Paper 213-26

Using SAS/GRAPH® to Analyze the Effectiveness of Tennessee's Alcohol and Drug Prevention Program among Hispanic Youth

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ABSTRACT

Tennessee Alcohol and Drug Prevention Outcome Longitudinal Evaluation (TADPOLE) is a state-funded program housed at The University of Memphis Department of Anthropology for the purpose of annually evaluating the outcomes of state-funded alcohol and drug abuse prevention programs in Tennessee. At risk adolescents are identified and evaluated before and after participation in alcohol and drug abuse prevention programs administered by thirty agencies across the state. The SAS® system is used throughout this evaluation process, from data cleaning and matching, to growth curve modeling, scaling, and the final analysis. Results are compiled in annual state outcome reports.

Tennessee has shown a disproportionate increase in Hispanic population during the past decade. At the same time, the U.S. Department of Health and Human Services has launched an effort to improve services to Hispanic Americans. The prevention programs currently in place in Tennessee were designed before the advent of this increased Hispanic population and have not yet been modified for this population change. This paper tracks the effectiveness of the statewide prevention programs among Hispanic youth using a multi-graph technique designed in SAS/GRAPH®.

INTRODUCTION

TADPOLE was jointly developed by the Tennessee Department of Health, Bureau of Alcohol and Drug Abuse Services, the Early Intervention Task Force and the Department of Anthropology at The University of Memphis and is an ongoing project. Implementation of this project began July 1, 1992.

Primary prevention programs aimed at reducing alcohol and drug abuse were offered to "at risk" youths in grades three to twelve. Because the younger children were just recently added to this program, and, because a different instrument is used for their evaluation and is available in Spanish, this paper focuses on prevention program participants in grades five through twelve.

All identified "at risk" youths become part of the prevention program. Each agency adopts state approved guidelines for this identification. The Student Attitudinal Survey (SAI) developed by Dr. Sehwan Kim is used for the program evaluation. This instrument consists of seventy-two items, all based on a Likert-type scale and six identification/ demographic items. The questionnaire is designed to be completed in thirty to forty minutes by the students and measures five attitudinal scales: drug attitude, nonrebelliousness, school value, self-esteem, and social attitude, in a pretest-posttest design.

SAS® programs used in this application are generic rather than operating system specific. The results presented in this

paper used SAS for VMS version 6.09e, SAS for Windows version 6.12 and SAS for Windows version 8.1.

DATA ANALYSIS

Pretest and posttest data was collected for seven years for three groups that participated in state alcohol and drug abuse prevention programs: Hispanic youth, Non-Hispanic Youth and Overall Youth. A growth curve model was used to adjust the difference between the two scores for normal attitudinal changes based on age. The percentage change between the pretest and adjusted posttest scores were computed and graphed. Although

not displayed on the graph, a paired t-test design was used to determine statistical significance.

Although data was collected and analyzed for seven years, only the most recent six years are displayed in this paper.

DATA RESULTS

Although consistent improvement is shown for the state as a whole across all attitude scales except "School Value" for all years in the study, there is no identifiable pattern in results for Hispanic participants. This divergent result is more evident when looking at the multi-graph display then when looking at separate graphs or studying tables of data results.

Based on these and other results, new prevention interventions are being piloted and evaluated for effectiveness across all Tennessee's youth populations.

DATA DISPLAY

Using a custom designed multi-graph, multi-variable display created within SAS/GRAPH®, the data for Hispanic youth can be compared over time with non-Hispanic and overall state totals across years and all five attitude scales in one single, easy to understand graphic. The use of this unique multi-graph format provides a single page look at complete results. It is even possible to add one additional variable, such as gender, to the current display without losing the ability to immediately see patterns in the results.

SAS/GRAPH procedures used in the custom multi-graph display are GCHART, GSLIDE, and GREPLAY. The Annotate facility is used to create the legend.

The GREPLAY graph template used for this display is printed at the end of this paper and the SAS programs are available upon request.

CONCLUSION

The SAS System can be used to effectively display results over time to evaluate the effectiveness of the State of Tennessee's drug and alcohol prevention programs among sub-populations. With the creation of a custom multi-graph template, several variables can be displayed and compared in a single graphic.

