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A Step towards Relapse Prevention

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Abstract

Tobacco is one of the biggest killers globally. Smoking Tobacco has shown to have serious repercussions on health including cancers, cardiovascular diseases, respiratory diseases, diabetes, hypertension and so on. Quitting smoking is not an easy process but requires support and strong determination. Thousands of people try quitting, but majority still result in relapse, where main culprit is Nicotine. Nicotine is the dangerous and addictive substance present in tobacco smoke. Ample of quitting aids like varenicline, bupropion, combination NRT and e-cigarettes are available to help smokers quit tobacco and prevent repulse. Despite all these measures relapse still occurs but the good news is some smokers do overcome it through will power and support. If nations, countries, healthcare system, policy makers, family and smokers, all will work hand in hand then combating relapse is surely possible. So, in a nutshell, relapse can be prevented by proper support system and resolution.

Keywords: Cardiovascular Diseases; Respiratory Diseases; Diabetes, Hypertension; Healthcare System

Abbreviations: TS: Tobacco Smoking; CVD: Cardiovascular Disease; CBT: Cognitive Behavioural Training; NRT: Nicotine Replacement Therapies; WHO: World Health Organisation; FCTC: Framework Convention on Tobacco Control.

Introduction

Tobacco is one of the leading contributors of premature morbidity and mortality across the globe [1]. The nexus of tobacco smoking (TS) with cardiovascular disease (CVD) reveals that majority of deaths in smokers are due to CVD [2]. But the good news is TS is largely evitable and one of the potentially modifiable risk factors for CVD [3]. Tobacco smoke contains more than 7,000 harmful chemicals and affects almost every organ of the body. Amongst these dangerous chemicals, nicotine is the substance that is highly addictive and responsible for impeding quit attempts. The major challenge in quitting tobacco is the struggle for nicotine cravings and overtime may foretell relapse. Data suggests that around half of the smokers try quitting each year but just 1 in 10 hit the target [4].

The reason behind these doomed attempts is relapse-the main culprit to tackle. Relapse is not uncommon with addictive behaviours like smoking, even after twelve months of quitting, relapse is observed in 80-95% of smokers [5]. Tobacco smoking dependence is comparable to chronic disease, requiring on going treatment because of relapse. Many relapse prevention strategies are in place to help people maintain the cessation stage of quitting. But for effectual outcomes health professionals, policy makers, health organisations, government, family members and smokers who want to quit, have to work hand in hand for preventing smoking relapse. Smoker has to take the lead in addressing the problem behaviour, secondly health

professional's cooperation is essential in sorting out the ways which work best for patient through behaviour, cognitive and medical strategies. Thirdly, family and non-smoking social support plays a significant role. Lastly, health authorities and government contribution is pivotal in making law against tobacco use, increasing tobacco taxes and banning smoking in public places. Hence, smoking and relapse are highly preventable if we are together. The aim of this feature piece is to highlight the possible predictors of relapse and strategies for relapse prevention. Furthermore, existing researches, theories and interventions will be reviewed with a focus on post remittance relapse of tobacco smoking and its prevention.

Why is Relapse Control so Difficult?

Relapse is regarded as the chronic outcome after quitting TS. One of the core grounds for relapse is withdrawal symptoms of nicotine which are very often observed soon after a smoker quits. These are nicotine hunger urges which are very difficult to ignore or perhaps outrageous to tackle for many smokers. Nicotine is the addictive substance in tobacco that activates the reward pathway in brain and gives a pleasurable feeling to the individual. Half-life of nicotine being 2 hours is the reason behind frequent topping up of cigarettes among smokers. Upon nicotine withdrawal smokers encounter serious intolerable symptoms like agitation, anxiety, depression, stress, smoke urge, insomnia and increased appetite. These start from the first week after quitting and may last for few weeks, making it irresistible for the smoker not to have a cigarette.

Smokers who initiate cigarettes for entertainment and pleasure can deter quitting easily. Besides, smoking which is associated with unfavourable moods, cravings for nicotine, low self-efficacy and smoker friends (as illustrated in Table 1 below) play a key role in impeding quit attempts [6]. Time to first cigarette is considered a prime marker in nicotine dependence and ultimately in the process of relapse [7]. A smoker who lights up his first cigarette in an hour after waking up in morning is predictive of high tobacco dependence and has great chances of cessation failure. Some smokers have a habit of smoking during night time and that make it difficult for them to resist, causing disturbed sleep when they try to quit [8]. Social smoking (with smoker friends), custom of drinking along with cigarette and previous failed tobacco cessation trials account for crucial factors in controlling relapse. Data on duration of years of smoking against TS cessation attempts is capricious but modest data shows older people are reluctant to stop smoking [9,10]. Furthermore, the study explored that there is no definite association of quitting with age of smokers, but depends on type of approach opted for quitting [10].

