

# [Direct comparison of different forms of nrt health and social care essay](https://assignbuster.com/direct-comparison-of-different-forms-of-nrt-health-and-social-care-essay/)

## 4. 1 Introduction

This chapter presents the discussion of the overall findings regarding the PICO question. The study aimed to define the different methods of NRT in aid of smoking cessation, in particular, the use of nicotine inhalers over other forms of NRT. Hence the PICO question: " Are Nicotine Inhalers the most successful form of NRT in reducing the long term addiction to smoking cessation in adult smokers (aged 18+)." The discussion is divided into two parts: the research findings of the studies and the result of the systematic review. For each part, the results of various forms of smoking cessation were assessed. Part one includes the comparison of Nicotine inhalers and other forms of NRT, the intention-to-quit, and the markers of exposure. The latter shows the outcome measures of the biochemical validation as described in chapter 2. Part two includes a summary of the research findings of the systematic review in relation to the nicotine inhaler. Following the discussion of results, an overview of the current national health care and social agenda is discussed.

## 4. 2 Results of the studies

## 4. 2. 1 Randomized Controlled Trails

## 4. 2. 1. 1 Nicotine Inhalers and other forms of NRT

Schneider et al. (2004) assessed the initial reaction to five NRTs. These were: the 2mg and 4 mg gum, inhaler, nasal spray and tablet to use in the morning. This study did not have a control group due to the small sample size. This research included various tables of ratings and rankings by the individual. Ratings were based in the: individual preferences of NRT, first and last choice of relief of craving and relief of withdrawal, while comparative rankings were based on 7 treatment variables. The comparative rankings consisted of 7 liker points in which the individual ticked the treatment given in relation to: " easy to use", " chosen under stress", " best to prevent slips", " most nicotine", " safe product", " prefer in public," " best in morning". It was noted that inhaler had the most first choice rankings in: " easy to use", " choose under stress", " best to prevent slips", " safe product", and " best in morning". With regards to individual preferences, it was noted that the nicotine inhaler was the most preferred with a percentage of 49%, followed by 4 mg gum (24%), 2 mg gum (10%), 2 mg tablet (10%), and nasal spray (7%). The difference in overall preference were significant for first choice (x2 = 24. 9, P < . 0001) and for the last choice (x2 = 33. 4, P < . 0001). In 2005, Schneider et al., conducted another study regarding the initial reactions and preferences of three nicotine treatments. Results show that nicotine gum ranked first choice for several items among the nasal nicotine spray and the nicotine inhaler. These items include: " safest in public," " ease of use," and " prefer in public." Nicotine inhaler also ranked lowest for " choose under stress," " relief of withdrawal," and " choice to help to quit." By contrast, in Schneider et al. (2004), inhalers were preferred when used freely. The difference here may lie in used freely versus enforced, as frequent puffing can be unpleasant. As for individual drug preference, ratings showed direct reaction to each variable. Nicotine gum still rated higher for " enough nicotine," and " more satisfying." There was no other significant difference between the nicotine inhaler and the nasal nicotine spray. In 2006, Schneider et al. conducted yet another study, this time comparing four NRTs. The inhaler, in combination with nicotine patch, was chosen most for " use under stress," (44%) followed by nicotine gum (33%) as opposed to lozenge (15%) and patch (7%). However, the inhaler was again ranked last on " safest to use." Participants also expressed that using inhalers was linked to the general awkwardness with shallow puffing, inability to inhale deeply, and its appearance. In fact nicotine inhaler was chosen least for " use in public." Regarding the NRTs in " help to quit," most participants chose the patch (56%), followed by inhaler (19%) gum (15%) and lozenge (11%). In Rennard et al.’s (2005) study, results were divided into two main headings. These were; the smoking reduction and the smoking cessation. In smoking reduction, the nicotine inhaler showed that it was significantly superior to placebo in achieving smoking reduction. It was superior in maintaining smoking reduction up to 12 and 15 months. Smoking cessation rates were higher in the nicotine group than in the placebo group with 7. 9% versus 1. 4% (p = . 