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THE EFFECTIVENESS OF TWO HYPNOSIS TREATMENTS FOR SMOKING CESSATION

by

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This thesis is dedicated to

my husband,

Phil Harris,

and my sister,

Tracey Hull

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ABSTRACT

This study was designed to compare the effectiveness of a one-session individual hypnosis treatment and a three-session individual hypnosis treatment. Fifty-three subjects were randomly assigned to the two groups, with 26 in the one- and 27 in the three-session approach. Seven subjects completed three sessions, with a 74 percent dropout rate. This high rate may have been related to lack of screening for subjects, and that motivational incentives were not required for attending sessions. Of the 12 subjects who completed at least two sessions, four were abstinent from smoking at three months (33%). One of the 31 one-session attenders was abstinent at three months. Extensive qualitative findings are reported in this research. Of interest is that 72 percent of women stated that weight gain was a factor that might keep them from successfully quitting smoking.

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CHAPTER ONE: INTRODUCTION

Before entering into individual counselling a client usually has three questions: 1) Will the counselling be effective?; 2) How long will it take?; and, 3) How much will it cost? A fourth concern, perhaps not verbalized, is: Will the counselling cause me harm? These four variables - effectiveness, time, cost, and safety, are important to take into consideration when offering a counselling program. They must also be looked at in relation to each other. For example, most methods that are time efficient are also cost efficient, being that time and cost are almost directly related. However, effectiveness may not be directly related to time. In some situations a program must be given adequate time to produce the desired results. Thus, having a less time consuming program in this case, and thus less costly, may also result in less effectiveness. Safety and effectiveness are not always directly related. Sometimes the most effective technique is also the most dangerous. In conclusion then, a client will most likely want a program of counselling that safely produces the desired results, in the least amount of time, and thus for the least cost.

Not all problems dealt with in counselling can be given a certain time frame, and therefore some programs need to be open ended. However, with a specific issue such as quitting smoking, most organizations offer a set number of sessions.

The questions, then, are: 1) What is a safe, effective method for assisting people to quit smoking?; and, 2) What is the optimum number of sessions needed to produce abstinence?

Holroyd (1980) evaluated 17 smoking cessation programs that involved hypnosis. Sixty percent of the studies showed to be as, or more, successful when compared to a review of 89 non-hypnosis smoking interventions (Holroyd, 1980, p. 353). Thus, hypnosis is an effective method for assisting people in quitting smoking.

There are many myths surrounding hypnosis, some saying that it is harmful. Erikson (1980), who was a well known psychiatrist and hypnotherapist, dispelled many of these myths. He concluded: "In summary, then, the literature offers little credible information concerning possible detrimental effects of experimental hypnosis, although replete with dogmatic and opinionated denunciations founded on outworn and untenable concepts of the phenomenon" (Erikson, 1980, p. 497). Erikson went on to say that in his experience "based upon several thousand trances on approximately 300 individual subjects, some of whom were hypnotized at least 500 times each over a period of four to six years, reveals no evidence of such harmful effects" (Erikson, 1980, p. 497). Hypnosis is actually a method where a person is guided into a physically relaxed state, with a heightened sense of awareness. It is both harmless

and enjoyable.

A review of the literature (see Appendix A) showed there is no standard number of sessions used in hypnosis treatment. Authors use from one (example, Stanton, 1978) to seven (example, Powell, 1980) sessions. Stanton (1978) advocated a one-session approach. He stated that more than one session served only to allow the client time to delay the decision to quit smoking. Based on the use of multi-sessions, presumably other authors believe a multi-session approach is more appropriate.

If indeed one session is as effective as multiple sessions, then the most cost and time efficient route would be with the one session. A meta-analysis of the research (see Appendix A) showed that the one- and multi-visit approaches were similar in effectiveness. However, since the two approaches were not tested within one research project, it is difficult to draw conclusions solely on the meta-analysis. There may be factors unique to each study to cause results. For example, one study may have a certain success rate due to highly motivated subjects, and another may have a high success rate because of an experienced hypnotist. The one- and multi-sessions need to be compared in one research study. Cornwell et al. (1981) did compare a one- and multi-session treatment. The results showed that the multiple treatment was 50 percent more effective than the single treatment. However, the two

were not significantly different. The authors stated that this was possibly due to using small sample sizes for each treatment group (10 for each group). Thus, the results of the Cornwell et al. (1981) study are suggestive, and worthy of further research.

In summary, research has provided data which suggested that hypnosis is effective in helping people quit smoking. It is also harmless. Not known, though, is how many individual sessions are optimal.

Literature Review

A review of the literature (see Appendix A) showed that many hypnosis treatment types have been studied. These included: a) the individual single-session approach (Barabasz et al., 1984; Berkowitz et al., 1979; Cornwell et al., 1981; Javel, 1975; Rabkin et al., 1984; Stanton, 1978); b) the individual single-session approach with optional additional sessions (Sheehan and Surman, 1982; Shewchuk et al., 1977); c) the individual multi-session approach (Byrne and Whyte, 1987; Cornwell et al., 1981; Lambe et al., 1986; MacHovec and Man, 1978; Perry and Mullen, 1975; Powell, 1980; Schubert, 1983; Watkins, 1976)); d) the group approach (Barabasz et al., 1986; Barkley et al., 1977; Horwitz et al., 1985; Jeffrey et al., 1985; Jeffrey and Jeffrey, 1988; MacHovec and Man, 1978; Neufeld and Lynn, 1988; Pederson et

al., 1975; Sanders, 1977); and e) hypnosis combined with another treatment type (Barabasz et al., 1986; Pederson et al., 1975; Pederson et al., 1979; Tori, 1978). Combining studies that included six month abstinence rates showed treatments a,c,d, and e to be 32.03, 39.85, 32.5, and 45 percent effective (there were too few studies to analyze treatment b). The average of the four treatments was 35.9 percent. There was no statistical significant difference between the four treatments ($p < .05$; see Appendix I for computations). That is, essentially the treatment types were equally effective.

Neufeld and Lynn (1988) cited a self-help smoking program as being between three to six percent effective, at six months. Using the self-help study as a control measure, the average (35.9%) of the above hypnosis studies achieved a far better rate of success.

Methodological Limitations

A review of the studies showed methodological limitations involving: sampling groups, validity of self reports, non-standard follow-up reporting, abstinence measures, and screening procedures. Many types of sample groups were used. These included university students, volunteers, and patients from clinics and hospitals. Few studies randomly assigned subjects to treatment groups.

Twenty-three of the 25 studies reviewed used self reports for determining subjects' treatment success. Rabkin et al. (1984) and Cornwell et al. (1981) used blood samples to determine serum thiocyanate. This is a biochemical indicator of the amount of cigarettes smoked. Physiological tests, however, are both expensive and time consuming, and they are, therefore, not easy to use in a research study; even though these tests are invaluable in confirming self reports.

Follow-up reporting was not standard throughout the studies. Sometimes subjects who could not be reached for follow-up were considered treatment failures. Also, occasionally subjects who dropped out before completion were counted as treatment failures. Both of these measures lead to more conservative results. That is, if a study does not include dropouts in the final abstinence rate, the rate will be higher than a study that does include the dropouts. Different ways of reporting treatment success make it difficult to compare studies.

Abstinence from smoking was not consistently defined for all studies. Abstinence was sometimes considered to mean that the subject had not smoked since the treatment. Other times it was defined as the subject not having smoked for a certain period of time before the follow-up. A standardized definition of abstinence would provide for more accurate comparisons.

Eight studies screened volunteers and excluded them from the research (Jeffrey et al., 1985; Jeffrey and Jeffrey, 1988; MacHovec and Man, 1978; Perry and Mullen, 1975; Rabkin et al., 1984; Schubert, 1983; Sheehan and Surman, 1982; Watkins, 1976). Since screening measures were not consistent throughout, it is difficult to compare results.

Factors relating to Treatment Success

An analysis of the most successful studies in the literature (see Appendix A) was done. Factors considered likely to be related to increased effectiveness are listed. Note that studies cited in this section all obtained a success rate of at least 40 percent.

1. Individualized hypnosis suggestions. Holroyd (1980) reviewed 17 hypnosis studies and concluded that individualized suggestions were related to higher success rates. Cornwell et al. (1981), Javel (1980), Sanders (1977), Schubert (1988), Stanton (1978), and, Watkins (1976) gave clients both standardized and individualized suggestions during hypnosis. Each of these studies obtained a 40 percent or better success rate. Individual suggestions were based on the clients own reasons and motivations for wanting to quit smoking.

2. Variety of hypnosis suggestions. Javel (1980),

Stanton (1978), and Watkins (1976) used a variety of hypnosis techniques for each client, involving visualizations, feelings, and auditory suggestions. Not all people respond to one kind of suggestions. Therefore, by using a variety of techniques, it is more likely that a person will respond to at least one of them.

3. White sound. Barabasz et al. (1986) and MacHovec and Man (1978) used a stereo to play background environmental sounds to subjects. Background music serves to create a restricted environmental stimulation situation. Restricted Environmental Stimulation Therapy (REST) has been cited by Barabasz et al. (1986) to increase hypnotic responsiveness. White sound therefore may enable the hypnosis to be more effective.

4. The counsellors expressed expectation of success. Stanton (1978) let each client know that he expected the hypnosis to be successful. He stated that this attitude of confidence and expectation transfered to the client, thus increasing the rate of success.

5. Combining hypnosis with another technique. As discussed in the review (see Appendix A) some studies combined hypnosis with another technique such as counselling or rapid smoking. Many other studies did not label their research as a combined method, yet employed various counselling strategies. It is therefore difficult to compare studies, and the effect of the combined methods.

However, three of four studies where it was clear that counselling was used with hypnosis (Watkins 1976; Pederson et al., 1975; Pederson et al., 1979) showed an approximately 50 percent abstinence rate. Barkley et al. (1977) used counselling and hypnosis with a 25 percent success rate.

Tori (1978) and Barabasz et al. (1986) also used a combined technique. Tori tested hypnosis with both rapid smoking and satiation smoking. These involve having the client repeatedly smoke until feeling nauseous. These techniques have an element of danger to them, in that there is a possibility of nicotine overdose. Barabasz et al. combined hypnosis with Restricted Environmental Stimulation Therapy (REST). White sound was used over earphones to produce a REST situation. Both studies achieved over 46 percent success.

Follow-up Time Period

The main reason it was difficult to compare studies reviewed was that follow-up times were inconsistent. Some studies reported two month follow-up times, while others reported three, six, nine, 10, 12, and 24 month times. The average drop in abstinence between three and six months, and between six and 12 months is illustrated in Table 1. Overall, between three and six months, 6.6 percent of people began smoking. Between six and 12 months, 1.8 percent

started again. From three to 12 months, 7.7 percent began smoking.

Table 1

Comparison of Abstinence Rates

Study	N	Number Abstinent at 3 Months	Number Abstinent at 6 Months	Number Abstinent at 12 Months
Berkowitz	40	15	10	-
Stanton	75	37	34	-
Baer	137	49	37	33
Byrne	85	27	26	26
Neufeld	22	6	5	-
Pederson/79	17	10	9	-
Pederson/75	16	4	3	-
Tori	10	7	6	-
Tori	25	21	17	-

Statement of the Problem

i) Purpose of the Study

The purposes of this study were: 1) to correct for some of the methodological limitations in previous hypnosis studies; 2) to create an effective treatment program based on the most successful studies from the literature; and, 3) to determine the optimal duration of a hypnosis treatment program, between one and multiple sessions.

This study overcame some methodological weaknesses by: a) using a sample population of smokers from both on and off a university campus; b) using random assignment to treatment group; c) defining abstinence clearly at the outset of the research; and, d) not screening subjects except for age. That is, subjects needed to be at least 18 years old to participate in the study. Although there were drawback in using self reports, they were used in this study. It was impractical to use a physiological indicator of smoking status.

The factors that were likely related to high success rates in previous studies were incorporated into this study. A smoking cessation program was designed with the five components: 1) individualized hypnosis suggestions; 2) variety of type of suggestion for each person; 3) white sound; 4) the counsellors expressed expectation of success;

and, 5) hypnosis with counselling.

The treatment was then made into two groups by giving one session for group one, and three sessions for group two. This study then looked at which number of sessions was optimal.

ii) Significance of the Study

As shown by Holroyd (1980) in a literature review of hypnosis and smoking studies, hypnosis is an effective method for helping people quit smoking. The significance of this study to both counsellors and smokers is that it adds insight into the question that relates to cost and time: How many hypnosis sessions are required to produce smoking cessation? Also, this study collected qualitative information relating to smoking cessation. This information is useful for counsellors who assist clients in quitting smoking, and the clients themselves.

iii) Null Hypothesis

1. There is no difference in the effectiveness between a one- and three-session hypnosis treatment for smoking cessation.

iv) Variables

Abstinence measure - the client has not smoked any cigarattes since immediately after the last session of treatment up to 12 weeks later.

Age - clients must be 18 years of age and older.

Effectiveness - abstinence from smoking at 12 weeks after treatment.

CHAPTER TWO: METHOD

i) Subjects

Fifty-three subjects responded to a poster advertising the study (see Appendix B for the advertisement and distribution locations). Twenty-six clients were randomly assigned to the one-session approach, and 27 to the three-session approach. Three of the 26 one-session people did not show for their first appointment, and seven of the 27 three-session people did not show. This left 23 people in the one-session and 20 in the three-session approach.

Nine of the subjects in the one-session group were males and 14 were females. Nine people in the three-session group were males, and 11 were females.

Eight subjects in the three-session group came to only one of the sessions. Four were males and four were females. Five people came to two of the three sessions (three males and two females). Seven people completed all three of the three sessions (two males and five females)

Subjects ranged in age from 19 to 59 years. Subjects were unpaid volunteers, and they were not charged for the sessions.

ii) Design and Procedure

Making Appointments

A random procedure determined whether clients were placed in the one- or three-session approach (see Appendix C). Clients who were assigned to the one-session method were given a 75 minute appointment. Clients randomized to the three-session approach were given one 75 minute and two 55 minute appointments. Appendix D contains a schedule of the available appointment times. When an appointment was scheduled, the researcher answered any questions the client had about the study. The client was given an estimate of the time involved in his/her participation. He/She was informed that a consent form would be given at the first appointment. Also, the researcher asked the client to think about three points before coming to the session: 1) What are your reasons for wanting to be a non-smoker; 2) How can you celebrate being a non-smoker; and, 3) How can you prepare your environment as a non-smoker (ie. clean out ashtrays, etc). The second and third point were used to have the client develop a positive frame of mind; that is, as having already succeeded, and needing to decide how to celebrate successful smoking cessation.

Receiving Clients

When clients first arrived, they were requested to fill out a two-and-a-half page questionnaire, and sign a consent form. These are included in Appendix E and F, repectively. The questionnaire was piloted with ten people. Results of the pilot study indicated that people understood the questions, and therefore the questions were not changed. However, additional items were added to gather further information. Items supplemented were as follows: 1) How many cigarettes have you smoked in the last day (item 1. on the Pre-session Questionnaire); 2) Do other people in your household smoke (item 6.); and, 3) What is your reason for chosing hypnosis (item 20.).

There was one consent form for clients randomized to the three session approach, and another for clients randomized to the one-session (see Appendix F). Clients were not directly told that the two types of treatment were being offered. The reason was to eliminate any bias a client might have had as to which treatment should be more successful. Clients were told of the two treatment types after all follow-up had been completed, and results tabulated.

A complete detailed description of the hypnosis session(s) is presented in Appendix G. The following is a brief overview. In the initial and only session the format used was: a) a pre-hypnotic counselling discussion, b) a

trance induction, c) personalized with standardized hypnotic suggestions, d) teaching a form of self hypnosis, and e) a post-hypnotic discussion.

