Positive Reactions of Alcoholic Men to Sensory Deprivation

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Abstract

Ten male alcoholics who had been abstinent for 2 to 9 weeks volunteered to participate in a study on the effects of sensory deprivation. After 8 hours of lying on a bed in a dark, silent room, they indicated on various measures that they had found the experience to be quite pleasant; in fact, they indicated that they had more frequent positive experiences and less frequent negative experiences than in normal life. This finding indicates that sensory deprivation may be an acceptable treatment modality for alcoholics, as it has been for other clinical populations.

Sensory deprivation has been useful in a variety of clinical contexts (Suedfeld, 1975). Among applications have been several studies reporting

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favorable results in enabling psychologically addicted cigarette smokers to reduce or cease smoking (e.g., Suedfeld and Ikard, 1974). Investigations in the modification of other addictive behaviors, including alcoholism, seem warranted. Social interaction has been reported to facilitate alcoholic drinking, and vice versa (Griffiths et al., 1973; Keehn, 1970); and while environmental enrichment can reinforce moderate drinking (Bigelow et al., 1972; Cohen et al., 1972), social isolation has been reported to suppress alcohol use (Griffiths et al., 1973; Lobb and Schaefer, 1971).

It is quite obvious that reduced environmental and social stimulation cannot be used beneficially if members of the relevant population find such conditions to be very stressful. Therefore, before attempting to use the technique as a clinical tool with alcoholic subjects, it was important to discover whether such individuals could tolerate the situation. As a corollary, we were interested in measuring personality and motivational characteristics related to stimulus-seeking which would be relevant to the reaction to sensory deprivation.

METHOD

Subjects

Because of the problems that may arise from sensorially depriving individuals who are acutely intoxicated, we used only subjects who had been abstinent from 2 weeks to 2½ months. All of the subjects were self-declared alcoholic men who volunteered for this study after having been approached at the Vancouver office of the British Columbia Alcoholic Foundation, the Psychiatric Clinic of The University of British Columbia, or the Burnaby Day Lodge (a self-help communal center). The only criteria for participation were the abstinence referred to previously and a lack of organic nervous system damage as far as could be ascertained. Demographic data are presented in Table 1. Each subject was completely briefed about the experiment and about the sensory deprivation environment, was assured of anonymity in any publication, and was paid $15 for participating. Ten male subjects were used.

Procedure

After reporting to the laboratory, each subject was taken through the sensory deprivation chamber and was thoroughly familiarized with the
Table 1
Demographic Data

<table>
<thead>
<tr>
<th>Subject number</th>
<th>Age</th>
<th>Ordinal position in parental family</th>
<th>Education level, years</th>
<th>Occupation</th>
<th>Marital status</th>
<th>Number of children</th>
<th>Years of alcoholism</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>37</td>
<td>2/3</td>
<td>9</td>
<td>Laborer</td>
<td>Separated</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>2</td>
<td>42</td>
<td>5/5</td>
<td>12</td>
<td>Hairdresser</td>
<td>Divorced</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>29</td>
<td>8/16</td>
<td>10</td>
<td>Laborer</td>
<td>Divorced</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>2/2</td>
<td>8</td>
<td>Laborer</td>
<td>Divorced</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>52</td>
<td>1/4</td>
<td>11</td>
<td>Salesman</td>
<td>Separated</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>55</td>
<td>1/1</td>
<td>10</td>
<td>Barber</td>
<td>Separated</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>7</td>
<td>45</td>
<td>1/1</td>
<td>12</td>
<td>Clerical</td>
<td>Separated</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>8</td>
<td>56</td>
<td>1/1</td>
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<td>Divorced</td>
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<td>26</td>
</tr>
<tr>
<td>9</td>
<td>57</td>
<td>1/1</td>
<td>3</td>
<td>Painter</td>
<td>Separated</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>41</td>
<td>1/3</td>
<td>8</td>
<td>Laborer</td>
<td>Divorced</td>
<td>5</td>
<td>14</td>
</tr>
</tbody>
</table>
furnishings and the equipment. He then signed a consent form to participate in the experiment, and was interviewed to obtain demographic information and alcohol and drug use histories. The following personality measures were then administered: Thing-Person Orientation (Little, 1972); Sensation Seeking Scale (Zuckerman, 1972); Subjective Stress Scale (Berkun et al., 1962); Reactions Checklist (an \textit{ad hoc} measure to evaluate frequency of past experiences in such areas as physical symptoms, changes in arousal level, and hallucinations); and the Multiple Affect Adjective Checklist (Zuckerman and Lubin, 1965).

