

Confirmatory Analyses of Reasons for Experiencing Psychoactive Drugs during Adolescence

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Abstract

This study established empirically defined reasons for experiences with psychoactive drugs by adolescents. By means of cross-validating procedures involving a series of principal component analyses of data obtained from three separate sample groups, three common motives or reasons for trying/taking drugs were derived: (1) a tension-reduction, or coping motive; (2) a drug-effect motive; and (3) a peer-related motive. The implications of the findings for further research and for treatment and prevention programs are reviewed.

INTRODUCTION

Research into the causes, correlates, and consequences of drug-taking behavior by adolescents and young adults has generated a considerable amount of information over the past three decades. Much of this research, however, has consisted of unrelated studies yielding, in many instances, inconsistent, contradictory, or piecemeal findings. Few researchers have replicated their findings, and still fewer have pursued systematic research that has followed a particular avenue of study, or which has been anchored in a theoretical framework. Some of the most revealing information about drug-taking behavior has emerged either

from studies that were based on a theoretical model (e.g., Jessor, Graves, Hanson, and Jessor, 1968; Jessor and Jessor, 1967; Huba, Wingard, and Bentler, 1980), or from systematic studies that focused on identifying some of the antecedents and correlates of drug-taking behavior (e.g., Kandel, 1978; Segal, Huba, and Singer, 1980; Smith and Fogg, 1978, 1980). It appears that major "breakthroughs" of knowledge concerning drug-taking behavior have, in large part, resulted from studies whose procedures were based on a theoretical model or from systematic research studies that have lent themselves to replication.

The present research, in accordance with the nature of the foregoing discussion, is an attempt to confirm previous findings that addressed reasons for experiencing drugs reported by adolescents (Segal, Cromer, Hobfoll, and Wasserman, 1982; Segal et al., 1980). The confirmation of previous findings should help to establish firm, empirically derived, knowledge concerning reasons for drug-taking behavior among adolescents.

Previous research undertaken by Segal and his associates (1980, 1982) was designed to explore reasons or motives for trying/taking drugs by adolescents and young adults. This research revealed a general consistency of motives for taking drugs across two different populations—university students and adjudicated juveniles. Three similar reasons for using drugs were found in both samples and these reasons were labeled as follows: (1) A *drug-effect motive*, which reflected a desire for increased experiences obtained through the use of drugs; (2) a *tension-reduction*, or *coping motive*, which accounts for the use of drugs to help overcome or cope with stress; and (3) a *peer-related motive*, which represents the influence that peers exert in drug-taking behavior.

The current research sought to determine if these three reasons that were associated with drug-taking behavior could be replicated in different cohorts of adolescents. The specific research question posed was: Would the reasons reported by adolescents for trying/taking drugs reveal similar patterns across divergent groups?

METHOD

Sampling

This research was part of a larger study designed to obtain data about the incidence and prevalence of drug-taking behavior among adolescents in Alaska, conducted in 1982-1983 (see Segal, McKelvy, Bowman, and Mala, 1983). Briefly, an extensive statewide sample was obtained from junior and senior high school students from eight different and widely separated locations to ascertain the nature and extent of drug-taking behavior. Surveys were developed to correspond to the unique characteristics of each location (Anchorage, Barrow, Bethel, Fairbanks, Juneau, Kotzebue, Nome, and Sitka), and to conform to each

school district's regulations regarding research within their schools. Included in each school survey, except for Bethel, were a set of questions pertaining to reasons for trying drugs (see Table 2A in the Results section). These questions were used in earlier studies and were found to be reliable and valid (Segal et al., 1980, 1982).

The sampling procedure involved three different methods, each contingent upon the conditions prescribed by the different school districts. The procedures were: (1) obtaining a random sample of students in grades 7 to 12, (2) surveying the entire school population of students in grades 7 to 12, or (3) surveying only those students whose parents gave permission according to the parental permission procedures formulated by the school district. Three cohort groups were formed based on how the survey data were gathered, and the data from each group were analyzed separately. The results showed a consistency of findings within and among groups; no significant differences were noted. It was thus concluded that the data could be combined to explore regional differences, or be combined to form specifically aggregated groups for cross-validation studies.

