

Impact of a 20-Minute Counselling Session on Smoking Cessation in an Outpatient Clinic; A Cohort Study

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ABSTRACT

Objective: To assess the smoking abstinence rate after a twenty-minutes structured counselling session.

Study Design: Prospective Cohort Study.

Place and Duration of Study: Respiratory Clinic, Pak Emirates Military Hospital, Rawalpindi Pakistan from Jun to Dec 2020.

Methodology: A total of 400 active smokers visiting respiratory clinics were inducted into counselling sessions of twenty-minute duration for a structured smoking cessation counselling advice during which additional information regarding age, motivation status, duration of smoking, previous cessation attempts etc., was also recorded. All candidates were followed by telephone for six months for subject-reported abstinence status.

Results: All the study participants were males between 39 to 64 years of age (mean age: 52.27 ± 4.78 years), of which 23 lost to follow-up, 102 (25.5%) remained quitters successfully, while the remaining 305 candidates relapsed at the end of 6 months. The highest relapse was observed at the end of 3 months, while the lowest relapse rate was observed in the fifth and sixth months since the quit date. Younger age had more odds of successful cessation rate than others (OR=6.13 CI 95%, $p < 0.001$). Those with a motivation score of 8 or more had more probability of abstaining (OR=5.38, CI 95%, p -value=0.001)

Conclusions: The smoking abstinence rate in these counselling sessions was as significant as in other smoking cessation programs. The probability of quitting was more in younger adults and highly motivated ones.

Keywords: Abstinence, Counselling, Smoking cessation, Tobacco cessation.

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INTRODUCTION

Smoking has been one of the main modifiable risk factors for several diseases. Around 8 million people die worldwide due to smoking; 7 million die due to its direct usage, while 1.2 million die due to indirect exposure.¹ In Pakistan, 19.1% of the adult population consumes tobacco, including 31.8 % of men and 5.8 % of women.² In addition, smoking has a causal relationship to the development of Coronary artery disease, Aortic Aneurysm, Peripheral Vascular disease and Stroke.³

Smoking cessation has several benefits that start to show as early as 20 minutes after quitting smoking. A year past smoking abstinence, cardiovascular risk is halved, and respiratory infection frequency is significantly lowered. Five years later, stroke risk is reduced, while at the end of 10 years, the risk of developing lung cancer is reduced by half and by 15 years, cardiovascular risk will be comparable to that of non-smokers.⁴ When viewing all this from an economic viewpoint, the burden was around 192 billion (USD 1.3

Billion), 69% of which was attributable to the smoking-related burden of Cardiovascular diseases.⁵

As per the seventh WHO report on global tobacco, 23 countries are providing comprehensive smoking cessation programs for their people.⁶ One survey suggested that around 70% of smokers visit a physician at least once a year.⁷ Over time, several smoking cessation strategies have been devised to aid patients in quitting smoking, including single therapies (Brief physician advice, telephone counselling, self-help materials, Varenicline, Nicotine Replacement therapy, and Bupropion SR etc.) or a combination of these therapies.⁸ However, despite the preventive care, these measures are not practically adopted in daily outpatient practice by healthcare workers worldwide.^{9,10} This study aims to assess the cessation rate of smoking among the patients visiting outpatient clinics after being counselled following a five A's (Ask, Advise, Assess, Assist and Arrange) Model for treating Nicotine addiction.⁸ While the brief physician advice is brief (mostly five minutes in duration), this study questions the impact of increasing that time to a twenty-minute structured and comprehensive counselling session on abstinence and whether its utility can significantly improve the abstinence rate.

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METHODOLOGY

The prospective cohort study was conducted from June 2020 to December 2020 at the Respiratory Clinic of Pak Emirates Military Hospital, Rawalpindi Pakistan, with ERC approval (No. A/28/EC/210/2020).

Inclusion Criteria: All patients who were smokers were included in the study,

Exclusion Criteria: The non-smokers were excluded from the study regardless of the demographic parameters.

A sample size of 237 was calculated using the openEpi software calculator for a 95% confidence interval and smoking prevalence of 19% in our population.² We included 520 participants who fulfilled the inclusion criteria during the study period. Non-probability consecutive sampling was used for the selection of participants in the study. Written informed consent was taken from the participating individuals.

