ensure that the addictive substance is never used again. This erroneous "all or nothing" way of thinking takes the person from the point of "absolute control" at one end to the point of "loss of control" at the other end. However, one or two drinks is only a "lapse" and indicates a repetition of the old behavior that has been abandoned. In order for this to turn into a "relapse," the lapse must be repeated one after the other. In contrast to the pendulum model, a more humane and flexible attitude is useful to avoid relapse. The cognitive reactions related to the person's mistake are what determine whether a mistake made during the treatment will turn into a relapse or not. Developing the thought that "My smoking a cigarette shows that I made a mistake, not that I am weak-willed and uncontrolled, and if I do not repeat this mistake, I can achieve my goal" will be useful in the cessation process (Sengezer, 2016b).

5A5: ARRANGE
Regular follow-up of patients after cessation will reduce relapses. The patient is usually not given an appointment on the day of

cessation. In the interview where the cessation plan is made, the patient is told what to do in detail. After the withdrawal day, a telephone call is made with the patient and the control can be given within the first 15 days. The frequency of follow-up appointments will vary according to the patient's withdrawal symptoms and coping skills. Since the first 3 weeks are the most risky period, it is appropriate to inform the patient about having a phone that he/she can reach or calling Alo 171 and to support him/her with written material. In the first month after quitting,

5R's STRATEGY

The 5R approach can be used in patients who do not want to quit smoking or in the prevention of relapse (Table 4). In this process, the physician should not only explain, but should take the patient's approach and evaluation on each subject (ENSP, 2016; Erkmen, 2016; Giulietti et al., 2020; Karatas, 2016):

- What do you think about the positive effects on your health?
- What do you think about the risks?
- What gains and benefits will quitting have for you?
- What do you think are the most important obstacles?

Ensure that the patient understands as specifically as possible how smoking cessation relates to him/her and all its effects in relation to his/her health status, family and environment.

5R2: Risks

Summarize the near-term and long-term negative effects of smoking on health. Acute risks such as shortness of breath, chronic risks such as lung cancer, COPD and environmental risks such as passive exposure of household members should be reviewed with the patient.

5R3: Rewards

The patient may be asked to list the potential benefits of smoking cessation, emphasizing those that are relevant to the patient. Emphasize the gains:

- Improvement in health status
- Taste of food, improved sense of smell
- Saving money
- Feeling better, energized
- Better smelling house, car, clothes and breath
- Setting a good example for their children; children's health
- Delayed aging of the skin

5R4: Roadblocks

The patient should be asked to identify the obstacles and difficulties in front of quitting smoking. How these barriers will be overcome when the person is motivated and the 5A approach is continued should be discussed in detail. Fear of weight gain, withdrawal symptoms, lack of support and fear of failure are the most common barriers.

Table 4.
5R's Strategy

5R
Relevance
Risks
Rewards
Roadblocks
Repetition

5R5: Repetition

Motivational interviewing should be repeated at each visit to the physician in relation to the current situation.

Smokers who have failed in previous attempts should be told that most smokers have made many quit attempts before successful quitting.

Smoking Cessation Treatments

Psychosocial Treatments

Motivational interviewing, which is one of the psychosocial approaches in the addiction treatment process and can be applied at all stages of cessation, is a patient-centered communication model specially designed to eliminate ambivalence about behavior change and to enable patients to take action for change (Sengezer, 2016b).

Motivational interviewing focuses on the smoker's perspectives and concerns about behavior change. It is aimed to increase the person's intrinsic motivation for change by leaving the responsibility of change to the person, not authoritarian, and by a supportive communication method, not argumentative.

The basic principles of motivational interviewing are showing empathy, revealing contradictions, working with resistance and supporting self-efficacy. In this patient – physician communication model, open-ended questions, confirmation/acceptance, reflective listening and summarizing methods are used.

At the beginning of the motivational interview, the patient's determination to quit should be investigated first. Appropriate intervention should be made according to the patient's level of decision. The patient's decision should be respected as a personal choice, judgment and conflict should be avoided, the patient should be encouraged to talk about the advantages and disadvantages of the quit attempt, and the patient should be encouraged to move from the current step to the next step in each interview.