Factors	Symptoms
Psychological	Increased level of nicotine dependence, withdrawal symptoms
Emotional	Anxiety, depression, stress and psychiatric disorders
Cognitive	Low-Self-efficacy, knowledge and motivation
Behavioural	Slip-ups, patterns of smoking
Social	Social norms, smoker friends, cues of places

Table 1: Factors associated with negative quit.

Low self-efficacy is deemed to be another foremost rationale in the process of relapse. Self-efficacy is person's capability to elicit a positive behaviour change. Research shows that proclaimed self-efficacy helps changing behaviour and maintains abstinence [11]. Another research explains the reason to arouse relapse after quitting was the concern about weight gain, particularly bothering young women [12].

Tobacco advertising can result in reduction of smoker's motivation to quit and will provoke relapse. Also, easy availability of cigarettes, low taxes, prevailing smoking zones, smoker friends and individual factors discussed above, all are the predictors for smoking aa well as relapse. So, a broader approach has to be initiated from government and policy makers to individual level in order to make the society tobacco free.

What Interventions are available to Support Relapse Prevention?

The dynamic process of quitting and relapse prevention often calls for support. This support could be in form of cognitive-behavioural training (CBT) and medical intervention or both [13]. CBT is a technique used to encourage, teach and support smokers in gaining and sustaining abstinence from tobacco. It helps the patient with planned schedule, recognising and dealing high-risk situations concerned with smoking. But the evidence against behavioural intervention shows heterogenicity towards relapse prevention in successful short- term quitters [14]. Furthermore, recent studies reveal dual combination of BCT and pharmacological interventions are more effective in preventing long term relapse than monotherapy [15].

The pharmacological interventions can range from nicotine replacement therapies (NRT), varenicline (champix), bupropion (zyban) and cytosine. NRT has a success rate up to 70% and its available in many forms- sprays, inhalers, transdermal patches, sublingual tablets and gums depending

on choice, tolerance and cost affordability of the individual [16]. Although NRT being very considerate in cessation of TS, it is associated with severe withdrawal effects like nicotine cravings, insomnia, persistent cough, flu-like symptoms, hunger pangs and mood changes. Moreover, NRT is thought to have hazard of smoking relapse which in turn depends on the longevity of abstinence- long the duration more unlikely to maintain cessation behaviour [17].

To date, varenicline (champix) is most efficient drug for quitting TS, it helps reduce cravings for tobacco and mitigates nicotine withdrawal symptoms [18] and works best in prevention of post relapse [19]. Additionally, varenicline and NRT dual therapy is found to be most productive than NRT alone. A randomised control trial using another drug bupropion showed positive results for relapse prevention with less weight gain which is common with NRT [20]. A form of electronic device known as e-cigarette is trending nowadays as a quit tool which looks similar to a regular cigarette but is nicotine free and combusts e-liquid. It has become more of a pleasurable leisure time activity rather than a quit aid for smokers. Many smokers are opting e-cigarette because of its resemblance to usual cigarette to satisfy their psychological desire. Recent studies explored that e-cigarettes have favourable quitting profile when compared to NRT alone as well as have a profound effect on relapse prevention [21,22].

Other approaches are also being implemented to overcome the failure of long-term abstinence. For-example in Saudi Arabia researchers found that joining the social media smoking cessation groups helped smokers to prevent relapse for longer periods [23]. Furthermore, exercise was another domain which depicted moderate results towards quitting tobacco and preventing relapse, however gaps exist in this area and more research is integral [24,25].

What has been done so Far to Curtail Smoking and Relapse?

In 2003, World Health Organisation (WHO) took an opening-move towards abridging tobacco by launching framework convention on tobacco control (FCTC) [26]. Later in 2008, to keep the slogan for tobacco prevention going MPOWER policy encompassing six evidence-based tobacco control measures (as illustrated in Table 2) was introduced by WHO [27]. Furthermore, in 2013 WHO launched action plans for reducing tobacco use by 30% by the year 2025. According to the proposed plan, global prevalence of smokers by 2025 should be 15.1% contrastingly, current data suggests it would not be as much as anticipated and the prevalence will be around 17.1% [28]. But many high income countries like United states, Australia, United Kingdom and most European countries are working hard and have shown positive outcomes in tobacco control [29]. For banning TS in workplaces, Ireland took the lead in 2004 [30]. Additionally, countries like Australia has taken initiatives to prevent smoking by approving the legislation for plain packaging of cigarettes and it proved to be a successful move [31].

MPOWER Component	Definition
M	Monitor tobacco use and prevention policies
P	Protect people from tobacco smoke
O	Offer help to quit tobacco use
W	Warn about the dangers of tobacco
E	Enforce bans on tobacco advertising, promotion and sponsorship
R	Raise taxes on tobacco

Table 2: Who MPower Policy Package.

What are the Clinical Implications in Practice?