Subjects were informed that a monitor would always be available in the next room, and would listen via the intercom system to make sure that everything was going well. They were also told that they themselves could terminate the experiment at any time by simply getting off the bed and walking out. The experimenter then left the subject in the chamber, and the lights were turned off.

The subjects were given access to visual stimuli for a 5-minute period during every hour after the first three. Four switches at bedside controlled sets of lights that appeared for 10 seconds on the ceiling directly above the subject's head; each switch initiated one specific stimulus pattern. The patterns varied in complexity (number of bulbs, colors, and locations) and in predictability. The purpose of this procedure was not only to measure whether the subjects would in fact crave stimulation and use the switches to obtain it, but also whether they would consistently prefer a particular level of complexity or predictability (see Jones, 1969).

At the end of the 8-hour sensory deprivation session, the Subjective Stress Scale, the Reactions Checklist, and the Multiple Affect Adjective Checklist were administered once more. The subjects were then taken out of the chamber, debriefed, paid, and released from the laboratory.

\textbf{Sensory Deprivation Procedure}

Sensory deprivation consisted of 8 hours of lying on a bed in a dark, sound-attenuating chamber (Industrial Acoustics Model 404-A). Liquid diet food and water were available \textit{ad lib} through plastic tubes reaching to the pillow of the subject, so that he did not need to leave the bed or sit up in order to obtain nourishment. A chemical toilet was placed in the chamber, and its use was the only acceptable reason for the subject leaving the bed. Participants were instructed not to move about excessively nor to make unnecessary noise. All of the subjects successfully completed the 8-hour session.
RESULTS

Stimulus Seeking

Because of technical problems, the complexity variable of the light display was somewhat difficult to perceive. In general, our subjects did not show preference for any particular light pattern. The effect of amount of time spent in the chamber also failed to reach significance.

Subjects pushed the button for stimulation an average of 133.60 times during the period when visual displays were available, giving an average of 4.45 responses or about 4 minutes of stimulation per hour. This is about the same viewing time as was found with the most nearly equivalent treatment group of Jones et al. (1961).

Subjective Reactions to Sensory Deprivation

Subjective Stress Scale. Subjective Stress Scale responses changed from a mean of 32.4 prior to the session to a mean of 16.8 afterwards, \( t(19) = 4.37, p < .001 \). On the Reactions Checklist, the number of pleasant experiences checked increased from 58 when rated for frequency in normal life prior to sensory deprivation to 73 during sensory deprivation, while the number of unpleasant experiences went down from 71 to 16, \( \chi^2(1) = 12.29, p < .001 \). When the Reactions Checklist was scored for subjective judgments of arousal states, tension symptoms (e.g., restless, alert) decreased from 64 to 26 and relaxation symptoms (e.g., relaxed, peaceful) increased from 37 to 46, \( \chi^2(1) = 22.27, p < .001 \).

Multiple Affect Adjective Checklist. On the Multiple Affect Adjective Checklist, there were no significant changes from before to after the session; the mean scores on depression, hostility, and anxiety before sensory deprivation were quite similar to those for job applicants and considerably lower than those of college students and of mental patients.

Personality Measures

Thing-Person Orientation. The mean scores for our subjects were 21.1 on the Thing component of the scale and 22.5 on the Person component. This is approximately equivalent to the norms of 22.9 and 24.7, respectively, on a sample of 284 male adults (Little, 1972).

Sensation Seeking Scale. The mean scores, converted to standard
deviations on the university student norms of the Sensation Seeking Scale, were \(-0.92\) for the General score, \(-1.77\) on Thrill and Adventure Seeking, \(-0.27\) on Disinhibition, \(-0.74\) on Experience Seeking, and \(-0.14\) on Boredom Susceptibility. Thus our subjects consistently scored lower than the male nonalcoholic students on whom the tests were standardized.