REFERENCES

"Guide Helps Latino Families Discuss Drugs," *SAMHSA News,* Volume 8, No. 2, Spring 2000, 7-11.

Kim, Sehwan, *Users Manual for Student Attitudinal Survey, Research Monograph Series U1*, DataBase ER Inc., 1990, 1996.

Okerson, Barbara and Paul Quaranta, *TADPOLE: An Application for Evaluation of the State of Tennessee's Alcohol and Drug Prevention Program Using the SAS® System*, SUGI Proceedings, SAS Institute, Inc., 1996.

SAS Institute, Inc. (1990), *SAS/GRAPH Software: Reference, Version 6, First Edition*, Cary, NC: SAS Institute, Inc.

TADPOLE Manual, Fall 2000.

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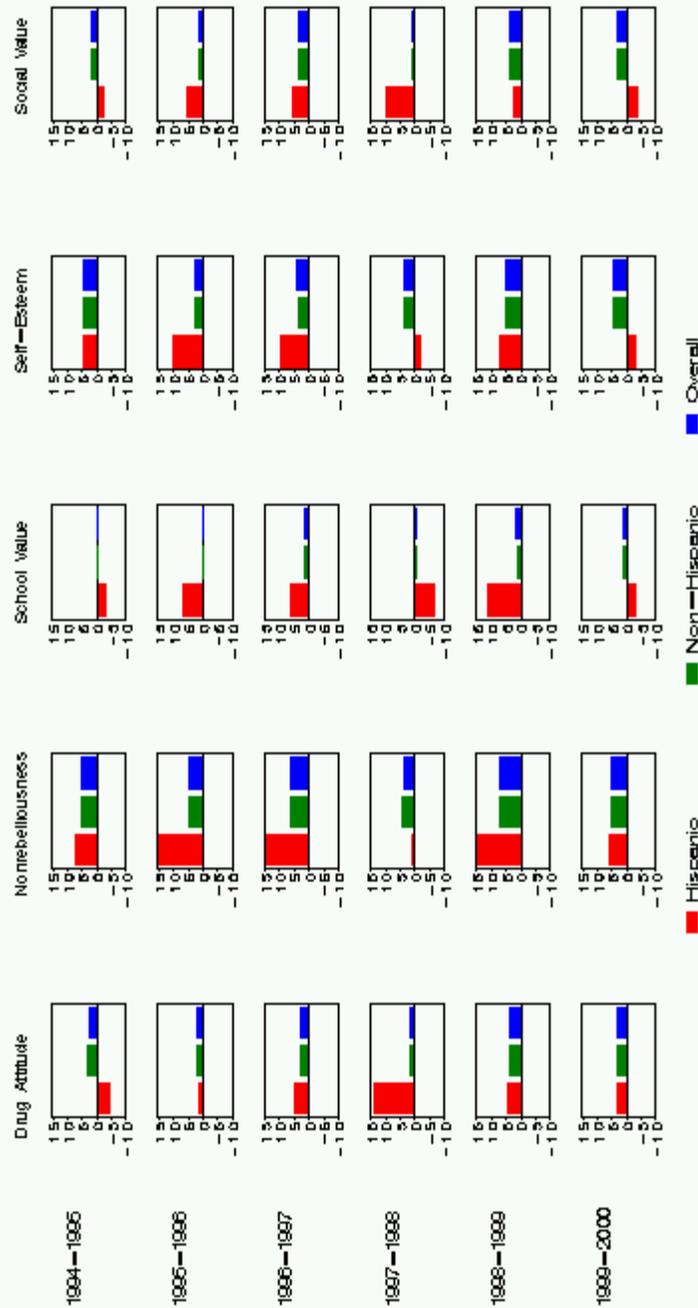   Barbara B. Okerson, Ph.D.
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GRAPH TEMPLATE AND GRAPH

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Tennessee's Alcohol and Drug Abuse Prevention Program
Effectiveness Among Hispanic Youth 1994—2000
Percent Change on Attitude Scales