

ANNOTATED MINUTES

*Tuesday, February 20, 1996 - 10:30 AM
Multnomah County Courthouse, Room 602
1021 SW Fourth, Portland*

BOARD BRIEFING

*B-1 Results of the Postponing Sexual Involvement Project Evaluation.
Presented by Jan Sinclair, Jeanne Gould and Barbara Glick.*

**BARBARA GLICK AND DIANE RAMINSKI
PRESENTATION AND RESPONSE TO BOARD
QUESTIONS AND DISCUSSION. STAFF TO
RETURN IN SIX MONTHS FOR BRIEFING
UPDATES ON TEEN LEADER EVALUATION AND
TWELVE MONTH PROGRAM EVALUATION.**

*Thursday, February 22, 1996 - 9:30 AM
Multnomah County Courthouse, Room 602
1021 SW Fourth, Portland*

REGULAR MEETING

*Chair Beverly Stein convened the meeting at 9:36 a.m., with Vice-Chair
Dan Saltzman, Commissioners Sharron Kelley, Gary Hansen and Tanya Collier
present.*

CONSENT CALENDAR

**FOLLOWING DISCUSSION AND UPON MOTION OF
COMMISSIONER KELLEY, SECONDED BY
COMMISSIONER HANSEN, THE CONSENT
CALENDAR (ITEMS C-1 THROUGH C-8) WAS
UNANIMOUSLY APPROVED WITH THE
CORRECTION TO C-2, APPOINTING MR. MIGGINS
TO THE MULTNOMAH COUNTY AUDIT
COMMITTEE, NOT THE INVESTMENT ADVISORY
BOARD.**

NON-DEPARTMENTAL

- C-1 *Appointments of Cynthia Houston, Angela D. Jackson, Bruce A. Trout, Dianne Duke Johnson and Sal Kadri to the JOBS Plus Implementation Council*
- C-2 *Appointment of Henry C. Miggins to the Multnomah County Audit Committee*
- C-3 *Appointment of Cecil C. Prescod to the Metropolitan Human Rights Commission*

DEPARTMENT OF ENVIRONMENTAL SERVICES

- C-4 *CU 10-95/HV 25-95/SEC 9-95 Hearings Officer Decision APPROVING, With Conditions, a Conditional Use Permit for a Single Family Dwelling, a Variance from a Required Setback and a Significant Environmental Concern Permit for Placement of a Septic Tank within 300 Feet of a Significant Stream, for Property Located at 38210 KNIERIEM ROAD, CORBETT*
- C-5 *LD 8-95/MC 3-95 Hearings Officer Decision APPROVING, With Conditions, a Two Parcel Land Division with Proposed Access to the Parcels from an Existing Private Easement, for Property Located at 39456 SE TARA LANE, CORBETT*

DEPARTMENT OF HEALTH

- C-6 *Intergovernmental Revenue Agreement 201786 with Oregon Health Sciences University, Providing a Community Health Nurse for the HIV Case Management Partnership Project*
- C-7 *Intergovernmental Agreement 201636 with Oregon Health Sciences University, Providing Funding to OHSU's Russell Street Dental Clinic for Dental Services to Low-Income Residents Living with HIV/AIDS*

DEPARTMENT OF COMMUNITY AND FAMILY SERVICES

- C-8 *Intergovernmental Revenue Agreement 101436 with State Office for Services to Children and Families, Providing Funding for Children's Mental Health Services through the Managed Care System*

REGULAR AGENDA

PUBLIC COMMENT

R-1 *Opportunity for Public Comment on Non-Agenda Matters. Testimony Limited to Three Minutes Per Person.*

NO ONE WISHED TO COMMENT.

The regular meeting was recessed at 9:38 a.m. and the briefing convened at 9:39 a.m.

*Thursday, February 22, 1996 - 9:30 AM
(IMMEDIATELY FOLLOWING REGULAR MEETING)
Multnomah County Courthouse, Room 602
1021 SW Fourth, Portland*

BOARD BRIEFING

B-2 *Multnomah County Audit Committee Presentation of Comprehensive Annual Finance Report and Single Audit Report for Fiscal Year Ending June 30, 1995. Presented by Thomas Kessler.*

TOM KESSLER PRESENTATION, JEAN UZELAC AND DAVE BOYER RESPONSE TO BOARD QUESTIONS AND DISCUSSION. BOARD COMMENDED WORK OF STAFF AND AUDIT COMMITTEE.

The briefing was adjourned at 9:52 a.m. and the regular meeting reconvened at 9:52 a.m.

*Thursday, February 22, 1996
(IMMEDIATELY FOLLOWING BOARD BRIEFING)
Multnomah County Courthouse, Room 602
1021 SW Fourth, Portland*

REGULAR MEETING

DEPARTMENT OF LIBRARY SERVICES

R-2 *Review Library Bond Proposal and Consider RESOLUTION Calling a Public Hearing (11:00 AM, TUESDAY, MARCH 12, 1996) Concerning*

the Proposed Submission of a Measure Election for General Obligation Bonds to Finance Certain Library Facilities and Equipment

COMMISSIONER COLLIER MOVED AND COMMISSIONER HANSEN SECONDED, APPROVAL OF R-2. DAVE BOYER EXPLANATION. RESOLUTION 96-25 UNANIMOUSLY APPROVED.

R-4 *Review Public Safety Bond Proposal and Consider RESOLUTION Calling a Public Hearing (11:00 AM, TUESDAY, MARCH 12, 1996) Concerning the Proposed Submission of a Measure Election for General Obligation Bonds to Finance Certain Public Safety Facilities and Equipment*

COMMISSIONER COLLIER MOVED AND COMMISSIONER HANSEN SECONDED, APPROVAL OF SUBSTITUTE RESOLUTION R-4. CHAIR STEIN EXPLANATION OF CORRECTION TO PAGE 2. SUBSTITUTE RESOLUTION 96-26 UNANIMOUSLY APPROVED.

DAVE BOYER AND GINNIE COOPER RESPONSE TO BOARD QUESTIONS AND DISCUSSION. STAFF TO PREPARE AND PROVIDE BOARD WITH A ONE PAGE LIST OF PUBLIC SAFETY AND LIBRARY ISSUES.

Chair Stein advised R-3 would be considered following the executive session. The regular meeting was recessed at 10:05 a.m. and the executive session convened at 10:07 a.m.

*Thursday, February 22, 1996
(IMMEDIATELY FOLLOWING REGULAR MEETING)
Multnomah County Courthouse, Room 602
1021 SW Fourth, Portland*

EXECUTIVE SESSION

E-1 *The Multnomah County Board of Commissioners Will Meet in Executive Session with its Real Property Negotiator to Discuss a Specific Possible Real Property Transaction Pursuant to ORS 192.660(1)(e). Presented by Bob Oberst.*

EXECUTIVE SESSION HELD.

The executive session was adjourned at 10:35 a.m. and the regular meeting reconvened at 10:38 a.m.

SHERIFF'S OFFICE

R-3 *Ratification of Memorandum of Agreement with the Multnomah County Deputy Sheriffs Association, AFSCME, Local 88 and the Multnomah County Corrections Officers Association Regarding Transition Plan for Reorganization of the Sheriff's Office Law Enforcement Division*

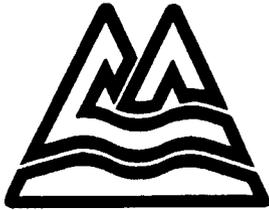
DARRELL MURRAY EXPLANATION AND SUBMISSION OF SUBSTITUTE MEMORANDUM OF AGREEMENT, ADVISING AFSCME, LOCAL 88 DID NOT APPROVE THE PROPOSED AGREEMENT AT ITS MEETING LAST NIGHT. MR. MURRAY ASKED THAT THE BOARD CONSIDER RATIFICATION OF THE SUBSTITUTE AGREEMENT CONTINGENT UPON APPROVAL OF MCDSA AND MCCOA, ADVISING HE HAS DELETED REFERENCES TO AFSCME UNTIL SUCH TIME AS AN AGREEMENT CAN BE REACHED. COMMISSIONER COLLIER MOVED AND COMMISSIONER SALTZMAN SECONDED, APPROVAL OF THE SUBSTITUTE AGREEMENT. DAN NOELLE AND JOE DEVLAE MINCK EXPLANATION AND RESPONSE TO BOARD QUESTIONS AND DISCUSSION REGARDING EFFORTS TO ADDRESS CONCERNS OF THE 13 AFFECTED LOCAL 88 EMPLOYEES. SUBSTITUTE AGREEMENT UNANIMOUSLY APPROVED.

There being no further business, the meeting was adjourned at 10:50 a.m.

OFFICE OF THE BOARD CLERK
FOR MULTNOMAH COUNTY, OREGON



Deborah L. Bogstad



MULTNOMAH COUNTY OREGON

OFFICE OF THE BOARD CLERK
SUITE 1510, PORTLAND BUILDING
1120 SW FIFTH AVENUE
PORTLAND, OREGON 97204
CLERK'S OFFICE • 248-3277 • 248-5222
FAX • (503) 248-5262

BOARD OF COUNTY COMMISSIONERS		
BEVERLY STEIN	CHAIR	•248-3308
DAN SALTZMAN	DISTRICT 1	• 248-5220
GARY HANSEN	DISTRICT 2	•248-5219
TANYA COLLIER	DISTRICT 3	•248-5217
SHARRON KELLEY	DISTRICT 4	•248-5213

AGENDA

MEETINGS OF THE MULTNOMAH COUNTY BOARD OF COMMISSIONERS

FOR THE WEEK OF

FEBRUARY 19, 1996 - FEBRUARY 23, 1996

Monday, February 19, 1996 - HOLIDAY - OFFICES CLOSED

Tuesday, February 20, 1996 - 10:30 AM - Board Briefing.....Page 2

Thursday, February 22, 1996 - 9:30 AM - Regular Meeting.....Page 2

Thursday, February 22, 1996 - 9:30 AM - Board Briefing.....Page 3

*Thursday Meetings of the Multnomah County Board of Commissioners are *cablecast* live and taped and can be seen by Cable subscribers in Multnomah County at the following times:*

Thursday, 9:30 AM, (LIVE) Channel 30

Friday, 10:00 PM, Channel 30

Sunday, 1:00 PM, Channel 30

Produced through Multnomah Community Television

INDIVIDUALS WITH DISABILITIES MAY CALL THE OFFICE OF THE BOARD CLERK AT 248-3277 OR 248-5222, OR MULTNOMAH COUNTY TDD PHONE 248-5040, FOR INFORMATION ON AVAILABLE SERVICES AND ACCESSIBILITY.

