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# **Recruitment to Adolescent Smoking Cessation Interventions – A literature review**

**Peter Dalum<sup>1</sup>, Anneke Bühler<sup>2</sup> & Nina Kamstrup-Larsen<sup>1</sup>**

<sup>1</sup>The Danish Cancer Society

<sup>2</sup> IFT Institut für Therapieforschung, München

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# 1. Introduction

There is a large volume of scientific literature on how adults can be helped to quit smoking, but to date there has been only scant focus on smoking cessation interventions specially designed for young people. In recent years, however, it appears that the interest in smoking cessation interventions for young people has been on the increase (Sussman & Sun 2009). Simultaneously, the problem of recruitment of adolescents into professional cessation aids arose. It is seen as the major challenge within this field as well as from scientific perspective (Backinger et al., 2008) as from providers of youth cessation interventions. The main aim of this article is to present an overview of what is known about the recruitment of young people to smoking cessation interventions and in particular what individual, social and structural factors are important in this connection.

## 1.1. Search strategy

The target problem for the search was: "What recruitment strategies are used by asc providers?" and "What factors are important for how young people are recruited to smoking cessation interventions?".

The object of the present study is to review the knowledge to be found in the scientific literature on existing recruitment strategies and factors that are important for recruitment to smoking cessation interventions for young people. In this connection searches were carried out in the data bases PubMed and PsycInfo.

The search terms were "Smoking Cessation" both as MeSH and as free text searches, combined with free text searches for the various terms for *recruitment*, *young people* and *programme*, limited, however, to English-language articles. The various search words used can be seen in the table below.

<b>Recruitment</b>	<b>Young people</b>	<b>Smoking cessation</b>	<b>Programme</b>
Recruiting	Adolescent	Smoking cessation	Programme
Recruitment	Teenager	Tobacco use cessation	Intervention
Enroll	Young adults	Smokeless	
Enrollment	Young people	Cigarette quitting	
	Teen		

In addition, another search was carried out with "Retention" instead of *recruitment*.

Furthermore, the function "related article" was used in PubMed, and specific searches were performed for articles written by P.W. McDonald, C.L. Backinger, S.T. Leatherdale or W.R. Stanton, and in references to relevant articles.

## **1.2. Young people and smoking cessation**

In spite of the numerous and well known health risks associated with smoking there are still many young people who smoke. In addition there is a great variance between European countries. In 2007, prevalence of smoking during the last 30 days ranged from 15% in Iceland to 44% in Latvia in boys. Among girls, prevalence rates in 2007 ranged from 1% in Armenia to 48% in Austria (ESPAD, 2009). Although there are still many young people who smoke, the majority of them report that they wish to stop smoking (Leatherdale & McDonald 2005; Leatherdale & McDonald, 2007; Oksuz et al, 2007; Stanton et al., 1999). Many of the young people who wish to stop are, however, ambivalent in relation to smoking cessation in the nearest future (Gnich et al., 2008; Oksuz et al., 2007).

In spite of these ambivalent feelings in relation to smoking cessation, the few studies that focus on young people attending school find that the majority of youth smokers have already tried at least once to quit smoking (Myers et al., 2007; Pirie et al., 1991; Stanton et al., 1999; Sussman & Sun, 2009). Bancej and colleagues (2007) analysed international representative surveys and find that 58% of young people who smoke have tried to quit smoking at some time in their smoking careers. The percentage is 58% for the time frame of the last six months and 68% for the last 12 months. However, attitudes to smoking cessation vary among different groups of young people. Leatherdale and McDonald find, for instance, that women are more liable than men to try to stop smoking (Leatherdale & McDonald, 2007). Moreover Stanton et al. find that fewer unemployed and young people not attending school have tried to stop smoking compared with young people who attend school (Stanton et al., 1999).

### **1.3 How many young people use smoking cessation interventions**

Although many youth smokers report that they are interested in quitting smoking, and many have even tried to stop already, only 3% of those who participated in smoking cessation interventions in England in 2005-2006 were under the age of 18 (NIH & HSCIC, 2006).

