

Opioid Addiction and Treatment: A 12-Year Follow-up

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CHAPTER 1

INTRODUCTION

D. Dwayne Simpson, George W. Joe, & Mark E. Barrett

Long-term follow-up studies of addicts treated in the Lexington and Fort Worth Public Health Service hospitals as well as untreated addicts are reviewed. Most of these studies focus on addicts who began heroin use and entered treatment before 1960, but sociocultural influences and treatment methods have changed since that time in this country. The Drug Abuse Reporting Program (DARP) began in 1969 as a national research data system based on an expanding federal drug abuse treatment strategy toward community-based programs that began during that period. The historical development of DARP, the research phases it progressed through prior to its current emphasis on addiction careers, and major findings on treatment effectiveness are discussed as the context for the studies presented in this volume.

CHAPTER 2

RESEARCH DESIGN AND METHODS

D. Dwayne Simpson

This chapter presents the research design and procedures followed in the 12-year follow-up study of the clients admitted to the Drug Abuse Reporting Program (DARP) during 1969 to 1972. It includes descriptions of the DARP treatment admission population, the selection of follow-up samples, the data collection instruments, and results of follow-up samples, the data collection instruments, and results of the fieldwork for conducting follow-up interview. In summary, 697 black and white daily opioid users admitted to the DARP were targeted for study. Of these, 490 (70%) were successfully interviewed, 52 (8%) were deceased, 13 (2%) refused to participate, and 142 (20%) were not located.

Descriptions of fieldwork outcomes and circumstances associated with specific agencies and cities included in the study are also discussed. Finally, indicators of the reliability and validity of the follow-up data – consisting of comparisons of self-reported drug use and criminal involvement with results of urinalysis and official criminal justice records – are presented to document veracity of the data.

CHAPTER 3

LONGITUDINAL OUTCOME PATTERNS

D. Dwayne Simpson

Long-term outcomes for former opioid addicts in the DARP showed that differential treatment effects disappeared by Years 6 and 12 of the follow-up and that 31 to 40% had one or more other treatments during any given year of the follow-up period. However, opioid use declined progressively over time, until Year 6 when it stabilized at about 40% for “any” use and 25% for “daily” use. Three fourths of the sample experienced relapses to daily opioid use after DARP treatment but by Year 12, 63% had achieved at least 3 years without a relapse, and 48% had achieved at least 6 years.

Marijuana continued to be used by just over half of the sample in each year of the follow-up, and over one-third used other non-opioids. In Year 12, nonopioid usage increased sharply to 47%, reflecting cocaine’s rising popularity in the 1980s. Incarcerations in jail or prison were

reported by about one-third of the sample each year, while over half held jobs during 6 or more months annually.

When considered simultaneously, these outcome criteria showed that 55% of the sample had no daily use of any illicit drugs and no incarcerations in Year 12. If employment (1 or more months) is added as a requirement to this recovery profile, it drops to 30% of the sample. At the extreme, a highly stringent recovery profile involving no illegal drug use, no jail, and employment in each month of Year 12 described only 11% of the sample.

CHAPTER 4

REASONS FOR ADDICTION STAGES

George W. Joe, Robert L. Chastain, & D. Dwayne Simpson

Self-reported reasons associated with each addiction career transition stage are examined, as well as their interrelationships between stages. The findings support the idea that multiple paths into addiction are common but that intraindividual reasons – especially euphoria and anxiety reduction – are strong and virtually universal influences. Availability of drugs was also viewed as important by nearly three-fourths of the sample. Social and interpersonal reasons generally were viewed as important by lower percentages, although peer influences were thought to be important by approximately half.

After the addiction career is well established, intraindividual reasons become even more prominent, while interpersonal reasons decline in relative importance as major motivations for continuing daily use. Among those who quit but later relapse and become readdicted, the reasons generally involve intraindividual factors and metabolic (craving) concerns. Decisions to finally quit daily opioid use center around being tired of the hustle, needing a lifestyle change or “hitting bottom,” special events such as getting married, fear of being jailed, and family responsibilities. Availability of drugs as a reason for quitting was viewed as important by less than half of the sample.

Canonical correlation analysis was used to examine reasons given across these phases and it showed that they were often interrelated. In addition, demographic variables and age of drug use onset were also associated with reasons given for different stages. In the initiation phase, for instance, youth tended to begin addiction in order to impress others and seek euphoria, while less educated addicts were more heavily influenced by sensation seeking and peers. On the other end of the addiction cycle, older addicts and females were more likely to quit due to medical or other health-related reasons.