AN EQUAL OPPORTUNITY EMPLOYER

Tuesday, February 20, 1996 - 10:30 AM
Multnomah County Courthouse, Room 602
1021 SW Fourth, Portland

BOARD BRIEFING

- B-1 *Results of the Postponing Sexual Involvement Project Evaluation. Presented by Jan Sinclair, Jeanne Gould and Barbara Glick. 1 HOUR REQUESTED.*
-

Thursday, February 22, 1996 - 9:30 AM
Multnomah County Courthouse, Room 602
1021 SW Fourth, Portland

REGULAR MEETING

CONSENT CALENDAR

NON-DEPARTMENTAL

- C-1 *Appointments of Cynthia Houston, Angela D. Jackson, Bruce A. Trout, Dianne Duke Johnson and Sal Kadri to the JOBS Plus Implementation Council*
- C-2 *Appointment of Henry C. Miggins to the Investment Advisory Board*
- C-3 *Appointment of Cecil C. Prescod to the Metropolitan Human Rights Commission*

DEPARTMENT OF ENVIRONMENTAL SERVICES

- C-4 *CU 10-95/HV 25-95/SEC 9-95 Hearings Officer Decision APPROVING, With Conditions, a Conditional Use Permit for a Single Family Dwelling, a Variance from a Required Setback and a Significant Environmental Concern Permit for Placement of a Septic Tank within 300 Feet of a Significant Stream, for Property Located at 38210 KNIERIEM ROAD, CORBETT*
- C-5 *LD 8-95/MC 3-95 Hearings Officer Decision APPROVING, With Conditions, a Two Parcel Land Division with Proposed Access to the Parcels from an Existing Private Easement, for Property Located at 39456 SE TARA LANE, CORBETT*

DEPARTMENT OF HEALTH

- C-6 *Intergovernmental Revenue Agreement 201786 with Oregon Health Sciences University, Providing a Community Health Nurse for the HIV Case Management Partnership Project*

- C-7 *Intergovernmental Agreement 201636 with Oregon Health Sciences University, Providing Funding to OHSU's Russell Street Dental Clinic for Dental Services to Low-Income Residents Living with HIV/AIDS*

DEPARTMENT OF COMMUNITY AND FAMILY SERVICES

- C-8 *Intergovernmental Revenue Agreement 101436 with State Office for Services to Children and Families, Providing Funding for Children's Mental Health Services through the Managed Care System*

REGULAR AGENDA

PUBLIC COMMENT

- R-1 *Opportunity for Public Comment on Non-Agenda Matters. Testimony Limited to Three Minutes Per Person.*
-

Thursday, February 22, 1996 - 9:30 AM
(IMMEDIATELY FOLLOWING REGULAR MEETING)
Multnomah County Courthouse, Room 602
1021 SW Fourth, Portland

BOARD BRIEFING

- B-2 *Multnomah County Audit Committee Presentation of Comprehensive Annual Finance Report and Single Audit Report for Fiscal Year Ending June 30, 1995. Presented by Thomas Kessler. 30 MINUTES REQUESTED.*

MULTNOMAH COUNTY
BOARD OF
COMMISSIONERS

SUPPLEMENTAL AGENDA

Thursday, February 22, 1996 - 10:00 AM
(IMMEDIATELY FOLLOWING BOARD BRIEFING)

*Multnomah County Courthouse, Room 602
1021 SW Fourth, Portland*

REGULAR MEETING

DEPARTMENT OF LIBRARY SERVICES

- R-2 *Review Library Bond Proposal and Consider RESOLUTION Calling a Public Hearing **(11:00 AM, TUESDAY, MARCH 12, 1996)** Concerning the Proposed Submission of a Measure Election for General Obligation Bonds to Finance Certain Library Facilities and Equipment*

SHERIFF'S OFFICE

- R-3 *Ratification of Memorandum of Agreement with the Multnomah County Deputy Sheriffs Association, AFSCME, Local 88 and the Multnomah County Corrections Officers Association Regarding Transition Plan for Reorganization of the Sheriff's Office Law Enforcement Division*
- R-4 *Review Public Safety Bond Proposal and Consider RESOLUTION Calling a Public Hearing **(11:00 AM, TUESDAY, MARCH 12, 1996)** Concerning the Proposed Submission of a Measure Election for General Obligation Bonds to Finance Certain Public Safety Facilities and Equipment*



MULTNOMAH COUNTY OREGON

OFFICE OF THE BOARD CLERK
SUITE 1510, PORTLAND BUILDING
1120 S.W. FIFTH AVENUE
PORTLAND, OREGON 97204

BOARD OF COUNTY COMMISSIONERS

BEVERLY STEIN •	CHAIR	• 248-3308
DAN SALTZMAN •	DISTRICT 1	• 248-5220
GARY HANSEN •	DISTRICT 2	• 248-5219
TANYA COLLIER •	DISTRICT 3	• 248-5217
SHARRON KELLEY •	DISTRICT 4	• 248-5213
CLERK'S OFFICE •	248-3277	• 248-5222

MULTNOMAH COUNTY BOARD OF COMMISSIONERS

SUPPLEMENTAL AGENDA

Thursday, February 22, 1996 - 11:00 AM
(IMMEDIATELY FOLLOWING REGULAR MEETING)
Multnomah County Courthouse, Room 602
1021 SW Fourth, Portland

EXECUTIVE SESSION

E-1 *The Multnomah County Board of Commissioners Will Meet in Executive Session with its Real Property Negotiator to Discuss a Specific Possible Real Property Transaction Pursuant to ORS 192.660(1)(e). Presented by Bob Oberst.*

MEETING DATE: FEB 20 1996

AGENDA NO.: B-1

ESTIMATED START TIME: 10:30

(Above space for Board Clerk's Use ONLY)

AGENDA PLACEMENT FORM

SUBJECT: POSTPONING SEXUAL INVOLVEMENT PROJECT EVALUATION

BOARD BRIEFING Date Requested: February 20, 1996

Requested by: Chair Stein

Amount of Time Needed: 1 hour (start at 10:30)

REGULAR MEETING: Date Requested: _____

Amount of Time Needed: _____

DEPARTMENT: HEALTH DIVISION: SPECIALTY AND FIELD SERVICES

CONTACT: BARBARA GLICK TELEPHONE #: 731-4434
BLDG/ROOM #: c/o 160/8th Floor

PERSON(S) MAKING PRESENTATION: JAN SINCLAIR, JEANNE GOULD, AND BARBARA GLICK

ACTION REQUESTED:

INFORMATIONAL ONLY [] POLICY DIRECTION [] APPROVAL [] OTHER

SUGGESTED AGENDA TITLE:

A briefing to present the results of the Postponing Sexual Involvement project evaluation.

2/20/96 COPY of HANDOUTS & TAPE to RODGER WILLIAMS (CITY WATER BUREAU)

SIGNATURES REQUIRED:

ELECTED OFFICIAL: _____

Or

DEPARTMENT MANAGER: Billi Odegaard

(ALL ACCOMPANYING DOCUMENTS MUST HAVE REQUIRED SIGNATURES)

Any Questions: Call the Office of the Board Clerk 248-3277/248-5222

98 FEB -6 AM 8:46
BOARD OF COUNTY COMMISSIONERS
MULTNOMAH COUNTY
OREGON

Developing the PSI Program Evaluation

What were the First Steps?

- Program Objectives were Defined
- Program Evaluation Model was Conceptualized

How were the Program Effects Measured?

- Study Design was Formulated
- Outcome Measures were Selected
- Potential Mediating Factors were Considered

Demonstrating the Effectiveness of the PSI Program

Were the Observed Effects Attributable to the Program?

- **Comparability of Study Groups at Baseline was Established**

Were the Goals of the Program Achieved?

- **Changes in Outcome Measures from Baseline to Follow-up were Examined**

Were Some Aspects of the Program More Effective than Others?

- **Relative Changes in Outcome Measures were Compared**

Ensuring that High Risk Participants Show Gains as a Result of the Program

Did the Program Reach Those at Highest Risk of Poor Response?

- **Student Characteristics Predictive of Undesired Responses were Identified**
- **Influence of Student Characteristics on program Effectiveness was Assessed**



POSTPONING SEXUAL INVOLVEMENT:

**A DEMONSTRATION PROJECT FOR SIXTH
GRADE STUDENTS IN MULTNOMAH COUNTY**

OUTCOME EVALUATION

Barbara Glick, Ph.D, Principal Investigator^{1,2}

David Gao, MBA¹

Xu Wang, Ph.D²

Program Design and Evaluation Services

¹Multnomah County Health Department

²Center for Disease Prevention and Epidemiology, Oregon Health Division

August 1995

**Postponing Sexual Involvement: A Demonstration Project
for Sixth Grade Students in Multnomah County**

Outcome Evaluation

**Copyright © August 1995
Barbara Glick, Ph.D
David Gao, MBA
Xu Wang, Ph.D**

Third printing

ACKNOWLEDGMENTS

Funding for this demonstration project was provided in part by the
Multnomah County Commission on Children and Families.

Appreciation is expressed to Joan Kinney
for her assistance in the preparation of this report.

TABLE OF CONTENTS

	Page
Executive Summary	1
List of Tables	5
List of Figures	6
I. Introduction	7
A. The Postponing Sexual Involvement Program	7
B. The Demonstration Project	8
II. Methods	11
A. Study Design	12
1) Program Evaluation Model	12
2) Demonstration Project Design	14
3) Selection of Schools	16
4) Scaled Outcome Measures of Program Effectiveness	18
5) Student Behavioral Risk Factor Characteristics	20
B. Analytical Issues Related to Assessing Program Effects	22
1) Demographic Characteristics of Study Groups	22
2) Participation Rates for Study Groups	24
3) Comparability of Groups with Matched and Unmatched Surveys ..	26
4) Comparability of Treatment and Control Groups	28
5) Potential School Effects	30

III. Results	33
A. Overall Effects of the Program	34
1) Student Perceptions of the Sexual Activities of Peers	34
2) Student Knowledge of the Risk of Pregnancy	36
3) Student Attitudes Regarding Teen Sexual Behavior	38
4) Student Behavioral Tendencies To Engage in Sex	40
5) Students Who Provided Matched Surveys	42
6) Achieving Desired Responses on all Four Outcome Measures	44
7) Differences in Effects Between the Four Outcome Measures	46
B. Influence of Student Demographic and Behavioral Risk Factor Characteristics on Program Effectiveness	48
1) Student Characteristics Predictive of Undesired Responses at Baseline	48
2) Gender	50
3) Race/Ethnicity	52
4) Parental Involvement	54
5) Academic Performance	56
6) Substance Use	58
7) Previous Sexual Experience	60
8) History of Physical Abuse	62
9) History of Sexual Abuse	64

IV. Conclusions	67
V. Recommendations	71
Selected Bibliography	73

Postponing Sexual Involvement: A Demonstration Project for Sixth Grade Students in Multnomah County

Outcome Evaluation

EXECUTIVE SUMMARY

A demonstration project aimed at reducing the risk of adolescent pregnancy was conducted by the Multnomah County Health Department in collaboration with Portland Public Schools. The goals of this demonstration project were to establish a new service program which addressed the Multnomah County Benchmark initiative of reducing teen pregnancy, to evaluate the effectiveness of the program, and to identify factors which influence program effectiveness. The project was based on an established behavioral intervention to increase the proportion of young adolescents who postpone the initiation of sexual intercourse. The intervention selected for this project was the Postponing Sexual Involvement program (PSI), developed in 1983 by the Teen Services Clinic at Emory/Grady Memorial Hospital, Atlanta, Georgia. An outcome evaluation was conducted by Program Design and Evaluation Services of the Multnomah County Health Department and the Oregon Health Division.