In general this field have been understudied in Europe so that we don't have precise estimations of how many teen smokers are successfully recruited for cessation aids. There is, however, broad agreement in the literature that the proportion of young people recruited to smoking cessation interventions is in general low, except for situations where youth are 'captive audiences' (e.g. classroom program or mandatory attendance in a program) where recruitment is not a major issue (Sussman & Sun, 2009). One of the findings from an earlier EU funded project on adolescent smoking cessation interventions (ASC) was that recruitment was a major challenge (Francis, Geesink & Moore, 2006).

It is difficult to estimate the average recruitment rate in interventions. Recruitment rates are dependent on the target group, availability of an intervention and amount of participants which can be included in the cessation aid. Moreover, existing data often comes from research studies where a special effort have been done to involve participants and therefore these recruitment rates are not necessarily transferable to 'real life' situations. Backinger et al estimate that the proportion of young people participating in smoking cessation interventions typically is between 2 and 10% (Backinger et al., 2003a). Others report of recruitment rates ranging from 6% to 100% (Sussman, 2002). A stronger focus and more research are required to find out how many young people actually use smoking cessation interventions and how high recruitment rates are for specific motivating strategies and interventions.

#### **1.3. Young people's views on smoking cessation interventions**

It has not been possible to find a comprehensive, theoretically or empirically grounded explanation for the low recruitment rate encountered in many studies dealing with young people and smoking cessation interventions. However, studies that examine *how* young people wish to stop smoking find that the majority would prefer to stop on their own or with help from their friends (Backinger et al. 2003b; Halperin et al., 2006; Leatherdale & McDonald, 2005; Leatherdale & McDonald, 2007; Myers et al., 2007; Stanton et al., 1999). This could be seen as part of the explanation why youth smokers do not as a rule enroll in smoking cessation interventions.

Many young people have a negative attitude to smoking cessation interventions in general and have no interest in using a smoking cessation programme, which also applies to young people who want to quit smoking (Dalum et al., 2004; Leatherdale & McDonald, 2007; Massey et al., 2003). This negative attitude among young people may be due to a number of things; for instance many young people have an idea that smoking cessation interventions look down on youth smokers (Backinger et al., 2003b; Dalum et al., 2004). In addition there is a view that contact with a professional to get help to quit smoking is more something one does in connection with drug addiction and is seen as irrelevant in relation to smoking cessation (Balch, 1998; Dalum et al., 2004; Gnich et al., 2008).

Thus, many youth smokers are not at all interested in smoking cessation interventions, which accords well with findings by Leatherdale and McDonald indicating that most youth smokers report that they would never use self-help books, free telephone lines, group meetings at school, their doctor, chat rooms on the Internet or a teacher, smoking consultant or school nurse to get help to quit smoking (Leatherdale & McDonald, 2005). In contrast to this study, however, Backinger and colleagues find that 40% of youth smokers would like to have help to quit smoking (Backinger et al., 2003b). There are thus conflicting findings in the literature on young people's views on smoking cessation interventions. These conflicting findings may have methodological reasons but may also illustrate that adolescent tobacco users are ambivalent towards using professional cessation support as they are towards quitting in general.

In the program studies in general, the subjects were fairly heavy smokers. An approximate grand mean of 8.4 cigarettes per day is estimated for baseline use. This mean was calculated by giving a value of once every 30 days or more a value of .033 cigarettes per day, once every seven days or more a value of .14 cigarettes per day, and current smoking a value of .14 cigarettes per day. (The estimate that current smoking is .14 may be an underestimate or an overestimate.) In addition, 'greater than' statistics were estimated as being "equal to" measures. This variation in baseline tobacco use is troublesome but by making these few assumptions, one obtains a general idea of range and mean of tobacco use in cigarette per day units.

#### **1.4. Who enrolls in smoking cessation interventions?**

Besides factors related to the content and implementation of the actual intervention, there assumably are a number of personal factors that are decisive for whether adolescents participate in a smoking cessation intervention. In general, participants of cessation programs seem to be fairly heavy smokers, approximately smoking 10 cigarettes per day (Sussman, 2002; Turner et al., 2004). If young people have previously tried to stop smoking, the

probability that they will participate in a school-based smoking cessation intervention is increased (Leatherdale & McDonald, 2007).