Four hundred selected candidates were inducted in a tobacco cessation counselling of twenty minutes duration, which proceeded in 5 steps strategy (1) Ask patients about smoking at every visit, (2) Advise all tobacco users to quit, (3) Assess smokers' willingness to try to quit (from scale 0 to 10), (4) Assist smokers' efforts with treatment and referrals, and (5) Arrange follow-up contacts to support cessation efforts through telephone. The remaining 120 were inducted into Control Group. The Cohort and Control Groups had a regular monthly follow-up by telephone for the next six months, their smoking status was checked, and the efforts of those who still had persisted in abstinence from smoking were appreciated. A single researcher recorded all the data regarding demographics, duration of smoking, willingness at the time of counselling, and abstinence status at the end of 6 months on a self-made pre-tested proforma. Patient confidentiality was maintained at all levels.

Statistical Package for Social Sciences (SPSS) version 23.0 was used for the data analysis. The odds ratio was calculated, and chi-Square and t-test were used to calculate the *p*-values. The *p*-value lower than or up to 0.05 was considered as significant.

RESULTS

All 400 participating individuals in the cohort study were males, with an age range of 39 to 64 years (Mean age: 52.27 + 4.78 years). 148 (37%) participants had asthma, 200 (50%) had COPD, while the remaining had multiple Comorbidities (e.g., IHD, chronic lung diseases etc.), and 258 (64.6%) had made a serious

attempt to quit in the past. The most common reason given for cessation in the past was health concerns in 350 (87.5%), expenditures in 268 (67%), family pressures in 206 (51.5%) and leading by example in 103 (25.7%) participants, respectively. Of these participants, 258 (64.5%) have been smokers for the past 30 years, while 5 (1.25%), 83 (20.75%) and 54 (13.5%) have been smoking for the last 10, 20 and 40 years, respectively (Table-I).

Table-I: comparison of descriptive parameters of cohort and control groups with *p*-values.

| Parameters | Study Groups | | <i>p</i> -value |
|--------------------------------------|----------------|-----------------|-----------------|
| | Cohort (n=400) | Control (n=120) | |
| Age in years (Mean ± SD) | 52.27 ± 4.78 | 50.64 ± 4.02 | <0.01 |
| Previous unsuccessful attempts n (%) | 258 (64.6%) | 40 (33.3%) | <0.01 |

Figure-1 showed the motivation self-scoring of Cohort Group for the desire to quit smoking at the start of the study. Again, 5 was the most common score self-marked by the candidates (26.25%), while 218 (54.5%) self-scored their motivation on a scale of 6 or more.

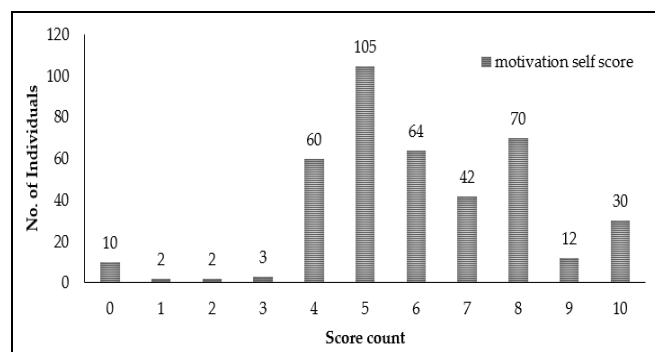


Figure-1: Participants' motivation self-scores (zero to 10) at start of study for desire to quit (*p*-value <0.01).

142 (35.5%) participants of Cohort Group were attempting abstinence for the first time. Those who failed previously did not use any concomitant Nicotine replacement therapy, Bupropion or Varenicline. The most common reasons for relapse in them was lack of willpower (n= 159; 57.5%), lack of family support (n= 71; 25.9%) and stressful life (n= 45; 16.6%)

Among these 400 participants, 23 lost to follow-up and were assumed to have relapsed. Of the remaining 377, 102 (25.5%) remained quitters, whereas 275 relapsed at the end of 6 months. The highest relapse rate was observed at the end of 3 months,

while the lowest relapse rate was observed at the fifth and sixth months (Figure-2).

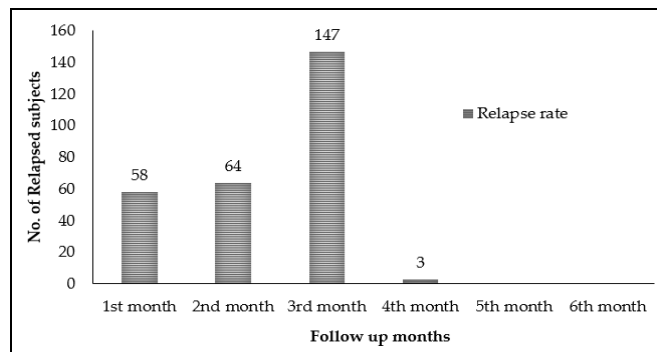


Figure-2: Frequency of relapse on follow up following tobacco cessation counseling.