The Sample

A total of 3,609 students were surveyed, and in accordance with state and local regulations only age and gender could be requested as identifying information. A complete description of the sampling procedure and of the sample is reported elsewhere (Segal et al., 1983). Briefly, there were 1,770 males and 1,732 females (107 students did not report their gender), with ages ranging from 12 to 19 years. A total of 3,632 students remained eligible for inclusion after the Bethel sample was deleted from this study because the reasons questions were not part of the Bethel school survey. Of those students remaining, only those who reported a lifetime experience of having experienced a drug one or more times in their lifetime were included in the present analyses.

The Survey

The survey developed for each school district, with the exception of Bethel, included a set of 19 questions pertaining to reasons for trying drugs which were answerable on a three-point scale: "True of me," "Sometimes true of me," and "Not true of me." The 19 questions were equivalent to those used in previous research (Segal et al., 1980, 1982). The survey was pilot tested and was found to conform to reading levels beginning at the ninth grade.

Cohorts

The survey data from the seven communities were formed into three data sets based on regional comparisons:

1. Anchorage, which represented the state's largest urban center and largest school district, from which a total of 1,588 students were surveyed by means of a random sample of students in grades 7 to 12 from all junior and senior high schools in the district. A subsample of 757 cases was extracted from the larger sample for inclusion in this study.
2. Juneau, Fairbanks, and Sitka (JFS), which represented an aggregation of data obtained from the state's smaller, but widely separated, regional centers. A total of 1,321 students comprised this group, of which 738 were included in the present analyses.
3. Barrow, Kotzebue, and Nome (BKN), which consisted of an amalgamation of three of the state's rural northern cities. A total of 600 students comprised this cohort, from which 381 were selected for inclusion in the present study.

Analyses

The procedure of creating three separate and independent cohort groups was followed in order to determine (1) if the factor structure found in previous studies (Segal et al., 1980, 1982) could be replicated, and (2) if the factor structure would be congruent across three different groups. The procedure may be described as that of a confirmatory factor analytic procedure, in which factors from previous studies were to be cross-validated. The hypothesis was that the given number of dimensions underlying the covariation among self-reported reasons for trying drugs would be consistent with previous results, as well as being consistent across cohort groups. The factor procedure was thus set to derive three dimensions, with the assumption that the resulting factor structure would demonstrate three factors whose loadings would primarily manifest a tension-reduction factor, a drug-effect factor, and a peer-influence factor. The process of splitting the sample into three groups for the purpose of cross-validating findings is based on a procedure recommended by Bentler (1977).

The data were analyzed by means of principal component analysis (PCA) with varimax rotations. Three separate analyses were conducted, one for each of the cohort groups. Following these analyses the factor structure for each of the three groups was tested for congruency by derivation of coefficients of congruence (Gorsuch, 1974).

RESULTS

Factor Comparisons

The results of the factor comparisons are presented in Table 1, which contains a listing of the coefficients of congruence. The findings indicate that each

Table 1
*Coefficients of Congruence for Comparison of Factor Structure
 Across Samples*

Factors	Anchorage			Juneau Fairbanks Sitka			Barrow Kotzebue Nome		
	I	II	III	I	II	III	I	II	III
JFS									
I	.98	.65	.52						
II	.60	.40	.96						
III	.33	.83	.53						
BKN									
I				.99	.48	.37			
II				.53	.97	.32			
III				.56	.41	.91			
Anch									
I							.98	.64	.53
II							.63	.45	.94
III							.52	.94	.57

of the components or factors within each cohort group has a highly congruent or similar dimension in each of the other two sets of factors. Inspection of Table 1 shows that Factor I is essentially identical across the three groups. Factor II within the Anchorage cohort is congruent with Factor III in the other two samples, and Anchorage's Factor III is congruent with Factor II in the other analyses. The comparison of the factor structure for BKN and JFS indicates that each of the factors is highly congruent with a factor within the other set of factors.