Six middle schools were selected on the basis of greatest socio-economic need. All sixth grade students in four of these schools received the PSI Young Teen Series Program (Treatment Group). Sixth grade students in the remaining two schools served as comparison schools (Control Group). A total of 1,158 students participated in the outcome evaluation, including 683 Treatment and 475 Control students. All students completed baseline (before PSI) and follow-up (after PSI) surveys, designed to assess student demographics, behavioral risk factors, and PSI program objectives. Four scaled outcome measures were developed from survey questions to represent the program objectives: "Perceptions" of the level of sexual activity among peers, "Knowledge" of the risk of pregnancy for young teens, "Attitudes" regarding whether young teens ought to be sexually active, and "Behavioral Tendencies" to consent to or try to engage in sex. The overall effects of the PSI program on these outcome measures were assessed. The effectiveness of the program was also assessed in relation to demographic and behavioral risk factors known to influence early sexual involvement, including gender, race/ethnicity, lack of parental involvement, poor academic performance, substance use, previous sexual experience, a history of physical abuse, and a history of sexual abuse.

The PSI program produced changes in the Perceptions, Knowledge, Attitudes, and Behavioral Tendencies of these sixth grade students, and these changes clearly reflected a decrease in their acceptance of sexual involvement. Treatment Group students showed statistically significant increases in desired responses following the PSI program on each of the four outcome measures, and in their ability to achieve desired responses on all four measures simultaneously. Control Group students showed no significant changes.

Students with demographic and behavioral risk factor characteristics were generally at a disadvantage before receiving the program; they showed higher levels of undesired responses on outcome measures at baseline. Specific risk factors were found to be predictors of giving undesired responses at baseline. Factors associated with at least one outcome measure were previous sexual experience, lack of parental involvement, poor academic performance, male gender, a history of physical abuse, Hispanic ethnicity, and African American or Native American descent.

However, the program was at least as successful in reaching students with risk factors as those without risk factors. Students with risk factors showed parallel or proportionally greater improvements in outcome measures than students without risk factors. Moreover, the program enabled students with three of these risk factors to achieve accelerated improvements that made them comparable to other students at follow-up. After receiving the program, students who lacked parental involvement, had a history of physical abuse, or were of African American descent no longer differed significantly from students without these characteristics in terms of levels of desired responses on any outcome measure. The disadvantages presented to students with other risk factors were not entirely overcome by the program; levels of desired responses at follow-up often remained lower than for students without risk factors. Curriculum modifications should be assessed for the potential to further increase improvements achieved by students with demographic and behavioral risk factor characteristics.

Although significant improvements were observed in each of the four outcome measures, marked differences were noted between the amounts of improvement in these measures. The program was more effective in improving Perceptions and Knowledge than Attitudes and Behavioral Tendencies. This suggests that there were differences in the relative effectiveness of the curriculum components that were

represented by each of the four outcome measures. Curriculum modifications should also be assessed for the potential to further increase improvements achieved in Attitudes and Behavioral Tendencies.

This demonstration project has enabled Multnomah County Health Department to establish a new service program which significantly decreases the level of acceptance of sexual involvement among young teens. Long-term studies of students who receive this intervention will be needed to assess the impact goals of increasing the age at first intercourse and reducing the rate of teen pregnancy.

The recommendations made on the basis of these findings are:

- To adopt the PSI program as the basic educational component of the teen pregnancy prevention effort delivered by Multnomah County Health Department;
- To expand the program to reach all sixth grade students in schools throughout Multnomah County;
- To maintain the emphasis on delivering the program in the early stages of adolescence, before most students have engaged in sexual activity;
- To modify the curriculum and implementation to consider the relative differences in effectiveness of the curriculum components, with emphasis on components related to Attitudes and Behavioral Tendencies;
- To modify the curriculum and implementation to address the characteristics of students most likely to influence program effectiveness, including but not limited to previous sexual experience, parental involvement, academic performance, gender, a history of physical abuse, and race/ethnicity;
- To justify the time and cost associated with future implementations of the modified PSI by conducting a single evaluation to determine whether the modifications made to the program result in enhanced effectiveness a) for the targeted curriculum components, and b) in relation to targeted risk factors;

- To develop PSI “booster” sessions designed to reinforce retention of the PSI curriculum, to be delivered annually from seventh through tenth grades;
- To justify the time and cost associated with “booster” sessions by conducting limited evaluations to determine whether students who receive “boosters” are more likely to retain the PSI curriculum than students who do not receive them; and
- To use the annual “booster” evaluations to assess the long-term impact goals of PSI in increasing the age at first intercourse and reducing the rate of teen pregnancy.

LIST OF TABLES

	Page
Table 1. PSI Demonstration Project Study Design	15
Table 2. Eligibility Characteristics of Sixth Grade Classes at Treatment and Control Schools	17
Table 3. Demographic Characteristics of Sixth Grade Students in Treatment and Control Groups	23
Table 4. Participation Rates for Sixth Grade Classes at Treatment and Control Schools	25
Table 5. Baseline Differences in Behavioral Risk Factor Characteristics Between Students with Matched and Unmatched Baseline to Follow-up Surveys	27
Table 6. Baseline Differences in Desired Responses Between Students with Matched and Unmatched Baseline to Follow-up Surveys	27
Table 7. Comparability of Treatment and Control Groups for Risk Factor Characteristics at Baseline	29
Table 8. Comparability of Treatment and Control Groups for Desired Responses at Baseline	29
Table 9. Baseline to Follow-up Changes in Proportion of Students Who Simultaneously Provide Desired Responses on all Four Outcome Measures	31
Table 10. PSI Effects on Students Who Provided Matched Surveys at Baseline and Follow-up	43
Table 11. PSI Effects on Student Ability to Achieve Desired Responses on All Four Outcome Measures	45

LIST OF FIGURES

	Page
Figure 1. PSI Program Evaluation Model	13
Figure 2. PSI Effects on Students Perceptions Regarding Sexual Activities of Peers	35
Figure 3. PSI Effects on Student Knowledge Regarding Pregnancy	37
Figure 4. PSI Effects on Student Attitudes Regarding Teen Sexual Behavior	39
Figure 5. PSI Effects on Student Behavioral Tendencies Regarding Having Sex	41
Figure 6. Relative Impact of PSI on Student Perceptions, Knowledge, Attitudes and Behavioral Tendencies	47
Figure 7. Demographic and Behavioral Risk Factors Predictive of Giving Undesired Responses at Baseline	49
Figure 8. Effectiveness of PSI in Relation to Gender	51
Figure 9. Effectiveness of PSI in Relation to Race/Ethnicity	53
Figure 10. Effectiveness of PSI in Relation to Parental Involvement	55
Figure 11. Effectiveness of PSI in Relation to Academic Performance	57
Figure 12. Effectiveness of PSI in Relation to Substance Use	59
Figure 13. Effectiveness of PSI in Relation to Previous Sexual Experience	61
Figure 14. Effectiveness of PSI in Relation to History of Physical Abuse	63
Figure 15. Effectiveness of PSI in Relation to History of Sexual Abuse	65

I. INTRODUCTION

This report describes an outcome evaluation of a demonstration project aimed at reducing the risk of adolescent pregnancy. The goals of this demonstration project were to establish a new service program which addressed the Multnomah County Benchmark initiative of reducing teen pregnancy, to evaluate the effectiveness of the program, and to identify factors which influence program effectiveness. The project was implemented by the Multnomah County Health Department (MCHD) in collaboration with Portland Public Schools, and evaluated by Program Design and Evaluation Services of the MCHD and the Oregon Health Division. It was based on an established behavioral intervention to increase the proportion of young adolescents who postpone the initiation of sexual intercourse.

A. The Postponing Sexual Involvement Program

The intervention selected for this demonstration project was the Postponing Sexual Involvement program (PSI), developed in 1983 by the Teen Services Clinic at Emory/Grady Memorial Hospital, Atlanta, Georgia. PSI was founded on the belief that young adolescents engage in sexual activity because of powerful societal and peer influences. The program incorporates a model for reducing negative health behaviors known as Social Inoculation. This model utilizes the concept that adolescents engage in risk taking behaviors because of social influences, and changing these behaviors depends on changing how adolescents respond to social influences. The model employs the concept of inoculation in that subjects are "immunized" against negative social and peer pressures. Incremental episodes of negative peer pressure are presented to students for the purpose of enabling them to develop the skills to combat such pressure.

PSI is a participatory program that involves both girls and boys in thinking about, discussing, and practicing using information that promotes resistance to social pressure. Older teens are trained to direct a participation group process which leads students through a curriculum that: Helps them understand the social pressures influencing sexual activity; informs them of their rights in social relationships; empowers them to handle peer pressures through assertiveness; and provides them with opportunities to practice refusal skills which enhance self esteem and promote the confidence to "say no."

for young adolescents to mature physically and socially before initiating sexual involvement. A five year impact evaluation showed a one-third reduction in pregnancies among twelfth graders who had received the program in eighth grade compared with those who had not. In one family planning clinic, eighty four percent of sexually active youth indicated that what they wanted most was more information on "how to say no without hurting the other person's feelings." Throughout the five year study period, researchers found that those who had been exposed to the program delayed sexual involvement significantly more than did those who had not been exposed. At the end of the school year in which the program was delivered, those students who had not been exposed to the program were more than four times more likely to have become sexually involved than those who had been exposed. By the end of the following school year, a one-third reduction in the rate of sexual involvement persisted. The program was not as successful with students who had already initiated sexual activity (Collomb and Howard, 1988; Howard and McCabe, 1990; Howard, 1992). This suggested the need to deliver the program to younger adolescents, and a fifth grade version of PSI was developed by the Teen Services Clinic. However, there are no available data on the effectiveness of PSI delivered before eighth grade.