The pre-hypnotic stage was used to build rapport, describe hypnosis, and discuss the client's reasons for wanting to quit smoking. General counselling techniques were used, such as empathic listening, open questionning, clarification, and summarization. The client's personal reasons for wanting to quit smoking were repeated during the hypnosis. This was in accordance with the analysis of the literature review, which showed that the more successful studies used individualized suggestions.

Two trance induction techniques were used to give the client time to relax and become comfortable. The client was given a choice of four types of background sounds, to be played on a stereo. This was in accordance with the white sound techniques used by MacHovec and Man (1978) and Barabasz et al. (1986). Both of these studies showed a high success rate.

Five different hypnosis techniques were used with each client. This was to provide variety, as used in the more successful studies. The five techniques used were:

1. Imagine being in your favourite outdoor place - to associate outdoor, fresh air with being a non-smoker, and to have the client feel calm and at peace.

2. Concentrate on breathing fresh air - used to

further relax the client, and personal suggestions were interspersed at this time.

3. Chalk board exercise - the client was asked to imagine writing on a chalk board. This was to symbolically associate feelings of success, and of being able to accomplish the goal of quitting smoking.

4. Movie theatre exercise - here the client was asked to imagine watching himself or herself, in the future as a successful non-smoker. The client was then asked to imagine being in future situations as a non-smoker.

5. The red balloon technique - described by Stanton (1978), again used to symbolize success.

During the five techniques, the client was encouraged to access as many of the senses (sight, sound, smell, touch, and taste) as possible. This further provided variety.

The post-hypnotic discussion was used to answer questions, and talk about the client's reaction to the hypnosis. Also, general counselling techniques were used.

The second and third visits for the three-session clients followed a similar format. However, less time was needed since the questionnaire and consent forms had already been completed. These sessions lasted from 30 to 55 minutes.

Follow-up

Clients were contacted by phone four, eight, and 12 weeks after their last day of hypnosis. The literature review showed there was little difference in abstinence rates between three and 12 months. Therefore, a three month (12 weeks) follow-up was used. Questions asked during the follow-up are listed in Appendix H.

Data Collection and Analysis

The following forms (in Appendix E) were used to collect data:

1. Pre-Session Questionnaire - filled out by subjects.
2. First Session Data Form - filled out by the researcher.
3. Second Session Data Form - filled out by the researcher.
4. Third Session Data Form - filled out by the researcher.
5. First to Third Telephone Follow-up Forms - filled out by the researcher during a telephone follow-up.

The null hypothesis was tested using Chi Square with alpha set to .05.

Qualitative information was consistently recorded for each subject, by the experimentor, in the Session Data Forms (see Appendix E).

CHAPTER THREE: RESULTS AND DISCUSSION

Description of Population

Fifty-three subjects responded to the advertisement for the smoking cessation program. Of these subjects, 26 were randomly assigned to the one-session approach, and 27 to the three-session approach. Three of the subjects assigned to the one-session group did not show for their first appointment, and seven of the three-session subjects did not show. The number of no-shows by treatment type are not significantly different (chi square = 1.79, d. f. = 1, $p > .05$). Details of all chi square calculations are presented in Appendix H.

In total, 43 subjects participated in the study, with 18 males (42%) and 25 females (58%). The subjects ranged in age from 19 to 59 years. The average age was 31 years.

On the Pre-session Questionnaire, clients were asked to state the typical number of cigarettes they had smoked in a day. On average, clients smoked 20 cigarettes in a day. This is approximately one package per day. (Detailed frequencies for each item on the questionnaires are included in Appendix E.)

Clients had first begun smoking at an average age of 17. All but two had tried to quit smoking before. The average number of attempts to quit was two. Previous

abstinence rates ranged from a day to over a year.

This study was advertised by posters circulated throughout the city. However, approximately half of the clients found out about the study from a friend, relative, or co-worker. The remaining half directly saw the poster.

Clients were also asked on the Pre-session Questionnaire whether smoking had affected their health. Eighty-six percent of respondents said it had. By far the most common affect people reported was shortness of breath (53%). One typical comment was 'If I have to exert myself in any way, such as running to the bus, or walking up stairs, I easily feel out of breath'. Other common affects were reduced endurance (28%), and a lack of energy, or tiredness (19%). A common comment was 'I feel tired and run down all the time'. Six clients mentioned that colds quickly turned into bronchitis, and they believed this was related to smoking. One client stated that she had twice suffered from a collapsed lung. She felt this was directly due to smoking.

Related to subjects' health affects was their reason for wanting to quit. The same number (86%) that felt smoking had affected their health wanted to quit to be more healthy. This was the most common response to the question 'What are your reasons for wanting to quit smoking?' The next most common response was to save money, with 74 percent selecting this alternative. Considering the average amount

smoked was a package a day, subjects could hope to save about 120 dollars a month by stopping smoking. The next three most frequent responses all related to heath, such as 'to have more energy', 'to breathe easier', and 'to be more active in exercise'. In summary, then, the two most common reasons for wanting to quit smoking were for increased health and to save money.

When subjects were asked what benefits they got from smoking, they most frequently responded 'to help me relax' (70%), 'to help me when I'm nervous' (77%), and 'something to do with my hands' (74%). When asked what might prevent them from quitting, 58 percent stated 'stress'. It seems likely then, that smoking is used as a stress management tool.

Another obstacle to quitting smoking was the fear of weight gain. Women feared gaining weight far more than did men, with 72 percent of the women, and only 11 percent of the men stating this concern. Typically women who had tried to quit smoking before had gained weight. One client stated that she had gained 20 pounds on her last attempt to quit. Another client stated a common concern, 'I sometimes feel it's a choice between smoking or gaining weight'.

According to the literature review (see Appendix A), this concern about weight is very realistic. Six of seven studies showed weight gain for many subjects is associated with smoking cessation (Baer et al., 1976; Barabasz et al.,

1986; Cornwell et al., 1981; Javel, 1980; Sanders, 1974; Sheehan & Surman, 1982). Subjects who quit in these studies gained averages of seven to 11 pounds. Sheehan and Surman found that 75 percent of subjects who quit smoking gained weight. Barabasz et al. found that females who stopped smoking gained more weight than males who stopped.

The results of this study show that weight gain is a concern that may keep women from quitting smoking. Also, it is likely that these women would gain weight, based on previous studies.

When subjects were asked how much they wanted to quit smoking, most (74%) said 'a lot'. Twenty-one percent stated 'somewhat'. This item on the questionnaire was used to get an indicator of the subject's motivation to quit smoking. Later analysis will relate this item to success in quitting.

Another item denoting motivation to quit was a subject's reasons for chosing hypnosis. Clients were asked on the Pre-session Questionnaire to state reasons for chosing hypnosis for quitting smoking. One third of respondents said they chose hypnosis because they had heard or believed it was a helpful method that indeed works. A typical comment for this group was 'a friend of mine tried hypnosis and he's quit for a long time now'. Approximately another third chose hypnosis because 'it's free', or 'I'm curious to give it a try'. Believing hypnosis will work, or trying it because it is there are quite different reasons.

These will later be analysed and compared to success in the program.

During the session, the background music selected most often (by 56% of subjects) was the wave tape. I began the experiment by using a microphone overlaying my voice on the music. Four of the first five clients requested that the microphone not be used. Since most of the first people didn't want the microphone, I decided to discontinue its use for the remaining 38 people.

After the hypnosis, subjects were asked for their feelings and impressions of the hypnosis. A typical comment was 'I'm surprised at how relaxed I feel'. Almost 70 percent of people commented on feeling very relaxed and calm. One subject mentioned that she felt as if she had just had an eight hour sleep. Other session information was consistently collected, and is listed in Appendix E.

Data Relating to the Hypothesis

The null hypothesis of this study was: There is no difference in the effectiveness between a one- and three-session hypnosis treatment for smoking cessation. My sense was that the three-session approach would be more effective, even though the literature review did not show a significant difference. The study by Cornwell et al. (1981) was suggestive that multiple sessions were more

effective, yet significance was not found possibly due to a small sample size. In the Cornwell et al. study, three of 10 of the one-session subjects were abstinent at two months, as opposed to six of 10 of the multiple-session subjects. With a larger sample I believed the multiple-session approach would be shown to be more effective than the one-session approach.

With the original numbers of people assigned to each group, it seemed it would be simple to test the hypothesis. However, I had not accounted for a large number of people dropping out of the study. Ten of the original 53 subjects did not show for their first appointment. This left 23 subjects in the one-session treatment, and 20 in the three-session treatment. As the study progressed, three-session subjects began not showing for additional sessions. By the end of the study, only seven people had attended the full three sessions. Five attended two sessions, and eight of the 20 attended only one. This equates to a 74 percent dropout rate for people originally signed up for the three-session method.

Since there was such a high dropout rate, I re-analyzed the literature to discover if other researchers had encountered the same problem. The analysis showed that 10 of the 24 studies reported dropouts (Barkley et al., 1977; Cornwell et al., 1981; Jeffrey et al., 1985; Jeffrey and Jeffrey, 1988; Lambe et al., 1986; Pederson et al., 1979;

Rabkin et al., 1984; Schubert, 1988; Shewchuk et al., 1977; Watkins, 1976). Dropouts in these studies occured when subjects did not come to the first scheduled appointment, or did not complete treatment. Barkley et al. reported that 21 percent of the subjects missed at least one session. Cornwell et al. reported only one subject as having dropped out. Jeffrey et al. reported a 37 percent dropout rate. Jeffrey and Jeffrey said 41 percent dropped out.

Lambe et al. (1986) stated that subjects in their study completed at least one of the two sessions. The researchers did not, however, state how many subjects completed the two sessions. Pederson et al. (1979) reported a 25 percent rate, Rabkin et al. (1984) 20 percent, Schubert (1988) 24 percent, Shewchuk et al. (1977) 10 percent, and Watkins (1976) 25 percent.

Few of the studies listed reasons for dropouts. Also, none of the studies showed as high a dropout rate as this one. Some possible explanations for the high dropout rate in this study are: 1) subjects were not charged a monetary deposit as in other studies; 2) subjects were not screened for motivation to quit nor committment to the study, as in other studies; and, 3) this study was located at the outskirts of the city, with poor bus access. The literature review showed that nine of the 25 studies were explicit as to whether subjects paid for the sessions or not (Baer et al., 1986; Barkley et al., 1977; Cornwell et al., 1981;

Horwitz et al., 1985; Javel, 1980; Jeffrey and Jeffrey, 1988; MacHovec and Man, 1978; Neufeld and Lynn, 1988; Perry and Mullen, 1975). Six of the studies charged a deposit for the sessions. Likely some of the remaining 16 studies charged a fee for sessions, and this may account for lower dropout rates.

Also, as reported earlier, eight studies used screening to select clients. For example, Watkins (1976) obtained the client's committment to the study before beginning treatment. She does not describe how this committment was obtained. It is likely that the lack of screening and deposit are related to the high dropout rate in this study.

Originally in this research abstinence was defined as the client not smoking at all since the last session of treatment, up to the time of the follow-up call. During the twelve week follow-up time, two subjects had smoked only either one or two cigarettes, respectively. Both clients stated they had had a temporary relapse, and were currently non-smokers. One woman had a cigarette at a New Year's party. The other woman had a "drag" of a cigarette while studying. She said it made her sick so she quickly put it out.

With this information in mind, it seemed unrealistic to consider these women as "smokers", so I decided to include them in the abstinent group.

Four of the subjects assigned to the three-session

group, then, were abstinent at 12 weeks. One of the one-session subjects was abstinent. Taking into account people assigned to the one- and three-session treatments, regardless of the number of sessions they attended, this difference is not statistically significant (chi square = 2.55, d. f. = 1, $p > .05$).

However, since many subjects did not actually attend three sessions, it is misleading to state that the three- and one-session treatments were not different in effectiveness. When subjects are grouped by those who attended one session, and those who attended two or three, the difference in abstinence is significant. Thirty-one clients had one session, and 12 had two or three. One of the 31 was abstinent at follow-up, as compared to four of the 12. This difference is significant (chi square = 7.63, d. f. = 1, $p < .05$). This result supports the hypothesis that the three-session treatment is more effective than the one-session treatment. It can be argued, though, that since there were so many dropouts in the three-session approach that it is not a viable method. However, I believe there would have been far fewer dropouts if clients had a motivational incentive to continue with the program, such as having given a deposit.

The success rate for the one-session approach was essentially zero. This does not match the literature, which showed an abstinence rate of about 32 percent. Again the

literature was reanalyzed to explain this result. The major difference discovered was the emphasis on self-hypnosis. Three studies specified that self-hypnosis was taught and encouraged (Baer et al., 1986; Javel, 1980; Rabkin et al., 1984). Baer et al. stressed the self-hypnosis be done at least 10 times per day. Javel suggested clients do the self-hypnosis at least three times per day, and Rabkin et al. instructed subjects to do the self-work every hour for a week.

This study taught an instant form of self hypnosis, but it was not emphasized. Clients were told they could use it if they found it useful. Almost 70 percent only used the self-hypnosis between zero and three times a day. Perhaps if more emphasis had been placed on the self-hypnosis, the abstinence rate for the one-session group would have been increased.

Also, since a common benefit of smoking was to help with relaxation, the self-hypnosis could be used to aid in this area. Many clients stated they began smoking due to stress.

Post-session Questionnaire Data

At the first follow-up call, four weeks after the last session, five of the 43 subjects were not smoking (12%). If subjects indicated that they had resumed (or never quit)

smoking at this call, they were not contacted for subsequent follow-up. One subject refused to answer follow-up questions, although he indicated that he was smoking.

As mentioned, part-way through the experiment it became apparent that subjects were not continuing with the three sessions. Follow-up had already been done with eight subjects at this time. The follow-up form was then changed to collect additional information that might give insight into the reasons for subjects discontinuing. The original follow-up data from the eight subjects was transfered to the new form, resulting in some questions having no answer.

Subjects were asked at the follow-up how easy it was to not smoke during the time between their last session and their first cigarette. Forty-one percent said it was 'very easy' or 'somewhat easy' to not smoke. One client said he felt as if he had never been a smoker during the eight days that he was abstinent.

Almost all subjects (86%) said hypnosis had helped them in trying to quit. One woman stated that although she had begun smoking, she felt hypnosis was more helpful than anything else she had ever tried. Another women made a similar comment. She said that even though she was still a smoker, she had come a long way on the road to quitting. She said she now smokes a much lighter brand of cigarettes. Another subject stated he head used the hypnosis techniques learned in the sessions to help himself with pain control.

He said he needed far less than usual medication for dental work. A further unplanned benefit of the hypnosis was in helping one man with his marriage. This man stated that during the session he used the hypnosis imagery to feel more positive about his marriage.

The most common reason subjects stated for beginning smoking was due to stress. This result is consistent with the Pre-session Questionnaire item that asks 'What might keep you from quitting smoking'? Here many (58%) stated 'stress'.

When smokers were asked how important it is to still quit, 25 (66%) said it was either very or somewhat important. Seventeen of these people anticipated trying either more hypnosis, or another type of smoking cessation program. Sixty-five percent of all one-session attendees felt they would have liked more hypnosis sessions.

Cross-tabulation of different variables from the Pre-session, Session, and Follow-up Questionnaires was done in order to find answers to the following questions: 1) Were there any differences between the smokers and the non-smokers that may have related to the ability to quit smoking?; 2) Were there differences between men and women; and, 3) Were there further reasons that people continued with the multiple sessions, while others dropped out?

Did smokers smoke more cigarettes in a day before the treatment than subjects who quit? Results showed that none

of the quitters had smoked more than a package a day before the first hypnosis session. Seven of the smokers had more than a package, but the difference was not significant (chi square = 1.1, d. f. = 1, $p > .2$).