Factor Structure

Tables 2A-2C show the loadings for the three principal components or factors extracted from each of the analyses. Since there is a high degree of congruence among the factors, they are grouped together by factor structure across the three cohorts.

The constellation of loadings on Factor I across the three samples (Table 2A) reveals an interrelated set of reasons for drug-taking behavior. The highest loadings across all three initial factors represent motives that are strongly related to taking drugs to relieve tension and/or to cope with unpleasant or unwanted feelings. Other high loadings for each of the three groups are for taking

Table 2A

Comparison of Loadings on Factor I Across Samples for Reasons for Trying Drugs: Tension-Reduction, or Coping Motive

Reasons	Anchorage	Juneau Fairbanks	Barrow Kotzebue
		Sitka	Nome
	I	I	I
1. To experience something new and exciting	.24	.15	.19
2. To get better insight into myself	.46	.58	.52
3. To experience the high	.45	.17	.24
4. To satisfy my curiosity about what it's like	.08	-.02	-.03
5. To overcome feeling of boredom or depression	.74	.67	.65
6. To give me more pep or energy	.70	.56	.51
7. To relieve anxiety or tension	.77	.77	.79
8. To be more creative	.64	.62	.56
9. To relate better to my friends	.39	.37	.33
10. To expand my awareness and understanding of things	.51	.51	.42
11. To relax	.72	.62	.60
12. To be part of a group	-.01	.12	.16
13. To get away from problems or troubles	.69	.66	.72
14. To have a good time with friends	.37	.30	.24
15. Because of anger or frustration	.68	.69	.73
16. Just feel like it	.40	.35	.30
17. Because my friends encouraged me to	-.02	-.01	.03
18. To increase the effects of other drug(s)	.45	.56	.50
19. To decrease the effects of other drug(s)	.39	.45	.55

drugs: "to relieve anxiety or tension," "to get away from problems or troubles," "to overcome feelings of boredom or depression," and "because of anger or frustration."

Additional reasons for trying drugs that load on the first set of factors involve loadings that show drugs are also taken to obtain a feeling of relaxation, to be more creative, to expand awareness, to achieve self-insight, and to feel more energized.

In all, the consistent pattern of loadings on all three initial factors suggests that a major motive for taking drugs is to not only feel better but to also feel good. Drugs thus appear to be perceived as helping one to transcend problems, to change one's mood, and to help achieve some degree of self-insight. This configuration of reasons shall continue to be identified as a *tension-reducing* or *coping motive*. Persons scoring high on this first factor would tend to be seeking the euphoric-like effect of drugs to deal or cope with tension related to unpleas-

Table 2B
*Comparison of Loadings on Factors Across Samples Showing
 Congruency: Drug-Effect Motive*

Reasons	Anchorage	Juneau	Barrow
		Fairbanks Sitka	Kotzebue Nome
	III	II	II
1. To experience something new and exciting	.69	.74	.71
2. To get better insight into myself	.12	.05	.19
3. To experience the high	.68	.82	.72
4. To satisfy my curiosity about what it's like	.75	.67	.79
5. To overcome feelings of boredom or depression	.27	.25	.19
6. To give me more pep or energy	.33	.38	.45
7. To relieve anxiety or tension	.23	.13	.23
8. To be more creative	.13	.13	.21
9. To relate better to my friends	.18	.08	.11
10. To expand my awareness and understanding of things	.06	.07	.27
11. To relax	.32	.29	.36
12. To be part of a group	.39	.14	.15
13. To get away from problems or troubles	.17	.14	-.01
14. To have a good time with friends	.58	.50	.40
15. Because of anger or frustration	.19	.04	.02
16. Just feel like it	.56	.58	.65
17. Because my friends encouraged me to	.31	.10	.06
18. To increase the effects of other drug(s)	.06	.14	.19
19. To decrease the effects of other drug(s)	.00	.04	.06

ant feeling or emotions. Additionally, the loading on these factors of the two items, taking drugs to increase and to decrease the effects of other drugs, implies that high scorers on Factor I may be more likely to take more than one drug to obtain the effects they seek.