002) at 15 months respectively. Kralikova et al.’s (2005) study found out that sustained and point prevalence abstinence rates were significantly higher in the active group (gum and nicotine inhalers) than the placebo group, both short-term and long-term follow-up. Although a large proportion of participants reduced their smoking by more than 50%, there was no significant difference between the active and placebo groups. Crogham et al.’s (2007) study was divided into two phases. Phase one randomly assigned individuals to a nicotine inhaler, bupropion, or a combination of both and Phase two started immediately after completion of phase one. Phase two dependent on the smoking status and initial treatment assigned. In phase two, participants using one form of treatment were further randomized into two groups and given a placebo or the treatment accordingly. In phase one, the participant receiving combination of both nicotine inhaler and bupropion had significantly higher smoking abstinences rates versus either treatment alone after 3 months time. In phase two, when it came to relapse prevention, participants assigned to the nicotine inhaler group and were abstinent from smoking had higher smoking abstinence rates at 12 months than those receiving placebo. The same was for those receiving bupropion. The participants who continued smoking were given a second attempt of smoking treatment (re-treatment). Smokers who were initially treated with bupropion and were retreated with nicotine inhaler did not have significantly higher smoking abstinence rates. In this study, the current finding indicated that combined therapy can be effective for an increase in smoking abstinence but continuation of the same combined pharmacotherapy was not found as effective in overall relapse prevention. Westman et al.’s (2000) study used the nicotine inhaler together with the nicotine patch for the first 6 weeks and the usage of nicotine inhaler decreased from 16. 0 (mean inhalers/week) to 11. 3 per week. The usage of nicotine patch decreased from 80% to 60% after 6 weeks. The study continued for another 6 weeks, this time without the use of the nicotine patch. The mean inhaler was increased to 13. 7 per week. Participants were then given a questionnaire to fill up according to their experience with the NRTs. It was noted that participants who quit liked the inhalers more than those who did not quit [5. 1 (SD = 1. 27 versus 3. 4 (SD = 1. 54), P < . 01]. Consequently, none of the 9 participants who did not like the inhaler were abstinent at 12 weeks. Darredeau and Barret’s (2010) data was analyzed by using repeated-measures analyses of variance and participants reported a greater reduction in intention to smoke when told inhalers contained nicotine than when told the inhaler were nicotine-free, regardless of the actual nicotine content. Participants also showed greater increases in subjective ratings of " alert" when told the inhalers contained nicotine than when told the inhalers were nicotine free. This shows that psychological factors play an important role in smokers’ subjective responses to nicotine inhalers. In Hajek et al.’s (2000) study, participants were instructed to continue smoking as normal up to the first session which was to be their " quit day." In the results section, they were presented by a series of comparisons between - the preferences and usage, men and women, high and low dependable smokers, and between different types of NRT. In the first week of the study, results showed that there was no significance difference between smoker’s preferences for different type of NRT in terms of age, educational level, tar and nicotine yield of usual cigarette and conscientiousness. However, there were large differences in between male and female participants, on what type of NRT they preferred. Nicotine patch was the most preferred therapy in both male and female participants for abstinence rates. It was then followed by nicotine nasal spray, nicotine inhaler and nicotine gum for the female participants, and nicotine inhaler, nasal spray and nicotine gum for the male participants. Results, in Hajek et al.’s (2000) study, continued to show that male and female participants differed in their 15-week success rates on different products. Men tented to do better on the gum than on the inhaler (p = 0. 02) (though this was not significant), while women tended to do better on the inhaler than the gum (p = 0. 01). Differences in product usage between high dependable and low dependable smokers were present. This was attributed to high dependable smokers using more gum and spray rather than patch and inhaler. There were differences in proportion among week 1 abstainers who relapsed by week 15. This was due to the fact, that fewer high dependence inhaler users relapsed by week 15 than users of other products. It was also noted that nicotine patch was the most successful method in continuous abstinence amongst the high dependable smokers, while for the low dependable smokers, all form of NRT ranked the same.