Another psychosocial treatment used in nicotine addiction is cognitive behavioral therapy. Behavioral and cognitive methods are used to intervene in the behavioral and psychological aspects of tobacco addiction. By trying to determine the connections between the emotions, behaviors and thoughts of the person, the person is enabled to interpret his/her experiences more realistically. The person is taught the skill of developing new thoughts by making him/her realize his/her mistakes about smoking. It is aimed to determine in which situations the person smokes, to make the person aware of this issue and to change these automatic behaviors. At the same time, methods of coping with withdrawal and stress are taught. It is used in combination with pharmacological treatment to reduce nicotine withdrawal symptoms and facilitate the process. The combination of individual behavioral and pharmacological treatment increases the chance of success in treatment due to the complex structure of smoking behavior (psychological, behavioral, and neurobiological components) (ENSP, 2016; Giulietti et al., 2020).

Pharmacological Treatments

Nicotine Replacement Therapies

Nicotine replacement therapy (NRT) works by reducing the number of nicotinic receptors in the brain and the nicotine dose is gradually reduced during the treatment process.

When a cigarette is smoked, nicotine reaches the smoker's brain within 7 seconds and saturates nicotinic receptors, producing a much higher peak effect than expected. The corresponding cells in the brain desensitize the receptors, increasing the number of receptors, which leads to a need for more nicotine over time.

NRT, on the other hand, causes nicotine to reach the brain much more slowly than cigarettes and does not cause a peak in the amount of nicotine in the blood. Thus, it provides saturation of nicotine receptors and eliminates the need for nicotine without stimulating nicotine receptors. In this way, the number of receptors produced decreases continuously and the number of receptors returns to normal after 12 weeks of NRT. However, these cells retain nicotine in their memory and can proliferate very rapidly on the cell membrane in case of re-smoking, which is why tobacco addiction is a chronic relapsing disease.

Nicotine forms used for NRT today are gum, nasal and oral spray, oral inhaler, and nicotine patch. In our country, transdermal patch, gum, and oral spray forms are available.

Nicotine Patch

With the nicotine patch, nicotine is delivered transdermally to the body in a controlled manner. There are two forms for 16 hours and 24 hours. The patch delivers 1 mg of nicotine per hour. With the nicotine patch, 50% of the amount of nicotine taken by cigarette smoking passes into the body. The patches available in our country are in three different sizes and the amount of nicotine taken into the body is different for each size.

In the stages of smoking cessation, the dose is reduced every 2 – 4 weeks and the patch containing a lower dose of nicotine is switched to the patch containing a lower dose of nicotine and the treatment is terminated in 8 – 12 weeks depending on the patient's condition. In patients who smoke 10 – 15 cigarettes/day or less and have lower addiction, treatment can be started with low doses of nicotine patches.

Nicotine patch is easy to use. When waking up in the morning, it is applied to a hairless, dry and clean area of the trunk or upper arm skin. If the patch comes off by itself during the day, it is possible to use the same patch again by using adhesive.

The most common side effect is local skin reactions. To reduce the risk of local skin reactions, the application area should be changed daily. It can be used on arms, shoulders and chest. Headache, nausea, flu-like symptoms, muscle aches and insomnia may also occur when using the patch. Pregnancy category is D (ENSP, 2016; Giulietti et al., 2020).

Nicotine Gum

Nicotine gum is available in two forms of 2 and 4 mg. However, not all of the nicotine in the gum can be absorbed, while 0.9 mg nicotine is taken into the body with 2 mg gum, 1.2 mg nicotine is taken into the body with 4 mg gum. Oral pH and chewing technique are very important for good absorption. No food or drink should be consumed during chewing. Especially acidic food consumption should be avoided about 30 minutes before chewing.

There is a special chewing technique for chewing gum to show its effect. For this reason, every patient who will start chewing gum should be well explained how to use it. After the chewing gum is taken into the mouth, it is chewed once or twice until the taste is released, then it should be kept between the cheek and the gum for the nicotine to be absorbed. When the taste decreases, it should be chewed for a short time and kept between the cheek and gum again. Continue to use by repeating the same process in another area of the oral mucosa. This method is called "chew and park" technique.

Nicotine absorbed from the gum reaches the plasma peak value after about 20 – 30 minutes. Although the frequency of use is determined by the patient himself/herself, generally 10 – 15 chewing gums per day is sufficient and at least half an hour should be left between two chewing gums. According to the FNBT score, it is appropriate to start treatment with 2 mg gum for those with low and medium addiction and 4 mg gum for those with high addiction. The maximum number of daily use is 24.

It is recommended to use the treatment for 8 – 12 weeks, the duration can be extended if necessary. Chewing gum treatment can also be used in combination with other withdrawal methods.