In an effort to disentangle facilitating factors of recruitment, Backinger et al analysed 55 effectiveness studies of adolescent cessation interventions (Backinger et al., 2008). Due to incomplete description only a few aspects could be analysed for their power to predict participation, i.e. type of recruitment, use of incentives, intervention site, sample size, number of cigarettes smoked per day and length of follow-up. With regard to personal factors, the authors found that the number of cigarettes the young person smokes has a significant impact on whether they enroll in smoking cessation interventions or not. Studies that include "lighter smokers", corresponding to  $\leq 5$  cigarettes daily, had a significantly higher recruitment rate than those with a target group that included a higher percentage of stronger smokers ( $\geq 6$  cigarettes per day). Turner et al found early attendance in a school-based group program was predicted by higher motivation to quit and less perceived stress at baseline (Turner et al., 2004). In addition they found that participants who were more dependent on nicotine and had more positive smoking expectancies were more likely to attend the first sessions (Turner et al., 2004).

## **2. On recruitment in general**

A recruitment process can be judged successful if the target group is reached and subsequently persuaded to enroll in the smoking cessation intervention. Reach (recruitment rate) has been defined as the number of participants who attend the first session relative to the amount of adolescents notified (Sussman, 2002). An algorithm to calculate recruitment rates to our knowledge has not been established. Determining recruitment rates is a procedure far from being standardised. In studies on adolescent smoking cessation, the primary focus are the results of the intervention so less effort is put in recruitment analysis (Backinger et al., 2008). If authors are in the situation to report on this issue adequately, "recruitment and retention methods may have been shortened in manuscripts in order to accommodate word length limitation of specific scientific journals" (Backinger et al., 2008, p365).

There are two recent reviews summarizing the most often used recruitment strategies in published cessation evaluation studies. Sussman and Sun (2009) in their analysis of 64 tobacco use cessation studies found that the most popular recruitment strategies were:

- Word of mouth (n=24 studies)

- Public announcements (n=17)
- Screening (n=17)
- Incentives (money movie tickets, gift certificates) (n=14)
- Class release time (n=12)
- Use of posters (n=12)
- Media campaigns/newspaper ads (n=9)
- Policies such as mandatory attendance (n=8)
- Referrals (n=7)
- Flyers (n=6)
- Part of classroom program (n=6)
- Presentation to a group (n=5)
- Gatekeepers support (n=5)
- Use of class credit (n=4)
- Use of contest (n=3)
- Use of display table (n=2)
- Social influence (n=2)
- Peer support to recruit (n=2)
- Use of community of school event (n=1)

The authors emphasise that their study cannot be used to discern which recruitment strategies are the most effective, but point out that it appears that the use of multiple recruitment strategies work better than the use of one strategy.

It is customary to distinguish between two different recruitment approaches based on a passive and an active recruitment strategy respectively. A passive recruitment approach can be seen as a static technique, in which there is minimal contact between potential participants and "recruitment persons" (Massey et al., 2003). Examples of passive recruitment include flyers, brochures and posters on display at schools, clinics, etc. as well as advertisements in newspapers, on TV and radio (Backinger et al., 2008). Most online smoking cessation interventions, for example, use a passive recruitment strategy and try to reach out to the target group via, among other things, campaigns in the mass media and in this way invite potential participants to seek help from specific programmes (An et al., 2007; McDonald, 1999). Passive strategies also include a "reactive" approach, i.e. waiting for a request of the target group or of persons responsible for the target group.

An active or pro-active recruitment strategy, also called an interactive approach, is on the other hand described as one-to-one interactions for a specific target group and includes, for instance, classroom presentations, telephone screening, person-to-person invitations, patient referrals and recommendatory enrolments (Backinger et al., 2008). As opposed to passive recruitment an active recruitment strategy involves maximum contact between potential participants and recruitment personnel (Massey et al., 2003).