## 4. 2. 1. 2 Intention-to-Quit

The participants in Rennard et al.’s (2005) research showed that at the 15 month, 17% of the participants in the nicotine inhaler group and 18% in the placebo group expressed an intention to quit, while in Kralikova et al.’s (2005) study, participants were asked of their intention to quit after 4 months and neither group of treatment had changed their intention to quit.

## 4. 2. 1. 3 Markers of Exposure

The outcome validation in relation to smoking cessation needs to be measured by the biochemical validation. Rennard et al.’s (2005) study showed that the correlation between decrease in expired carbon monoxide (CO) levels and magnitude of reduced smoking from baseline to month 15 was highly significant. In both the treatment group in this study, the plasma cotinine and thiocyanate levels were statistically more reduced in participants who reduced smoking by at least 50% than those participants who didn’t. Kralikova et al.’s (2009) study showed a decrease in both the plasma cotinine level and the expired CO versus the baseline in abstainers and reducers, but was unchanged in those who failed to stop smoking. In Westman et al.’s (2000) study, a table of the cotinine level both at a baseline level and after the 6 week period was presented. There was a decrease in the level of cotinine in the saliva after the 6th week. In fact at the end of week one, 71. 4% participants had less than 100% cotinine replacement when compared to the baseline. Darredeau and Barret’s (2010) study established that a significant pharmacology (given nicotine versus given no nicotine) by time interaction (pre- versus post-sampling) (p = 0. 004) confirmed that relative to the placebo condition, saliva cotinine levels were elevated following administration of nicotine inhalers. In Schneider et al.’s (2006) study, it was recorded that self-reported slips and CO scores served as partial checks on the half day of abstinence. This was due to the fact that researchers could not assess bedtime CO to determine the half-live of CO in the participants. A significant difference (n = 27, p < 0. 0001) was noted between the baseline and after the use of the four NRT conditions.

## 4. 2. 2 Systematic Review

Substantial evidence in Stead et al.’s (2008) review shows that, NRT was more effective than placebo, in maintaining abstinence from smoking. The different formulation of NRT does not appear to differ in efficacy (Stead et al., 2008). The review investigated different forms of NRT in which its aim was to temporarily replace much of the nicotine, reduce the nicotine withdrawal symptoms and reduce the motivation to smoking, thus help in smoking cessation. The review included 132 studies, 111 of which contributed to the primary comparison between NRT and placebo or non-nicotine control. The main findings of the review were as follows: Any form of NRT vs. Placebo or non-nicotine control (111 studies, n = 43, 040): at maximum follow up (6–12 months) after research was finished, NRT was more effective at maintaining abstinence than placebo or a non-nicotine control (relative risk [RR] 1. 58, 95% Confidence Internal [CI] 1. 50 to 1. 66). The average quit rate with NRT was 17% compared with 10% for placebo.

## Different forms of NRT vs. placebo or non-nicotine control:

Gum (53 studies, n = 19, 090): at maximum follow up (6–12 months), NRT gum was more effective at maintaining abstinence than placebo or a non-nicotine control (RR 1. 43, 95% CI 1. 33 to 1. 53). Patch (41 studies, n = 18, 237): at maximum follow up (6–12 months), NRT patches were more effective at maintaining abstinence than placebo or a non-nicotine control (RR 1. 66, 95% CI 1. 53 to 1. 81). Intranasal spray (four studies, n = 887): at maximum follow up (6–12 months), NRT spray was more effective at maintaining abstinence than placebo or a non-nicotine control (RR 2. 02, 95% CI 1. 49 to 3. 73). Inhaler (four studies, n = 976): at maximum follow up (6–12 months), NRT inhalator was more effective at maintaining abstinence than placebo or a non-nicotine control (RR 1. 90, 95% CI 1. 36 to 2. 67). Tablet/lozenge (six studies, n = 3109): at maximum follow up (6–12 months), NRT tablets or lozenges were more effective at maintaining abstinence than placebo or a non-nicotine control (RR 2. 00, 95% CI 1. 63 to 2. 45).