Chewing gum should be chewed slowly. Excessive salivation when chewed fast or not used correctly may cause irritation, hiccups and gastrointestinal side effects. Pregnancy category is C (ENSP, 2016; Giulietti et al., 2020).

Nicotine oral spray

Nicotine oral spray is a nicotine replacement therapy with a rapid onset of action. Each puff contains 1 mg nicotine. One bottle contains 150 puffs. One puff is sprayed a few centimeters into the oral cavity, into the cheek or under the tongue. After waiting a few seconds, it can be swallowed. Do not inhale while spraying. Maximum 2 puffs at a time, maximum 4 puffs per hour, maximum 64 puffs per day can be applied.

Bupropion

Bupropion acts by inhibiting the synaptic reuptake of dopamine and noradrenaline. Thus, it mimics the effect of nicotine and causes a reduction in nicotine withdrawal symptoms. It is an FDA-approved agent for both depression treatment and smoking cessation.

Bupropion is available in 150 mg tablets. For the first 3 days, 150 mg is taken 1 time a day, and 150 mg is taken 2 times a day starting from the fourth day, reaching a total treatment dose of 300 mg. Bupropion treatment is started before smoking cessation, and the day of smoking cessation is determined between 7 and 14 days of the drug. Treatment continues between 12 and 24 patients in total. The recommended daily dose of bupropion in the elderly is 150 mg.

The patient's use of antipsychotic drugs, antidepressants, tramadol, methylxanthine, systemic steroids, antihistamines, antibiotics such as quinolones, and anorexic substances should be questioned before starting bupropion. Alcohol use status and date of last alcohol intake, history of diabetes mellitus, or head trauma should also be questioned.

Bupropion may be used in combination with NRT in patients with severe withdrawal symptoms or in patients who are not successful with monotherapy. Combination therapy with bupropion and NRT has been found to be more effective than bupropion alone and NRT alone. When bupropion is compared with NRT, it is not certain that it is more effective than NRT.

The most common side effects are headache, insomnia, and dry mouth. Convulsion may occur in approximately 0.1% of patients. This risk is increased in patients with a history of epilepsy, eating disorders such as anorexia nervosa and bulimia, as well as bipolar disorder, severe liver failure due to chronic alcohol consumption and the use of MAO inhibitors and benzodiazepines in the last 2 weeks are factors that lower the seizure threshold. Pregnancy category is C.

Varenicline

Varenicline is a partial agonist of $\alpha 4\beta 2$ nicotinic cholinergic receptors that mediate dopamine release. By stimulating $\alpha 4\beta 2$ receptors, it induces dopamine release from the nucleus accumbens through nicotinic agonist effects, thereby reducing the intensity of nicotine withdrawal symptoms. At the same time, by binding tightly to nicotine receptors, it inhibits the binding of cigarette smoke-induced nicotine to the receptors and reduces the rewarding effect of smoking.

Treatment with varenicline is started with 0.5 mg once a day for the first 3 days while continuing to smoke, 0.5 mg twice a day in the morning and evening between days 4 and 7, and 1 mg twice a day from day 8. Patients who continue to smoke when the drug is started are aimed to quit smoking by setting a target smoking cessation day between the 8th and 14th day. The treatment is completed with a dose of 1 mg 2 times a day for a total of 12 weeks. The average duration of treatment is 12 weeks, but 24 weeks of treatment has been shown to reduce smoking relapse rates within 6 months and 1 year. Prolongation of the treatment period may be considered for patients with a tendency to relapse.

The most commonly reported side effect of the drug is nausea (35.8%). Other side effects were insomnia (22%), abnormal dreams (14.4%), headache (16.8%), and gastrointestinal complaints (22.5%). In order to reduce the incidence of these side effects, the drug is started at a low dose in the first week and the dose is increased by titrating. In cases where nausea is a problem, it is recommended to take the drug with meals. If nausea persists despite this, the daily dose of varenicline is reduced to 1 mg and after nausea is controlled, another dose increase (2×1 mg) is tried. Eighty percent of varenicline is excreted unchanged in the urine, therefore there is no need to change the dose in patients with hepatic insufficiency. In patients with severe renal insufficiency, it is recommended to reduce the daily dose by 0.5 mg. There is no need to change the dose in elderly patients or patients with different comorbidities. No interaction with other drugs has been reported.

Varenicline can be used safely in psychiatrically stable smokers. According to the results of the multicenter CATS and EAGLES studies, which investigated the safety of varenicline, bupropion and nicotine patch in relation to cardiovascular and psychiatric diseases, it has been shown that it does not increase the risk of these diseases compared to placebo. Pregnancy category is C (Anthenelli et al., 2016; Benowitz et al., 2018).