A number of studies conclude that an active recruitment strategy is considerably more effective in recruiting young people to smoking cessation interventions than a passive recruitment strategy (An et al., 2007; Massey et al., 2003; Kealey et al., 2007; Peterson et al., 2009). A study by McDonald, which, however, focuses on adults and recruitment to smoking cessation interventions, finds for instance that active recruitment strategies were 66.5 times more effective than passive recruitment strategies (McDonald, 1999). Conversely, a study by Backinger et al. finds that there is no significant difference in the level of recruitment depending on whether a passive or active recruitment strategy is used (Backinger et al., 2008). In relation to type of recruitment strategy there are thus contradictory findings in this field. This might be because some strategies are active but not tailored to the person or group addressed. Gnich et al (2008) emphasise the importance of tailoring recruitment and advertising for individual smoking cessation interventions to the individual setting and target group. Another explanation may be that in fact in many interventions a combination of different recruitment strategies is used and therefore it is not “necessarily a straightforward task to classify studies as using either a predominant active or passive recruitment method (Backinger et al., 2008, p365).

In summary, the evidence base for the effectiveness of specific recruitment strategies or activities is very thin. First steps were undertaken to document strategies used in interventions published in the literature and to develop a classification of recruitment strategies. There is no standard of determining the recruitment rate. There is no theoretical model applied for recruitment efforts and – as it becomes clear in the next chapters - only scarce empirical research available to make informed decisions about how to proceed in motivating young tobacco users to enrol in cessation interventions.

### **3. Problems in recruiting young people to smoking cessation interventions**

#### **3.1. Self-perception as a smoker**

A number of studies indicate that many youth smokers do not perceive themselves as smokers, as dependent or see their smoking as a problem (Backinger et al., 2003; Gnich et al., 2008; Halperin et al., 2006; Leatherdale, 2006; Leatherdale & McDonald, 2007; Leatherdale, 2008). This group of young people will probably not enroll in a smoking cessation

intervention. In recruiting young people to smoking cessation interventions it is therefore important to focus on other factors that may affect whether young people enroll for a smoking cessation intervention (Balch, 1998). An important part of the recruitment work will therefore be to focus on smoking as a problem and to find a method for correcting the young people's perception of their smoking and thereby move the young people further along in the "stages of change" circle (Balch, 1998; Gnich et al., 2008; Leatherdale, 2008).

### **3.2. Confidentiality and stigmatization**

A second general problem when recruiting young people to smoking cessation interventions is that many young people smoke without their parents, teachers or other adults knowing about it. Most of these young people want things to continue in this way and therefore do not wish to take part in smoking cessation interventions, if this involves their having to "expose" themselves as smokers (Backinger et al., 2003b; Balch, 1998; Massey et al., 2003; Kealey et al., 2007). A somehow similar barrier is participant privacy. Many students are concerned that their friends or family finds out that they take part in a cessation course, noting that they will not receive social support for their effort. Therefore it is crucial that participants feel secure that their participation in a smoking cessation program is confidential (Kealey et al., 2007).

### **3.3. Availability of attractive and effective youth specific cessation interventions**

Finally interventions have to be relevant and accessible in order to make them attractive for adolescents (Leatherdale, 2008; Kealey et al, 2007). As mentioned earlier adolescents have rather negative expectations towards cessation interventions (Balch, 1998; Dalum et al., 2004) and this barrier has to be overcome if we are to recruit adolescents in the interventions. Often cessation programs for adolescents are adaptations of approaches that were designed for adults. Meanwhile there are some few smoking cessation programs that were specifically developed for teenage smokers and tailored to their needs within the cessation process but their transfer into practice is still at the beginning ([www.access-europe.com/en/national-smoking-cessation-programmes.php](http://www.access-europe.com/en/national-smoking-cessation-programmes.php)). A youth-specific cessation approach should e.g. take into account that

- smoking may be instrumental for youth development and thus alternative abilities and life skills might have to be acquired to cope with developmental tasks
- family plays a different role than in adulthood and family issues should be worked on as a central theme

- there are specific risk factors like social pressure by peers or emotional stress especially important for teenagers
- there are different developmental pathways of substance use and therefore very different target groups within the population of smoking adolescents, etc. (Bühler et al., 2009).