CHAPTER 5

LENGTH OF CAREERS

George W. Joe, Robert L. Chastain, & D. Dwayne Simpson

Length of addiction careers averaged 9.9 years in duration for the total sample, representing the time from first to last daily opioid use. Overall, 28% were addicted 1-5 years, 33% for 6-11 years, 36% for 12-20 years, and 4% for over 20 years. However, 25% were still actively addicted in Year 12 of the follow-up; on the average, this subsample had used for 16 years. The remaining 75% had quit at least a year before follow-up, and they had used for an average of 9 years.

Several variables defined from the sociodemographic background, intraindividual, interpersonal, and environmental domains were examined in relation to addiction career length using regression analysis. Collectively, these predictors explained 50% of the total variance in the measurement of addiction career length. The results showed that sociodemographic background, intraindividual, and environmental domains were most important as predictors. The specific variables that accounted for the largest percentages of variance were years of education, year of first use, sources of financial support, availability of drugs, and self-esteem. In the next tier of importance were several other intraindividual variables (deviance, pleasure, sensation seeking, and leisure activities) and legal pressures. Family and peer-related variables generally accounted for a limited amount of additional variance and were relatively less important in predicting how long active addiction lasts.

CHAPTER 6 **RELAPSE**

**George W. Joe, Robert L. Chastain,
Kerry L. Marsh, & D. Dwayne Simpson**

Relapse to daily opioid use after DARP treatment is examined in relation to selected sociodemographic, intraindividual, interpersonal, and environmental variables. Posttreatment follow-up data showed that relapse to addiction was most probably during the first 3 months following DARP; 27% of the sample became readdicted during this time, and 44% relapsed within 36 months. By the time of the 12-year follow-up interview, 71% of the total sample had relapsed one or more times to daily opioid use. On the other hand, only 25% were still addicted in Year 12, and it had been 3 years or longer since 63% of the sample was last addicted.

Persons at greatest risk of relapse following DARP treatment were under 28 years of age at admission, were never married, had less than a high school education, began their addiction after 1964 (an indicator of younger age at drug initiation, and representing a different drug culture compared to addicts who started before 1964), were more involved in illegal activities for their financial support, felt more satisfied with life at the time they began addiction, tended to use drugs for sensation-seeking reasons, and had more history of legal deviance. Collectively, the results suggest an underlying concept reflecting degree of socialization into a supportive network and to a conventional lifestyle as being significant in predicting later recidivism to opioid addiction.

CHAPTER 7 **TREATMENT HISTORY** **Kerry L. Marsh, George W. Joe, D. Dwayne Simpson, & Wayne E. K. Lehman**

Treatment experiences and their relationships with sociodemographic measures, length of addiction career, and long-term outcomes are examined in this chapter. Numbers and types of treatment, reasons, perceived helpfulness, and expected outcomes are all considered. Types of programs entered most frequently throughout the addiction career defined mutually exclusive groups representing “major treatment,” and addicts were also classified according to nonmutually exclusive “treatment exposure” groups indicating which types of treatment they had

ever received. Background and behavioral outcome variables were then examined with respect to major treatment and exposure classifications.

The findings illustrate the complexity of treatment histories, both in terms of different modalities entered and the number of separate episodes. An average of over six program admissions were reported by each addict, most often involving methadone maintenance. Major types of treatment were found to be associated with the length of the addiction career and with some socialization variables (e.g., employment). The treatment exposure classification was also related to ratings of program helpfulness and to behavioral outcomes. Overall, residential therapeutic communities and outpatient drug-free modalities were rated as most positive, and addicts ever admitted to therapeutic communities had the most favorable outcomes in Year 12. Treatment was considered important in helping addicts quit drug use, although most required multiple episodes before achieving favorable outcomes at follow-up.

CHAPTER 8

CRIMINAL INVOLVEMENT

Wayne E. K. Lehman & D. Dwayne Simpson

Criminal involvement was examined for addicts before, during, and after active addiction phases as well as for their overall life history. Virtually all had some criminal history; over half spent a total of 1 year or longer in jail or prison, and a majority admitted being involved in each of several different major crime categories examined (and the rates were higher for males than females). Criminal behavior among males was almost universal during active addiction: 73% committed crimes against property, 72% committed crimes of acquisition, and 49% committed violent crimes. About half of the male sample, however, was also involved in criminal acts before and after periods of active addiction.

In general, criminal involvement at all stages of the addiction career was linked to nonconventional and unstable lifestyles. Higher criminality before addiction was associated with deviant friends, alcohol problems, and nonopioid use. During-addiction crime rates were correlated with use of nonopioids, more frequent association with other drug users, and preaddiction criminal involvement. Finally, postaddiction crime continued to be related to level of drug and alcohol use as well as preaddiction criminality. Crime was therefore closely associated with the financial support of opioid addiction, but much of it also occurred outside of the immediate pressure to support one's drug habit.