Were the quitters more motivated to quit than the non-quitters? On the Pre-session Questionnaire, subjects were asked 'how much do you want to quit smoking?'. This item was intended to determine level of motivation to quit. All of the non-smokers stated they wanted to quit smoking 'a lot', while 29 of the 38 smokers wanted to quit 'a lot'. This difference was not significant (chi square = 1.5, d. f. = 1, $p > .2$).

Also related to motivation was the subject's reason for chosing hypnosis. Some people stated they chose hypnosis either because it was free or to 'give it a try'. These people may not have been as highly motivated to quit as people who came for other reasons. A comparison of smokers and non-smokers showed four of the five non-smokers chose hypnosis because they believed it would work, with only 10 of the 38 smokers selecting this reason. This difference is significant (chi square = 5.8, d. f. = 1, $p < .05$). Perhaps the belief that hypnosis will work is important for the hypnosis to be effective.

Interesting to note is that only one of the non-smokers chose wave music as opposed to 23 of the smokers. This difference is significant (chi square = 2.94, d. f. = 1, p

< .1). Two of the non-smokers chose the thunderstorm, and two chose the trance tones. It's difficult to imagine how choice of music could relate to quitting. Perhaps it is indicative of another untapped variable.

Another question was whether there were significant differences between men and women, and their ability to quit smoking. Many cross-tabulations were performed and no differences were found. The only item where gender showed a significant difference was in the previously discussed issue on weight control. Women were far more likly to believe they would start smoking due to weight gain. Over a period of three weeks, during the treatment, one woman gained 10 pounds. Understandably, she felt very disheartened. Another woman, a non-smoker, who feared weight gain actually lost weight. The day she quit smoking she also joined a health spa. A third woman, who was not able to quit smoking, was able to lose weight. She said she used the hypnosis techniques that she learned in the program to help her lose weight.

As discussed, an alarming number of subjects dropped out of the three-session treatment. Of interest was to look for differences between people who dropped out, and those who continued with two or three sessions. Subjects who attended two or three sessions were placed into one category since there were a small number of subjects in each of these two groups. Also, two of the five people who

attended two sessions stated they did not return because they felt they did not need any more sessions. Both of these people were abstinent from smoking at three months. It seemed unreasonable to then count these people as dropouts in the same category as people who discontinued for other reasons.

Both the dropouts and the multi-session attenders had a similar motivation to quit, as stated in the Pre-session Questionnaire. There was no significant difference between the two groups (chi square = .65, d. f. = 1, $p > .2$). However, on the Follow-up Questionnaire, subjects were asked to look back on their motivation when they first signed up for the study. Few (two of seven) of the dropouts felt they had wanted to quit 'a lot', whereas most (seven of 11) of the continuers felt they had wanted to quit 'a lot'. This difference is significant (chi square = 2.10, d. f. = 1, $p < .2$). Perhaps the dropouts initially wanted to quit, but then realized it was not that important. This result points to motivation in wanting to quit as being a factor related to continuing with the program (and subsequently being able to quit).

Also related to motivation, was reason for chosing hypnosis as a method for quitting smoking. The dropouts were more likely to have chosen hypnosis out of curiousity than the continuers. This difference was significant (chi square = 3.33, d. f. = 1, $p < .1$). This result further

suggests that committment to the program was not as high for the quitters.

Another factor that may have contributed to dropouts was the location of the program. The sessions were offered in an office near the outskirts of the city. Generally, the dropouts rated this location as less convenient than the continuers (chi square = 4.8, d. f. = 3, $p < .2$). One of the most common reasons dropouts gave for not continuing with the program was 'I was too busy'. Perhaps the extra travel time on top of a busy schedule was enough to cause these people to discontinue. Thus, motivation, and factors that may affect motivation such as location, are related to people continuing with the program.

CHAPTER FOUR: CONCLUSIONS AND RECOMMENDATIONS

Limitations of the Study

Following are limitations and weaknesses of this study:

1. There was no control group. Since there was no control group in this study, the question of how many people would have quit smoking without treatment cannot be answered. It is important to know the answer, since it is possible that hypnosis actually inhibits people from quitting smoking. In this study the one-session treatment of hypnosis was virtually ineffective. Did the one session inhibit smoking cessation, or would the rates be similar to a control group? According to a meta-analysis of the literature (see Appendix A), hypnosis was shown to be far more effective than a control group. Not known, though, is the comparison of a control group in this study.

2. Self reports of abstinence were used. Clients were asked if they had smoked since their last hypnosis treatment. These self reports were used to state the number of people abstinent at three months. It is possible when self reports are used that some subjects report not smoking because they are embarrassed about beginning smoking, or want to please the researcher. Based on my impression, it seems unlikly that this occured. It is a possibility though, that would reduce the success rate.

3. There may be variables that were unique to the population in this study. Thirty-seven percent of the subjects replied to the study due to a poster at a universtiy. Perhaps the same results may not be achieved by other researchers, unless a similar population is used.

4. This study was not double blind and therefore it is subject to experimentor bias. Clients were not informed that there were two treatment groups. As the researcher, though, I was aware of the treatment group for each client. Both treatments were designed from the most successful studies in the literature. Every attempt was made to give both groups the best possible treatment in the allotted time. However, it is possible that unknown factors were operating to bias the study. I tended towards believing the three sessions would work best. As it turned out, that approach was more effective, except for the unusual dropout rate. In the case of dropouts, all the bias I may have had did not get the majority of subjects to continue with the program.

5. Subject bias. Although I did not tell subjects of the two treatments, they may have learned of it from others in the program. Approximately 50 percent of the people heard of the program through word of mouth. It is very likely many knew of the two treatments. This may have caused the results to turn out as they did.

6. Location of the program. Half of the subjects

stated in the Follow-up Questionnaire that the location of the program was inconvenient. I believe that there would have been fewer dropouts if the location was more central.

Conclusions

This study overcame some methodological limitations from the literature review by: 1) using random assignment to treatment groups; 2) defining abstinence; 3) using a sample population of smokers from both on and off campus; and, 4) not screening subjects except for age. This study did not use a control group. Also, subjects' self reports of smoking status were used.

The treatment programs in this study used a variety of hypnosis suggestions for each client, in addition to individualized suggestions. Eighty-one percent of subjects stated that the hypnosis was either very or somewhat helpful. Also, 65 percent of subjects explicitly stated that the hypnosis was relaxing and enjoyable. These results suggest that in general clients enjoyed the content of the session(s).

In addition to many subjects finding the hypnosis relaxing, three people mentioned other positive side effects. These included: 1) using hypnosis for pain control; 2) using hypnosis to feel more positive about marriage; and, 3) using hypnosis for weight control. These

results suggest that hypnosis can be used in other areas besides for smoking cessation.

Based on the quantitative results of this study, the following conclusions appear warranted: 1) the one-session hypnosis approach was not effective; and, 2) the three-session method showed promising results with a 30 percent effectiveness rate at three months. Sixty-five percent of the one-session subjects stated that they would have liked additional sessions. Clients stated they would have wanted between one and ten more sessions.

There was a high dropout rate in the three-session group. Motivation to quit smoking and location of the program were related to people not continuing.

This study showed that people who were not smoking at one month were also not smoking at two and three months. This result suggests that if a smoker is abstinent at one month, he or she is likely to be abstinent at three months.

Weight control was a common concern for women. Seventy-two percent of women stated weight gain as an obstacle to quitting smoking. Only two of the 18 men had this same concern.

Recommendations

The results of this study show that the three-session approach of hypnosis was significantly more effective than

the one-session approach, when dropouts were not considered. Results showed that reasons for dropping out were related to motivation to quit, and location of the program. To reduce dropouts, then, I recommend a central location, and the use of a monetary deposit for the program. As shown in the literature review, programs that used a financial deposit had far fewer dropouts than this study.

Since this study showed that motivation to quit was related to success in quitting, and continuation with the program, future studies need to focus on developing motivational incentives. The financial requirement may be a motivation in itself. Also, other techniques could be explored.

This study showed that the one-session approach was not effective. It is even possible that this approach inhibited clients from quitting smoking. I recommend the use of an alternate treatment control group in order to determine the effect of hypnosis. For example, a counselling program for smoking cessation could be used as a control group for the hypnosis treatment.

Other one-session studies in the literature that showed a better success rate placed a higher emphasis on self-hypnosis. Research is needed to determine the effect of emphasis on self-hypnosis. According to this research, though, I do not recommend the use of this one-session approach for smoking cessation.

Many one-session subjects stated that they would have preferred more sessions, ranging from one to about ten more sessions. Further research is recommended to determine the effect of allowing the client to set the number of sessions required. However, a caution here is that the one session approach from this study was not effective, and thus clients should be discouraged from chosing only one session.

Many women in the study stated their concern about gaining weight when quitting smoking. The literature showed that quitters do gain more weight, and women gain more than men (see Appendix A). One woman in the study felt she needed to chose between gaining weight and smoking. Perhaps others felt similar. I recommend that future studies incorporate the issue of weight control for women, so they will feel more comfortable with chosing to quit smoking. One method of incorporating weight control into the smoking cessation program is to combine hypnosis with another treatment discipline, such as nutrition counselling.

Since many subjects stated that they started smoking due to stress, further studies need to incorporate stress management into the treatment program. Generally clients in this study found the hypnosis relaxing. Placing more emphasis on self hypnosis may assist clients with relaxation. Also, other relaxation techniques need to be explored in order to assist people with quitting smoking.

A final recommendation for further hypnosis and smoking cessation studies is to incorporate a pilot study into the project. Had a pilot study been used in this experiment, I believe the dropout problem would have been detected. A financial deposit could then have been employed for the full study.

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APPENDIX A: LITERATURE REVIEW

Smoking has long been known to be dangerous to a person's health. However, knowing that does not make it easy for someone to quit. Many different ways of helping smokers quit have been employed. Hypnosis is one of these methods. In this review, hypnosis as a treatment option for smoking cessation will be examined. (Studies reviewed are summarized in Table 2.) We will look at the different types of hypnosis treatments, variables related to treatment success, other outcomes of treatment besides abstinence, hypnosis compared to no treatment, and finally, methodological limitations in hypnosis research.

Types of Hypnosis Treatments

Hypnosis is used for treatment in smoking cessation programs. Different types of hypnosis programs include: a) the individual one-session approach; b) the individual one-session approach with additional optional sessions; c) the individual multi-session approach; d) the group approach; and e) hypnosis combined with another type of treatment.

Table 2
SUMMARY OF STUDIES USING HYPNOSIS FOR SMOKING CESSATION

AUTHOR & YEAR	SAMPLE	ABSTINENCE MEASURE	TYPE OF TREATMENT	% ABSTINENCE AT FOLLOW-UP	OTHER FINDINGS
Baer et al (1986)	172 clients Boston, Massachusetts	Subjects available for follow-up who have not smoked since treatment	1 interview session and 1 individual hypnosis session	17% at 24 months	Hypnotizability related to outcome; a subgroup reduced level of smoking; 71% who quit gained weight; experience of clinician n.s.
Barabasz et al (1986)	307 clients aged 16-65; 153 males, 154 females Large city teaching hospital	Subjects available for follow-up who have not smoked since treatment	1 65 to 100-minute individual hypnosis session (experienced clinician) 1 65 to 100-minute individual hypnosis session (intern clinician) 1 90-minute group hypnosis session (experienced clinician) 1 to 3 60 to 90-minute individual hypnosis sessions (experienced clinician) 1 to 3 60 to 90-minute REST sessions with hypnosis (experienced clinician) 1 psychological evaluation session (experienced clinician) 1 50-minute individual hypnosis session (intern clinician)	28% at 17 months 13% at 9.3 months 36% at 10.1 months 30% at 17.0 months 47% at 19.4 months 6% at 13 months 4% at 4 months	Hypnotizability related to outcome; depression was higher for Ss who did not achieve abstinence; Ss who quit gained weight; experience of clinician significant
Barkley et al (1977)	34 Ss; 21 males, 15 females Bowling Green, Ohio	Subjects available for follow-up who have not smoked since treatment	7 60-minute group hypnosis sessions 7 60-minute group rapid smoking sessions 7 60-minute group attention placebo sessions	25% at 9 months 41.7% at 9 months 0% at 9 months	Hypnosis and rapid smoking not significantly different in outcome
Berkowitz et al (1979)	40 Ss aged 22-63; 20 males, 20 females Albany, New York	All subjects who have not smoked since treatment	1 individual hypnosis session	25% at 6 months	
Byrne & Whyte (1987)	274 Ss; 133 males, 141 females	Subjects available for follow-up who have not smoked since treatment	4 individual hypnosis sessions Other programs Unaided group	31% at 12 months for all subjects	Those who continued to smoke reduced amount smoked by 35%; methods n.s. different in outcome

(Continued)

Table 2 (Continued)
SUMMARY OF STUDIES USING HYPNOSIS FOR SMOKING CESSATION

AUTHOR & YEAR	SAMPLE	ABSTINENCE MEASURE	TYPE OF TREATMENT	% ABSTINENCE AT FOLLOW-UP	OTHER FINDINGS
Cornwell et al (1981)	30 Ss	Subjects who have not smoked since treatment	1 individual hypnosis session 4 individual hypnosis sessions Waiting list controls	30% at 2 months 60% at 2 months 0% at 2 months	One and four sessions n.s. different; hypnotizability not related to success; average weight gain of 8.5 lb. for those abstinent at one month
Horwitz et al (1985)	798 Ss	Subjects with usable pre- and follow-up questionnaires (219; 70 males, 149 females) who have not smoked since treatment	1 90-minute group hypnosis session	26% at 12 months	Males more successful than females; longest previous quit time related to success; perceived spousal support related to success
Javel (1980)	30 Ss aged 28-72 Santa Cruz, California	Ss available for follow-up (30) not smoking at 3 months	1 60-minute individual hypnosis session 1 60-minute suggestions alone session No treatment	60% at 3 months 40% at 3 months 0% at 3 months	Formal hypnotic induction n.s. different from suggestions alone; smoking related illness and a mother who smoked related to failure; weight gain for successes and failures
Jeffrey et al (1985)	35 Ss aged 21-67; 24 males, 11 females Outpatient psychology clinic	Subjects available for follow-up who have not smoked since treatment	4 60-minute group hypnosis sessions (prior to first session Ss had to be abstinent for 48 hours) Control group	50% at 3 months 0% at 3 months	
Jeffrey & Jeffrey (1988)	120 Ss	Subjects available for follow-up who have not smoked since treatment	1 90-minute orientation session, 4 60-minute group hypnosis sessions (abstinent for 48 hours before hypnosis sessions) 1 90-minute orientation session, 4 60-minute group hypnosis sessions	70.6% at 3 months 54.1% at 3 months	Groups n.s. different, dropout rates identical in both groups (40.8%)
Lambe et al (1986)	180 Ss Rochester, New York	Not known	2 40-minute individual hypnosis sessions Control group	22% at 12 months 20% at 12 months	College education related to success; control and hypnosis n.s. different; depth of trance n.s.