If interventions consider these aspects they may be more relevant and attractive to young smokers. Thus, content, type and effectiveness of interventions is important not only for cessation but also for recruitment purposes.

These general factors have a decisive influence on recruitment rates and contribute to making the process of recruiting young people to smoking cessation interventions more difficult. In the following some more specific factors important in the recruitment process are described.

#### **3.4. Lack of knowledge about smoking cessation intervention**

One of the reasons for the low recruitment to smoking cessation interventions for young people is that many young people do not know about the available programmes. Among the problems highlighted in connection with school-based smoking cessation interventions is the fact that the majority of young people do not know about the availability of the programmes at their school (Leatherdale, 2006). In this connection Leatherdale and McDonald underline the importance of thorough advance information about the programme, a factor they find to be especially relevant for school-based smoking cessation interventions (Leatherdale & McDonald, 2007).

Gnich et al. find moreover that in many interventions more time and effort are used on recruiting young people for the smoking cessation interventions than anticipated (Gnich et al., 2008). It may therefore be necessary to have a long introductory period before the programme itself begins, so that both the professionals and the young people involved can become familiar with the specific intervention (An et al., 2007; Gnich et al., 2008; Massey et al., 2003).

#### **3.5. The importance of the choice of words**

One important aspect in a smoking cessation intervention is the language used and the specific choice of words. For instance the term "to stop" may for young people mean stopping smoking for a period, for instance in connection with a key football match or when

dating a non-smoker (Backinger et al., 2003b). It is therefore important to focus on the use of language and to employ the same terms that young people would use themselves. This becomes relevant not only in relation to interpreting results, but also in connection with recruitment.

As pointed out above, many young people do not identify themselves as smokers, even though they would be seen as such on the basis of an adult definition (Backinger et al., 2003). If recruitment for a specific smoking cessation intervention solely addresses "youth smokers", for instance, many young people who smoke only occasionally and therefore do not consider themselves to be smokers will not see the programme as relevant for them and will therefore not enroll.

In connection with the recruitment process it will therefore be necessary to clarify what target group the specific smoking cessation intervention is aiming at and then to adjust its language to that particular group.

### **3.6. Incentives**

Studies of adults have shown that the percentage of responses to questionnaire studies is increased by the use of pecuniary incentives. It would seem possible that the same tendency might be seen in relation to young people and enrollment in smoking cessation interventions. It has not, however, proved possible to find a detailed review of the literature on the advantages and disadvantages of using incentives in connection with smoking cessation interventions for young people.

In a qualitative study of young people, however, the author asked them about factors that might be thought to persuade them to enroll in a smoking cessation intervention. In this study 'money' was the incentive most frequently mentioned by the young people as likely to increase the probability of their enrolling in a smoking cessation intervention (Balch, 1998). At the same time nevertheless many young people found it hard to imagine that there were any incentives at all that would get them to do something they would not otherwise think of doing (Balch, 1998).

An important aspect of the recruitment of young people to smoking cessation interventions will therefore be to *convince* them that it is relevant for them to participate in the programme. Leatherdale and McDonald also stress the importance of effectively communicating the benefits to be gained from existing smoking cessation interventions targeting young people (Leatherdale & McDonald, 2007).

The scientific literature contains conflicting findings and results concerning the question whether pecuniary incentives promote the recruitment of young people to smoking cessation interventions. Some studies find an increased recruitment rate from such incentives and a more positive attitude to the programme if there is a possibility of winning a money prize (Dalum et al., 2004; Martinson et al., 2000). Other studies, however, find very low participation in spite of pecuniary incentives, and that these are not decisive for whether young people wish to participate in the programme (Koo & Skinner, 2005; Massey et al., 2003). Furthermore, one review finds no significant differences in recruitment rates between programmes that used pecuniary incentives and those that did not (Backinger et al., 2008).