Health professionals play a key role in helping the patients quit by conducting tobacco cessation interventions. The main aim is to educate the patient on the benefits of smoking cessation but the challenge is to recognise such patients who are ready to listen and change behaviour. Smoking cessation interventions are vital in standard medical treatment as recommended by International cessation guidelines and clinical practice guidelines for CVD control [31]. Many guidelines recommend combination of behavioural (brief intervention, advice and counselling) and medical interventions (NRT, bupropion. varenicline) for effective outcomes. International guidelines recommend the health workers to consider brief interventions including advice, encouragement and negotiation using the 5A'S (illustrated in Table 3) with smokers in an attempt to quit. Moreover, consider brief advice and very brief advice (outlined in Table 4) in the quest of making successful quit attempts.

Ask	Ask about smoking at every visit
Advice	Advice to quit
Assess	Assess tobacco use, carbon monoxide level and readiness to quit
Assist	Assist the patient according to his outcome
Arrange	Arrange follow-up

Table 3: The 5A's framework for Smoking cessation.

Ask	About smoking status and document it at every follow-up
Brief advice	In less than 30 seconds on relevant and current situation
Cessation Support	Encourage the patient to opt cessation support for quitting- behavioural and pharmacotherapy, offer help to access it

Table 4: The brief advice (ABC of Smoking cessation).

The cognitive and behavioural skill approach is largely used where smokers learn to address and cope with the high- risk circumstances of relapse [32]. Some approaches are better than the other in terms of patient tolerance, preference and situation, besides some data reveals intensive support is more effective [33,34]. Additionally, a combination of both medical and behavioural therapies can be provided to acquire promising results. A study conducted in 2019 by Norris E, et al. [35] revealed.

- Extending the duration of pharmacotherapy particularly with varenicline results in maintaining abstinence phase and eventually reduced smoking remission
- Modest data supporting relapse prevention with NRT and bupropion
- Behavioural interventions do not show successful in prevention against remission. Contemporary data shows advising patients through telephone, text messaging and mailing NRT is also fair way in cessation and relapse control process [35].

Many countries have introduced specialist stop smoking services like Ireland has HSE standard smoking cessation programme which is delivered by trained advisors by using motivational interviewing. MI is a patient centred approach encouraging patient's self-efficacy and motivation to change, breaking down quitting into achievable steps, referring previous attempts as learning experience and assisting the patient when required. A Cochrane study in 2015 revealed that MI is an effective way of making a successful quit attempt rather than didactic lecturing the client about benefits and harms of tobacco.[36] Health professionals can help patients by supporting, guiding, educating and discussing their concerns about quitting. They can help prevent relapse by expanding on withdrawal effects and assisting the quitter with crucial first five minutes of nicotine craving by guiding ways to divert mind- to take a walk, eat, listen music, exercise or call a friend. Lastly, a follow-up is foremost in abstinence for long-term by encouraging, supporting, discussing the benefits and barriers of remaining smoke-free, reminding patient goals, re-assessing motivation and organise next follow-up.

Quitting is not the ultimate victory in the chronic process of abstinence from tobacco but maintenance of that behaviour is challenging. Majority of relapse is observed shortly after stopping tobacco and many factors like social, emotional and psychological contribute to it. Preventing relapse is difficult, yet possible if support is provided. At health system level, many effective interventions (varenicline, dual-NRT and bupropion) are available which are tailored according to quitter's preference. At personal level, motivation and skill training is pre-requisite as well as social support is necessary. Additionally, government and legislation should impose further restrictions on smoking at public places, increase the prices and taxation on tobacco products, ban advertisements this may help in reduction in quitting and eventually relapse prevention [36,37].

Research Gaps

There is ample evidence to support the efficacy of CBT and pharmacological intervention but research highlights the gap that even after using interventions, around three-quarter of quitters will start on smoking again in a year [19]. Moreover, many areas need further exploration in relapse prevention like portrayal of social media [23], text messaging, telephoning and role of exercise [24,25]. Additionally, standardised research should be undertaken for resolving the heterogenicity of NRT regarding potency and short-term relapse [13]. Nonetheless, the effects of long-term use of e-cigarette is not clear yet, so researchers must shed some light in this zone as well.

Conclusion

Tobacco smoking is amongst the biggest killers worldwide. Not uncommon that quitting is followed by relapse which is mostly due to nicotine withdrawal effects. Tremendous efforts have been made by WHO, nations, health system and professionals to control tobacco and prevent its relapse but still a lot needs to done in quest of achieving the target. Despite the availability of various quit lines, relapse still occurs in majority and long-term medical interventions using varenicline, bupropion, combination NRT and e-cigarettes are assumed to be life savers. There are many confounding factors affecting long-term abstinence like smoking duration, time to first cigarette, quitting medication choice, emotional and social factors. To effectively prevail the desired tobacco-free world, government, health system, health professionals, community and quitters all have to work together. Prevention of smoking and relapse are not inevitable, but can be attained with support and self-determination.

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