The nature of the loadings on the second set of congruent components (Table 2B) reveals a complementary pattern of reasons for using drugs. Items that load highly on this factor are: to experience the high, because of curiosity, to experience something new and exciting, and because one just feels like it. This pattern of loadings is similar to one described earlier by Segal et al. (1982) which was labeled as a "drug-effect" factor. Since the shape of the loadings across these three factors continues to reflect the use of drugs to achieve an altered state of consciousness, these reasons will continue to be identified as representing a *drug-effect motive* for experiencing drugs. Persons scoring high on this factor would thus tend to be "using" drugs primarily to experience an

Table 2C
*Comparison of Loadings on Factors Across Samples Showing
 Congruency: Peer-Relative Motive*

Reasons	Anchorage	Juneau Fairbanks Sitka	Barrow Kotzebue Nome
	II	III	III
1. To experience something new and exciting	.23	.11	.14
2. To get better insight into myself	.40	.16	.15
3. To experience the high	.06	.07	.07
4. To satisfy my curiosity about what it's like	.19	.15	.12
5. To overcome feelings of boredom or depression	.14	.12	.20
6. To give me more pep or energy	.09	-.04	.00
7. To relieve anxiety or tension	.15	.05	.01
8. To be more creative	.39	.05	.34
9. To relate better to my friends	.64	.64	.72
10. To expand my awareness and understanding of things	.53	.21	.30
11. To relax	.13	.07	.20
12. To be part of a group	.72	.84	.76
13. To get away from problems or troubles	.26	.19	.20
14. To have a good time with friends	.29	.41	.50
15. Because of anger or frustration	.22	.14	.18
16. Just feel like it	.09	.00	.19
17. Because my friends encouraged me to	.74	.76	.73
18. To increase the effects of other drug(s)	.55	.03	.24
19. To decrease the effects of other drug(s)	.57	.02	.50

altered state of consciousness brought about by a drug's effect. Such persons would appear most likely to be experimental "users" or "users" who might tend to take drugs selectively (cf. Segal et al., 1980).

The third set of congruent factors show loadings which support their being labeled as a *peer-related motive* for trying drugs (Table 2C), as evidenced by the loadings for taking drugs because of friends' encouragement, to relate better to friends, and to be part of a group. Individuals scoring high on this factor would tend to take drugs in a social context, and to perceive drugs as a means of facilitating "good times" with friends. Such drug-taking behavior may tend to be symbolic of and depend upon preexisting solidarity and trust within the social context in which drug use occurs.

DISCUSSION

The results of the analyses not only demonstrate a consistency of reasons for experiencing drugs across three divergent groups, but they also confirm

Table 3

Summary of Motives for Drug Use and Their Implications

Motive	Interpretation	Behavioral implications	Research and intervention implications
Tension-reduction/ coping	Seeking euphoric effects of drugs to alter consciousness to deal with stress, tension, or unpleasant emotions.	Beginning the process that may lead from incidental/recreational use to potential abuse and dependency.	Identify more precisely the sources of stress related to the need for drugs. Focus more directly on these factors and develop more meaningful alternatives to help reduce stress.
Drug-effect	Seeking to experience an altered state of consciousness primarily to undergo the phenomenon of the drug experience.	Beginning with one or two drugs and possibly increasing use to more drugs to achieve different and more intense experiences, potentially leading to drug-related problems.	Identify the characteristics associated with high- and low-risk individuals, and develop prevention strategies accordingly. Determine if people who develop drug-related problems attributable to this motive are in need of traditional treatment or whether alternative behaviors need to be learned.
Peer-related	Drugs are chiefly used in a social context, at the urging of friends, to enhance good times with friends (e.g., as a social lubricant).	Motive for use possibly changing from a social/recreational motive to those expressed above.	Examine more precisely the factors that help individuals resist peer influences, and explore if drugs such as marijuana and cocaine are replacing the traditional role of alcohol as the "drug of choice."

previous findings (Segal, 1980, 1982) that identified similar motives for drug-taking behavior. It thus appears that three important empirically derived motives have been developed regarding reasons for drug-taking behavior by adolescents. Specifically, given the consistency of the findings presented in the preceding section, it may be concluded that drug-taking behavior among adolescents may

be largely related to three basic sets of motives or reasons. A summary of these motives, together with statements concerning their potential implications for research and treatment, is presented in Table 3.