These conflicting findings may be due to strong variation in how “incentives” are actually implemented recruitment of different intervention studies. Effectiveness might depend on the type of incentive (money, voucher, goods, etc.), size of incentive or reinforcing scheme. In a study testing some hypotheses in this regard, the authors are of the opinion that the probability of winning a money prize may be less important than the actual sum, and that larger prizes would have been more effective in increasing the percentage of responses (Martinson et al., 2000).

#### **4. The Internet and recruitment**

The Internet has had a considerable effect on changes in the way in which communication and information are disseminated among individuals and in society in general. Internet services like websites, e-mail, news groups and blogs are examples of new and powerful ways of disseminating and gathering information (Koo & Skinner, 2005). Social communities are of increasing importance.

In addition to the new possibilities offered by the Internet, the use of the Internet is growing among various population groups, and searches for health information, including information about quitting smoking, have become very common. A survey conducted by Andreasson et al. (2007) on citizens' use of e-health services in seven EU countries showed that more than half (53%) of responding Internet users reported the Internet as an 'important' or 'very important' source of health information. Altogether, 71% of Internet users already use the Internet for health purposes. It has not been possible to find specific research on young people and their use of the Internet for smoking cessation purposes. In a study of American Internet users, 19.5% of the persons who were recruited via having sought smoking cessation on the Internet in a 10-day period were, however, under 26 years of age (Cobb & Graham, 2006). The results

from this study indicate therefore that also many young people use the Internet to search for health information, for example help for smoking cessation, which suggests that that it can be effective to use the Internet in connection with the recruitment of young people to smoking cessation interventions. Moreover many young people use the Internet daily, which can also be seen as an advantage in relation to young people and smoking cessation interventions.

#### **4.1. The Internet as an element in recruitment strategy**

A study by Graham et al. examines how many persons enroll in a web- or telephone-based smoking cessation intervention, depending on whether online advertising or other recruitment approaches such as posters, TV or radio advertising are used (Graham et al., 2008). Although the study did not specifically target youth smokers, the findings show that a higher percentage of men and young people are recruited through advertising on the Internet than when more traditional media are employed (Graham et al., 2008). This result indicates that it is a good idea to involve the Internet in the work to recruit young people to smoking cessation interventions.

Furthermore, the findings also indicate that online advertising is in general a promising way of recruiting smokers for web- or telephone-based smoking cessation interventions. The study finds an overall enrollment rate of 9.1%, which is better than that attained by most interventions using traditional recruitment approaches (Graham et al., 2008). A specific example showed that the advertisements for a smoking cessation intervention on the Internet in only two states resulted in 9600 enrolled users, which corresponds to almost half the number of persons registered in the same period using all other forms of advertising in the entire USA (Graham et al., 2008). Thus it seems possible to conclude from this result alone that advertising for a smoking cessation intervention on the Internet would be advantageous in respect of the recruitment of youth smokers to a specific smoking cessation intervention.

An et al. (2006) have examined various strategies for promoting enrollment in smoking cessation interventions for college students in the USA, and how the young people's participation in Internet programmes can be maintained. They find that three modifications in particular result in a considerably increased stability in participation. These modifications are 1) a change of the Internet page's format from that of a smoking cessation intervention to that of an "online college life magazine"; 2) the addition of interactive e-mail support from other young people; and 3) the introduction of a parallel site structure that refers participants via

study activities (An et al. 2006). These three modifications aiming at increasing retention may as well have a positive effect on recruitment.

#### **4.2. Problems connected with the use of the Internet**

A study by Koo and Skinner comparing different strategies for recruiting teenagers to evaluate a smoking cessation intervention mentions some of the challenges that accompany the use of the Internet. One of the problems described in the study arises in connection with the information that the programme wishes to give the young people via e-mail. Many young people have more than one e-mail address (Koo & Skinner, 2005), and this means that they may not check the e-mail box in question so often and thus fail to receive the information concerned. Furthermore, it can also be imagined that quite a lot of young people will perceive an invitational e-mail as spam, delete it and thereby fail to hear about the specific smoking cessation intervention (Koo & Skinner, 2005).