B. The Demonstration Project

Six middle schools in the Portland Public School District were selected for this demonstration project on the basis of greatest socio-economic need. All sixth grade students, aged eleven and twelve years, in four of the six schools received the PSI Young Teen Series Program. Sixth grade students in the remaining two schools served as comparison schools. A total of 1,158 students participated in the outcome evaluation.

The goals of the outcome evaluation were to assess the overall effectiveness of the PSI program in moving sixth grade students down on a scale of acceptance of sexual involvement, and to examine the effectiveness of PSI in relation to behavioral risk factors widely known to contribute to early sexual involvement among adolescents. These risk factors include lack of parental involvement, poor academic performance, substance use, previous sexual experience, a history of physical abuse, and a history of sexual abuse. Developing a program that meets the needs of all students will depend on determining whether and which behavioral risk factors render students differentially receptive to the program.

The PSI Young Teen Series Program was originally developed for eighth grade students. Because this demonstration project was directed at sixth grade students, some modifications were made in techniques of implementation to ensure that younger students would be optimally engaged in classroom activities. No changes were made to curriculum content for this demonstration project. Modifications made to program delivery are detailed in a companion volume on the implementation evaluation, which employed qualitative methods to assess all aspects of program delivery. These modifications made in implementation should be considered in the interpretation of the findings presented in this outcome evaluation.

II. METHODS

This section describes the PSI program evaluation model, the overall design of the demonstration project, the outcome measures selected, and factors considered in the analysis of the data. Information is presented on the:

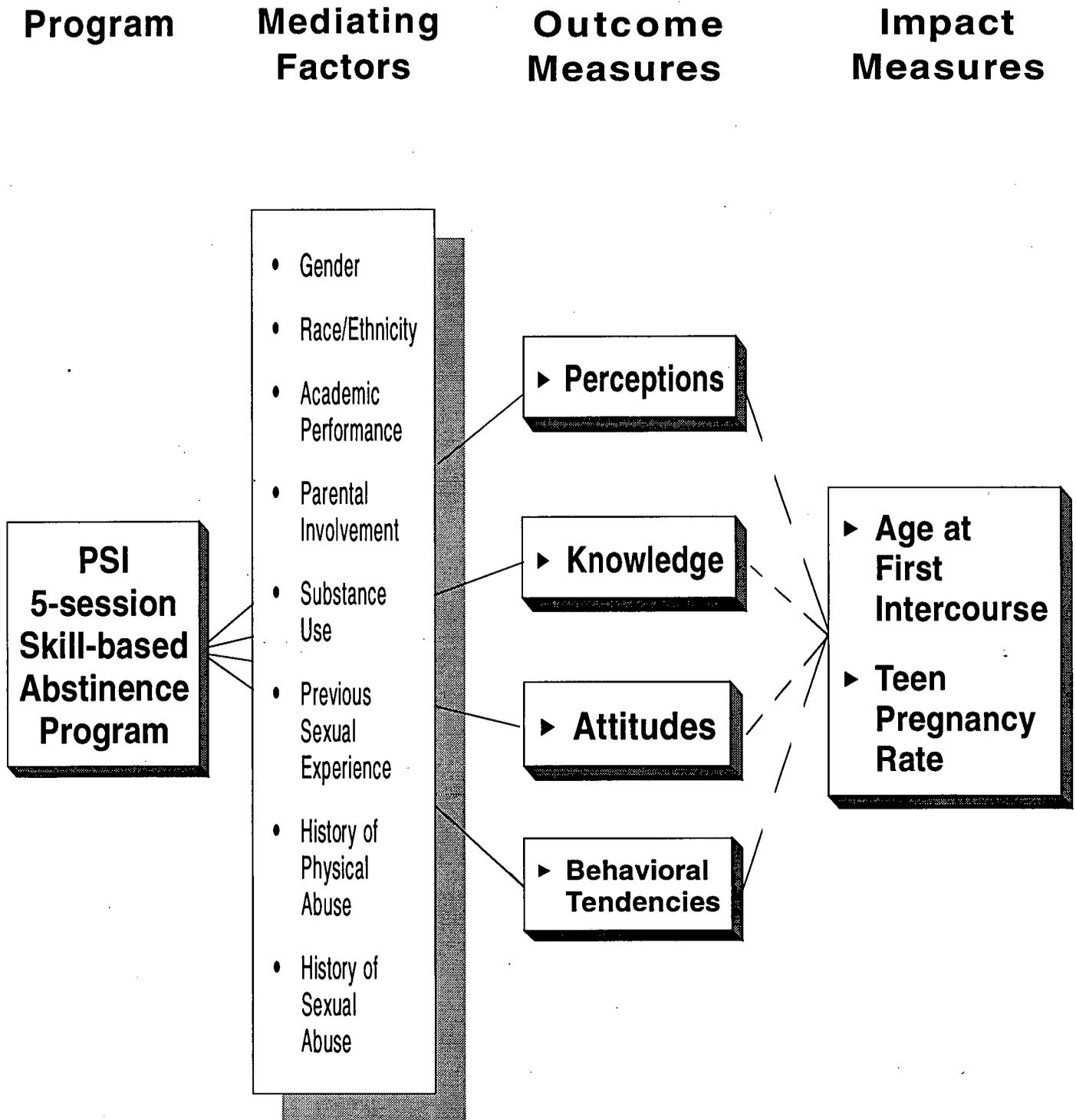
1. Conceptual framework for the evaluation;
2. Design of the study, including the timing of the PSI sessions and surveys completed;
3. Rationale for the selection and allocation of schools to study groups;
4. Content of the survey questions used to develop the scales for outcome measures;
5. Behavioral risk factors considered as potential mediators of outcome measures;
6. Participation rates achieved for study schools;
7. Baseline comparability (in outcome measures and behavioral risk factors) between students who were able to provide matched surveys from baseline to follow-up and those who were not able to do so;
8. Baseline comparability (in outcome measures and behavioral risk factors) between all students who received the PSI program and those who did not; and
9. Potential influence of different schools on the effects of the PSI program.

A. Study Design

1) Program Evaluation Model

- The conceptual framework for this evaluation is outlined in the program evaluation model. This model identifies the program, mediating factors, outcome measures and impact measures. The model suggests that the effects of PSI on the outcome measures related to sexual involvement (Perceptions, Knowledge, Attitudes and Behavioral Tendencies) are mediated by demographic (gender and race/ethnicity) and behavioral risk factors (academic performance, parental involvement, substance use, previous sexual experience, a history of physical abuse, and a history of sexual abuse). The model further suggests that the outcome measures influence the impact measures of age at first intercourse and the teen pregnancy rate (Figure 1).
- This demonstration project was designed to test the first two tenets of this model: 1) that the PSI program can change the Perceptions, Knowledge, Attitudes and Behavioral Tendencies of sixth grade students, reflecting a decrease in their acceptance of sexual involvement; and 2) that demographic and behavioral risk factors can influence the effects of the PSI program on the outcome measures.
- Long-term studies of students who receive this intervention will be required to test the third tenet of this model, that these outcome measures affect the impact measures of age at first intercourse and the teen pregnancy rate.

Figure 1
PSI Program Evaluation Model



2) Demonstration Project Design

- The PSI demonstration project used a quasi-experimental design in which subjects were allocated to groups by school. This was done to facilitate efficient delivery of the program and to reduce the risk of students sharing information regarding the program content, and thus contaminating the data.
- Four schools comprised the Treatment Group and two schools comprised the Control Group. A total of 1,158 sixth grade students participated in the evaluation. There were 683 Treatment Group Students in 29 classes. Each of these 29 Treatment classes received a baseline survey, five PSI program sessions, and a follow-up survey for a total of 203 contact classes. There were 475 Control Group students in 23 classes. Each of these 23 Control classes received baseline and follow-up surveys for a total of 46 contact classes. In addition, 528 seventh grade students in Treatment schools completed baseline surveys to provide historical controls for the 12-month follow-up assessment of retention of the PSI curriculum.
- All students completed baseline surveys in late February/early March, 1995. Sixth grade Treatment Group students received the five session PSI program from March through May. Four sessions were delivered to students at one week intervals. The fifth session, designed to provide reinforcement, was delivered one month after the fourth session. All sixth grade students then completed one-month follow-up surveys in June, 1995. Students were asked to provide coded identification information on the front of the survey instrument to permit electronic linking of baseline and follow-up surveys, while ensuring anonymity.
- This report describes changes in measures of PSI program objectives for the sixth grade Treatment and Control Groups from the baseline to the one-month follow-up evaluation.

Table 1. PSI Demonstration Project Study Design

Study Group	Grade	Sequence of Activity				
		1. Baseline Evaluation ¹	2. PSI Implementation	3. SBHC ² Opening	4. 1 Month Follow-up Evaluation	5. 12 Month Follow-up Evaluation
Treatment						
School #1	Grade 6	●	●	●	●	○
	Grade 7	●				
School #2	Grade 6	●	●	●	●	○
	Grade 7	●				
School #3	Grade 6	●	●		●	○
	Grade 7	●				
School #4	Grade 6	●	●		●	○
	Grade 7	●				
Control						
School #5	Grade 6	●			●	○
	Grade 7					
School #6	Grade 6	●			●	○
	Grade 7					

¹A PSI baseline/follow-up (before PSI/after PSI) scannable survey instrument was developed for this evaluation. The instrument included questions on student demographics behavioral risk factors, and PSI program objectives.

²SBHC - School Based Health Center

3) Selection of Schools

- Schools were selected using an eligibility index based on three socioeconomic factors: Highest percentage of students receiving free lunch, highest percentage of student suspensions, and lowest student enrollment stability.
- Schools were allocated to Treatment and Control Groups to achieve socioeconomic and minority population comparability (Table 2).
- After assignment to groups, one Control school was replaced due to concurrent involvement in another teen pregnancy prevention program. This resulted in a lower percentage of suspensions and higher percentage of minority students for the Control Group than the Treatment Group. The specific racial/ethnic source of this difference was examined with survey response data.

