DOCUMENT RESUME

ED 176 129 CG 013 719

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TITLE Behavioral Strategies for Nonsmokers: Avoiding and Confronting Smokers.
PUB DATE Jun 79
NOTE 17p.; Paper presented at the Meeting of the Association for Behavior Analysis (Dearborn, Michigan, June 16-19, 1979)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adults; *Air Pollution Control; *Behavior Change; *Conflict Resolution; *Ecological Factors; Environmental Influences; *Health; Individual Needs; *Smoking

ABSTRACT

Nonsmokers repeatedly breathe smoke-polluted air in various settings, despite the evidence demonstrating the deleterious consequences upon such passive smokers. The extent of exposure to environmental irritants during a 17-day baseline period was tested, and the efficacy of two simple behavioral strategies in reducing smoke were documented (requests to stop smoking, by nonsmokers to smokers, and avoiding being with smokers). While the tactics were efficacious, their use generated considerable negative as well as positive reaction. The first tactic, actively avoiding smokers, reduced rates of daily smoke exposure from 40 minutes to 29 minutes. The second approach, avoiding and confronting smokers (i.e., politely asking them not to smoke), succeeded in practically eliminating exposure to smoke. Although rates of smoking increased during the final baseline period, levels remained lower than the initial baseline and avoidance phases. (Author/LS)

Behavioral Strategies for Nonsmokers: Avoiding and Confronting Smokers

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Paper presented at the meeting of the Association for Behavior Analysis, Dearborn, Michigan, June, 1979.

My thanks to Bill Collamer for his help in obtaining reliability estimates.

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Behavioral Strategies for Nonsmokers:

Avoiding and Confronting Smokers

While the majority of Americans do not smoke, they are passive smokers due to the necessity of living and working in pervasive smoke polluted settings. This is noteworthy given the recent report by the Surgeon General which indicated that passive smoking is hazardous to the health of nonsmokers (Congressional Record, 1972). Passive smoking increases levels of carboxyhemoglobin (Russell, Cole, & Brown, 1973). This elevation can adversely affect individuals with coronary heart disease (Aronow, 1974). Exposure to smoke filled settings can cause severe eye and throat irritations (Weber, Jermini, & Grandjean, 1976), particularly for eight million people with common allergies clinically sensitive to smoke (Zussman, 1974). The adverse effects of living in smoke polluted environments has even been documented with children. Exposure to smoky family settings enhances the risk of sudden infant death syndrome (Bergman & Wiesner, 1976) and increases the incidence of infant admissions to hospitals for bronchitis and pneumonia (Harlap & Davies, 1974). Given the plethora of deleterious consequences of passive smoking, behavioral psychologists need to investigate strategies to help nonsmokers exert more control over this noxious environmental irritant.

A series of studies in Chicago has evaluated the efficacy of signs and requests in reducing smoking behaviors. Jason and Clay (in press) showed that barbers could reduce smoking behaviors in a barber shop by posting no-smoking signs and politely requesting customers not to smoke. Jason (Noted) eliminated

smoking behaviors in his faculty office after posting a no-smoking sign. Jason et al., Note 2) had a research assistant approach smoking customers by the check-out counters in two supermarkets, and found over 90% complied with a request to extinguish their cigarettes. In another study (Jason & Savio, in press), four nonsmoking secretaries dramatically reduced smoking behaviors by consistently asking their bosses not to smoke in their working area. The above studies indicate that smoking behaviors of barber shop and supermarket customers, friends, associates and employers can be controlled by relatively simple stimulus and consequence control tactics.

While previous investigations have indicated that smoking behaviors could be reduced in circumscribed target areas, nonsmokers need strategies which might be effective throughout an entire day (i.e., decreasing noxious irritants in diverse smoke-polluted settings). The present case-study initially assessed the extent of daily exposure to smoke in multiple settings, and then investigated the efficacy of two behavioral strategies: avoidance and confrontation. The former tactic entailed avoiding people who were smoking, the latter combined this approach with polite requests not to smoke. The effectiveness and practicality of these approaches were studied.

Method

The impetus for the study arose during a pilot experiment involving seven De Paul undergraduates enrolled in a course in Behavioral Community psychology. Six of the nonsmoking undergraduates monitored for one week the number of people who smoked in their vicinity (i.e., in any setting where they could see the cigarette, cigar, or pipe lit and smell the smoke) and whether the smoker

asked permission to smoke. One hundred episodes of smoking were recorded, and none of the smokers asked nonsmokers permission to smoke. During the subsequent week, three of the undergraduates asked 13 smokers not to smoke in their presence (six complied with this request). Another undergraduate tried avoiding (walking away from) or escaping from smokers for a week and daily exposure to smokers decreased from 2.4 to .6. One undergraduate who smoked monitored for two weeks the number of people she smoked in front of and the responses to her question, "Do you mind if I smoke in your presence?" Only two out of 62 people asked her not to smoke. These preliminary findings suggested that most nonsmokers are extremely passive, and that avoidance and confrontation strategies might effectively reduce exposure to smoke.