It will be relevant to take into account both the advantages and the problems described in this chapter relating to Internet recruitment of young people to smoking cessation interventions when developing an Internet smoking cessation intervention for young people, as well as when considering the use of the Internet for recruitment to a smoking cessation intervention.

## **5. The mobile phone, recruitment and smoking cessation interventions**

Like the Internet, the mobile phone is very widely used. Worldwide there are more than a billion mobile phone users, which is more than the users of stationary telephones . The majority of young people in the developed countries have a mobile phone, and text messages have become a new medium of communication, one that is especially used by young people . It may therefore be advantageous to use it in the recruitment of young people to smoking cessation interventions. It has not, however, been possible to find studies that describe in any detail the benefits and disadvantages of using the mobile phone in recruitment. The following sections will therefore take their point of departure in studies that deal with smoking cessation interventions in which the use of the mobile phone plays an active role.

### **5.1. Advantages of using the mobile phone in smoking cessation interventions**

There are relatively many examples of studies dealing with the use of mobile phones and messaging as part of a smoking cessation intervention for young people. A study by Rodgers et al., the primary purpose of which was to assess whether a programme using the mobile phone could increase smoking cessation, also considers the advantages connected with using the mobile phone in smoking cessation interventions . Besides being, as described above, very widely used in general, the mobile phone also represents a new individual information source that can deliver information no matter where the receiver may be (Rodgers et al. 2005; Whittaker et al. 2008). This factor does not apply to the Internet to the same extent even though it is becoming increasingly common to be able to access the Internet via one's mobile phone.

Another advantage of using the mobile phone in a smoking cessation intervention or in the recruitment process is that it is relatively cheap to send text messages, a factor that also applies to e-mail and the use of the Internet, while texting has the additional advantage of making a personal effect and being especially suited to young people (Rodgers et al., 2005). Furthermore, it is easy to disseminate a message over large geographical areas via the mobile phone (Rodgers et al., 2005). In a study by Kealey et al they conclude that adolescents are receptive to participation to a telephone delivered intervention if it is personally tailored, supportive of the adolescents autonomy, and proactively delivered via telephone {Kealey et al., 2007).

As already mentioned, most of these advantages also apply to the Internet. One difference between the two media is, however, that the mobile phone is in general more widespread than the computer, especially among lower socio-economic groups and young people.

Many of the above-mentioned advantages of using mobile phones in connection with the provision of a smoking cessation intervention seem likely to apply to the use of the mobile phone in connection with recruitment.

It has not been possible to find any descriptions in the literature of the disadvantages of using the mobile phone in smoking cessation interventions or for the recruitment of young people to smoking cessation interventions.

## **6. The school as a setting for smoking cessation interventions and recruitment**

Many of the earlier smoking cessation interventions that have been accessible to young people during the course of the years have involved the school in some way or the other (Backinger et al., 2003a). In this connection Sussman and Sun find that smoking cessation interventions should be implemented in a context that is structured for young people such as schools, sports clubs and health clinics (Sussman & Sun, 2009).

### **6.1. Advantages from involving the school**

Besides the fact that the school is precisely a context structured for young people, there are also other advantages from involving the school in smoking cessation interventions. One of the often mentioned advantages is that in connection with the school the young people can be seen as a "captive audience" (Massey et al., 2003). If a specific smoking cessation intervention is spoken of in connection with a lesson in the classroom, the young people will be present in all circumstances. For this reason the school is a frequently used prevention arena (Backinger et al., 2003a).

## **6.2. Disadvantages from involving the school**

On the other hand there are also some disadvantages and some factors that may act as potential barriers in connection with recruitment when the school is involved either as the setting for a smoking cessation intervention or as an element in the recruitment process.

Some studies find that young people in general are not interested in participating in smoking cessation interventions that take place in schools (Balch, 1998; Leatherdale, 2006). There may, however, be many reasons for this. For instance, it may be due to the fact that, as described above, many young people who smoke, do so without their teachers or parents knowing about it, a situation they wish to maintain, but which is perhaps not possible when smoking cessation interventions take place in schools.