**Table 2. Eligibility Characteristics of Sixth Grade Classes
at Treatment and Control Schools**

Study Group	Percent Free Lunch¹	Percent Suspensions	Stability Index²	Percent Minority³
Treatment				
George	61.7	20.4	71.6	35.2
Portsmouth	49.9	18.7	78.4	41.2
Tubman	71.7	11.8	74.0	74.1
Binnsmead	58.8	11.3	68.0	26.8
Mean ± s.d.	60.5±9.0	15.6±4.7	73.0±4.4	44.3±20.7
Control				
Ockley Green	58.2	8.5	77.1	57.2
Whitaker	71.3	5.2	74.3	64.7
Mean ± s.d.	64.8±9.3	6.9±2.3	75.7±2.0	61.0±5.3

¹Based on self-reported family income

²Percentage of students enrolled by October 1 who are still enrolled at the same school in June

³Percentage of non-Caucasian students

4) Scaled Outcome Measures of Program Effectiveness

- The central outcome measure for this study was to move students down on a scale of acceptance of sexual involvement.
- Scales were developed to assess student Perceptions, Knowledge, Attitudes, and Behavioral Tendencies related to sexual involvement. Each of these four scales was derived from three survey questions designed to measure specific program objectives.

Definitions of Scaled Outcome Measures¹

Perceptions regarding the level of sexual activity among peers. Specific questions focus on how many girls, boys, and close friends in their school respondents believe have had sex.

Knowledge regarding a young teen's ability to become or make someone pregnant. Specific questions focus on respondents understanding of whether young teens are old enough to become pregnant or impregnate someone, whether a young teen girl can become pregnant the first time she has sex, and whether young teens must have sex many times to cause a pregnancy.

Attitudes regarding whether young teens should be sexually active. Specific questions focus on the reasons respondents think young teens should or should not have sex, whether having previously had sex means a young teen must continue to be sexually active, and whether it is okay for young teens to have sex with someone they like a lot.

Behavioral Tendencies or willingness to engage in sexual activity. Specific questions focus on whether respondents would consent if someone asked them to have sex, whether their own sexual feelings for someone would lead them to try to have sex, and whether they would say "no" if someone asked them to have sex when they didn't want to.

¹ Three questions comprise each scaled item.

5) Student Behavioral Risk Factor Characteristics

- A major objective of this evaluation was to demonstrate the effectiveness of the PSI in relation to behavioral risk factors widely known to contribute to early sexual involvement. These factors include lack of parental involvement, poor academic performance, substance use, previous sexual experience, a history of physical abuse, and a history of sexual abuse.
- Survey questions were designed to collect information on behavioral risk factors. Single questions were used to determine previous sexual experience, a history of physical abuse, and a history of sexual abuse. Scales were developed to assess parental involvement, academic performance, and substance use. Each of these scales was derived from two or three survey questions.

Definitions of Behavioral Risk Factor Characteristics¹

Parental Involvement - whether students believe their parent(s) are involved in their lives. Specific questions focus on parental monitoring of students' whereabouts, and how much students perceive their parents care about them.

Academic Performance - whether students describe themselves as performing below average or equal to/greater than average. Specific questions focus on actual letter grades received, perceptions of whether students believe their academic performance is better than, equal to, or worse than peers, and what level of education they expect to achieve.

Substance Use - whether students report any use of tobacco, alcohol or other drugs.

Previous Sexual Experience - whether students report ever having had sexual intercourse.

Physical Abuse - whether students report ever having been hit by an adult in anger, to the point of being badly hurt or getting bruises or scars.

Sexual Abuse - whether students report ever having had sex when they didn't want to, when someone forced them or talked them into it.

¹One to three questions comprise each risk factor.

B. Analytical Issues Related to Assessing Program Effects

1) Demographic Characteristics of Study Groups

- The distributions of males and females were the same for the Treatment and Control Groups.
- There were no significant differences between Treatment and Control Groups in proportions of Hispanics, Asian/Pacific Islanders, Native Americans, or “others” of mixed race. There were significantly more Whites in the Treatment Group than in the Control Group, and significantly more African Americans in the Control Group than in the Treatment Group. The potential bias introduced by these differences was examined in baseline comparability of Treatment and Control Groups.
- Groups were comparable with respect to the presence of parents or step-parents in the household (Table 3).

Table 3. Demographic Characteristics of Sixth Grade Students in Treatment and Control Groups

Characteristic	Treatment Group n (%)	Control Group n (%)	p value ¹
Gender			
Male	344 (50.5)	234 (49.4)	0.70
Female	337 (49.5)	240 (50.6)	0.70
Race/Ethnicity			
White	310 (45.7)	148 (31.4)	0.00
African American	136 (20.0)	177 (37.5)	0.00
Hispanic	45 (6.6)	39 (8.3)	0.29
Asian/Pacific Islander	74 (10.9)	40 (8.5)	0.18
Native American	58 (8.5)	31 (6.6)	0.22
Other	56 (8.2)	37 (7.8)	0.80
Person(s) Living With			
Mother	218 (34.3)	147 (33.6)	0.79
Father	36 (5.7)	16 (3.7)	0.13
Mother & Father	265 (41.7)	185 (42.2)	0.87
Mother & Stepfather	51 (8.0)	28 (6.4)	0.31
Father & Stepmother	16 (2.5)	13 (3.0)	0.66
Other ²	49 (7.7)	49 (11.2)	0.052

¹Chi-Square test

²Other includes foster parents, stepmother, stepfather, other adult, other adult & mother, other adult & father.

2) Participation Rates for Study Schools

- Comparable participation rates were achieved for Treatment and Control Groups at baseline and follow-up. Some loss to follow-up was due to end of the school year field trips. However, there was no systematic bias in the changes in participation rates (Table 4).

**Table 4. Participation Rates For Sixth Grade Classes
at Treatment and Control Schools**

Study Group	Participation Rate				Percent Change
	Baseline		Follow up		
	n ¹	%	n	%	
Treatment					
George	153	86.9	134	74.9	-12.0
Portsmouth	146	80.2	100	58.5	-21.7
Tubman	141	75.8	169	90.9	+15.1
Binnsmead	222	96.1	196	84.8	-11.3
Mean ± s.d.		84.8±8.8		77.3±14.1	15.0±4.7
Control					
Ockley Green	200	82.9	151	62.7	-20.2
Whitaker	267	83.4	258	80.6	- 2.8
Mean ± s.d.		83.2±3.6		71.7±12.6	11.5±12.3

¹Twenty-nine students did not provide school identification codes.

3) Comparability of Groups with Matched and Unmatched Surveys

- Students with matched surveys were those who were able to provide coded identification information at follow-up which was consistent with that provided at baseline, to permit electronic linking of data. Fifty-one percent of students provided matched surveys. Therefore, it was important to assess the extent to which students with matched surveys were representative of the total study population. This was done by comparing students with matched and unmatched surveys for baseline levels of behavioral risk factor characteristics, and the four scaled outcome measures.
- Students with any one of six behavioral risk factors were significantly more likely to provide unmatched baseline to follow-up surveys than matched surveys. Students with these risk factors were under-represented in the matched survey results (Table 5).
- For Attitudes and Behavioral Tendencies, students who could provide matched surveys were significantly more likely to give desired responses at baseline than those who could not provide matched surveys. This difference fell just short of significance for Perceptions. Students who gave desired responses were over-represented in the matched survey results (Table 6).
- Students who provided matched surveys were not representative of the entire study population. However, the methodological advantage in the data linking students at baseline and follow-up warranted some analysis of matched survey data.

Table 5. Baseline Differences in Behavioral Risk Factor Characteristics Between Students with Matched and Unmatched Baseline to Follow-up Surveys

Risk Factor ¹	n	Percent of Students with Matched Surveys	Percent of Students with Unmatched Surveys	p ²
Parental Involvement: little/none	67	3.8	7.5	<.01
Academic Performance: < average	148	9.4	15.7	<.01
Substance Use: yes	52	2.9	6.2	<.01
Previous Sexual Experience: yes	86	10.8	17.4	<.01
History of Physical Abuse: yes	235	17.8	25.2	<.01
History of Sexual Abuse: yes	61	3.1	8.2	<.01

¹Gender and Race/Ethnicity were not significantly associated with ability to provide matched surveys.

²Chi-square test

Table 6. Baseline Differences in Desired Responses Between Students with Matched and Unmatched Baseline to Follow-up Surveys

Scale	Percent of Desired Response		p ³
	Students with Matched Surveys ¹	Students with Unmatched Surveys ²	
Perceptions	44.9	39.2	.055
Knowledge	54.5	57.9	.07
Attitudes	60.8	53.5	.04
Behavioral Tendencies	80.2	70.4	<.01

¹n = 411-535, depending on scale

²n = 345-497, depending on scale

³Chi-square test

4) Comparability of Treatment and Control Groups

- When the entire study population was assessed, Treatment and Control Groups were comparable in prevalence of behavioral risk factors and baseline levels of desired outcome measures.
- There were no significant differences between Treatment and Control Groups in baseline levels of any of the behavioral risk factors (Table 7).
- There were no significant differences between Treatment and Control Groups in baseline levels of desired responses for Perceptions, Knowledge, Attitudes, or Behavioral Tendencies (Table 8).
- Comparability of Treatment and Control Groups was also established for students who provided matched surveys.

**Table 7. Comparability of Treatment and Control Groups
for Risk Factor Characteristics at Baseline**

Risk Factor	Percent of Total		p ³
	Treatment Group ¹	Control Group ²	
Parental Involvement: little/none	5.9	5.7	.90
Academic Performance: <average	12.4	13.0	.75
Substance Use: yes	5.3	3.8	.26
Previous Sexual Experience: yes	14.7	13.9	.86
History of Physical Abuse: yes	21.4	22.2	.77
History of Sexual Abuse: yes	6.0	5.6	.78

¹Treatment group n = 602 - 682, depending on risk factor.

²Control group n = 448 - 475, depending on risk factor.

³Chi-square test.

**Table 8. Comparability of Treatment and Control Groups
for Desired Responses at Baseline**

Scale	Percent of Desired Response		p ³
	Treatment Group ¹	Control Group ²	
Perceptions	40.8	43.3	.60
Knowledge	54.7	58.7	.39
Attitudes	55.2	59.2	.40
Behavioral Tendencies	75.3	74.5	.93

¹Treatment group n = 602 - 682, depending on risk factor.

²Control group n = 474 - 476, depending on risk factor.

³Chi-square test.