(Continued)

Table 2 (Continued)
SUMMARY OF STUDIES USING HYPNOSIS FOR SMOKING CESSATION

AUTHOR & YEAR	SAMPLE	ABSTINENCE MEASURE	TYPE OF TREATMENT	% ABSTINENCE AT FOLLOW-UP	OTHER FINDINGS
MacHovec & Man (1978)	58 Ss aged 22-70 Winnipeg, Manitoba	Abstinent since treatment	Placebo site acupuncture Correct site acupuncture 3 30-minute individual hypnosis sessions 3 30-minute group hypnosis sessions Untreated controls	0% at 6 months 25% at 6 months 50% at 6 months 40% at 6 months 0% at 6 months	Reduction after treatment of cigarettes smoked per day also recorded
Neufeld & Lynn (1988)	27 Ss aged 22-66; 14 males, 13 females Lancaster and Columbus, Ohio	Ss available for follow-up who have not smoked since treatment	1 120-minute group hypnosis session Self-hypnosis tape given to Ss at end of session	22.73% at 6 months	
Pederson et al (1979)	65 Ss; 28 males, 37 females London, Ontario	Abstainers defined as not having smoked for 3 months in succession; results include dropouts	1 group hypnosis plus 8 group counselling sessions 1 group videotaped hypnosis and 8 group counselling sessions 1 group relaxation and 8 group counselling sessions 9 group counselling sessions	53% at 6 months 18.75% at 6 months 12.5% at 6 months 18.75% at 6 months	Dropout rates for live hypnosis and counselling were 25% as opposed to 50% for the other 3 groups
Pederson et al (1975)	98 Ss London, Ontario	Abstainers defined as not having smoked for 3 months in succession	1 90-minute group hypnosis session plus 12 group counselling sessions 12 group counselling sessions 1 group hypnosis session Waiting list controls	50% at 10 months 0% at 10 months 8% at 10 months 2% at 10 months	
Perry & Mullen (1975)	38 Ss aged 19-47; 24 males, 14 females Montreal, Quebec	Subjects who completed the 2 sessions who have not smoked since treatment	1 individual hypnotic susceptibility session plus 1 individual hypnosis session	18.42% at 3 months	26% of subjects reduced amount smoked by 50%; hypnotizability not related to success; it was related to reduced smoking, however.
Powell (1980)	23 Ss Cambridge, Massachusetts	Abstinent since treatment; all subjects contacted	7 10 to 15-minute individual hypnosis sessions	30.4% at 4 months	Flooding and hypnosis technique used for 7 Ss who had begun smoking occasionally since treatment

(Continued)

Table 2 (Continued)
SUMMARY OF STUDIES USING HYPNOSIS FOR SMOKING CESSATION

AUTHOR & YEAR	SAMPLE	ABSTINENCE MEASURE	TYPE OF TREATMENT	% ABSTINENCE AT FOLLOW-UP	OTHER FINDINGS
Rabkin et al (1984)	168 Ss aged 20-65 Vancouver, British Columbia	Ss available for follow-up; abstinence definition not known	1 30-minute individual hypnosis session 5 45 to 90-minute group behaviour modification sessions Group health education program Waiting list controls	31% at 6 months 24% at 6 months 36% at 6 months Given treatment at 3 weeks	n.s. differences between the three treatments; each treatment group also reduced amount smoked
Sanders (1977)	19 Ss aged 25-60; 9 males, 10 females University of N. Carolina, Department of Psychology	Data available for all Ss; abstinence defined as not smoked since treatment	4 group hypnosis sessions	68% at 10 months	
Schubert (1988)	87 Ss aged 17-56; 41 males, 46 females Long Beach, California	Subjects who completed treatment	4 50-minute individual hypnosis sessions 4 50-minute individual systematic relaxation sessions Waiting list controls	55% at 4 months 58% at 4 months 7% at 4 months	n.s. difference between the two treatment groups; treatments related to reduction in smoking, more hypnotizable subjects reduced smoking, but hypnotizability not related to cessation
Sheehan & Surman (1982)	100 Ss in an outpatient clinic in a large city teaching hospital Boston, Massachusetts	Subjects available for follow-up who had not smoked since treatment	1 to 3 individual hypnosis sessions	21% at 15 months	Relapse rates plateau at 4th month; 60% of those who were smoking at follow-up had reduced by 40%; 7% had increased; 50% of those treated gained weight; subject perceived depth of trance n.s.
Shewchuk et al (1977)	571 Ss American Health Foundation	Not known	1 to 3 individual hypnosis sessions 1 to 3 individual counselling sessions 5 group counselling sessions Nonattender controls	17% at 12 months 19% at 12 months 21% at 12 months 8% at 12 months	Younger, more educated Ss chose hypnosis; at 12 months, only group therapy remained superior to the nonattender success rates

(Continued)

TABLE 2 (Continued)
SUMMARY OF STUDIES USING HYPNOSIS FOR SMOKING CESSATION

AUTHOR & YEAR	SAMPLE	ABSTINENCE MEASURE	TYPE OF TREATMENT	% ABSTINENCE AT FOLLOW-UP	OTHER FINDINGS
Stanton (1978)	75 Ss Tasmania, Australia	Not known	1 individual hypnosis session 2 to 5 individual hypnosis sessions	45% at 6 months —	If a S was unsuccessful in stopping smoking after 1 session, his/her chances were not greatly increased by having additional sessions
Tori (1978)	35 Ss aged 25-58; 14 males, 21 females	Follow-up data available for all Ss; abstinence definition not known	5 individual satiation sessions, followed by 5 individual hypnosis and counselling sessions 5 individual rapid smoking sessions, followed by 5 individual hypnosis and counselling sessions	68% at 6 months 60% at 6 months	
Watkins (1976)	48 college students at University of Montana, Missoula, Montana	Ss who finished the program and who were available for follow-up; abstinence defined as not smoked since end of treatment	5 individual hypnosis sessions	61% were not smoking at 6 months	

The Individual One-session Approach

The individual one-session hypnosis approach offers the client one private visit. The session usually consists of a) a pre-hypnotic interview; b) a trance induction; c) specific suggestions while in trance; and d) a concluding discussion after the hypnosis. The pre-hypnotic interview is used to determine the client's reasons for wanting to quit smoking. Also, the clinician describes hypnosis and answers questions at this time. Sometimes during the concluding discussion the client is taught self hypnosis. He or she is then instructed to use this technique if a craving for a cigarette occurs. The theory behind the one-session approach is that the client will be able to stop smoking after the single visit. Seven of the 25 studies reviewed used this method.

Forty volunteer patients in a private psychiatric clinic were given one visit in the study by Berkowitz, Ross-Townsend and Kohberger (1979). Volunteers were referred by word of mouth, or by their physician. The method used was designed by Spiegel (as cited in Berkowitz et al.). It consisted of taking a brief clinical and smoking history, testing the client's hypnotizability, and then inducing a trance state. During the trance, the clinician gave the client standardized anti-smoking suggestions. Three basic points were addressed: 1) smoking

is a poison to the body, 2) you need your body to live, and 3) you owe your body respect and protection. After the induction, the client was taught self-hypnosis, and instructed to use it 10 times per day. Results of the study showed a 25 percent success rate at six months. These results may not be generalizable, since volunteers were recruited by word of mouth through a psychiatric clinic.

Stanton (1978) treated 75 patients using the one-session method. In the first part of the session he used a pre-hypnotic interview. He emphasized the power of the mind over the body, and his expectation that the hypnosis would be successful. The patient was then hypnotized. While the patient was in a trance state, Stanton gave a series of ego-enhancing suggestions, interwoven with anti-smoking statements. The ego-enhancing suggestions included telling the patient that he or she would feel "physically healthier, more relaxed, more calm and unworried, more self-confident, self-reliant, independent, and be able to think more optimistically and positively . . ." (p. 25). After the suggestions had been completed, Stanton then used an adaption of the red balloon technique. The client imagines throwing away cigarettes and the desire for them into a basket. The basket is attached to a huge red balloon. The ballon floats up into the sky, and the client is left free of the desire to smoke. As a final step in the trance, Stanton had the

client imagine himself or herself in a situation in the future where previously he or she would have smoked. The client imagined being a non-smoker in these situations. Forty-five percent of the patients were not smoking after six months. This relatively high rate of success may be due to a combination of factors. First, Stanton told clients that he expected the session to be successful. Second, he used a variety of techniques during the hypnosis, such as auditory, visual, and kinesthetic exercises. Finally, Stanton used individualized suggestions, which may contribute to a higher success rate.

Ten outpatients and staff of a California hospital were given the one-session treatment by Javel (1975). He followed Spiegel's (as cited in Javel) approach, adding two additional steps. When in trance, patients were asked to recall their first experience with smoking, and its benefit at that time. Javel then suggested to the patient that he or she could now experience this benefit as a former smoker. Also, Stanton's (1978) ego-enhancing suggestions and red balloon visualization were given. At three months follow-up, 60 percent of the patients were not smoking. Again, the high results may be due to using a variety of techniques during the hypnosis. However, also note that the sample size is small.

Rabkin, Boyko, Shane, and Kaufert (1984) randomized subjects to one of three smoking cessation treatments. One

of these was the individual single hypnosis session. Volunteers were recruited from radio and newspapers. The authors used Spiegel's (as cited in Rabkin et al.) single treatment technique. To determine whether subjects had quit or reduced smoking, both self reports and blood measures were collected. At six months, 31 percent of the subjects available for follow-up were abstinent. This study was generally methodologically sound, in that subjects were randomized to treatment, a general population of volunteers were recruited, and blood measures of smoking consumption were used in addition to self reports. Lower results may be due to less variety of techniques employed during hypnosis, and standardized as opposed to individualized suggestions.

Barabasz, Baer, Sheehan, and Barabasz (1986) studied six different smoking cessation treatments. They varied clinician's experience level, contact time, and procedural thoroughness. Three of the authors' treatments used the individual one-session approach. Group one was given one individual hypnosis sesssion by an experienced clinician. The clinician used a five phase approach to the session. The first phase was considered a rapport builder, where a detailed discussion of hypnosis was given. The second phase consisted of an imagination exercise which served as an initiation to the third phase which tested hypnotizability. The third phase tested the subject's hypnotizability using the Stanford Hypnotic Clinical Scale (SHCS). The fourth

phase consisted of a hypnotic induction and smoking cessation instructions designed by H. Spiegel and D. Spiegel (as cited in Barabasz et al.). The instructions for smoking cessation were given by a tape recording. The fifth phase consisted of teaching the subject self hypnosis. Results showed 28 percent abstinence at 17 months.

The second treatment group in this study received the same technique as outlined above, except that it was delivered by an intern clinician. Thirteen percent of subjects were abstinent at 9.3 months.

The third group was given a single session by an intern clinician. It was modelled after an existing program in the clinic, reported by Sheehan and Surman (1982). The method consisted of a trance induction, emphasizing deep muscle relaxation. The subject was then given direct suggestions to stop smoking. Also, smoking behaviour was "paired with noxious imagery such as the exhaust fumes of an automobile" (p. 174). Results for this group were four percent absintence at four months follow-up.

The subjects in the Barabasz et al. (1986) study were not randomized to treatment. Subjects were permitted to chose the type of therapy they wanted. Therefore, results may not be generalizable. Also, this study looked at many different treatments, thus making it difficult to analyse the results. For example, the five phase one-session was given by an intern and experienced clinician. However, the

original one-session was only given by an intern. Also, many of the treatment groups were reported as being too small for any valid comparison.

Cornwell, Burrows, and McMurray (1981) treated 10 volunteers using an altered form of Spiegel's one session method. (Individualized suggestions were added to Spiegel's standardized suggestions.) Subjects were seen for an initial interview where a history of their smoking, and reasons for wanting to quit were obtained. Also, the Stanford Hypnotic Clinical Scale was administered to each subject. In addition, a sample of blood was taken to determine the level of nicotine. The subjects then returned for a single session treatment. They were told that they were expected to quit after the session. In the first part of the session, a brief discussion was carried out to talk about the difficult times in the following week the subject might experience. Suggestions for making these times easier were discussed. Trance was then induced using the eye fixation and progressive relaxation techniques. The modified Spiegel method was then carried out. At two months, 30 percent of the subjects were abstinent. It is difficult to call this a one session method, as subjects actually attended two sessions, one for the initial interview. However, since hypnosis treatment was only given in the second session, this study is listed under the one visit category.

Baer, Carey, and Meminger (1986) gave 172 patients from

a general hospital hypnosis clinic one hypnosis session, and one interview session. The initial visit included taking a brief psychiatric evaluation, as well as a smoking and health history. Then hypnosis was described. Finally the SHCS was administered to determine hypnotizability. The second session included an induction, followed by Spiegel's (as cited in Baer et al.) suggestions for smoking cessation and self hypnosis instructions. Again, this study resembles a multi-session approach. Although, only one session was used to administer the treatment hypnosis. Of the patients available for follow-up (137), 17 percent were abstinent at 24 months. This lower rate of abstinence could be due to a longer follow-up time, or standardized suggestions.

The Individual One-session Approach with Optional Additional Sessions

Clients are given the one-session approach and are told that they can have optional visits if desired. This treatment takes into account that some people will not quit after one session.

Sheehan and Surman (1982) used this approach with 100 patients from an outpatient clinic. Eighty-nine percent of the patients were seen for one or two individual hypnosis sessions. The others were seen for three, four or five sessions. The treatment consisted of an induction procedure

that used deep muscle relaxation. The patient was then given "direct suggestions to stop smoking and positive reinforcements and motivational instructions for stopping. Under hypnosis smoking behavior was also paired with noxious imagery, e.g. the exhaust fumes of an automobile" (p. 7). At 15 months follow-up, 21 percent of the patients were abstinent. Of the people who were abstinent at 15 months, only 25 percent of them said that the hypnosis was 'very helpful'. Of interest then, is to know what others attributed their success to.

Three methods of smoking cessation treatments were studied by Shewchuk et al. (1977). One of these methods was individual hypnosis. The initial hypnosis session was patterned after Spiegel, as previously described. Subjects were given additional sessions if required. The extra sessions were similar to the first. Most subjects were treated within three visits. Results of this study showed that 17 percent of subjects were abstinent at 12 months. The Spiegel method uses standardized suggestions for each person, and this may contribute to the lower success rate of this study. Also, perhaps during a longer follow-up time more subjects resume smoking.

The Individual Multi-Session Approach

The individual multi-session approach offers the client

a set number of visits. In some studies, the sessions are all designed to be similar. The idea is that through continued hypnotic reinforcement, the client will quit smoking. Other studies use the multi-session approach to cover different information on each visit.

Lambe, Osier, and Franks (1986) studied patients at the Rochester Family Medicine Program who smoked and were willing to undergo hypnosis. The first session consisted of obtaining informed consent for the hypnosis, inducing a trance, giving instructions, and then teaching self hypnosis. The second was similar to the first, except that during trance the subject was asked to choose a quit date. A 12 month follow-up showed 22 percent of subjects to be abstinent. The results may be misleading however, since they include subjects who were randomized to the hypnosis group, but who actually did not show up for their appointment. It would be of benefit to know why these subjects did not show up.

Hypnotic susceptibility and success in hypnosis treatment for smoking cessation was studied by Perry and Mullen (1975). Fifty-four volunteers from a university population were screened for the study, resulting in 38 subjects being selected. The remaining subjects were given two individual hypnosis sessions. At the first visit rapport was established, and then the subject was hypnotized. His or her susceptibility level was recorded.

All subjects were told "that their degree of hypnotic responsivity was sufficient for the purposes of session two" (p. 500). At the second visit the subject was given the single treatment method developed by Spiegel (as cited in Perry & Mullen). 18.4 percent of subjects were abstinent at three months follow-up. This study employed screening procedures, and also used a university population, possibly leading to less generalizable results.

MacHovec and Man (1978) researched three different smoking cessation treatments and two control groups. Subjects who had previous therapy or hypnosis were not included in the study. One of the treatments was a three-session individual method. Each session was similar in format. It consisted of an induction with white sound and progressive relaxation using a 30 to one count down. Then, during hypnosis, aversive messages about smoking were given. These suggestions included stating the disagreeable taste, odor, and expense of smoking. A post-hypnotic suggestion was given. The subject was told to breathe deeply and remember the aversive messages if he or she craved a cigarette. At six months, 50 percent of the subjects were abstinent. These results are relatively high. The white sound (background environmental sounds such as waves) may have contributed to this. However, note that the subjects were screened, and therefore the results may not be generalizable.

Two smoking cessation treatments were compared by Schubert (1983). One of these was hypnotherapy. Four individual hypnosis sessions were given to 22 subjects. (Seven of the original 29 subjects did not complete the treatments.) Each of the visits were similar. A trance state was induced, and then smoking cessation suggestions were given. Both individualized and standardized suggestions were used. Results at four months follow-up showed that 55 percent of the subjects were abstinent. Important to know is the reason the seven subjects did not complete treatment.