Following this exploratory study, I decided to serve as the participant-observer in a more precise and long-term experiment. As a faculty member at De Paul University, I noticed that on a typical day I encountered smokers in a variety of settings in the psychology building (i.e., hallways, meeting rooms, the secretaries' reception area, etc.), during lunch at the faculty club, walking down the street with smoking colleagues, as well as in community facilities (in teacher lounges, at elementary schools, at community group meetings, etc). The study focused on assessing and modifying smoking behaviors in these diverse settings.

Dependent Variables

In order to assess daily exposure to smoke, I counted the number of times and the amount of time I was in proximity to a person having a lit cigarette, cigar, or pipe. Examples of this included walking with a smoker outside, being at a meeting where one individual was smoking, eating lunch with a faculty member who was smoking, etc. If I was with a group of people in the hallway or at a meeting where several individuals were smoking, each smoker was counted

once (regardless of the number of cigarettes smoked) and the duration of exposure was the number of seconds one or more cigarettes was lit (separate counts for each lit cigarette were not made). If I entered a smoke-filled room, but nobody was currently smoking in the room, this exposure was not recorded. In addition, if a person walked by me while smoking, this exposure was also not tabulated.

Experimental Conditions

The study utilized an A-B-A-BC-A design. Each of the phases lasted 17 days. Each day, data was collected during an eight hour period, from 9:00 a.m. to 5:00 p.m. All phases occurred during the academic school year.

Baseline: During this period, naturalistic rates of exposure to individuals with lit cigarettes were monitored in all settings I entered.

Avoidance: In this phase, attempts were made to stay away from smokers either by avoiding or escaping from them. For example, I avoided the secretary when she smoked cigarettes, and only entered her work area when she was not smoking. If a colleague or student with a lit cigarette approached me, I would terminate the contact as quickly as possible by saying I had to go somewhere. This episode illustrates an escape response. I attended all required faculty, clinic, research, and committee meetings, as well as individual conferences with students and faculty members, even though smoking occurred in these settings.

Baseline: For this condition, I ceased all avoidance activities.

Confrontation and Avoidance: During this phase, if I could not avoid a setting, I directly confronted each smoker by saying, "Would you mind

not smoking here?" Individuals who were currently smoking as well as those about to light a cigarette, cigar or pipe were approached. When I was in settings where attendance was optional (e.g., talking with students in a hallway), I actively avoided smokers (using a strategy delineated in the avoidance condition). During this phase, I recorded the number of people who complied with my request, and the number of smokers from which I escaped. I did not record the number of smokers avoided.

Baseline: During this phase, baseline conditions were once again reinstated.

Reliability

During different phases of the study, a nonsmoking graduate student obtained six independent observations of the two dependent variables.

Results

Reliability

In six separate settings during experimental phases, reliability estimates were obtained. Agreement between observers was 100% for the number of people in proximity to the observers having a lit cigarette, cigar or pipe (3 smokers were counted in these six settings). The observers reached an average agreement of 97% (the minutes counted by one observer were divided by minutes counted by the other observer) for the number of minutes exposed to the smoking individuals. Both observers agreed that one individual complied with the request to put out a cigarette, and one smoker was avoided.

Experimental Conditions

Figure 1 and Table 1 present data collected across the five experimental

conditions.

Insert Figure 1 and Table 1 about here

Baseline: During this phase, I was exposed to about 40 minutes of smoke each day. Regrettably, minutes of exposure to smoke were not stable in this 17 day period. The highest rates of exposure occurred during various meetings in the clinic and psychology department. None of the smokers asked the author permission to smoke in either this phase or in the subsequent four phases.

Avoidance: During this phase, exposure to smoke was reduced by about 10 minutes per day. However, even using an avoidance strategy, smoke exposure was relatively high (averaging about 29 minutes each day). The number of smokers encountered decreased by 1.4 during this phase.

Baseline: When the avoidance strategy was eliminated, exposure to smoke increased, averaging about 51 minutes per day.

Confrontation plus avoidance: Exposure to smoking decreased considerably during this phase, averaging only .4 minutes per day. Of the 50 episodes encountered in this phase, I successfully escaped 32 smokers, 15 complied with my request to not smoke, and three put out their cigarettes when I entered a setting they occupied (all three had previously been requested not to smoke).