5) Potential School Effects

- The potential influence of different schools on the effects of the PSI program was assessed in order to determine whether students in certain schools showed greater changes following the PSI program than those in other schools. This “school effect” could potentially explain the significant differences observed from baseline to follow-up, thereby confusing the issue of whether the PSI program had any effect.
- No significant effect of schools was found; the amount of change from baseline to follow-up did not differ between students on the basis of which school they attended for any of the four scaled items. Therefore, students from different schools responded similarly to the PSI program, and could be considered independent subjects in the sample population for the purposes of statistical analysis (Table 9).

Table 9. Effects of Different Schools on the Amount of Desired Change From Baseline to Follow-up

Scale	n	Percent of Desired Changes				Mean	p ¹
		School					
		1	2	3	4		
Perceptions	211	19.5	15.6	16.1	14.2	14.2	.48
Knowledge	193	13.8	12.8	12.2	13.7	13.0	.99
Attitudes	269	20.4	20.0	10.9	15.9	15.6	.35
Behavioral Tendencies	298	14.0	4.1	10.3	13.2	10.7	.33

¹Chi-Square test.

III. RESULTS

This section describes the effects of the PSI program with respect to changes from baseline to follow-up in the proportions of students who gave desired responses for the four scaled outcome measures of Perceptions, Knowledge, Attitudes and Behavioral Tendencies. Findings are presented on:

- 1) Changes in outcome measures for the entire study population;
- 2) Changes in outcome measures for students who provided matched surveys at baseline and follow-up;
- 3) Changes in ability to achieve desired responses on all four outcome measures;
- 4) Relative changes in outcome measures;
- 5) Demographic and behavioral risk factors which predict undesired responses at baseline; and
- 6) Changes in outcome measures for the entire study population in relation to demographics (gender and race/ethnicity), and behavioral risk factors (lack of parental involvement, low academic performance, substance use, previous sexual experience, a history of physical abuse, and a history of sexual abuse).

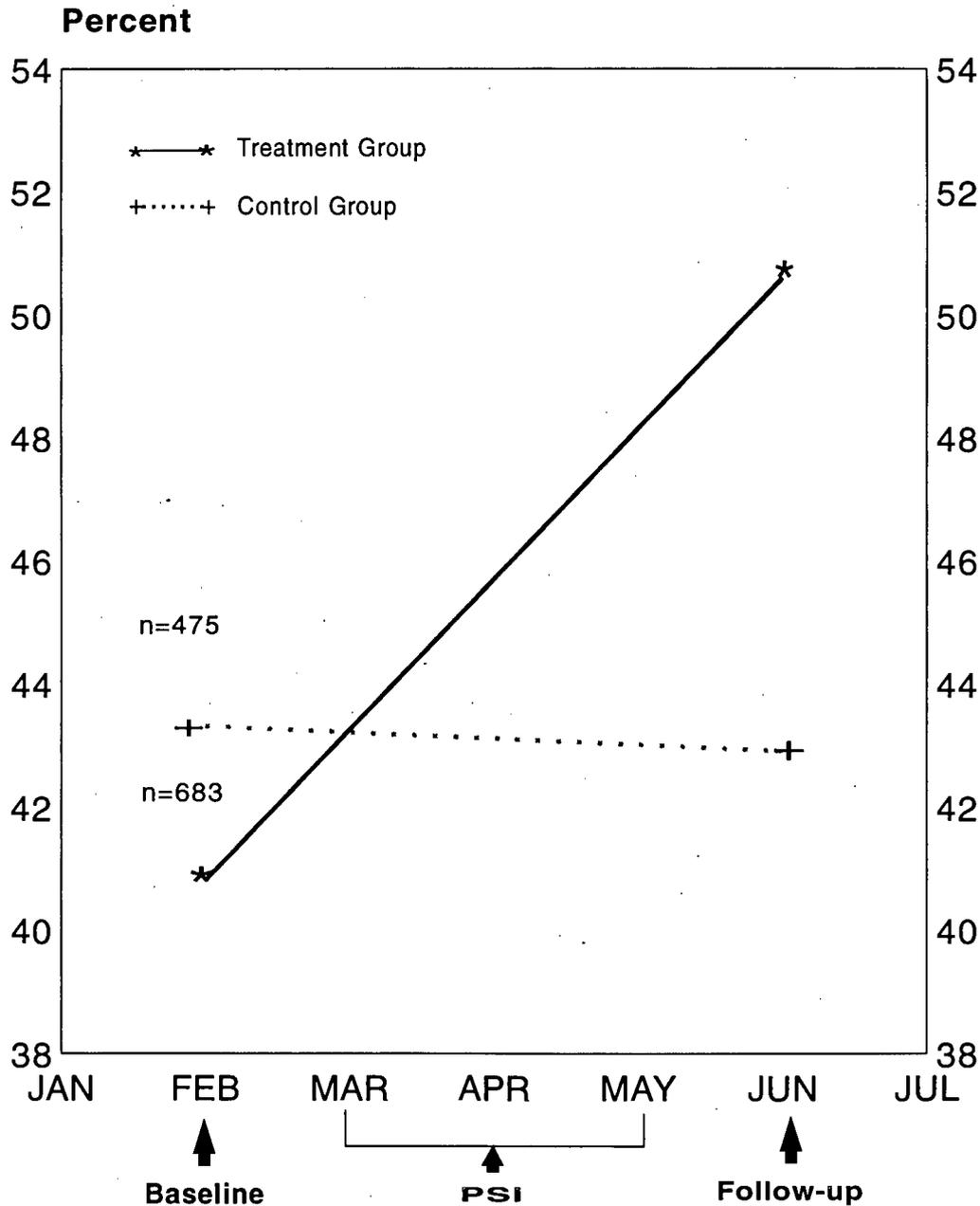
A. Overall Effects of the Program

1) Student Perceptions of the Sexual Activities of Peers

- The PSI intervention included defining social norms for the level of sexual activity among young teens.
- The Perception Scale incorporated three questions to measure the percentage of students who stated that their peers were not sexually active.
- When compared to baseline, Treatment Group students at follow-up were statistically significantly more likely to state that their peers were not sexually active. Control Group students showed no significant change (Figure 2).

Figure 2 PSI Effects On Student Perceptions Regarding Sexual Activities of Peers

Change in Percentage of 6th Grade Students Who State That Their Peers Are Not Sexually Active^a



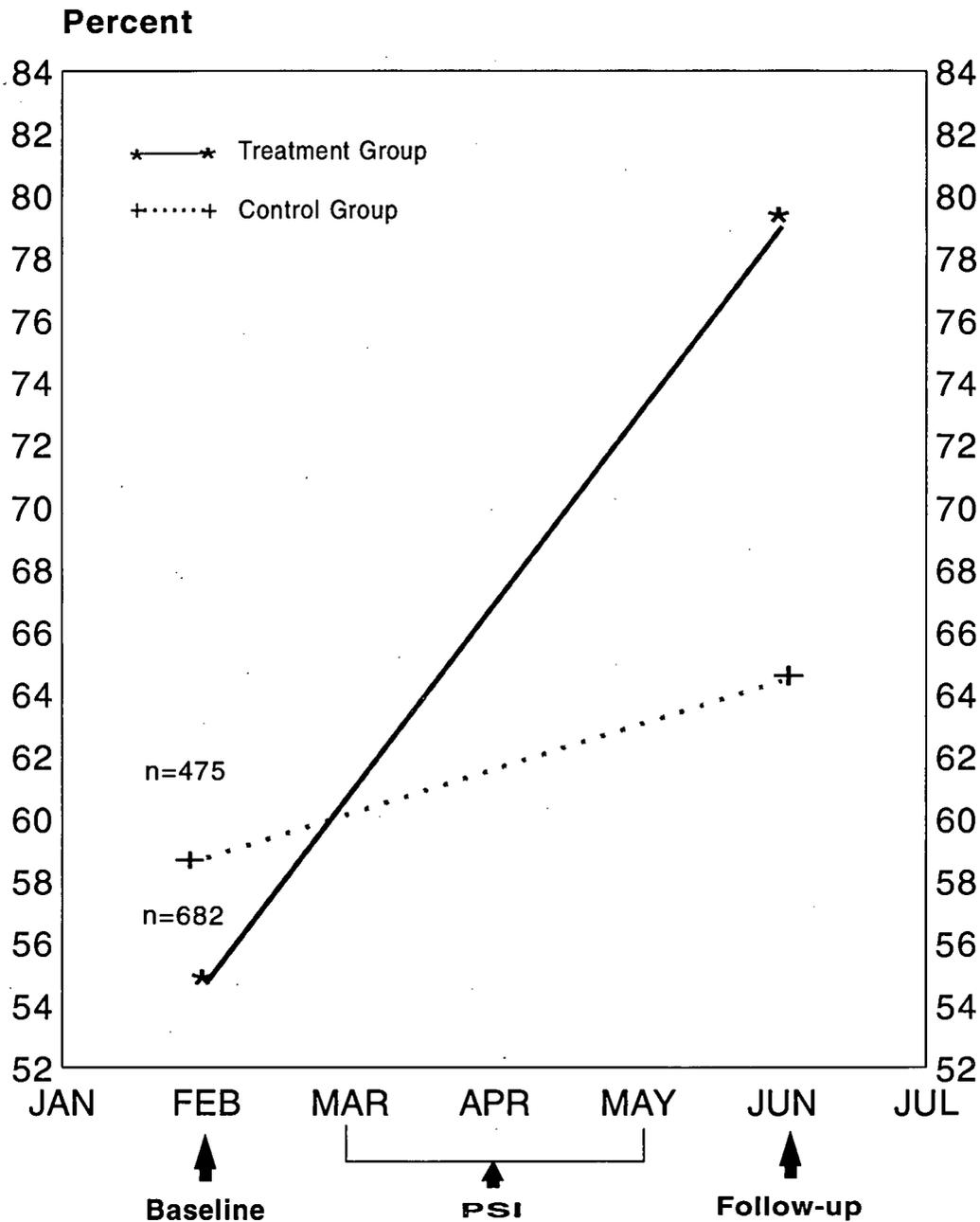
^aChi-Square test: Treatment group, $p < .01$; Control group, $p = .54$.

2) Student Knowledge of the Risk of Pregnancy

- The PSI intervention included defining the risk of pregnancy for young teens.
- The Knowledge Scale incorporated three questions to measure the percentage of students who stated that young teens could become or make someone pregnant.
- When compared to baseline, Treatment Group students at follow-up showed statistically significant increases in knowledge of the ability of young teens to be involved in a pregnancy. Control group students showed no significant change (Figure 3).