Byrne and Whyte (1987) tested the effectiveness of four smoking cessation treatments. One of the treatments used an individual four-session approach. Each visit included a hypnotic induction followed by suggestions associating uncomfortable feelings and consequences with smoking. Feelings of relaxation and contentment were paired with the absence of smoking. At 12 months, approximately 31 percent of the subjects were abstinent. Lower results may be due to standardized suggestions. Or, during a longer follow-up time more subjects may resume smoking.

Watkins (1976) designed an individual five session hypnosis treatment for smoking. Subjects were students who came to the student counselling centre at the University of Montana. At the first session information was gathered regarding the subject's smoking situation. At the second

session the subject was hypnotized and given three sets of individualized suggestions. Also, two individualized visual images were given. The third and fourth sessions were similar to the second. However, in the fourth, self hypnosis was taught. At the fifth session the client practised this self induction technique. Of the subjects who completed the program, 67 percent were abstinent at six months. A variety of techniques were used by Watkins, including counselling. Also, individulized suggestions during hypnosis were given. These two factors may contribute to the high rate of success. However, the results may not be generalizable, as university students were subjects.

Powell (1980) studied a technique for helping clients who had quit smoking using hypnosis, but later relapsed. The first part of the study used a five to seven session individual approach. During the first visit the client's reasons for wanting to quit smoking were discussed. The subject was then hypnotized and the individual reasons for quitting were repeated. Following the induction, the subject used self-hypnosis and repeated the suggestions. The subject was instructed to use self-hypnosis four times a day. It is assumed that additional sessions followed this initial format. Each of the sessions were 10 to 15 minutes long. At four months approximately 30.4 percent of subjects were abstinent. This study had a relatively short session

time, with other studies having close to an hour for each session. This shorter time may contribute to a lower success rate. Also, the study mentioned that some subjects dropped out after one week. The reasons for dropping out, and the number who dropped out are not listed.

Along with studying the effect of the one-session method, Cornwell et al. (1981) also looked at a four session method. The format was similar to the single session in that subjects were first seen for an initial interview. Ten subjects were then given Spiegel's technique, with added individualized suggestions. The four hypnosis sessions were similar. At two months, 60 percent were abstinent. This study had subjects deposit 50 dollars. The money was to be returned at the end of the two months if subjects were still abstinent. It is possible that this monetary deposit further contributed to motivation to quit.

The Group Hypnosis Approach

The group method uses the same types of formats as in the individual approaches, except that a number of clients are treated together. Within this technique, there are also single- and multi- session formats. The theory in the group approach is that it is as effective as the individual method, yet less expensive.

Neufeld and Lynn (1988) studied the effectiveness of a

single two-hour group hypnosis session. There was a maximum of six subjects per group, and the groups were co-facilitated. Hypnosis was explained to the people as self hypnosis. During the trance many visualizations were described. These included: a) having the subjects imagine feeling relaxed; b) visualizing reasons for quitting smoking on a chalk board; c) imagining one-self as a non-smoker; and d) visualizing successfully coping with the urge to smoke. At the end of the session, each subject was given a tape with a self hypnosis induction on it. At six months, 22.73 percent of the participants were abstinent. The results of this study are lower than others. The reason for this is not clear. Perhaps the giving of a cassette tape influenced the results. Also, of the techniques used during the trance, many of them were visualizations. Some people may not have been able to visualize as well as others.

Horwitz, Hindi-Alexander, and Wagner (1985) also used a single-session group approach. Four groups of approximately 200 people were held. The session lasted for 90 minutes. During the first 70 minutes the group leader "described the principles of hypnosis, shaped expectancies, and answered questions" (p. 30). The final 20 minutes was used to induce a trance state. During the trance suggestions were given to desensitize the subjects' cravings for cigarettes. 18.23 percent of subjects available for follow-up were abstinent at 12 months. This study used standardized

suggestions which may contribute to a lower success rate. Also, with such a large number of people, distractions may have kept some people from relaxing and becoming hypnotized.

Barabasz et al. (1986) used a single-session group approach for one of the six treatments studied. Six to 15 clients were seen in each group, which lasted 90 minutes. The five phase technique employed in the individual one-session approach (described above) was used. In the group, each subject was individually hypnotized. Suggestions were then given to everyone via tape. At 10.1 months, 36 percent of subjects were abstinent. Individually hypnotizing each subject makes this study a unique form of group hypnosis. Also, the five phase technique showed to be relatively high in success for both the group hypnosis and the individual hypnosis (described above).

MacHovec and Man (1978) conducted a three-session group. They used the same technique as in their individual approach (previously described). Ten subjects were in the group, and at six months, 40 percent were abstinent. This is lower than the individual approach, although not significantly.

Sanders (1977) conducted a four-session group using mutual hypnosis. Mutual hypnosis is a technique where the members of the group talk to each other while in a trance state. Each of the four sessions included the following steps: a) a trance induction by the group leader; b)

brainstorming; c) time progression and imagery; d) a hypnotic dream; and e) self-hypnosis instructions. During the brainstorming phase the members were asked to verbalize reasons for wanting to quit smoking. The leader then repeated and clarified the reasons for each person. The members were then guided to a future time and encouraged to have a hypnotic dream. "'The dream may be a sound, an image, a thought or night dream, but whatever it is it will have something to do with being a nonsmoker'" (p. 133). Finally, the group was given instructions for using self-hypnosis. At 10 months follow-up, 68 percent of the subjects were abstinent. This study was very high in success. This can possibly be attributed to the variety of techniques used, group support during the trance state, and individualized suggestions.

Jeffrey, Jeffrey, Greuling, and Gentry (1985) studied the effectiveness of a four-session group hypnosis approach. Subjects were military personnel or their dependents. Before joining the group, subjects were required to not smoke for 48 hours. The four sessions were all similar in that they consisted of 35 minutes of discussion followed by a 15 minute trance induction. During hypnosis, all subjects were given the same suggestions. "These included maintenance of smoking cessation, relaxation, and ego enhancement" (p. 96). Of the 22 members who completed the treatment, 50 percent were abstinent at three months

follow-up. Thirteen subjects had dropped out or were not able to be abstinent for the 48 hours. The results of this study are less generalizable since military people and their dependents were subjects, and the requirement of subjects to be abstinent before beginning treatment.

A similar study was done by Jeffrey and Jeffrey (1988). This time two treatment groups were compared. Each group was given the above four-session approach. The first group, called the exclusion condition, was required to not smoke for 48 hours. The second group did not need to meet this criteria, although subjects were strongly encouraged to quit immediately. For people completing the treatments, 70.6 percent of the exclusion group and 54.1 percent of the nonexclusion group were abstinent at follow-up. Again, the results may not be generalizable due to the population studied, and the exclusion condition (or strong recommendation to quit).

Barkley, Hastings, and Jackson (1977) studied three different smoking cessation treatments. Seventy-four volunteers responded to an advertisement in a university community. "Only 36 of the 74 volunteers were able to meet all the demands of the procedures, which included scheduling of treatment sessions, assignment to groups at random, the data collection and deposit requirements, etc." (p. 9). Of the treatment types studied, one was a seven-session group hypnosis approach. Each session lasted one hour. The first

and last 15 minutes of the group was used to discuss problems subjects were having in quitting smoking. The middle 30 minutes was used to induce trance, and give suggestions. Trance was induced using relaxation, drowsiness, and body senstivity statements. Suggestions during hypnosis included associating smoking with various ailments and diseases. At nine months follow-up, 25 percent of the subjects were abstinent. It is interesting to note that a large number of volunteers did not meet criteria for the study. Perhaps the criteria were restricting, thus limiting the generalizability of the results.

Pederson, Scrimgeour, and Lefcoe (1975) studied different smoking cessation treatments. In one of the treatments 50 clients were given a single group session. They were then contacted 8 to 12 months after the office visit. At this time eight percent were abstinent. It is not clear why these results were comparatively lower than other studies.

Hypnosis Combined with Another Treatment Type

Some studies look at the effectiveness of two types of treatment techniques used together. Although, many of the above studies also combined types of treatment. For example, many employed hypnosis and a form of counselling. Actually, it is difficult to separate hypnosis from

counselling, since a part of the hypnosis for many of the studies was to also discuss personal reasons and motivations for quitting smoking. The hypnosis itself may be called a counselling technique, as it uses many behavioural and counselling strategies, while the client is in a trance state. With this in mind, we will look at studies that specifically labelled their research 'hypnosis and counselling' or hypnosis with another treatment type.

Barabasz et al. (1986) used hypnosis with restricted environmental stimulation therapy (REST). Each subject was given one to three REST with hypnosis visits. During the session, the subject was "seated comfortably in a fixed recliner chair under sound attenuated conditions with eyes closed and movement limited to that required to maintain comfortable seating. Low-level white noise was provided using padded earphones " (p. 174). While seated, the person was guided through the hypnosis procedure designed by H. Spiegel and D. Spiegel (as cited in Barabasz et al.). At 19.4 months follow-up, 47 percent of participants were abstinent. This study had a relatively high level of success, possibly due to combining the REST with hypnosis. Note that MacHovec and Man (1978) used a similar strategy (although it was not labelled REST). Their study showed 60 percent abstinence at six months.

Pederson, Scrimgeour, and Lefcoe (1975) combined hypnosis with counselling. Sixteen subjects participated in

a 90 minute group hypnosis session. It contained relaxation suggestions and a description of the benefits of not smoking. Following the hypnosis session, the group met once a week for six weeks, and then once a months for six months. These meetings consisted of group counselling. Discussions included talking about withdrawal symptoms, systematic self-monitoring, and substitution behaviour. At 10 months follow-up, 50 percent of participants were abstinent. A counselling alone group was also conducted, and at 10 months, zero were abstinent. This seems to indicate that the factor contributing to abstinence was the hypnosis session. Also note, however, that abstinence in this study is defined as at least three months of not smoking. This makes results difficult to compare to other studies where abstinence is defined as no smoking since treatment.

In a later study, Pederson et al. (1979) researched three different combinations of hypnosis and counselling groups. The first group was given a single-session live hypnosis treatment. Also, this group underwent group counselling for an additional eight weeks. The second group was given a taped hypnosis session, followed by eight counselling sessions. The third group was given a live hypnosis session, although during the trance state no reference was made to smoking or smoking cessation. This group also participated in eight group counselling sessions. At six months, the abstinence rates for groups one, two, and

three were 53, 18.75, and 12.5 percent, respectively. The results (significantly different) indicate that a hypnosis session involving smoking cessation suggestions is the most successful. Also of interest is that the drop-out rates and absenteeism for the active hypnosis was 25 percent, while it was 50 percent for the other two groups.

Tori (1978) tested two types of smoking treatments, each with additional hypnosis sessions. The first treatment group was given five individual satiation sessions, followed by five individual hypnosis sessions. The satiation treatment consisted of having the subject sit in a six by eight foot unventilated room. The experimentor then gave instructions through a stereo system. The subject was instructed to continuously smoke cigarettes by holding smoke in the mouth with occaisional inhalations. Smoking in this way was continued until "feelings of nausea and discomfort were such that subjects reported the loss of any desire for cigarettes" (p. 575). Following five consecutive days of the satiation treatment, participants were given five booster hypnotherapy sessions. These consisted of a taped induction giving relaxation suggestions. The experimentor then gave antismoking statements. At the end of the hypnotherapy, slides that depicted tissue damage caused by smoking were shown. The subjects were then instructed on using self-hypnosis. Also, other behavioural control techniques for overcoming cravings for cigarettes were

discussed.

At six months 68 percent of the subjects were abstinent.

The second treatment group followed the same format as the first, except that rapid smoking was used instead of satiation smoking. Rapid smoking is a technique where the subject smokes non-stop until he or she feel nauseous or vomits. At six months 60 percent of the subjects were abstinent. Both treatments combined many methods: counselling, hypnosis, and satiation or rapid smoking. Rapid smoking is known to be dangerous, and may produce an overdose of nicotine. Although the satiation treatment is not as dangerous as rapid smoking, it may still have some ill health effects due to continuous inhalation of nicotine.

Analysis of Treatment Types

A comparison of the effectiveness rates was made for the four treatments: a) individual single-session; b) individual multi-session; c) group sessions; and d) hypnosis and another treatment combined. To compare the treatment types, six month abstinence rates were tabulated (see Table 3). Those studies that reported six month rates were included. Results for the four treatments are 36.81, 33.33, 32.5, and 45 percent, respectively. None of the treatment types are significantly more effective than the others ($p > .05$, see Appendix I for detailed computations).

Table 3

Comparison of Abstinence Rates By Treatment Type

Treatment Type	Author	N	Abstinent at Six Months	Percent
Single	Berkowitz et al.	40	10	25
	Stanton	75	34	45.3
	Rabkin et al.	29	9	31
	Baer et al.	137	37	27
Total		281	90	32.03
Multiple	MacHovec & Man	12	6	50
	Byrne	85	25	31
	Watkins	36	22	61
Total		133	53	39.85
Group	Neufeld & Lynn	22	6	27.3
	MacHovec & Man	10	4	40
	Barkley et al.	8	3	37.5
Total		40	13	32.50
Combined	Pederson (1979)	17	9	52.9
	Pederson (1975)	16	3	18.8
	Tori	10	6	60
	Tori	35	17	48.6
Total		78	35	45.0
All		532	191	35.9

Other Treatment Variables

Hypnotist's Experience Level

Two studies looked at the effect of the hypnotist's experience on the outcome of treatment (Baer et al., 1986; Barabasz et al., 1986). Baer et al. analyzed the results of patients treated by experienced hypnotists or interns. Each treatment group was given two 60 minute individual hypnosis sessions. The results for the experienced hypnotists were 38 percent abstinence at three months. For interns the abstinence rate was 34 percent at three months. The authors report that this difference was not significant. The authors note, however, that interns were given more training time than other studies.

Barabasz et al. (1986) had two treatment groups administered by intern hypnotists. One treatment consisted of a 50 minute individual hypnosis session. An experienced clinician did not conduct a matched group. The other treatment using interns was a 65 to 100 minute five phase individual hypnosis approach. An experienced clinician did conduct a matched treatment in this case. The hypnotist's experience level for the five phase session was significant at $p < .10$ ($Z = 1.86$).

The Effect of a Subject's Hypnotizability on

Treatment Results

Many studies looked at the subject's hypnotizability (Baer et al., 1986; Barabasz et al., 1986; Cornwell et al., 1981; Lambe et al., 1986; Perry & Mullen, 1975; Schubert, 1983; Sheehan & Surman, 1982). Of interest was to determine whether more highly hypnotizable subjects would be more successful in being abstinent in the hypnosis treatment.

The Stanford Hypnotic Clinical Scale (SHCS) was administered in the study by Baer et al. (1986). Results showed that medium and high hypnotizable subjects did not differ significantly at any of the seven follow-up times. However, abstinence rates of both high and medium hypnotizable subjects were significantly greater than abstinence rates of low hypnotizable subjects. This significance was evident at the six month follow-up time. At 1.5 and two years, however, there was no significance between the high, medium, and low subjects. The authors suggest this is due to the reduced N's at these times.

The SHCS test was also used in the study by Barabasz et al. (1986). Scores were obtained for 83 clients who were administered the five phase individual one-session treatment, by an experienced clinician. Abstinence rates for the six levels of scores (subjects could score a 0, 1, 2, 3, 4 or 5) were significantly different (Chi square = 26.0, d. f. = 5, $p < .001$).

In the study by Lambe et al. (1986), subject's depth of trance was noted by the hypnotist on a standard form. (The form used is not described in the report.) Results showed that abstinence rates did not significantly differ according to depth of trance.