CHAPTER 9

ALCOHOL USE

Wayne E. K. Lehman & D. Dwayne Simpson

Alcohol use and alcohol-related problems were examined at selected points in time from admission to DARP treatment through the 12-year follow-up period. In general, up to half of the sample drank heavily at some point during their addiction careers, and 11% appeared to have a chronic problem with heavy drinking. Alcohol consumption at admission to DARP treatment and throughout the follow-up period was associated with more frequent use of marijuana and nonopioids, but generally not with opioid use. In Year 12, heavier drinking and associated problems were related to indicators of social stability and a past history of alcohol abuse. And finally, substitution of alcohol for opioids was linked to a history of abusive drinking and greater

vulnerability to peer pressure and familial alcoholism. Consequences of substitution appeared to include abusive drinking patterns, elevated marijuana and nonopioid use, and higher levels of psychological dysfunction.

CHAPTER 10

DEATH RATES AND RISK FACTORS

George W. Joe & D. Dwayne Simpson

Mortality risk factors were analyzed for 555 addicts who had survived to the initial 6-year DARP follow-up interview. Significant predictors of mortality included alcohol consumption, opioid drug use patterns, age, and marital status. In particular, addicts who were at higher risk of dying between Years 6 and 12 included those who consumed large amounts of alcohol (over 8 ounces of 80-proof liquor equivalent per day), continued to have drug and alcohol problems, were over 36 years of age at admission to DARP treatment, and were unmarried at Year 6 of the follow-up.

The overall mortality rate of 13.8 was approximately seven times higher than for a general population sample of comparable age. Heavy alcohol consumption was the strongest predictor, with a rate of 29.7 deaths per 1000 person years, compared to a rate of under 11 deaths per 1000 person years for those drinking less than 4 ounces per day.

CHAPTER 11

PREDICTIONS OF 12-YEAR OUTCOMES

Wayne E. K. Lehman & D. Dwayne Simpson

The longitudinal data system of the DARP provides a unique opportunity to examine long-range predictions of addiction outcomes. Prediction models for Year-12 outcomes on individual criteria (drug use, criminality, and employment) and composite scores represented extensions of previous studies on this sample which focused on during-treatment and posttreatment performance.

Thirty-three predictor variables were used from pretreatment, during-treatment, and follow-up data sets for carrying out hierarchical multiple regressions. These variables accounted for 22-34% of the variance in individual outcome criteria in Year 12, and 36% of the composite outcome score. Preadmission measures for background and baseline data as well as DARP treatment variables were relatively unimportant as predictors, compared with more temporally proximal behavioral and psychological adjustment indicators. Thus, the interactional determinants of addiction outcomes limit the usefulness of long-term predictors which are temporally removed in time.

CHAPTER 12

AN INTEGRATIVE MODEL

Wayne E. K. Lehman, George W. Joe, & D. Dwayne Simpson

An integrative, theoretical framework of long-term outcomes for heroin addicts is evaluated which incorporates multiple domains of influence representing sociodemographic background, initiation and baseline, treatment history, 6-year outcomes, and psychological

adjustment. Macro-level analysis based on canonical and partial canonical correlations between these domains was used to estimate path coefficients in the model. At a micro-level, significant direct effects involving specific variables with domains were interpreted using inter-set correlations.

Results of the macro-level analyses showed that variable domains generally had significant direct effects on other domains which followed in close chronological sequence across the overall longitudinal context. For instance, background influences had direct effects on initiation and baseline behaviors, treatment history, and 6-year outcomes, but not on variables measured later on in the addiction career. Micro-level analyses demonstrated the complexity of relationships between these domains and the influence of environment, socialization, and psychological dysfunction on addiction lifestyles. In general, individuals who were more alienated from societal norms were more intensely immersed in deviant behaviors and in the drug subculture over time. In addition, the findings stressed the role of environmental factors (especially drug availability) in addiction careers.

CHAPTER 13

FINAL COMMENTS

D. Dwayne Simpson

The longitudinal data collected from opioid addicts over a 12-year interval following treatment admission in the DARP provided the information needed to examine important aspects of addiction careers. Overall, three out of four addicts in the study relapsed to daily use one or more times after treatment in the DARP. Throughout the last year of the follow-up period, however, 76% had not used opioid drugs daily and 55% had no daily use of any illegal drugs or incarcerations. With respect to the stability of these outcomes, 63% of the sample had at least 3 years without a relapse to daily opioid use.

When compared to findings of most earlier studies reviewed in Chapter 1, these data suggest a relatively high long-term recovery rate. Therefore, potential concerns about the accuracy and generalizability of the data are reviewed, followed by additional comments about some of the major findings and their implications.