Demographic Data

Demographic characteristics were not significantly related to the other measures. The fact that all of the subjects were divorced or separated, and their relatively low occupational level, were not surprising in view of the life histories of these men, which included various periods of unemployment, frequent bouts of drunkenness, time spent on Skid Row, and similar difficulties. The proportion of first- to later-borns was within the range found in seven previous studies reviewed by Chen and Cobb (1960).

DISCUSSION

Because of the difficulty in discriminating the different levels of complexity and predictability in the visual display, the specific nature of stimulus motivation in the alcoholic subjects was not ascertainable. However, all of our results point to the conclusion that a low-stimulation environment was a positive one for our subjects. They found sensory deprivation pleasant and relaxing, and reported both an increase in positive experiences and a decrease in negative experiences compared to normal-life baseline levels. Our data do not establish whether alcoholics are generally low in stimulation seeking, or whether they find monotony a pleasant time-out from a more usual, and to them aversive, environment (Brownfield, 1966); but in either case, the response was clearly favorable.

The positive reaction of alcoholics to sensory deprivation is encouraging for those who are concerned with the therapy of alcoholism. Previous research has shown that brief periods of physical and social isolation suppress drinking behavior in alcoholics (Bigelow et al., 1974), and that alcoholics prefer to drink in company but in general prefer isolation to socialization (Nathan et al., 1970). There may well be a parallel in the report of Suedfeld and Ikard (1974) that psychologically addicted smokers find the lack of cigarettes nonstressful during the sensory deprivation session, whereas they find it extremely stressful in normal life. There is evidence that schizophrenics, like alcoholics, have positive reactions to
sensory deprivation (Cohen et al., 1959; Harris, 1959; Suedfeld and Roy, 1975) and that the technique is therapeutically effective for them (Azima and Cramer-Azima, 1956, 1957; Cohen et al., 1959; Cooper et al., 1962; Harris, 1959). Our current data, in combination with previous findings, give rise to optimism that sensory deprivation may be similarly useful as a technique in the treatment of alcoholism.

While the therapeutic value of sensory deprivation with alcoholism is as yet only hypothetical, the technique has been demonstrated to be effective with other kinds of habit control, particularly smoking and overeating (Suedfeld and Ikard, 1974; Borrie, 1977). If this approach is to be extended to alcoholism, the model followed in the past would call for the development of appropriate messages and behavioral exercises, to be prepared in collaboration with each patient in order to identify crucial issues and problems for that individual, and the delivery of these inputs during sensory deprivation. Supportive preparation and follow-up would also be desirable to maximize the impact of the treatment as well as to evaluate its results.

In transferring the technique from the experimental laboratory to the clinical setting, a number of issues must be considered. To begin with, relatively little training of technical staff is necessary in the sensory deprivation procedure. Aside from the work of the therapist himself, what is needed is a monitor who sits in a control room to which the sensory deprivation facilities are connected via intercom (and possibly, although not necessarily, by various telemetric instruments for measuring physiological and motoric responses). The primary role of this monitor is to deliver the stimuli and record the responses if any; there is also reassurance for the patient in knowing that he is not isolated in the chamber. This work can be done by secretarial staff, students, or other quickly trained individuals.

While in the current research phase a technically complex and sophisticated sensory deprivation chamber is being used, this probably is not necessary to obtain good therapeutic results. In fact, we are now in the process of planning the establishment of a clinical facility in the city of Vancouver which will use sensory deprivation as one of its primary treatment modalities. The rooms in this facility will consist of small offices, either in the inner core of a building or with the windows completely boarded up and screened, and with additional soundproofing by the use of acoustic tile, insulation material, or the like. Since one control chamber and monitor can handle almost any number of treatment rooms, the number of patients who can be treated at one time depends
only on financial and geographic considerations. The direct cost per patient, not including the time of the therapist or overhead (rent, utilities, insurance, etc.), runs to approximately $50 for a 24-hour session. This includes the payment of a monitor if one must be hired specifically for that purpose. Thus the treatment is potentially not only effective but also quite economical.

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REFERENCES

POSITIVE REACTIONS TO SENSORY DEPRIVATION