Cornwell et al. (1981) also found that hypnotizability was not related to abstinence or reduction of amount smoked. The SHCS test was given to 30 subjects.

Perry and Mullen (1975) used the Diagnostic Rating Procedure (DRP) by Orne and O'Connell to evaluate hypnotic susceptibility. The scores were calculated by transforming the 5-point DRP scale into a 14-point ordinal scale. Results showed that in terms of complete absinence, hypnotic susceptibility was not significant. However, this study also reported on the reduction of amount smoked by subjects who were not abstinent. Results showed that when the 15 most and 15 least susceptible subjects were examined, the results for smoking reduction were significant (Chi square = 4.88, d. f. = 1, $p < .05$).

Schubert (1983) used the Harvard Group Scale of Hypnotic Susceptibility to determine the effect of hypnotizability. Results showed that there was no significant difference. However, as in the Perry and Mullen (1975) study, significance was found at the four month follow-up for subjects who reduced their smoking ($F= 4.68$, $p < .039$).

Sheehan and Surman (1982) did not administer a hypnotic susceptibility scale to their subjects. Rather, subjects were asked for self perception of depth of trance. Results showed that self perception of trance level was not significantly related to success. Also, the authors note that only 10 percent of the successful group felt they had achieved a really significant level of trance. Thirty-five percent of the successes felt they were either not hypnotised at all or only slightly hypnotised.

Other Treatment Results

The purpose of most of the studies reviewed was to determine the effectiveness of the treatment. Success was usually considered total abstinence from smoking. However, some of the studies did record other treatment results. These are 1) a reduction in the amount smoked 2) weight gain, and 3) emotions after treatment.

Reduction of the Amount Smoked After Treatment

In addition to studying abstinence rates after treatment, many studies also recorded smoking reduction as related to treatment (Baer et al., 1986; Byrne & Whyte, 1987; Cornwell et al., 1981; Lambe et al., 1986; Perry & Mullen, 1975; Rabkin et al., 1984; Schubert, 1983; Sheehan &

Surman, 1982; Watkins, 1976).

Of the 137 subjects available for follow-up at two years in the study by Baer et al. (1986), seven reduced their amount smoked. Twenty-three of the 137 subjects were abstinent at two years. Byrne and Whyte's (1987) results showed that there was a reduction in the amount smoked from baseline to termination of treatment. However, the amount smoked increased at the three month follow-up time. By seven and 12 months, the authors report that of those who continued to smoke, 35 percent reduced their amount smoked. There was no significant difference between reduction and the different types of treatments tested.

Lambe et al. (1986) reported that some subjects reduced their amount smoked. However, at 12 months follow-up, this reduction was not significantly different from a control group. Perry and Mullen (1975) found that 31 percent of subjects had reduced their amount smoked by 50 percent. This result was recorded at three months. Rabkin et al. (1984) reported that at six months there was a significant reduction in amount smoked. Schubert (1983) found a significant difference in the reduction of amount smoked between treated groups and a waiting list control group. Sheehan and Surman (1982) reported that 60 percent of subjects who were still smoking at 15 months follow-up reduced their amount smoked by 40 percent. Seven percent of subjects who still smoked increased their amount smoked.

Watkins (1976) found that eight clients who did not quit smoking had reduced their amount smoked. This result was noticed at the termination of the treatment. At six months follow-up, however, Watkins reports that these subjects had increased their amount smoked.

Cornwell et al. (1981) found that at two months, three subjects in 20 had reduced the amount of cigarettes smoked. There was no significant difference in reduction and type of treatment (single- or multi- sessions) used.

Weight Gain as Related to Smoking Cessation

Studies show that weight gain is associated with smoking cessation for some subjects (Baer et al., 1976; Barabasz et al., 1986; Cornwell et al., 1981; Javel (1980); Sanders, 1977; Sheehan & Surman, 1982). However, Schubert (1983) reported that weight gain by people who quit smoking was not different from those who continued.

Seventy-one percent of subjects who quit smoking in the Baer et al. (1976) study gained weight. The average weight gain was 11 pounds. This was a significant amount ($t[33] = 6.16$, $p < .001$). Males and females did not differ significantly in the amount gained. The average weight gain for subjects who quit smoking in the Barabasz et al. study was 9.24 pounds. Those who continued to smoke gained an average of 1 pound. The results are significant ($t = 4.76$,

d. f. = 127, $p < .001$). In this study, females who stopped smoking gained more weight than males who stopped.

Javel (1980) reported that eight out of 10 treatment successes and four out of 10 failures gained weight. The average weight gain for the sucesses was 7 1/4 pounds. Sanders (1977) did not report on average weight gain. She did, however, state that one person in the study gained 20 pounds. Sheehan and Surman (1982) found that 50 percent of subjects treated gained weight as a result of trying to stop smoking. 75 percent of those who quit gained weight. Their average gain was 10.7 pounds. People who failed to quit gained an average of 2 1/5 pounds. The differences in weight gain between treatment failures and successes is significant ($p < .001$).

Schubert (1983) found that there was no significant difference in weight gain between people who quit or did not quit smoking.

Cornwell et al. (1981) found that subjects abstinent at one month follow-up noticed an average weight gain of 8.5 pounds (ranging from two to 23 pounds). The authors concluded that the issue of weight gain needs to be dealt with or some subjects may resume smoking to lose weight.

Affect After Treatment

Some studies reported on subjects' emotions as related

to treatment (Barabasz et al., 1986; Cornwell et al., 1981; Sanders, 1977; Sheehan & Surman, 1982). Sanders reported that people who quit smoking felt more "active, healthy and pleased with kicking the habit" (p. 134). Barabasz et al. tested clients for depression, using the Beck scale. Results showed that clients who failed to quit smoking had significantly higher depression scores than clients who quit. Sheehan and Surman found similar results. "Almost 2/3 of all subjects reported transient mood changes (usually negative) after treatment to stop smoking, almost 1/2 feeling more irritable and more tense. Almost 1/4 felt more anxious or more depressed" (p. 9). Cornwell et al. (1981) found that most subjects who were abstinent for one week reported withdrawal symptoms. "These included irritability, nerviness, emotionality, hunger, craving, tearfulness, stomach cramps, depression, headaches, constipation, and hyperventilation" (Cornwell et al., 1981, p. 72).

Variables Related To Treatment Success Or Failure

Many studies used questionnaires to determine if there were any variables related to a subject's success or failure in treatment. Average age of subjects was reported by most studies. Three did an analysis to see if it related to treatment success (Baer et al., 1986; Horwitz et al., 1985; Rabkin et al., 1984) and found it not to be related.

However, Shewchuck et al. (1977) reported that hypnosis subjects tended to be younger than subjects choosing another treatment.

A subject's educational level was looked at by some researchers (Horwitz et al., 1985; Lambe et al., 1986; Rabkin et al., 1984; Shewchuk et al., 1977). Lambe et al. found that a college education was related to success in smoking cessation. Shewchuk et al. reported that subjects who chose hypnosis tended to be better educated. However, Rabkin et al. found that educational level did not differentiate the response between their three smoking cessation programs. Also, Horwitz et al. found no significant difference between treatment success or failure and educational level.

Two studies specifically explored the relationship between gender and likelihood of success. Horwitz et al. (1985) found that males were more likely to be ex-smokers than females at the one year follow-up (Chi square = 7.55, $p < .05$). However, Rabkin et al (1984) found gender was not related in three treatment programs.

Javel (1980) explored the relationship between smoking success and many demographic and historic variables. He found two variables to be significant. Having a mother who smoked was related to success in treatment. Having a medical history of a smoking-related illness was related to failure in treatment.

Researchers looked at the number of cigarettes smoked before treatment as related to success or failure (Baer et al., 1986; Horwitz et al., 1985; Lambe et al., 1986). Each of these studies found amount smoked to not be related to success or failure.

Lambe et al. (1986) found that the number of times a person tried to quit prior to treatment was not related to success. Sheehan and Surman (1982) also found this. However, Horwitz et al. (1985) did find a relationship between length of previous quit time and success. Baer et al. (1986) also tested the length of previous quit times, but found it not to be related to success.

Years smoked prior to treatment was not associated with whether or not the person would be successful (Horwitz et al., 1985; Rabkin et al., 1984). Shewchuk et al. (1977) did find, however, that subjects in the hypnosis group had not been smoking for as long as subjects in the group therapy or individual counselling groups.

Is Hypnosis For Smoking Cessation Better Than No Treatment?

To answer whether hypnosis for smoking cessation is better than no treatment, a control group needs to be included in a study. However, it is difficult to design a control condition that will adequately test the question. It seems that people who have decided to quit smoking could

be divided into two groups. One group is given hypnosis treatment, and the other attempts to quit without any treatment. It can be argued, though, that people who can quit without treatment do not sign up for hypnosis or other research approaches.

Therefore, researchers typically design a control group called the waiting list controls. These people contact the researcher for an appointment and are told they cannot be given treatment for a certain period of time. During this time the waiting list people are contacted at follow-up points to see if they have quit smoking on their own. A researcher needs to determine, though, if the control subject obtained other treatment elsewhere. After the waiting period the control group is given treatment.

There are ethical concerns with almost any type of control group. For example, how long should these people be left waiting for treatment? Many of the studies reviewed did not use a control condition. This may be due to the difficulties associated with conducting such a group. Eleven studies, did, however, use some type of control group. These will be discussed.

Five studies had a group of subjects in the waiting list control group (Cornwell et al., 1981; Jeffrey et al., 1985; Pederson et al., 1975; Rabkin et al., 1984; Schubert, 1983). Others used a type of minimal treatment as a control group. Barkley et al. (1977) gave the controls seven 60

minute group sessions. The subjects were told that the only way to quit smoking was cold turkey. The group time was spent discussing problems related to quitting smoking, and watching films related to smoking. Although this group was intended as a control, it resembles group counselling in some ways. The subjects in the control group used by Lambe et al. (1986) were given a handbook on quitting smoking. Also, they were given a letter notifying them that the physicians at the clinic hoped they would quit smoking.

The controls used by Shewchuk et al. (1977) consisted of subjects who had dropped out of the other treatment programs. Controls in the Javel (1980) study were told they could not be given an appointment. They were given a referral to another treatment if desired. Barabasz, et al. (1986) gave the control group a one-session psychological evaluation.

After an initial intake interview, subjects in the Byrne and Whyte (1987) study were given the option of being in an unaided control group. MacHovec and Man (1978) used a group of untreated controls. Studies that included a control condition are meta-analysed in Table 4. Chi squares and p values were calculated for these studies using the technique described by MacPherson (1987, p. 76). Results show that overall, hypnosis treatment groups have significantly more successes than control groups ($p < .00003$).

Table 4

Meta-analysis of Hypnosis Treatment vs. Control Groups

Author	Control Group	Chi square	p value	Z value
Barkley	Attention-Placebo	2.06	.2	.84
Cornwell	Waiting list	6.21	.02	2.05
Javel	No appointment	10.76	.005	2.58
Jeffrey	Waiting list	19.04	<.001	3.08
Lambe	Waiting list	.05	>.3	0.00
MacHovec	Untreated	5.85	.02	2.05
Pederson	Waiting list	1.25	.3	.52
Schubert	Waiting list	7.99	.005	2.58
Shewchuk	Non-attenders	2.44	.2	.84
	Overall	Z = 14.54 / 3.0 = 4.85		
			p < .00003	

Conclusion

A review of the types of hypnosis treatments for smoking shows that generally the individual one-session, multi-session, group, and combined approaches all have similar success rates. Overall, treatments employing hypnosis are generally 35.9 percent successful for six months. This has been shown to be significantly more effective than a series of control groups. Hypnosis is a viable treatment alternative for smoking cessation.

APPENDIX B: Advertisement and Distribution List

Poster ad:

DO YOU WANT TO QUIT SMOKING?

FREE HYPNOSIS is being offered as part of a university smoking cessation study.

Appointments are available for 60 people. Karin Harris, a certified Hypnotherapist and Educational Psychology Graduate Student, will be conducting the sessions.

For an appointment or more information, call 667-7058.

Poster Distribution List: (Winnipeg, Manitoba)

Dr. Scott-Herridge, Chiropractor in North Kildonan

Pregnancy Distress Service, downtown

Manitoba Lung Association

University Centre, University of Manitoba

Education Building, University of Manitoba

Nursing Faculty, University of Manitoba

Word Processing Centre, U of M

Polo Park Dental Centre

Fort Gary Women's Resource Centre

Interfaith Pastoral Institute

Women's Health Clinic

Klinic

Creative Retirement

Alcoholism Foundation of Manitoba

Canadian Cancer Society

Manitoba Hypnosis Association, given to six members

Paul Madak, University of Manitoba

Bill Schulz, University of Manitoba

APPENDIX C: Randomized Table For Assigning Clients to Treatment

Clients were randomly assigned to the two groups. However, since it was anticipated that more females would volunteer, and such was the case, every second male caller was automatically assigned to the opposite group as the first male caller. First male callers were randomly assigned a group. The table below was used to assign subjects to groups. If there was an even random number beside the caller number, the caller was assigned to the three-session group, and odd numbers were used to assign to the one-session group. The following table was used:

Caller Number	Random Number	Caller Number	Random Number	Caller Number	Random Number	Caller Number	Random Number
1	4	16	25	31	68	46	30
2	34	17	81	32	40	47	63
3	76	18	99	33	25	48	48
4	80	19	21	34	95	49	65
5	55	20	79	35	38	50	32
6	69	21	43	36	53	51	59
7	43	22	55	37	46	52	33
8	46	23	46	38	69	53	91

9	35	24	98	39	69
10	32	25	22	40	22
11	74	26	67	41	76
12	9	27	13	42	15
13	92	28	8	43	45
14	59	29	16	44	18
15	5	30	5	45	93

APPENDIX D: Schedule for Appointments

X - available appointment times

TIME	MON	TUES	WED	THURS	FRI	SAT
9:00 - 10:30	X	X	X	X	X	X
10:30 - 11:30	X	X	X	X	X	X
11:30 - 12:30	off	off	off	off	off	off
12:30 - 2:00	X	X	X	X	X	X
2:00 - 3:00	X	X	X	X	X	X
3:00 - 4:30	X	X	X	X	X	X
4:30 - 5:30	class	off	off	off	off	off
5:30 - 6:30	|	X	X	|	X	|
6:30 - 8:00	|	X	X	|	X	|
8:00 - 9:00	v	X	X	v	X	v

APPENDIX E: Questionnaires and Data Collection Forms

Hypnosis for Smoking Cessation:
Pre-Session Questionnaire

Name: _____

Address: _____

Phone Number: Home: _____ Work: _____

Gender: 18 (42%) Male 25 (58%) Female

Age: 19 to 59 years, average 31

1	(2%)	under 20
21	(49%)	20 - 29
16	(37%)	30 - 39
3	(7%)	40 - 49
2	(5%)	50 - 59

Please note that all questions are optional.

1. Approximately how many cigarettes did you smoke yesterday?

0 to 51, average 20

8	(19%)	0 - 12
28	(65%)	13 - 25
6	(15%)	26 - 38
1	(2%)	39 - 51

2. a) Was that number of cigarettes typical of the number you smoked each day in the last week? Please circle:

34	(79%)	YES
9	(21%)	NO

b) If NO, what was the typical number of cigarettes that you smoked in a day over the past week of so?

3	0 - 12
5	13 - 25
0	26 - 38
1	75

3. Approximately how old were you when you first began smoking regularly?

12 to 23, average 17

9 (21%) 10 - 14
28 (65%) 15 - 19
6 (14%) 20 - 29

4. Have you ever quit smoking before? Please circle:

41 (95%) YES
2 (5%) NO

5. a) If YES, how many times have you quit?

22 1
9 2
4 3
3 4
3 more than 9

b) What was the longest length of time that you quit for?

