Proactive telephone counseling for smoking cessation: meta-analyses by recruitment channel and methodological quality
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CRD summary
The authors concluded that proactive telephone counselling had a positive impact on smoking cessation in adults in the short term but not in the long term. Proactive telephone counselling increased prolonged/continuous abstinence long term. The authors’ conclusions reflected the evidence presented but some weaknesses in the review methodology meant the reliability of the conclusions was uncertain.

Authors’ objectives
To evaluate proactive telephone counselling for smoking cessation for adult smokers.

Searching
MEDLINE, PsycINFO, Current Contents Connect, EMBASE, CINAHL and Scopus were searched for published peer-reviewed articles in English to December 31st 2008. Search terms were reported. Bibliographies of retrieved articles were scanned for additional articles.

Study selection
Randomised controlled trials (RCTs) were eligible if they evaluated proactive telephone counselling (counselor-initiated telephone counselling) alone or with self-help materials for smoking cessation for adult smokers (aged 18 years or older). Participants were from the general community. Eligible trials had to report outcomes at least six months from recruitment. Trials were excluded if most of the participants may have been motivated to quit by health concerns or included particular populations such as pregnant women, hospitalised/recently discharged patients, outpatients awaiting surgery/an invasive medical procedure, those at higher risk of cancer or military personnel.

Some trials used active methods to enrol participants through telephone recruitment from health maintenance organisations or managed care systems, or via mailed information sent from general practice records or enclosed in utility bills. Other trials used passive recruitment methods such as television, radio or print media. One trial used both methods of recruitment.

The number of telephone counselling sessions varied from one to seven calls, with various self-help materials.

Outcomes varied between trials and included seven-day point prevalence and abstinence (prolonged and continuous measured at three to 18 months).

The authors did not state how many reviewers selected trials for inclusion. Just under half the trials reported biochemical verification.

Assessment of study quality
Trial quality was assessed using criteria developed by the Effective Public Health Practice Project for both randomised and non-randomised trials and included selection bias, trial design, confounders, blinding, data collection methods, withdrawals and drop-outs. Each trial was classified as strong, moderate or weak.

One reviewer assessed quality and 25% of trials were checked for accuracy by a second reviewer. Discrepancies were resolved through discussion or with reference to two other reviewers. One author then rechecked remaining trials to ensure issues identified through discussion were applied to all trials.

Data extraction
Trials were grouped by recruitment method (active or passive). Data were extracted to calculate the risk ratios (RRs) and corresponding 95% confidence intervals (CIs) for point prevalence abstinence (abstinent for at least 24 hours, 48 hours, seven days or non smoking) at time of assessment at six to nine months or long term, 12 to 15 months, after recruitment and for prolonged/continuous abstinence (three to six months abstinence) at six to nine months or longer.
term (three to 12 months) abstinence at follow-up. Cessation rates were on an intention-to-treat basis. All outcomes were based on self-reported cessation rates.

The authors did not state how many reviewers extracted data.

Methods of synthesis
Data were pooled using a DerSimonian and Laird random-effects model. Statistical heterogeneity was assessed using $I^2$. Logistic regression analysis was used to determine whether samples from active or passive recruitment differed in terms of various participant characteristics.

Results of the review
Twenty-four RCTs (37,339 participants, range 45 to 6,322) were included in the review. Quality assessment rated two trials as strong, 10 trials as moderate and 12 trials as weak. Seven RCTs used active recruitment methods and 16 RCTs used passive recruitment methods.

Overall proactive telephone counselling had a greater effect on point prevalence abstinence than self-help materials or no intervention control groups at six to nine months follow up (RR 1.26, 95% CI 1.11 to 1.43; 11 RCTs, $I^2=21.4\%$). There were no significant differences between intervention and control groups at 12 to 15 months after recruitment (13 RCTs, $I^2=0\%$). Results were similar for sub group analyses by recruitment channel and methodological quality.

Prolonged or continuous abstinence was greater at six to nine months for proactive telephone counselling (RR 1.58, 95% CI 1.26 to 1.98; seven RCTs, $I^2=49.1\%$) and at 12 to 18 months (RR 1.40, 95% CI 1.23 to 1.60; 13 RCTs, $I^2=18.5\%$) after recruitment compared to control. Results were similar regardless of recruitment method or quality at 12 to 18 months but at six to nine months results were not significant for active recruitment trials (one RCT) or for strong/moderate quality trials (three RCTs) compared to control groups.

Logistic regression found significant differences between active and passive groups at baseline in terms of smokers ready to quit and mean daily consumption across trials (details reported in review).

Authors’ conclusions
Proactive telephone counselling had a positive impact on smoking cessation in the short term but not in the long term. Proactive telephone counselling increased prolonged/continuous abstinence long term.

CRD commentary
The review question was clearly stated with detailed inclusion criteria. Several relevant sources were searched but the restriction to articles published in English in peer-reviewed journals meant that language and publication biases were possible. Trial quality was assessed using an appropriate tool and results for individual trials were reported. Independent quality assessment was conducted only for a proportion of the included trials and no review methods were reported for trial selection or data extraction so there may have been potential for reviewer error and bias. Trials were combined in a meta-analysis and statistical heterogeneity was assessed. Sub group analyses was appropriately conducted.

There were significant differences at baseline between trials that used active and passive recruitment methods in terms of participants prepared to quit and mean daily consumption and this was not adjusted for in the analysis. The authors noted that only one trial was included in the analysis of the effect of active recruitment methods on prolonged/continuous abstinence in the short term and that the results of the analysis by recruitment method should be read with caution. All the trials used self-reporting of outcome measures (liable to bias) and biochemical measurements were not reported.

The authors’ conclusions reflect the evidence presented but the potential for language and publication bias, self-reporting of outcome measures and lack of reporting of review methods meant the reliability of the conclusions was uncertain.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated a need for further research into methodological assessment and its impact this has on
treatment effect estimate. Explicit reporting of quality assessment procedures during a systematic review process was essential. Recruitment costs in proactive telephone counselling trials should be reported and robust research methods undertaken for both passive and active recruitment trials. Further trials with active recruitment were required to evaluate the impact of this recruitment method on prolonged/continuous abstinence, particularly in the mid-term to determine whether longer term efficacy was achievable.

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