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Short communication

A game for smokers: A preliminary naturalistic trial in a psychiatric hospital

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Abstract

Objective: ''Pick-Klop'' is a game based on cognitive behavioral therapy. It aims to change smokers' attitudes towards tobacco addiction. This study tests the feasibility and the impact of one brief session of the intervention in a naturalistic setting within a psychiatric hospital.
Method: Fifty-one smokers were recruited during their stay in a psychiatric hospital with a prohibitive smoking policy. They were assessed pre- and post-treatment with visual analogue scales designed to evaluate their intention to stop smoking.
Results: All patients completed the intervention. The outcome shows that the intention to stop smoking becomes significantly stronger after the intervention.
Conclusion: This pilot study supports the feasibility and the effectiveness of the ''Pick-Klop'' game in a psychiatric hospital setting. The game seems to improve the intention to quit smoking. The data, however, should be confirmed by a controlled trial. Moreover, follow-up studies are needed to examine the potential impact of the game on smoking cessation attempts.
Practical implications: The game seems to be a useful and simple tool for education about smoking in a psychiatric hospital setting.

Keywords: Smoking; Smoking cessation; Cognitive behavior therapy; Motivational interviewing; Psychiatric hospital; Prohibitive smoking policy

1. Introduction

Smoking is the first avoidable cause of morbidity and mortality [1]. Most smoking cessation attempts are made without any help [2].

Despite the efficacy of nicotine substitutes [3], bupropion [4] and some behavioral approaches [5], these treatments are used only by a minority of smokers [6,7]. This is probably due to the smokers' lack of knowledge about methods available to help them quit smoking [8].

A modification of knowledge and attitude regarding tobacco and smoking cessation methods can thus be particularly relevant [8].

Smokers are generally informed about the risks associated with smoking. However, this awareness seems to be not sufficient to induce behavioral changes [9]. Positive attitudes towards giving up nicotine addiction, however, are linked to a greater willingness to stop smoking [10].

In the transtheoretical model of behavioral change, a re-evaluation of the advantages and disadvantages of nicotine addiction and cessation enable smokers to evolve within the motivational process [11].

The notion of ''self-efficacy'' [12] corresponds to the trust one has in one's own ability to behave effectively in a given situation [13]. Its increase predicts smoking cessation [14].

Several methods to help change are available, more specifically self-help books and cognitive and behavioral therapies (CBT).

Self-help books have several advantages: they reach out to an important number of smokers from different groups of the population [15]. Their effectiveness has yet not been proven [2,16]. Nevertheless, a study done in California shows that 9.3% of the smokers who stopped smoking in the previous year admitted having got help from a self-help book [15].

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Table 1
Description of the game ''Pick-Klop''

The game ''Pick-Klop'' is based on the cognitive, behavioral and motivational therapeutic approaches to addictive processes. It comes in the form of a game and consists of 291 questions, each linked to 3 multiple choice answers. The game presents several individuals in different motivational stages. This should make it easier for the players to identify themselves with the characters and to exchange views with other participants. Because of the type of questions asked, as well as the board on which the pawns are moved, the progression of the game tends to recreate the motivational process described by Prochaska and DiClemente
The questions tackle the following items
The history of tobacco, its constituents and their physiological effects
The reinforcement mechanisms of nicotine addiction
Smoking cigarettes as a coping strategy when facing difficulties in daily life
The costs of nicotine addiction; in particular, the benefits when kicking the addiction
The processes and stages of weaning, as well as the cognitive and behavioral mechanisms involved in the maintenance of the process and in change
Pharmacological means to help with withdrawal
The aims of the game
To inform smokers in a way that does not make them feel guilty
To have the smoker re-evaluate the advantages and the disadvantages of tobacco by placing him in an active and decentered position
To increase the smoker's trust in his ability to stop smoking
To modify the attitudes towards nicotine addiction and its treatments
Assessment tools: A game of questions/answers is given to the participants, along with two dice, pawns and a game board on which to move the pawns
Development of the game: Two to six smokers can play alone or in the presence of a game director. One round lasts about 1 h to 1 h 30 min

On the other hand, CBT seem to be more effective than self-help books. At present, however, they reach out to only 5% of smokers at the very most [16].