Figure 3 PSI Effects On Student Knowledge Regarding Pregnancy

Change in Percentage of 6th Grade Students Who Demonstrate Knowledge Of The Ability Of Young Teens To Become Pregnant Or Make Someone Pregnant^a



^aChi-Square test: Treatment group, $p < .01$; Control group, $p = .17$.

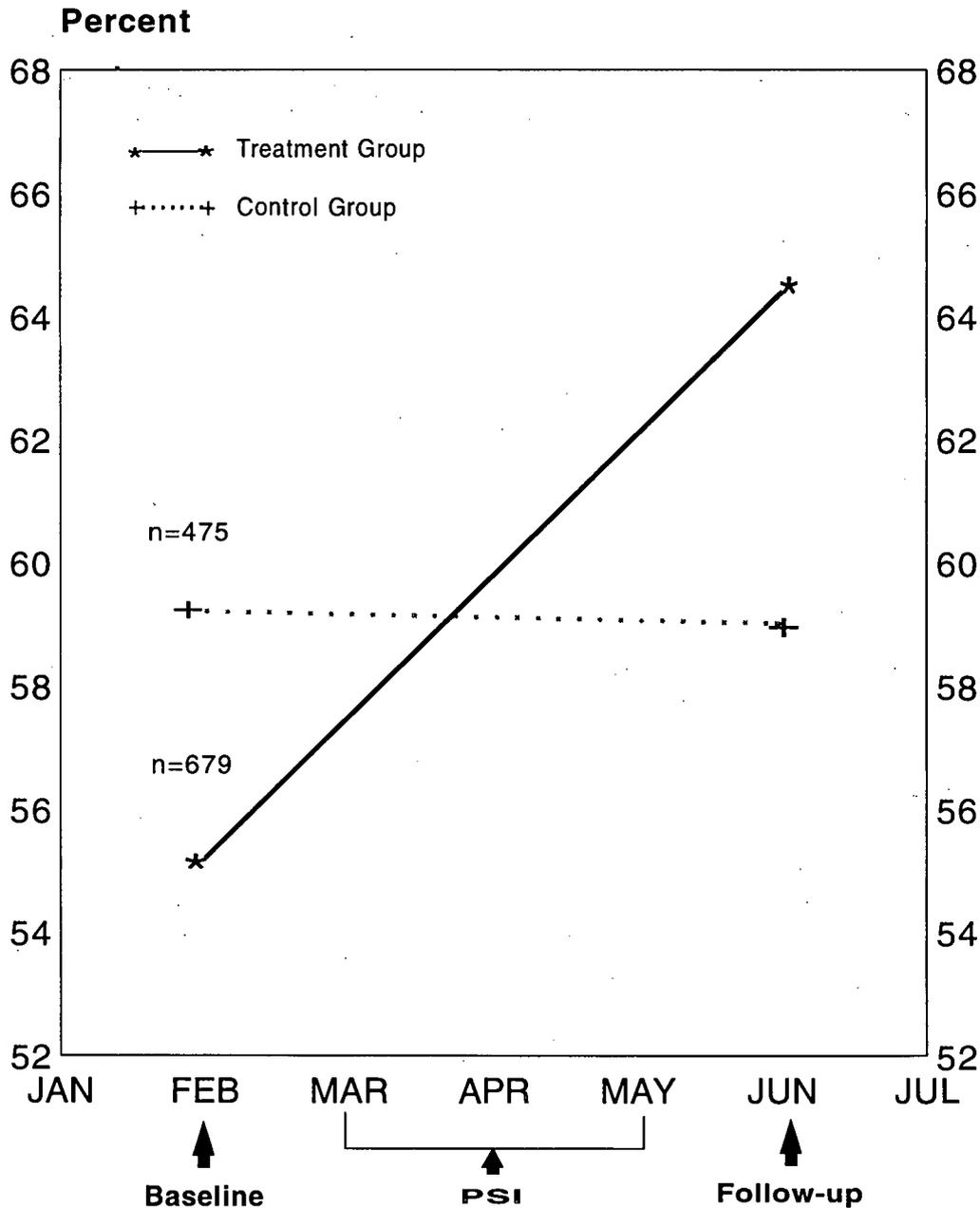
3) Student Attitudes Regarding Teen Sexual Behavior

- The PSI intervention provided reasons for young teens not to become sexually active.
- The Attitude Scale incorporated three questions to measure the percentage of students who stated that young teens should refrain from having sex.
- When compared to baseline, Treatment Group students at follow-up were statistically significantly more likely to state that young teens should not have sex. Control Group students showed no significant change (Figure 4).

Figure 4

PSI Effects On Student Attitudes Regarding Teen Sexual Behavior

Change in Percentage of 6th Grade Students Who State That Young Teens Should Refrain From Having Sex^a



^aChi-Square test: Treatment group, $p < .01$; Control group, $p = .61$.

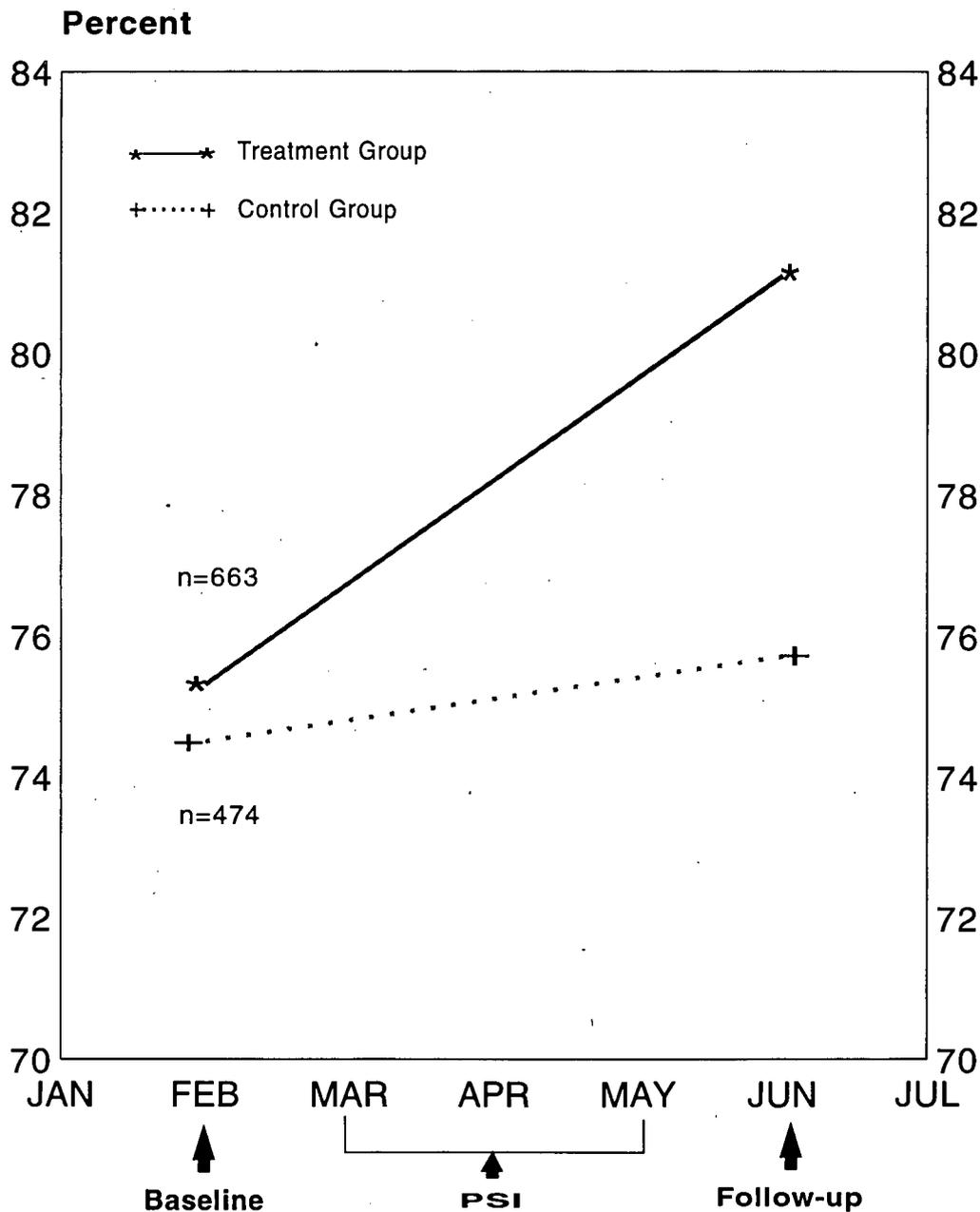
4) Student Behavioral Tendencies To Engage in Sex

- The PSI intervention included information on self assertiveness in the context of avoiding sexual involvement.
- The Behavioral Tendencies Scale incorporated three questions to measure the percentage of students who stated that they would not consent to or try to engage in sex.
- When compared to baseline, Treatment Group students at follow-up showed statistically significant increases in asserting that they would not have sex. Control Group students showed no significant change (Figure 5).

Figure 5

PSI Effects On Student Behavioral Tendencies Regarding Having Sex

Change in Percentage of 6th Grade Students Who State That They Would Not Consent To Or Try To Engage In Sex^a



^aChi-Square test: Treatment group, $p < .05$; Control group, $p = .73$.

5) Students Who Provided Matched Surveys

- Treatment Group students with matched surveys showed statistically significant increases from baseline to follow-up in desired responses for Knowledge, Attitudes and Behavioral Tendencies. Changes in Perceptions fell just short of significance. Control Group students with matched surveys showed no significant changes in desired responses (Table 10).

**Table 10. PSI Effects on Students Who Provided Matched Surveys
at Baseline and Follow-up**

Scale	Percent of Desired Response					
	Treatment Group ¹			Control Group ²		
	Baseline	Follow-up	p ³	Baseline	Follow-up	p ³
Perceptions	62.1	68.7	.055	62.0	54.3	.17
Knowledge	85.0	93.3	.01	88.2	89.4	1.00
Attitudes	66.5	75.8	<.01	75.2	72.8	.58
Behavioral Tendencies	85.2	90.9	<.02	89.4	86.5	.35

¹n = 193 - 298, depending on scale

²n = 85 - 141, depending on scale

³McNemar's test

6) Achieving Desired Responses on all Four Outcome Measures

- Baseline to follow-up changes in the proportion of students who achieved the desired responses for all four outcome measures simultaneously were examined. This was done for Treatment and Control Groups comprised of all students as well as those comprised of students with matched surveys. The proportion of Treatment students who gave desired responses for all four outcome measures more than doubled, and was significantly higher at follow-up than at baseline. The proportion of all Control students who gave desired responses showed no significant change from baseline to follow-up. This proportion decreased significantly for students with matched surveys (Table 11).