17 0 - 2 months
15 3 - 6 months
5 7 - 12 months
4 12+

6. Do other people in your household smoke? Please circle:

21 (49%) YES
22 (51%) NO

7. a) If YES, how many people in your household smoke?

14 1
4 2
2 3
1 4

8. How did you find out about this study? Please circle the letter:

20 (47%) A. from a friend, relative, or co-worker
16 (37%) B. from a poster at U of M
6 (14%) C. from a poster elsewhere
1 (2%) D. from a newspaper
E. on television
F. other, please specify:_____

9. If you found out about this program from a poster, where

was it located (ie. what building or organization)?

11 University Centre
6 Faculty of Education
2 Transport Canada
1 Klinic
1 Women's Health Clinic
1 Pregnancy Distress
1 Child Guidance Clinic

10. Please indicate which of the following statements best applies to you: Please circle ONE of A or B:

37 (86%) A. Smoking has affected my health
4 (9%) B. Smoking has not affected my health
2 (5%) No answer

11. If you chose A above, in what ways do you think smoking has affected your health?

23 (53%) Shortness of breath
12 (28%) Reduced endurance
8 (19%) Lack of energy or tiredness
8 (19%) Other
6 (14%) More colds or bronchitis
5 (12%) Coughing or wheezing
3 (7%) Sore throat
2 (5%) Chest pain
2 (5%) Exacerbates other health problem(s)
1 (2%) Headaches

12. What benefits did you get from smoking? Please circle ANY of the following - NOTE: you may circle MORE than one.

30 (70%) A. to help me relax
32 (74%) B. something to do with my hands
23 (53%) C. to help me when I'm angry
27 (63%) D. to help me when I'm bored
4 (9%) E. to feel part of a crowd
13 (30%) F. I like holding a cigarette
4 (9%) G. I don't know
7 (16%) H. other, please specify: _____
8 (19%) I. to celebrate feeling happy
33 (77%) J. to help me when I'm nervous
16 (27%) K. to help me when I'm afraid
17 (40%) L. to help me when I'm sad
7 (16%) M. I like the sensation of smoke in my lungs

13. Of the benefits that you selected above, which one or two would you say are the most important to you?

15 A. 6 H.
11 B. 1 I.
3 C. 10 J.
5 D. 1 K.
2 E. 5 L.
4 F. 2 M.
0 G.

14. What, if anything, might keep you from quitting smoking? Please circle ANY of the following - NOTE: you may circle MORE than one.

13 (13%) A. friends who smoke
5 (12%) B. partner/spouse who smokes
20 (47%) C. weight gain
0 (0%) D. nothing
4 (9%) E. other, please specify:
_____
31 (72%) F. lack of willpower
4 (9%) G. deciding to be a smoker
25 (58%) H. stress

15. How much do you want to quit smoking? Please circle ONE of the following:

32 (74%) A. a lot
9 (21%) B. somewhat
0 (0%) C. not smuch
0 (0%) D. I don't know
0 (0%) E. other, please specify:
_____
2 (5%) no answer

16. What are your reasons for wanting to quit smoking? Please circle ANY of the following - NOTE: you may circle MORE than one.

21 (49%) A. to have more energy
37 (86%) B. to be more healthy
22 (51%) C. to breathe easier
32 (74%) D. to save money
9 (21%) E. because of pressure from others to be a nonsmoker
0 (0%) F. I don't know
12 (28%) G. other, please specify:
_____
8 (19%) H. to get rid of the coating on my tongue
17 (40%) I. to have clean smelling clothes
7 (16%) J. to feel more accepted around nonsmokers
22 (51%) K. to be more active in sports or exercise

17. Of the above reasons for wanting to quit smoking, which

ONE or TWO are the most important to you?

9	A.	11	G.
26	B.	1	H.
6	C.	1	I.
11	D.	1	J.
3	E.	6	K.
0	F.		

18. Have you ever been hypnotized before? Please circle:

9	(21%)	YES
31	(72%)	NO
3	(7%)	no answer

19. How helpful do you think hypnosis will be in assisting you to quit smoking? Please circle only ONE of the following:

9	(21%)	A. very helpful
3	(7%)	B. moderately helpful
0	(0%)	C. slightly helpful
1	(2%)	D. not at all
27	(63%)	E. I don't know
0	(0%)	F. other, please specify: _____
3	(7%)	no answer

20. Please state your reason(s) for choosing hypnosis for quitting smoking:

14	(33%)	heard/believe hypnosis will work
14	(33%)	other
11	(26%)	need assistance with quitting
13	(30%)	tried other methods and they haven't worked
7	(16%)	it's free
4	(9%)	seems worth a try
2	(5%)	curiousity
2	(5%)	painless method

First Session Data Sheet

Client Number: _____

Date: _____

Time: _____

1. Ways to achieve benefits from smoking by other means:

26	(60%)	not sure or no answer
8	(19%)	something to occupy hands
5	(12%)	chew gum or eat sunflower seeds
3	(7%)	distraction activity such as walking
1	(2%)	doesn't want a replacement

2. What methods have you tried for quitting smoking?

27	(63%)	no answer
5	(12%)	nicotine gum
4	(9%)	accupuncture
4	(9%)	smoke enders
3	(7%)	other

3. Do you have a favourite outdoor place?

40	(93%)	YES
3	(7%)	NO

4. Can you remember a time when you felt you had succeeded at something?

39	(91%)	YES
3	(7%)	NO
1	(2%)	no answer

5. Response to the Swish:

16	(37%)	worked well
8	(19%)	didn't do the swish
7	(16%)	difficulty visualizing
7	(16%)	worked well after 2-3 times
5	(12%)	not sure

6. Questions/comments re hypnosis explanation:

29	(67%)	no comment
4	(9%)	other
3	(7%)	have seen another hypnotist
2	(5%)	sounds nice/relaxing
2	(5%)	found explanation helpful
1	(2%)	bored with explanation

1 (2%) concerned
1 (2%) no answer

7. Questions/comments re being in control:

37 (86%) no comment
4 (9%) concerned
1 (2%) found explanation helpful
1 (2%) no answer

8. Questions/comments re free to move or leave:

39 (90%) no comment
2 (5%) laughed
1 (2%) found it helpful to know
1 (2%) no answer

9. Questions/comments re common feelings in hypnosis:

41 (95%) no comment
1 (2%) surprised
1 (2%) no answer

10. Hypnotized before?
11 (26%) YES
31 (72%) NO
1 (2%) no answer

11. Questions/comments re this study:

39 (90%) no comment
2 (5%) other
1 (2%) angry
1 (2%) no answer

12. Questions/comments re hypnosis script:

32 (74%) no comment
5 (12%) sounds relaxing/nice/interesting
1 (2%) laughed
1 (2%) surprised
1 (2%) bored
1 (2%) found explanations helpful
1 (2%) other
1 (2%) no answer

13. Tape selected

24 (56%) waves
8 (19%) thunderstorm
7 (16%) trance tones
2 (5%) nothing

1 (2%) birds
1 (2%) no answer

14. Other before hypnosis:

21 (50%) no comment
7 (16%) concerned about weight
4 (9%) other
3 (7%) admired books on shelves
2 (5%) heard hypnosis works
1 (2%) joining an exercise program
1 (2%) falls asleep easily
1 (2%) previous hypnosis didn't work
1 (2%) had a cigarette before hypnosis
1 (2%) nervous
1 (2%) no answer

15. Primary access system:

18 (42%) visual
11 (26%) auditory
9 (21%) kinesthetic
5 (12%) don't know

16. Responses during hypnosis:

17 (40%) visually very relaxed
8 (19%) frequently shifting
6 (14%) body follows instructions ie. eyelids move up,down.
4 (9%) no readable signs
2 (5%) deep breathing
2 (5%) frequent coughing
2 (5%) frequent swallowing
1 (2%) fell asleep
1 (2%) no answer

17. Experimentor estimate of depth of trance:

21 (49%) low
8 (18%) low +
9 (21%) medium
2 (5%) medium +
2 (5%) high
1 (2%) fell asleep

18. How was hypnosis?

28 (65%) relaxing and enjoyable
7 (16%) "okay"
3 (7%) other
2 (5%) feel light headed

1 (2%) feel sleepy
1 (2%) not what was expected
1 (2%) feels like being stoned

19. Would you change anything next time?

32 (74%) no changes
3 (7%) change pink balloon exercise
1 (2%) would like to go deeper in a trance
1 (2%) had difficulty visualizing
1 (2%) would like to spend longer in hypnosis
1 (2%) really have to want to quit for this to work
1 (2%) instructions should be more concrete
1 (2%) need more time to create images
1 (2%) felt cold during hypnosis
1 (2%) other

20. Questions/comments re self hypnosis:

43 (100%) no comment

21. Other comments after hypnosis:

39 (91%) no comment
1 (2%) hard to believe it will work
1 (2%) feel it has already worked
1 (2%) would like to buy wave tape
1 (2%) hypnosis helped with relationships and smoking

Second Session Data Sheet

Client Number: _____

Date: _____

Time: _____

1. Smoking?

8 YES
3 NO
1 no answer

2. Reduced smoking?

8 reduced

3. Problem times:

2 - with friends who smoke
2 - in the car
1 - studying
1 - most situations
1 - meetings
1 - while concentrating
1 - none
1 - parties
1 - breaks
1 - no answer

4. Comments before hypnosis:

3 - none
3 - difficult not to smoke
1 - believed hypnosis worked
1 - couldn't remember last session
1 - didn't believe hypnosis could work
1 - sessions helped, but not hypnosis
1 - gained weight

5. Hypnosis program changes/if any:

5 - none
2 - no clouds
2 - write name on success board
1 - reframing exercise
1 - no music or dr. flower
1 - no pink balloon

6. Comments after hypnosis:

6 - felt more relaxed/very relaxed this time
3 - other
1 - wanted to go deeper
1 - hypnosis helpful as a reinforcement
1 - didn't go as deep

Third Session Data Sheet

Client Number: _____

Date: _____

Time: _____

1. Smoking?

4 YES
3 NO

2. Reduced smoking?

2 reduced

3. Problem times:

2 - none
1 - most situations
1 - meetings
1 - while concentrating
1 - stressful times
1 - no answer

4. Comments before hypnosis:

1 - the counselling part of session helpful, hypnosis not
1 - gained 10 pounds
5 - no comment

5. Hypnosis program changes/if any:

1 - no music
2 - write name on success board
2 - no clouds

6. Comments after hypnosis:

1 - felt very tired
1 - would like more sessions
1 - doesn't like self-hypnosis
1 - felt as if could "conquer the world"
1 - gone through alot of changes as a result of the sessions
1 - felt very relaxed
1 - used hypnosis that was learned in the sessions in dentist's chair to reduce amount of medication

needed
1 - felt went even deeper this time

First Telephone Follow-up Form

Client: _____

Date: _____

Group: 1 session / 3 session

Sessions attended: 1 2 3

1. Have you smoked since your last hypnosis session?

38 (88%) YES
5 (12%) NO (two subjects had had one cigarette)

2. If YES to 1:

3. How much time passed between your last cigarette and the time you started smoking?

28 0 - 1 week
7 1 - 2 weeks
3 2 - 3 weeks

4. How easy was it for you to not smoke during that time?

11 1. very easy
7 2. somewhat easy
6 3. somewhat difficult
8 4. very difficult
6 no answer

5. What were your reasons for beginning smoking?

11 stress
7 no answer
6 wanted to smoke
3 not sure
3 other smokers
2 crisis
2 withdrawal symptoms
1 bad day
1 lack of reinforcement
1 habit
1 boredom

6. Are you currently smoking?

36 YES
1 NO
1 no answer

7. If YES, how important is it to you to quit?

15 1. very important
10 2. somewhat important
6 3. somewhat not important
1 4. not at all
4 no answer

8. Do you anticipate trying another program to stop smoking?

17 YES
12 NO
7 not sure
1 no answer

If YES, what?

10 not sure
4 hypnosis
2 smoke enders
1 laser

9. If NO to 1.: How easy is it for you to not smoke?

2 1. very easy
3 2. somewhat easy
0 3. somewhat difficult
0 4. very difficult

10. Was the hypnosis helpful in assisting you to quit?

37 YES
3 NO
3 no answer

11. If YES to 10, how helpful was it?

17 1. very helpful
18 2. somewhat helpful
4 3. somewhat not helpful
2 4. not helpful at all
2 no answer

12. Did you do the self hypnosis exercise?

30 YES
11 NO
2 no answer

13. If YES, how often per day?

17 0 - 3 times
3 4 - 7 times
4 7+
6 not sure or no answer

14. If NO to 12, Why not?

4 didn't remember
1 didn't think I could do it
1 didn't think it was important
5 no answer

15. If NO to 12, Do you think that not doing the self hypnosis affected your being able to quit?

6 YES
1 NO
4 no answer

16. How would you rate the location of the hypnosis program?

9 1. very convenient
9 2. somewhat convenient
6 3. somewhat inconvenient
12 4. very inconvenient
7 no answer

17. How would you rate your appointment time(s)?

29 1. very convenient
3 2. somewhat convenient
1 3. somewhat inconvenient
0 4. very inconvenient
10 no answer

18. In terms of the time you spent in the program, would you say the time involved was:

0 1. too much
21 2. just right
16 3. too little
6 no answer

QUESTION 19 FOR THREE SESSION DROPOUTS:

19. Originally you signed up for three sessions, and you didn't complete all three. Was this because:

1 a. you started smoking and were too embarrassed to return

2 b. felt discouraged because it didn't work right away
0 c. found the hypnosis worked and you didn't need to return
0 d. lost interest
8 e. other:
5 - too busy
1 - wanted to smoke
2 - family crisis
2 no answer

20. Looking back on it now, when you first signed up, how much did you want to quit smoking?

19 a. alot
15 b. somewhat
0 c. not much
0 d. don't know
0 e. other
9 no answer

21. Based on your experience, would you recommend hypnosis to other people wanting to quit?

29 YES
1 NO
4 not sure
9 no answer

22. Is there any advice you could give me for improving this program?

Comments were as follows:

improve location
session too long
make first follow-up call sooner
wasn't ready to quit
stress self-hypnosis more
excellent program
more sessions
used hypnosis techniques for dental work
pink balloon exercise needs more time
would like emergency availability of hypnotist
hypnosis more motivating than other methods tried
prepare people more for withdrawal symptoms
have people go deeper
trigger negative reinforcement with smoking, such as nausea
soothing voice
enjoyed hypnosis, it was very relaxing
found hypnosis helped

do more "bridging" in hypnosis with current situation

Second Telephone Follow-up Form

Client: _____

Date: _____

Group: 1 session / 3 session

1. Have you smoked since the last follow-up call?

0 YES (one subject had one cigarette)
5 NO

Third Telephone Follow-up Form

Client: _____

Date: _____

Group: 1 session / 3 session

1. Have you smoked since the last follow-up call?

0 YES
5 NO

APPENDIX F: Consent Form: (Three-session Approach)

1. The purpose of this project is to see how many people will quit smoking with three hypnosis sessions.

2. Requested of you will be:
a) to sign this consent form if you would like to take part in the study.
b) to fill out a two page questionnaire (all questions are optional).
c) to attend three scheduled hypnosis sessions. The first will last for 75 minutes, and the second and third will last for 55 minutes each.
d) to answer follow-up questions (by telephone or mail), one, two, and three months after the end of the sessions.

3. In total, the time requested of you will be approximately four hours.

4. All questionnaire information will be kept confidential, with only the researcher, Karin Harris, having access to it. The results of the questionnaires will be tabulated, and only totals will be published (with no references to individuals whatsoever).
Any information discussed during the hypnosis sessions will be strictly confidential between you and the researcher. In some instances, the researcher may need to consult with the project advisor, Bill Schulz. In these cases, names or identifying information will not be revealed.