While most smokers complied quickly with my request, several responded in the following ways. One person asked if smoke bothered me. When

I said yes, he put the cigarette out. Another replied, "You want me not to smoke. Does this bother you at a sensory or cognitive level? I hope this request is not just a bill of rights." When I responded that smoking really bothered me, he put his cigar out. At a meeting, a faculty member was asked not to smoke, and he replied, "I won't smoke, but I'm not as glad to do this as I was when I was asked in your office." Another faculty member responded,"If I don't smoke, I'll have a nicotine fit." Still another tried to make a deal with me, saying, "I'll not smoke at meetings if you can get people to stop chewing Juicy Fruit gum and using Old Spice deodorant. I personally can't stand those odors." A student encountered outside replied, "Oh, come on. You're not going to make me not smoke here." One associate, after being asked not to smoke, stopped talking to me.

Baseline: During this baseline phase, rates of smoking began to increase (averaging 14 minutes per day). Several individuals continued not to smoke in my presence; others began to smoke once again.

Discussion

Previous investigations, targeted towards specific settings, have indicated that behavioral strategies could reduce smoke in an office setting (Jason, note 1), supermarkets (Jason, Clay, Savio, & Martin, Note 2), a barber shop (Jason & Clay, in press) and a work setting (Jason & Savio, in press). The present study extends these findings by documenting the extent of smoke exposure in multiple settings and by assessing the differential effectiveness of two behavioral strategies in reducing these rates. During the first two baseline phases, the author was

exposed to about 40 - 51 minutes of smoke daily. An avoidance strategy was only minimally effective in lowering these excessively high rates. The combination of confrontation and avoidance immediately and effectively reduced exposure to smoke. With cessation of these behavioral strategies, rates of smoke exposure insidiously increased.

In the pilot study, an undergraduate conduced towards substantial reductions in smoking using the avoidance strategy. Only modest reductions were noted when I used this strategy. This suggests that some nonsmokers might be more successful avoiding smoke-filled settings, whereas others, who are required to be present at such settings, might need to employ more confrontative approaches. The combination of confrontation and avoidance succeeded in reducing the levels of daily smoke exposure. While the tactics were efficacious, their use generated considerable reactions, both positive and negative. Several nonsmokers applauded my efforts at curtailing irresponsible smoking patterns (even these individuals, however, never were observed to model my confrontative behaviors). Several smokers became rather angry and perturbed at my persistent requests not to smoke. One associate even stopped talking to me following one of my requests. Several other relationships with smokers became strained; this was impressionistically confirmed by a perceived decline in interactions and informal dialogues with them.

Several undergraduates in the preliminary study obtained less success in implementing the confrontation tactics. More than likely, student deference to my perceived role as an authority figure contributed to extraordinarily high rates of compliance. However, attained compliance was not solely due to interpersonal perceptions of status or power since faculty members with higher seniority and prestige also honored my requests. Further research needs to focus on determining under what conditions, with which individuals,

and with which specific confrontation techniques, compliance is obtained.

Because the effective treatment package included both avoidance and confrontation elements, the independent and distinctive contribution of confrontation was not systematically evaluated. The unilateral effects of confrontation have been demonstrated in supermarkets (Jason, et al., Note 2) and a work setting (Jason & Savio, in press). Employing similar tactics in the present study would have been justifiably offensive to smokers. For example, had I approached a group of smokers in the hall, it would have been presumptuous and grating to request the extinction of cigarettes when an alternative viable strategy, avoidance, was conveniently available.

Although rates of smoking increased during the last baseline period, levels remained lower than previous baseline and avoidance phases. With cessation of confrontation, many smokers gradually resumed former patterns of irresponsibility. In contrast, several sensitized smokers continued to extinguish or not light cigarettes in my presence. One associate, who had complimented my previous, quixotic efforts at reducing pollution, began requesting that we sit only with nonsmokers during lunch.

In conclusion, the findings suggest that exposure to smoke can be substantially reduced through the use of combined confrontation and avoidance strategies. These results now need to be replicated with groups of nonsmokers in order to assess generalizability. At a broader level, the study's findings indicate that most smokers are incredibly insensitive to the rights of nonsmokers. Behavioral community psychologists need to devote more efforts toward inculcating responsible smoking behaviors, disseminating effective techniques for controlling smoking friends, and lobbying for legislative changes insuring no-smoking sections in all public settings (Jason, 1977).