The game ''Pick-Klop'' (Table 1) was created by the first author of this article with the following aim: proposing an intermediate approach between the self-help book and CBT.

The smokers play around a table on which the game board is laid to play. The board represents a curved cigarette (as a motivational cycle) containing boxes of various colors. The participants play in a group of two to six players. Each player has a pawn and advances while throwing the dices. According to the score obtained the player places himself on a box. The color of this one indicates him the card to be drawn (Fig. 1). The cards are white (general questions about tobacco), blue (questions about the behavioral aspects of nicotinic addiction), green (questions related to the processes of change and the motivational stages), and pink (questions about the methods of change). For a correct answer (among three choices), the player wins respectively 1–4 points, the pink cards being worth 4 points. The situation of group leads naturally the players to make comments on the given questions and answers.

One advantage of games is that they arouse curiosity, as well as an intellectual and emotional investment. They do so in a non-judging and de-centered way that does not induce feelings of guilt, as players do not have to face their problems directly. Finally, these games are very accessible and can be easily distributed. This type of approach has already proven useful in other fields of psychiatry [17].

A preliminary assessment has been carried-out with patients hospitalized in a public psychiatric hospital in Switzerland, as the previous year, smoking had become strictly prohibited in all the enclosed places of the hospital. Also, we know that such prohibitions, even though they have seldom been studied, do not seem to influence the patients' motivation to give up their nicotine addiction [18]. Therefore, we wanted to study the impact of one session of the game on the attitudes of smoking patients. The study focused on the smoking prohibition on one hand and on the patients' intention to stop smoking on the other hand. In addition, we wished to assess their reaction towards the game.

Considering the high number of smokers among psychiatric patients, the short time normally given to answer this problem and the rarity of smoking cessation counseling offered by psychiatrists to their patients, the use of such a game may be a particularly advantageous approach [19].

2. Method

2.1. Subjects

The study included 51 inpatients recruited in groups of three to six patients. To be included in the study, patients had to be adult smokers (18–65 years old) hospitalized in the public psychiatric hospital of Lausanne/Switzerland; they also had to be able to give informed consent. They were recruited through advertising in the psychiatric unit. Psychiatric diagnoses were recorded from the chart review. They were established according to the DSM-IV criteria by psychiatry residents and a senior psychiatrist.

Sessions took place in an open-ended group and were directed by a psychologist.

2.2. Measures

Visual analogue scales (i.e. horizontal lines, 100 mm in length, anchored by word descriptions at each end. Patients make on the line, the point that they feel represents their attitude) were administered before and after each session in order to assess the attitudes towards stopping smoking (My intention is to stop smoking 1 day; ratings went from ''not at all'' (0) to ''absolutely'' (100)) and towards the smoking prohibition in hospital (I find the smoking prohibition in hospital completely unacceptable (0) to completely justifiable (100)). The assessment of ''the intention to stop. . .'' carried-out with a visual analogue scale is a simple and validated technique [10,20]. Indeed, intentions towards tobacco are powerful predictors of the future behavior linked to nicotine addiction [21].

A visual analogue scale was also administered at the end of the game session in order to assess the patients' appraisal of the game (I value the game ''Pick-Klop'': not at all (0) to completely (100)).

Smoking dependence was evaluated by: time-to-first cigarette after waking-up and the number of cigarettes smoked per day.

White card: Nicotine is a psychoactive substance acting on many brain receptors.
When smoking, these receptors are affected in
1. about 15 minutes
2. about 5 minutes
3. **about 7 seconds**

Blue card: Nowadays, smokers are smoking because:
1. They don't know the serious risks for their health.
2. They lack will
3. **They find many advantages to smoking**

Green card: Your friend Isabelle wants to quit smoking. As you have already stopped smoking, you propose to her:
1. To throw immediately her package of cigarettes and to swear that she will not smoke again.
2. **To start to observe herself and think about what pushes her to smoke and what will she loose if she stops smoking.**
3. To run out to buy nicotine chewing gums

Pink card: Nicotinic substitution (intake of nicotine when quitting tobacco smoking) allows, nicotine dependent smokers, to:
1. Increase slightly their chances to succeed their tobacco withdrawal
2. **Multiply by 2 to 3 the chances to remain non-smokers at 6 months**
3. Multiply by 10 the chances to remain non-smokers at 1 month

Fig. 1. Example of white, blue, green and pink cards (answers in bold).