Odds to quit were found more in first-time quitters, younger population and those highly motivated at the start of counselling session (Table-II).

Table-II: Odds ratios for smoking cessation among individuals post counseling session.

| Factors | p-value | Odds Ratio | 95% CI for Odds Ratio |
|---------------|---------|------------|-----------------------|
| Cohort Group | <0.01 | 1.36 | 1.281-1.463 |
| Control Group | <0.01 | 0.068 | 0.017-0.270 |

Among 120 Control Group members, none was lost to follow-up, with all relapsing at the end of six months.

DISCUSSION

The abstinence rate of our study was 25.5%, while a similar study published in BMJ registered 82,515 patients in Denmark across 823 smoking cessation programs, studied various factors affecting quit success, and revealed the abstinence rate of 33% among the participants at the end of 6 months.¹¹ A study published by Park, observed the quit success following a brief counselling session and recorded the successful abstinence rate as 34%.¹² While another study conducted in the Korean National Health Insurance Service smoking cessation program in 2015 enrolled 954 people in a prospective study to observe predictive factors for successful abstinence from smoking and concluded an abstinence rate of 30.4% of candidates at the end of 6-month follow-up interviews.¹³ In our study, 54.9% of quitters being motivated had a score of 8 and, that too, more at the start of study which had a significant correlation to the abstinence rate of ex-smokers (OR=5.38, CI 95%, p-value <0.001). This correlation was also observed in a similar study conducted in 2020 by Klemperer, in which the odds of quitting success were

more with the motivation level of the subjects under observation at the start of the study (OR=1.36, CI=95%).¹⁴

Age significantly impacted the abstinence rate, with more than half of successful abstainers falling in age groups of 50 years and below (OR=6.13 CI 95%, p<0.001). The trend of more potential to abstain from smoking in younger adults was seen in similar studies conducted in Europe and among Latino healthcare providers.^{15,16} The duration of smoking among the subjects also deeply impacted the study's outcome, with 100%, 50% and 19.2 % of subjects smoking for ten years, 20 years and 30 years, respectively. Those who successfully abstained from smoking by the end of the 6-month follow-up (p-value <0.001) indicated a successful outcome for those who previously smoked for a lesser duration. Another study suggested that the earlier the age of smoking initiation, the lower the incidence and chances of quitting smoking.¹⁷ Those subjects who, at the start of the study, wanted to quit for the reason of setting an example for others in their social surroundings were more likely to quit smoking than those who had a desire to quit smoking due to health concerns or high economic burden of smoking (OR=1.223, CI 95%, p=0.016). This compelling reason was a major factor in increasing the odds of successful smoking cessation as per the World Health Organization.¹⁸ It was observed that the relapse rate significantly dropped after three months, indicating that those who abstained from smoking consistently for three months were more likely to remain quitters at the end of six months successfully. A similar study was published by Gilpin, that depicted the abstinence rate of farmers at a month follow-up interview was 12%, while gradually improved to 25% at the third month follow up, then increased further to 52% at the sixth month follow up interview reiterating the fact further.¹⁹ Abstinence rate was appreciated in 42.55% of asthmatics, 19.5% of COPD patients and none of those with multiple comorbidities (p-value <0.001). A cross-sectional study was conducted by Kalkhoran, that compared the attempts frequency and success rate of smoking cessation between those with comorbidities and the other group without comorbidities and found significantly more attempts to quit among the first group and comparable successful abstinence rate than the second group.²⁰ As no smoking abstinence interventions were employed in the cohorts, that might have improved the study outcome further, especially for those who had previously failed to quit, for which further studies need to be conducted.

CONCLUSION

The abstinence rate following a structured twenty-minute counselling session was as significant as other abstinence measures. The probability of quitting was higher in young adults and those who were highly motivated at the start of the study. The success of abstinence increased with the duration of cessation and was the same for those quitting for first and those who failed to quit previously. Further studies can be done to evaluate the impact of these sessions with smoking cessation aids like nicotine replacement therapies, Bupropion and varenicline.

Conflict of Interest: None.

Author's Contribution

UN: Conception, SN: Study design, TS: Data interpretation, MQ: Data analysis, FN: Data analysis and article drafting, TA: Data Interpretation.

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