The first of these motives appears to be to reduce stress, as indicated by the persistent manifestation of what has been called a tension-reduction, or coping factor. As represented by this factor, drugs are taken to help cope with problems by altering one's mood to not only "feel good" but to also "feel better."

The use of drugs to cope with problems and to feel better has chiefly been associated with alcohol in our society. Jessor et al. (1968) have indicated that a certain kind of drinking is associated with using alcohol to transcend personal problems. The narcotic-like effect of the alcohol seemingly serves to dull one's senses so that one's problems can no longer intrude into consciousness. Jessor et al. attributed such drinking to a personal-effects motive by the drinker.

It would appear that the current youthful generation, one which has grown up during the period of the pharmacological revolution, perceives drugs in the same way that the older generation has perceived alcohol—as a means of helping to deal with problems. Young people have apparently turned to marijuana, cocaine, and other drugs for reasons analogous to those given for alcohol consumption by an older generation.

The relationship between drug-taking behavior and an ostensible attempt to alter one's mood leads to the speculation that adolescent drug-taking behavior, beyond the level of just experimentation with drugs, may be more of a function of personal needs and stresses than of peer influences or other social motives. While peers may help to influence experimentation with drugs, the subsequent or continued use of drugs may be more strongly associated with intrapersonal than interpersonal processes. The finding by Huba, Wingard, and Bentler (1979) that adolescent use of drugs is unrelated to any specialized pattern of interaction with peers or adults lends support to the contention that sustained drug-taking behavior by some adolescents may be more closely tied to coping behavior than to any other reasons. Further research is needed to determine if and/or how this behavior is related to a modeling of the perceptions of and actions toward drugs in the larger society.

A second purpose for trying/taking drugs has been specified as a drug-effect motive. This motive incorporates a desire to use drugs in order to experience the sensations and/or altered state of consciousness that drugs induce. This behavior is consistent with behaviors that have been repeatedly found to be connected with "sensation-seeking" behavior (Segal, 1978; Segal et al., 1980, 1982; Zuckerman, 1979, 1983). Sensation seeking represents a need for varied, novel, and complex sensations and experiences, and is represented by a willingness to take physical and social risks for the sake of such experiences. Given the apparent similarity between the drug-effect motive and aspects of sensation-

seeking behavior, serendipitous convergent validity may have been obtained that supports the relationship between sensation-seeking and drug-taking behavior.

The third incentive to take drugs, identified as peer influence, represents the role that peers have in helping to induce drug-taking behavior. Research has demonstrated that peers exert considerable influence on adolescent values and behavior (Kandel, 1978), and that adolescent initiation into drug-taking behavior has been shown to be largely related to attitudes and closeness of peer relationships (Johnson, 1973; Kandel et al., 1978). This influence is markedly prominent with respect to marijuana (Penning and Barnes, 1982). The current findings tend to continue to illustrate the influence that peers exert on drug-taking behavior.

The consistency of these three motives in the present study, represented by the replication of their orthogonal structure within and across the three sample groups, may be utilized to attempt to identify different kinds of drug-taking behavior by adolescents. Using factor scores as a criterion, youngsters scoring high on all three factors may tend to show a greater willingness to try different drugs and to take them more frequently. Conversely, individuals scoring low on these factors may tend to take drugs less extensively. Different patterns of drug-taking behavior may thus be related to different combinations of motives for taking drugs. More research is clearly needed to determine what each motive means in relation to one's extent of drug use.

The reasons for trying/taking drugs that have been confirmed in this study appear to represent three fundamental motives that have been repeatedly related to drug-taking behavior. Given the replication that they have shown across divergent samples, it may be time to consider them as empirically derived facts and begin to deal with their implications (see Table 2) concerning further research, as well as address their implications for developing intervention and prevention strategies to deal with drug-taking behavior by adolescents and young adults.