Participants gave informed consent and the local Ethics Commission's approval was obtained for the study.

2.3. Analyses

The statistical analyses were performed by the program SPSS 11.0. Non-parametric Wilcoxon tests based on negative ranks were used to compare the mean/average scores for the intention to stop smoking before and after the game. These tests were also used to compare the attitudes towards the smoking prohibition in hospital before and after the game. Pearson's correlations were carried-out to assess potential links between continuous variables. For all analyses a significance level of $p \leq 0.05$ was used.

3. Results

Fifty-one patients were included in the study. During their hospitalization, the patients were treated for: major depressive episode (39.2%), manic or mixed bipolar disorder episode (13.7%), schizophrenia or other psychotic disorders (29.4%), personality disorder (17.7%). A history of substance abuse or dependence (other than tobacco dependence) was found for 36% of the sample. More than half (52.9%) of the patients had at least one more psychiatric diagnosis such as an anxiety disorder or a personality disorder. In general, the participants had a relatively long psychiatric history (8.5 ± 9 years) and were unemployed (67%).

Among the patients who accepted to participate in the study (Table 2), 74.5% showed a high degree of dependence and smoked their first cigarette within the first half-hour after waking-up. The shorter the time between wake-up and the first cigarette, the higher the number of cigarettes smoked per day ($R = 0.4$ and $p = 0.005$). The general attitude of patients towards the smoking prohibition in hospital was relatively good (71.5/100). Patients were rather inclined to express an intention to stop smoking 1 day (61.4/100). The game was well prized, since 80% of the patients gave it a grade higher than 60/100, with a mean at 79.1/100. The intention to quit smoking increases significantly after having played the game ($Z = -3.4$ and $p = 0.001$). However, the attitude regarding the smoking prohibition in hospital does not improve significantly ($Z = -1.7$ and $p = 0.09$).

Table 2
Main sociodemographic and clinical characteristics of the samble before and after the game

Mean age in years ± S.D.	43.7 ± 12.8
Sex, male (%)	54
Cigarettes/day, mean ± S.D.	23 ± 14
$T < 5$ min (%)	36.20
5 min $< T <$ 30 min (%)	38.30
31 min $< T <$ 1 h (%)	12.80
$T \geq 1$ h (%)	12.80
Attitudes toward smoking prohibition in hospital before pick-klop: mean ± S.D./100	71.5 ± 28.8
Attitudes toward smoking prohibition in hospital after pick-klop: mean ± S.D./100	75 ± 25.4
Intention to stop smoking assessed before the game: mean ± S.D./100	61.4 ± 34.3
Intention to stop smoking assessed after the game: mean ± S.D./100	74.2 ± 27.2
Appreciation of the game "'Pick-klop" mean ± S.D./100	79.1 ± 23

$N = 51$.

None of the patients has left the game before the end of the session and the general atmosphere appeared to be rather playful. Moreover, among the 20 patients who had a score <50/100, 19 increased their score.

4. Discussion and conclusion

4.1. Discussion

This study confirms the feasibility of this approach. Overall, patients seemed to enjoy the game and to have, on average, a basically open-minded attitude towards the smoking prohibition in hospital. Nevertheless, a selection bias cannot be excluded, as the patients accepted to participate in a game about tobacco. Moreover, the observed increase of the intention to quit smoking could have a therapeutic effect; although the clinical impact of this increase in terms of attempts to quit smoking is difficult to establish in the absence of a more controlled design and follow-up assessment.

4.2. Conclusion

The game session lead to an increase in the intention to quit smoking. This study, however, has several limitations, such as its non-controlled nature, as well as the absence of both follow-up measurement and a more precise description of the smoking status (i.e. other measures of dependence, attitudes toward nicotine replacement therapy, self-efficacy measures, etc.) and psychiatric status (i.e. structured diagnosis) of the sample. A larger study, currently in progress, will include these factors as well as smoking status at 3 months and at 1-year follow-up and will try to validate the game in a controlled fashion (Pick-Klop vs. waiting list or brief psychoeducation).

4.3. Practical implications

This study shows the possible use of the game ''Pick-Klop'' in psychiatric hospitals in order to render patients more aware of issues linked to nicotine addiction.

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