## Direct comparison of different forms of NRT:

Inhalator vs. patch (one study, n = 222): at maximum follow up (6–12 months), nicotine inhalator and nicotine patches did not significantly differ at maintaining abstinence (RR 0. 59, 95% CI 0. 22 to 1. 60). Nasal spray vs. patch (two studies, n = 1275): at maximum follow up (6–12 months), nicotine nasal spray and nicotine patches did not significantly differ at maintaining abstinence (RR 0. 90, 95% CI 0. 64 to 1. 27).

## 4. 3 National and Social Agenda

All interventions used in the studies and literature reviews were interventions that can be utilised and offered within the local setting. The ministry for Health, the Elderly and Community Care in Malta offers two types of support for smoking cessation and these can be found online on their website (Ministry of Health, the Elderly and Community Care, 2008). A quit line and free phone service offers direct telephone support and advice on a humanistic and empathic approach. Anyone interested to make use of the services are then given immediate telephone support on quitting and are also referred to a support group know as ‘ Tobacco Dependence Support Classes, depending on their individual needs and smoking habits. One of the services provided in the ‘ Tobacco Dependence Support Classes’ is in fact advice and guidance on the commercially available NRT and how to use them. Sammut (2003) identified a low abstinence rate at the end of the six month post-intervention at smoking cessation clinics. The 10% prevalence abstinence rate and 9% continuous abstinence rate at six months achieved in Malta was significantly lower than the 20-30% long term abstinence rates obtained from a similar service offered in the UK (The Maudsley Hospital Smoking Cessation Clinic, 2000). Two possible factors may account for this difference. One significant factor could be the freedom of choice for the use of NRTs. While in UK and US recommendations put pharmacotherapy (NRT) as the cornerstone of therapy, Maltese smoking cessation clinics still leave participants free to choose over the method for smoking cessation. Another significant factor may be due to the high cost of purchase of NRTs, which has to be borne by participants who want to quit. Therefore, Sammut (2003) suggested that Maltese Health Division would do well to follow UK National Health Services (NHS), which has recognised the cost-effectiveness of NRT products, and " make them available for prescription by general practitioners" (NHS Smoking Cessation Services, Service and Monitoring Guidance, 2001/02). Hence, one of the most important considerations for future smoking cessation interventions carried out locally will be the provision of low cost/free NRT.

## 4. 4 Conclusion

The findings of various studies and the systematic review determined that several forms of Nicotine Replacement Therapy could improve the outcome of smoking cessation. Nicotine Inhaler can either be used alone or in combination with another form of NRT. This was seen in various studies where nicotine inhaler increases the rates of smoking cessation when compared with nicotine patch (Westman et al. 2000). Findings suggest that, as demonstrated with other studies of NRTs (for example: Hughes et al., 989: Perkins et al., 2004; Fucito and Juliana, 2007), psychological factors play an important role in smokers’ subjective responses to nicotine inhalers (Darredeau & Barret, 2010). One of the most important considerations for future smoking cessation intervention would be direct comparisons between the various forms of NRT and between the different doses and durations of treatment. Also direct comparisons between NRT should be considered with newer pharmacotherapies. All forms of NRT that are commercially available, that is, gum, transdermal patch, nasal spray, inhaler, lozenge and sublingual tablet are effective as part of a strategy to promote smoking cessation (Stead et al., 2008). These conclusions apply smokers and who are motivated to quit and who has high levels of nicotine dependence.