Relapse

After quitting smoking, smoking a single cigarette or a few puffs is called a slip, smoking one cigarette for a few days is called a lapses, and starting to smoke again as before is called a relapse. It has been shown that 95% of people who experience errors after smoking cessation start smoking regularly again in long-term follow-up.

As with all other addictive substances, smoking addiction is a chronic disease with relapses and relapses, which constitute a major obstacle to quitting smoking, are actually a result of the natural course of the disease. According to studies, almost half of the patients who quit smoking without treatment start smoking again within the first few days and the other half within the first two weeks. It is reported that half of the patients who quit smoking using treatment experience relapse within the first 1 year. Therefore, the most important goal in patients who have recently quit smoking is to prevent relapse, and the patient's smoking cessation status, motivation and tendency to relapse should be evaluated during follow-up after smoking cessation.

Meeting with patients at certain intervals provides significant benefit in preventing relapse. It is recommended to have one interview in the first 2 weeks, when nicotine withdrawal is the most intense and the risk of relapse is the highest, and at least four interviews in the following periods and intermittent control interviews for 1 year. Studies have shown that interviews longer than 10 minutes increase the success of quitting compared to interviews conducted between 3 and 10 minutes, and interviews conducted 8 times or more increase the success of quitting compared to those conducted 3 times or less.

It is important to inform the patient about relapses. It should be explained to the patient that even smoking just one puff of cigarette will increase the possibility of relapse, that the first 1 – 2 weeks after quitting smoking is the period when withdrawal symptoms will be felt most intensely, that these withdrawal symptoms may consist of depressive mood, excessive desire to smoke, difficulty in concentration, and suggestions should be given on how to cope with withdrawal symptoms. For example, a person experiencing insomnia may be guided to take a warm shower and not to consume insomnia-causing beverages such as tea and coffee at late hours, to drink plenty of water if he/she has increased appetite, to prefer low-calorie foods, and to use behavioral techniques such as taking more frequent breaks if he/she has difficulty concentrating.

Social and psychological changes are also of great importance in preventing relapses. Some effective behavioral techniques that can be applied while supporting individuals at the stage of smoking cessation are as follows; anticipating risk factors and learning to avoid them, developing cognitive strategy knowledge to reduce negative mood, encouraging lifestyle change to improve quality of life and reduce stress, developing behavioral strategies to overcome the desire to smoke. For example, exercise, which is recommended to the patient in terms of lifestyle change and stress reduction, may facilitate the individual's coping with stress and alleviate withdrawal symptoms, and may also be protective against the tendency to gain weight, or if the patient has old habits such as going to the coffee shop, excessive tea and coffee consumption, which are conditional stimuli for smoking, he/she may be encouraged to take up new hobbies that require manual skills, which are not conditional stimuli for smoking. In terms of coping with cigarette cravings, it can be suggested that cigarette cravings that recur more frequently in the early period and last 3 – 5 minutes are temporary and will soon pass, or behavioral and cognitive avoidance techniques such as breathing exercises, changing the environment, taking a shower, going for a walk can be suggested to the patient.

The aim of mindfulness-based relapse prevention, which is a new method in the prevention of relapses, is to enable the person to recognize and accept thoughts and sensations by applying mindfulness and to use mindfulness skills as an effective coping mechanism in high-risk situations. It is ensured that people can detect situational clues that pose a high risk for relapse with mindfulness skills. Although the person is exposed to high-risk situations, his/her self-efficacy will increase when he/she does not use the addictive substance impulsively thanks to mindfulness.

While treating relapse cases, the reasons for the occurrence of relapse should be determined and cognitive techniques should be used for these reasons. Because high-risk situations for relapse may vary from person to person, while a different situation may cause relapse in the same individual at different times.

It is also important to determine how smoking cessation affects the person. If the person who quit smoking started the process without a good preparation period, he/she may experience sadness due to quitting smoking, deprivation of something he/she deserves, and the feeling of losing a loved one. Or, if the preparation period has been well spent, the feeling of relief when getting rid of a life-threatening situation may be intense. If it is the first emotion, as the quitting process is prolonged, longing for cigarettes and envying smokers may increase the risk of relapse. If a sense of relief is experienced, a feeling of feeling sorry for smokers occurs and the person avoids factors that may cause relapse and is a candidate for permanent cessation (ENSP, 2016; Giulietti et al., 2020; Sengezer, 2016a; 2016b).

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