5. You may, at any time, withdraw from this research project, without any penalty. This means that you are free to leave at any time before, or during the hypnosis sessions. Also, you may cancel subsequent appointments without any penalty, and you may state that you not be contacted for follow-up.

6. When this study is complete, the total number of people who quit smoking for three months will be published, along with other comments on the study. A copy of the study report will be mailed to you if you are interested in receiving it. Please check one: _____ yes I would like to receive a copy of the report, or _____ no, I do not want to receive a copy of the report.

7. You may ask questions regarding the study at any time, before, during, or after the hypnosis sessions. You may also call the researcher for any additional information at 667-7058.

8. This study is being done for a Master's thesis in Educational Psychology.

It is our hope that you will find the hypnosis sessions relaxing and enjoyable. If at any time you feel discomfort, know that you are free to leave.

Researcher, Karin Harris

_____

Project Advisor, Bill Schulz

_____

Signature of Consent

_____

Date _____

Appendix F: Consent Form: One-session Approach

1. The purpose of this project is to see how many people will quit smoking with one hypnosis session.

2. Requested of you will be:
a) to sign this consent form if you would like to take part in the study.
b) to fill out a two page questionnaire (all questions are optional).
c) to attend one scheduled hypnosis session, lasting 75 minutes.
d) to answer follow-up questions (by telephone or mail), one, two, and three months after the end of the session.

3. In total, the time requested of you will be approximately two hours.

4. All questionnaire information will be kept confidential, with only the researcher, Karin Harris, having access to it. The results of the questionnaires will be tabulated, and only totals will be published (with no references to individuals whatsoever).
Any information discussed during the hypnosis session will be strictly confidential between you and the researcher. In some instances, the researcher may need to consult with the project advisor, Bill Schulz. In these cases, names or identifying information will not be revealed.

5. You may, at any time, withdraw from this research project, without any penalty. This means that you are free to leave at any time before, or during the hypnosis session. Also, you may state that you not be contacted for follow-up.

6. When this study is complete, the total number of people who quit smoking for three months will be published, along with other comments on the study. A copy of the study report will be mailed to you if you are interested in receiving it. Please check one: _____ yes I would like to receive a copy of the report, or _____ no, I do not want to receive a copy of the report.

7. You may ask questions regarding the study at any time, before, during, or after the hypnosis session. You may also call the researcher for any additional information at 667-7058.

8. This study is being done for a Master's thesis in Educational Psychology.

It is our hope that you will find the hypnosis session relaxing and enjoyable. If at any time you feel discomfort, know that you are free to leave.

Researcher, Karin Harris

_____

Project Advisor, Bill Schulz

_____

Signature of Consent

_____

Date _____

APPENDIX G: Session Script

Pre-hypnotic Discussion

This part of the session was used to build rapport with the client and prepare him or her for the hypnosis. Of importance was to determine the client's reasons for wanting to quit smoking, so that these could be repeated during the trance state. Also, hypnosis in general was described in order to alleviate any fears about it. The following questions and topics were discussed with each subject:

1. The researcher explained hypnosis. That is, it was described as a trance state. Naturally occuring trance states are states that happen in a person's life, that are not consciously directed. One example is when a person drives to work, but does not remember actually driving. Another is the state just before falling asleep. Hypnosis, then, is a guided trance state.

2. The researcher described what hypnosis is used for. That is, it is a way for a person to access his or her unconcious mind to make the changes he or she desires.

3. Explained to the person was that he or she would be in control. Instructions and guided imagery could be changed inside the person's mind to be more suitable.

4. The person was informed that he or she was free to move around during the hypnosis to become comfortable.

5. The person was informed that he or she was free to end the session at any time (even during the hypnosis), for whatever reason.

6. Discussed were common feelings people notice during hypnosis - such as feeling heavy and relaxed, or feeling a floating sensation.

7. Described were signs a person may notice as indications of having been in a trance state - such as time passing by faster than is thought.

8. The client was asked his or her reasons for wanting to quit smoking. He/She was then told that these reasons would be repeated back during the hypnosis.

9. The client was asked what benefits were derived from smoking. How can you achieve these benefits from other means?

10. Asked was whether the client knew of an outdoor place, real or imagined, that is very peaceful and joyful. This imagery was then used in the trance state. Clients who did not know of a place immediately were instructed to give it some thought, and then during the hypnosis, to go with whatever images came to their mind.

11. The client was asked if he or she could remember a time of feeling successful and proud. This imagery was also used during the trance state. Clients who did not remember this feeling were given the same instructions as in point 10 above.

12. If the client had been hypnotized before, he/she was asked to describe the past hypnosis. This information was helpful for knowing how to induce the trance for the person.

13. Any further questions regarding the study were answered.

14. Generally described were the steps to be used in the hypnosis. For example, the client was told "first I will have you stare at a spot, and then when you close your eyes I will count from 10 to one, and then I will ask you to imagine being on a path leading to your favourite outdoor spot . . . . ". Then asked was if any of the statements should be changed. This step was included to help clients feel more comfortable, in that they knew what to expect out of the hypnosis. Also, it was used to uncover any fears, such as the fear of being in the clouds. In these cases, the hypnosis script was changed by taking out the instructions to imagine floating in the clouds. All other instructions were the same.

15. The client was asked if there were any other issues to discuss before starting the hypnosis.

16. The client was asked to do the Swish, described below. This exercise was done to give the researcher information on the client's internal access systems (ie. visual, auditory, or kinesthetic). The information was then used to assist the hypnotist in inducing the trance state.

The Swish is as follows: "Now imagine sitting in a movie theatre with a large screen:

a) see yourself on the screen feeling proud and successful (from the pre-hypnotic discussion)

b) now make that picture really small, and put it at the bottom left hand corner of the screen

c) now imagine yourself just about to light a cigarette

d) at the count of three erase that picture and make the small picture of you feeling successful fill the screen"

e) repeat steps a) to d) two more times

17. The client was informed that the researcher would ask him/her to touch his/her thumb to forefinger during the hypnosis. This was done to create a kinesthetic anchor for later use with self hypnosis.

The Trance Induction

1. The person was asked to recline the chair back and become comfortable. A selection of background music was then offered. Choices were: wave sounds, thunderstorm, Manitoba bird sounds, musical tones, or nothing.

2. The Dr. Flower technique of induction was then used to begin inducing the trance state. This is a method where the person is asked to concentrate on a spot on the wall,

and close his or her eyes when breathing out. The person then reopens the eyes to resume staring at the spot. Ten counts of this were done, and the person was told that at any time he or she could keep the eyes closed.

3. A 10-to-one progressive relaxation count down was then used, as follows: "Begin by taking a deep, slow breath, pausing for just a moment after you inhale, and then exhaling completely. Continue to breathe slowly and naturally. As you sink into this slow, calm pattern of deep breathing, imagine that with every breath out you release tension and become more relaxed.

Now I am going to count backwards from 10 to one. Continue to breathe very slowly and calmly. Ten . . . gently drift your awareness to your feet and toes. As you breathe out imagine the tension leaving your feet and toes. Breathing in relaxation and calmness, spreading through your feet.

Nine . . . gently shift your awareness to your calves, and lower legs. Feel them fully supported by the chair as they become more relaxed, deeper, and deeper. As you inhale fully and naturally, drift deeper into a state of calmness and peaceful relaxation.

Eight . . . gently concentrate on the muscles in your quadriceps and upper legs. Feel them relax and let go.

Seven . . . feel your pelvic muscles and lower stomache relax, slowly and calmly letting go of any tension.

As you continue to breathe naturally and slowly, feel your body fully supported by the chair beneath you. Gently go deeper and deeper into calmness and peace.

Six . . . bring your awareness to the muscles in your back. As you breathe out, feel them fill with warmth and relaxation. As you breathe slowly and easily, allow yourself to drift deeper and deeper into a feeling of calmness and serenity.

Five . . . slowly drift your attention to your chest. As you breathe out allow the muscles in your rib cage to relax, so that your breathing becomes even more relaxed and easy. As you drift deeper into peacefulness . . .

Four . . . focus your attention on your shoulders, letting them drop and relax. Feeling freer and lighter. Let them become loose and limp, feeling very relaxed and calm.

Three . . . now gently consider the muscles in the back of your head. Allow these muscles to go loose and limp. Peacefully into a state of calmness and relaxation.

Two . . . gently notice your jaw muscles. Let them relax fully, perhaps even allowing your mouth to open a slight bit as you drift deeper and deeper.

One . . . notice your eye muscles, and the muscles surrounding them. Feel your upper eyelids against your lower lids. Letting yourself now enjoy the feeling of being deeply relaxed and at peace."

Hypnosis

A standard pattern of images and suggestions were used for each subject, interspersed with individualized suggestions. All statements were positively oriented. For example, if a person wanted to quit smoking to become less tired, suggestions were stated to emphasize feeling more energetic. Noxious imagery was NOT used. That is, smoking was not paired with harm and damage to the body. Suggestions were as follows:

1. "Imagine walking on a path that leads you to your favourite outdoor place. Feel your feet beneath the ground as you walk. Notice the air against your face. Look at the surroundings around the path. Notice any sounds that you hear along this path. Feel the muscles in your calves as you take each step. As you are easily walking along this path, you may notice in the distance your favourite outdoor place."

2. "Arriving at your favourite place now, just check it out. Make sure it is exactly as you want it. Perfect and relaxing. Notice the sights around you. Hear the sounds associated with your favourite place. Feel the air against your face. You may even notice feelings of peace and contentment at this place."

3. "Look around this place and choose a spot to sit or

lie down on. As you are sitting or lying, feeling very comfortable, a peaceful alertness. As you take in a deep breath, look up at the blue sky above you. Begin breathing in the air around you. Breath in the light blue air, smelling the freshness of it. Breath in the blue sky around you. With each breath in you may begin to feel lighter and lighter. Each time you exhale you breathe out heaviness. Continuing to feel even lighter still. And as you breathe in sky you may be aware that you have almost stopped feeling your body on the ground. It's almost as if your body has begun to gently lift off the ground. Continuing to breathe in the blue light sky. And with each breath, feeling yourself rise up a little higher and higher. You may even notice yourself up in the clouds, floating and feeling free and light. As light as the air around you. And now you may chose to continue floating, or perhaps even fly off somewhere. In a moment I will ask you to touch your thumb to your forefinger. I will begin now to talk about your reasons for being a non-smoker. Touching your thumb now to your forefinger, remembering that you can at any time in the future repeat this simple act to recall this feeling of deep relaxation." [Put in individualized reasons here.]

That is, the person's own reasons for wanting to quit smoking were repeated. For example, "realize that each day you save more and more money from not smoking. You may even begin to think about something special that you would like

to do with that money to reward yourself for not smoking . . . "

"Take a moment now to within your own mind say to yourself any additional reasons for being a nonsmoker that you might have. When you have done this allow your hand to return to it's original resting position."

4. "Now imagine yourself standing in front of a chalk board. On the board is written the word CIGARETTES. Approach the board and erase the word. Now pick up a piece of chalk and write: SUCCESS. Feel what it feels like to be successful. You are now a non-smoker. You have successfully quit smoking."

5. "Now imagine sitting in a movie theatre with a large screen. Imagine yourself on the screen in the future." [Put in personalized visualizations here. For example, 'see the money in your hand that you have saved from not smoking . . .'] "And now jump into the movie and actually be there. (The person was asked to concentrate on feelings, images, sounds, etc. that would be happening in this situation.)

"And now I would like you to imagine yourself in a future time when you would previously have smoked. Feel successful and proud that you are a non-smoker."

6. "Shrink this picture and put a pink balloon around it. Have the balloon float up into the universe, collecting all the energy that you need to continue to be a successful

non-smoker."

7. The person was then taken out of the trance, by counting up from one to five.

A Form of Self Hypnosis

1. The person was informed that any time in the future, he or she could take in a deep breath, and recall all the positive benefits of being a non-smoker. The thumb to forefinger touch could be used as a reminder of the hypnosis. The decision to use the self-hypnosis was left with the client.

Post-hypnotic discussion

1. The client was asked, "What were your feelings, reactions, thoughts, etc. about the hypnosis? Would you change anything the next time?"

2. Further appointments were confirmed with people in the three-session approach. For the one-session people, the researcher asked permission to phone for a follow-up call in four weeks.

APPENDIX H: Chapter Three Computations

Chi Square Calculations

Formula from MacPherson (1987)

	Treat #1	Treat #2
Result 1	A	B
Result 2	C	D

Define

V = A + B
W = C + D
X = A + C
Y = B + D
Z = V + W
P = V · X / Z
Q = V · Y / Z
R = W · X / Z
S = W · Y / Z

Then

$$\text{Chi square} = (A-P)^2/P + (B-Q)^2/Q + (C-R)^2/R + (D-S)^2/S$$

1.

	Treat #1	Treat #2
Result 1	7	3
Result 2	20	23

V = 10.00
W = 43.00
X = 27.00
Y = 26.00
Z = 53.00
P = 5.09
Q = 4.91
R = 21.91
S = 21.09
Chi square = 1.79

2.

	Treat #1	Treat #2
Result 1	4	1
Result 2	16	22

V = 5.00
W = 38.00
X = 20.00
Y = 23.00
Z = 43.00

P = 2.33
Q = 2.67
R = 17.67
S = 20.33
Chi square = 2.55

3.

	Treat #1	Treat #2
Result 1	1	4
Result 2	30	8

V = 5.00
W = 38.00
X = 31.00
Y = 12.00
Z = 43.00
P = 3.60
Q = 1.40
R = 27.40
S = 10.60
Chi square = 7.63

4.

	Treat #1	Treat #2
Result 1	0	7
Result 2	5	31

V = 7.00
W = 36.00
X = 5.00
Y = 38.00
Z = 43.00
P = 0.81
Q = 6.19
R = 4.19
S = 31.81
Chi square = 1.10

5.

	Treat #1	Treat #2
Result 1	5	29
Result 2	0	9

V = 34.00
W = 9.00
X = 5.00
Y = 38.00
Z = 43.00
P = 3.95
Q = 30.05
R = 1.05
S = 7.95

Chi square = 1.50

6.

	Treat #1	Treat #2
Result 1	4	10
Result 2	1	28

V = 14.00
W = 29.00
X = 5.00
Y = 38.00
Z = 43.00
P = 1.63
Q = 12.37
R = 3.37
S = 25.63
Chi square = 5.80

7.

	Treat #1	Treat #2
Result 1	1	23
Result 2	4	15

V = 24.00
W = 19.00
X = 5.00
Y = 38.00
Z = 43.00
P = 2.79
Q = 21.21
R = 2.21
S = 16.79
Chi square = 2.94

8.

	Treat #1	Treat #2
Result 1	4	3
Result 2	9	3

V = 7.00
W = 12.00
X = 13.00
Y = 6.00
Z = 19.00
P = 4.79
Q = 2.21
R = 8.21
S = 3.79
Chi square = 0.65

9.

	Treat #1	Treat #2

Result 1	2	5
Result 2	7	4

V =	7.00	
W =	11.00	
X =	9.00	
Y =	9.00	
Z =	18.00	
P =	3.50	
Q =	3.50	
R =	5.50	
S =	5.50	
Chi square =		2.10

10.

	Treat #1	Treat #2
Result 1	2	0
Result 2	6	12

V =	2.00	
W =	18.00	
X =	8.00	
Y =	12.00	
Z =	20.00	
P =	0.80	
Q =	1.20	
R =	7.20	
S =	10.80	
Chi square =		3.33

11. Results from SAS

APPENDIX I: Chi Square Calculations

	Single	Multi	Group	Combined	Total
Expected	97	52	14	28	191
Observed	90	53	13	35	191
Difference	7	1	1	7	

Chi Square = 49/97 + 1/52 + 1/14 + 49/28 = 2.345 d.f. = 3

$p > .2$