Prevention

With respect to implications concerning prevention, it seems clear that there are at least three basic motives that are related to "using" drugs, and that prevention efforts need to be directed accordingly. In the context of taking drugs to cope with problems, the fundamental question that needs to be raised with respect to prevention efforts is: How can adolescents be helped to cope with their problems other than through taking drugs? When drugs are taken out of curiosity or just to experience their effects, the chief question becomes: By what means other than through drugs can adolescents attain stimulation, relaxation, heightened perception, imagery, or euphoria? Drugs taken largely in re-

sponse to peer influence raise the following question: How can adolescents be helped to resist peer pressure to experiment with drugs?

Although there are no complete solutions that will totally answer these questions, efforts can nevertheless be pursued to reduce the risk of trying or taking drugs. For example, in the case where drugs are taken for the purpose of self-medication—that is, to cope with problems—prevention efforts need to be directed at changing attitudes that link the reduction of stress with altering one's state of consciousness. Prevention specialists, particularly educational curriculum specialists, will need to derive precise strategies or curriculum that are responsive to this prevention objective.

In those cases where drugs are taken primarily for the drug experience itself, alternative behaviors need to be introduced that would facilitate the achievement of "natural highs." This objective, however would need to be tied to one that directs adolescent value systems away from attitudes held by many persons in our society who apparently have come to accept drug-taking behavior as part of a life-style emphasizing the social and recreational use of drugs as a means of obtaining new and different experiences (Segal, 1984).

Helping adolescents to overcome the influences that peers exert with respect to drug-taking behavior is another important task that needs to be addressed in attempting to prevent drug-taking behavior. While psychological factors may contribute to a need to "get into drugs," social processes appear to be responsible for helping to initiate one into "drug use." Thus more needs to be known about how and/or why some adolescents are more susceptible to social pressures than others, as well as comprehending more fully the processes that maintain the association with others who "use" drugs. It is also possible that peer pressure may be used to counter drug use by helping youth to advocate for non-drug use as the norm, rather than as the exception.

Treatment

The implications that these findings have for treatment of drug-related problems have been reviewed previously (Segal et al., 1980). Briefly, those who tend to take drugs for purposes of self-medication may be in need of clinical intervention. The source(s) of stress must be identified, and new coping skills learned. Decisions regarding clinical treatment, however, should be made only after a thorough diagnostic evaluation (Segal, *in press*). Many cases may not necessarily require prolonged therapy. A problem-oriented, short-term approach may be more effective.

Adolescents who have taken drugs largely out of curiosity or to satisfy a need for new and different experiences (i.e., sensation-seeking behavior) might require a form of intervention that focuses on redirecting their energies toward finding substitute behaviors that achieve the same satisfactions that had been provided or are anticipated as being derived, through taking drugs.

Research

With respect to furthering basic research, one area that is in need of further investigation is that of determining more precisely the relationship between patterns of drug-taking behavior and personality. Within this context, it may also be important to begin to determine the nature of individual differences with respect to susceptibility and reaction to stress among adolescents, and the role that adolescents perceive drugs to play in their efforts to adapt to stress (Einstein, 1983). Additionally, the complex interaction between psychological and sociological variables is in need of further clarification. Finally, since recent research is suggesting a relationship between biological processes and psychological characteristics (Zuckerman, 1983), the nature of the interaction among biological, psychological, and sociological processes, as they relate to drug-taking behavior, is also in need of further study.

ACKNOWLEDGMENTS

This research was largely supported by a grant from the State Office of Alcoholism and Drug Abuse (SOADA), Department of Health and Social Services, of the State of Alaska. I would like to express my appreciation for the support provided by SOADA, and for the patience and guidance shown by Jim Gorman, SOADA's project director. Further, I would like to acknowledge the thoughtful assistance provided by Dr. Robert Madigan, of the Department of Psychology, University of Alaska Anchorage, for his thoughtful review of the manuscript.

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