Another problem connected with involving the school in recruitment to smoking cessation interventions is how to reach out to high-risk young people. If the recruitment takes place only at school, there is a strong risk that these young people will not hear about the programme, as many of these young people are liable to truant (Massey et al., 2003). For this reason attention is drawn to the advantages to be gained by combining different forms of recruitment strategy, for instance using both mass media and school-based recruitment, so that both young people who attend school regularly and those who do not are informed about a specific smoking cessation intervention (An et al., 2007).

Furthermore, there are a number of factors that it is important to consider in connection with a school-based smoking cessation intervention, such as the logistics, costs and human resources required to implement the programme at the school (Sussman and Sun, 2009) which also applies to using this setting for recruitment.

## **7. Future research**

Despite the increasing attention devoted to the problem of young people and smoking cessation interventions there is not much scientific literature on the subject, especially not on the problem of recruiting young people to these programmes. In order to clarify the exact nature of the challenges involved and to design possible solutions there continues to be a need for a stronger focus on this field.

Developing an effective recruitment strategy needs a theory and evidence base like development of intervention does, too. There is no theory-driven model of recruitment (Backinger et al, 2008) which could guide identification of facilitating and hindering factors

in the process of motivating young smokers to use cessation interventions by means of empirical studies. This knowledge can be used to optimise existing practice of recruitment e.g. as documented through the ACCESS project. Then sound effectiveness studies should be implemented to determine and compare recruitment rates and characteristics of reached target group of different recruitment strategies or activities. At the end of this research program evidence-based recruitment strategies will be available which is one of the factors in the equation to increase the impact of smoking cessation efforts among adolescents (Reach X Effect=Public Health Impact, De Vires & Brug, 1999).

Within this urgent comprehensive research agenda some specific research topics need attention. New research is, for example, required in order to assess the advantages of identifying young people's characteristics and then adjusting smoking cessation interventions to the needs of more specific groups of youth smokers. It is conceivable that different groups of young people have different reasons for stopping smoking, and that it could be useful to make use of them in the recruiting process. Smoking cessation interventions could, for example, be directed specifically at physically active young people, at girls or at other more or less specific groups of youth smokers. Improving smoking cessation interventions is the other factor that has the potential to increase public health impact of cessation aids for young tobacco users.

As described above, the literature shows no significant differences in recruitment rates for programmes that use pecuniary incentives and those that do not. A review by Backinger et al. was unable to distinguish whether the incentives had been used for recruitment or in order to retain the young people in the smoking cessation intervention, which indicates the need for further research in this field (Backinger et al. 2008). but once again more research is needed.

## 8. Summary

Many young people wish to quit smoking, but few of them make use of the already available smoking cessation interventions that have been developed for young people. Many professionals see the recruitment of young people as the main problem, which gives a particular interest to this focus. The scientific literature to be found in this field links the recruitment of young people to smoking cessation interventions to a number of problems, which include that many young people:

- do not perceive themselves as smokers,
- are ambivalent in relation to smoking cessation in the nearest future
- wish to stop on their own or with help from friends,
- do not know about the available smoking cessation interventions to be found, for instance, at schools,
- do not want their parents or other grown ups to know that they smoke, and
- have an idea that smoking cessation interventions have a condescending attitude to youth smokers.

In connection with recruitment and perhaps even with the smoking cessation intervention itself it will be relevant to consider these problems in order to improve recruitment.

Another challenge relating to the problem of recruiting young people to smoking cessation interventions is that there are conflicting findings for many of the factors examined. This applies to factors such as:

- the general recruitment strategy, although it appears that several studies indicate that it may be an advantage to employ an active rather than a passive recruitment strategy,
- recruitment via the Internet, which is in focus among other things because many young people use the Internet,
- money incentives, for which some studies find that this promotes recruitment, while others find that there is no difference in recruitment rates.

The general conclusion must be that despite an increased focus on this field in recent years there is still a need for more research into the challenges that can arise in connection with the recruitment of youth smokers to smoking cessation interventions.

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