Reference Notes

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Table 1

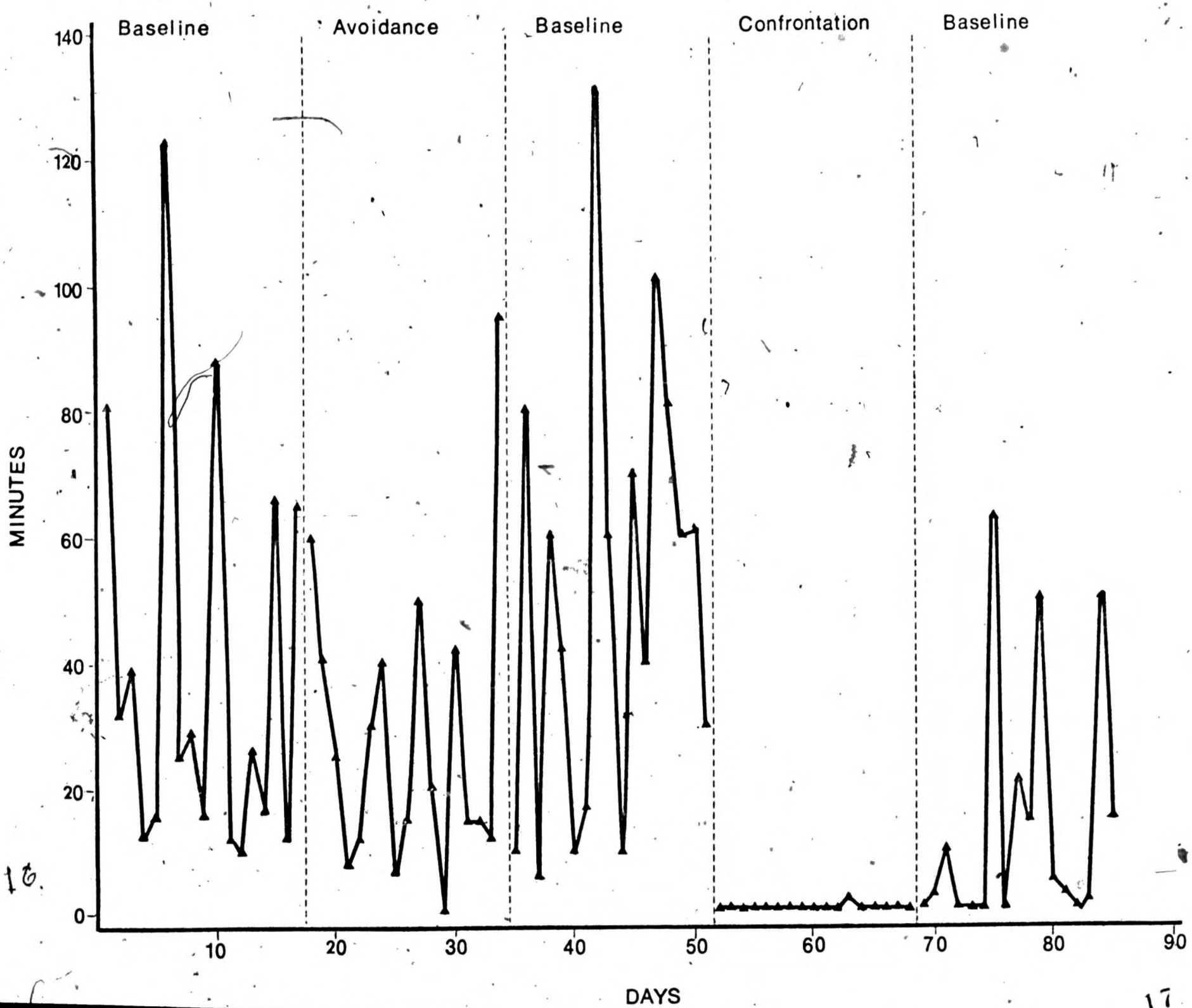
Mean number of smokers and minutes exposed to smoke during the experimental phases

	Smokers		Minutes	
	$\bar{X}$	range	$\bar{X}$	range
Baseline	4.2	(3-7)	39.5	(10-88)
Avoidance	2.8	(0-8)	28.7	(0-95)
Baseline	3.5	(1-7)	51.1	(6-131)
Confrontation	2.9	(0-8)	.4	(0-2)
Baseline	2.9	(0-7)	14.1	(0-63)

Figure 1

Daily Exposure to Smoke across Experimental Conditions

minutes exposed to smoke


Baseline
Avoidance
Baseline
Confrontation
Baseline
140
120
100
80
60
40
20
0
MINUTES
10
20
30
40
50
60
70
80
90
DAYS