Table 11. PSI Effects on Student Ability to Achieve Desired Responses on all Four Outcome Measures

	Percent of Total ^{1,2}					
	All Students			Students With Matched Surveys		
	Baseline n (%)	Follow-up n (%)	p ³	Baseline n (%)	Follow-up n (%)	p ³
Treatment Group	92 (14.9)	183 (31.2)	<.01	58 (16.5)	132 (33.6)	<.01
Control Group	77 (17.5)	76 (19.6)	.47	38 (24.1)	23 (14.5)	<.05

¹Includes students who entered responses for all of the four scaled items.

²Denominators for groups may differ from baseline to follow-up due to participation rate changes.

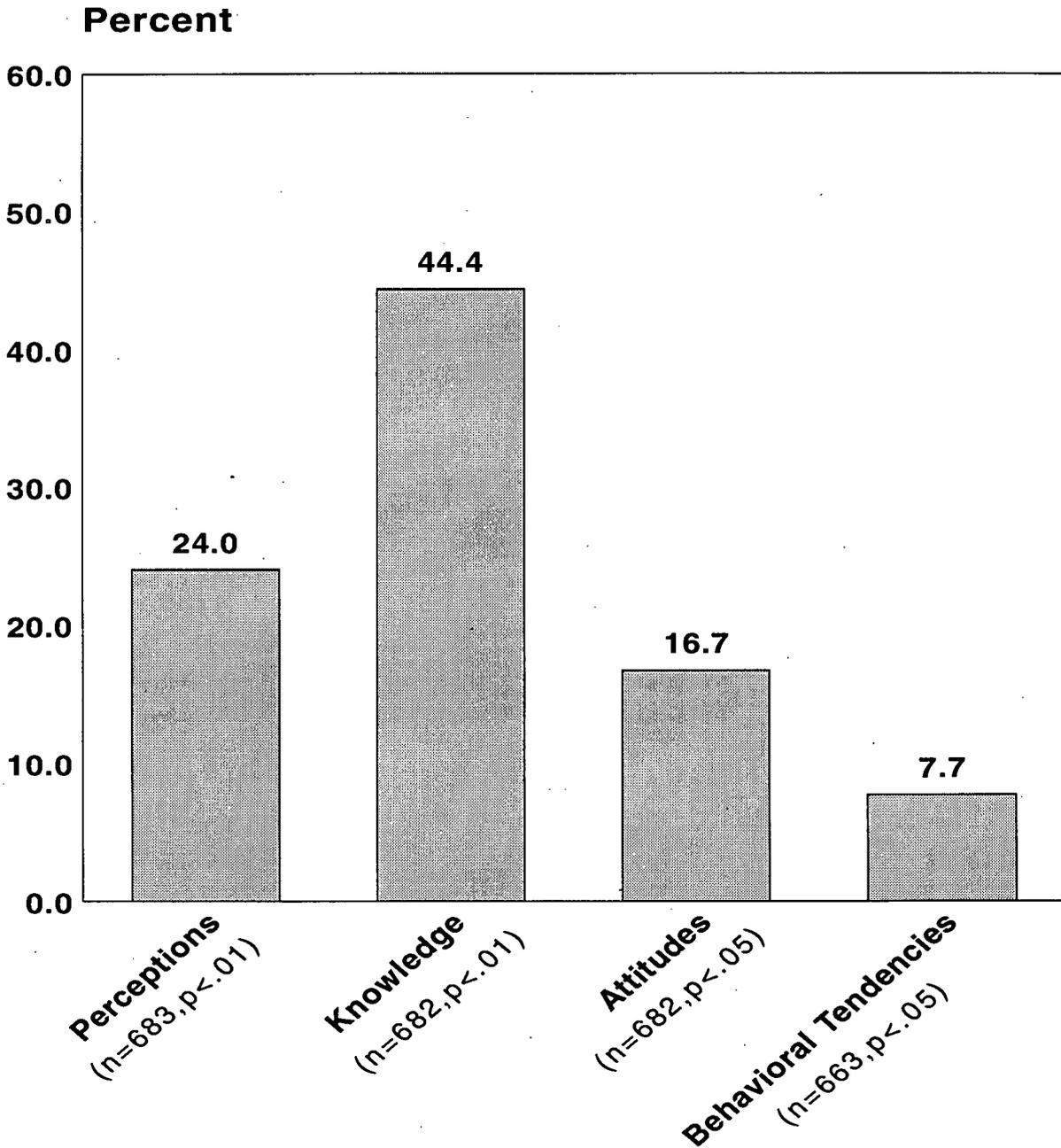
³Chi-square test

7) Differences in Effects Between the Four Outcome Measures

- The relative effectiveness of PSI curriculum components related to the four scaled outcomes was assessed by comparing relative improvements in these outcomes.
- Treatment Group students showed significantly higher levels of desired responses at follow-up than at baseline for each of the four scaled outcome measures. However, proportional increases in desired responses at follow-up varied markedly for the four scales: 24.0% for Perceptions, 44.4% for Knowledge, 16.7% for Attitudes, and 7.7% for Behavioral Tendencies (Figure 6).

Figure 6
Relative Impact Of PSI On Student
Perceptions, Knowledge, Attitudes And Behavioral Tendencies

Increase In Percentage Of Students Who
Provided Desired Responses Relative To Baseline Levels

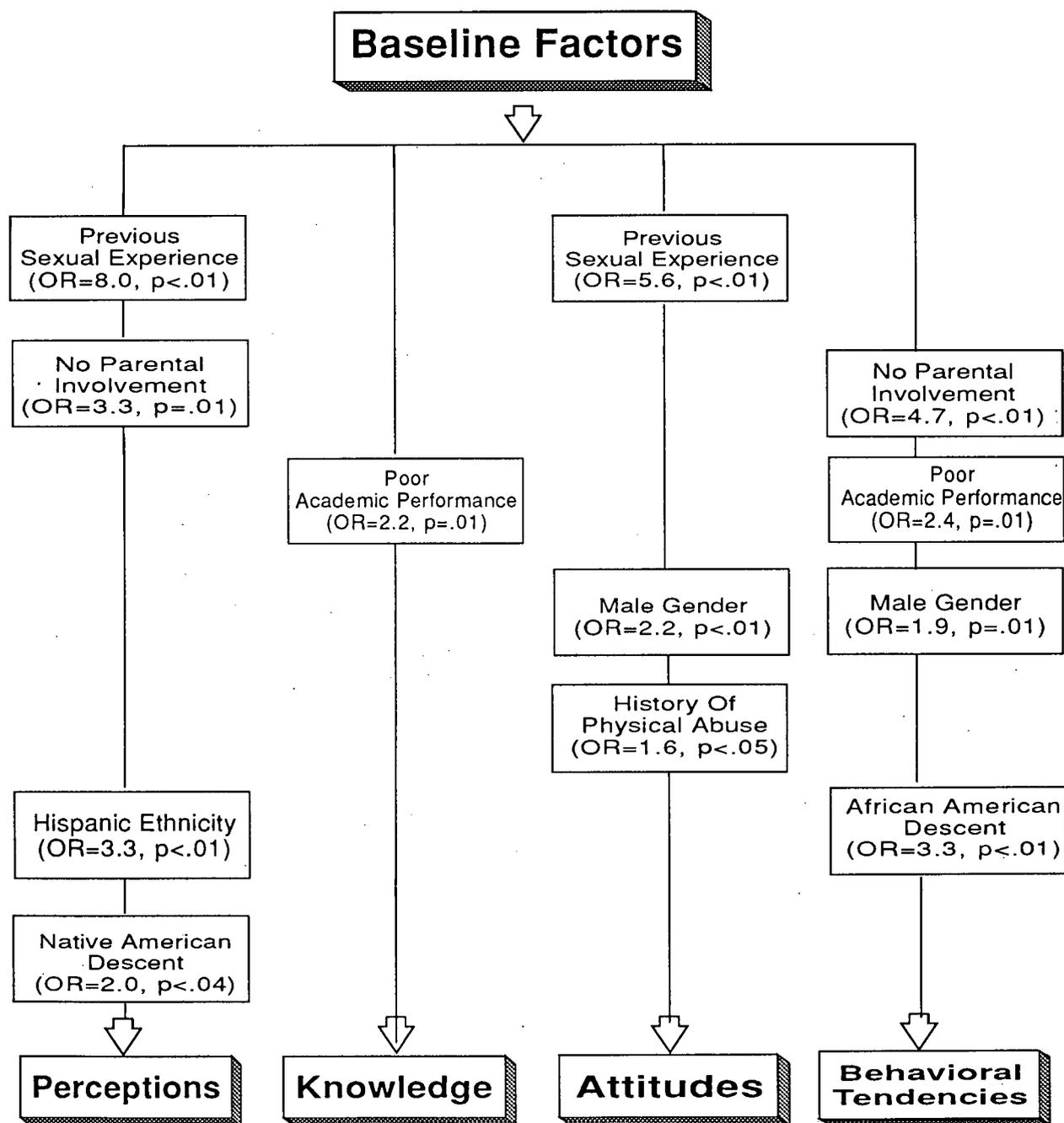


B. Influence of Student Demographic and Behavioral Risk Factor Characteristics on Program Effectiveness

1) Student Characteristics Predictive of Giving Undesired Responses at Baseline

- Characteristics of students that could place them at a disadvantage in being able to give desired responses before receiving the program were identified. This was done by assessing student demographic and behavioral risk factor characteristics for their predictive value in determining undesired responses at baseline. Having previous sexual experience was the single most predictive factor for Perceptions. For example, students with previous sexual experience were 8.0 times as likely to provide undesired responses for Perceptions as students with no sexual experience. Lack of parental care or being Hispanic or Native American were other predictors of undesired responses for Perceptions. Poor academic performance was a predictor of undesired responses for Knowledge. Having previous sexual experience, being male or having a history of physical abuse were predictors of undesired responses for Attitudes. Lack of parental involvement, poor academic performance, being male, or being African American were predictors of undesired responses for Behavioral Tendencies (Figure 7).
- In order to determine whether the program enabled students to overcome the disadvantages presented by these risk factor characteristics at baseline, this analysis was also performed at follow-up. In contrast to baseline, lack of parental involvement, a history of physical abuse, or being African American were not predictors of undesired responses at follow-up.

Demographic And Behavioral Risk Factors Predictive Of Giving Undesired Responses At Baseline^a



^aMultiple logistic regression, OR=Odds Ratio.

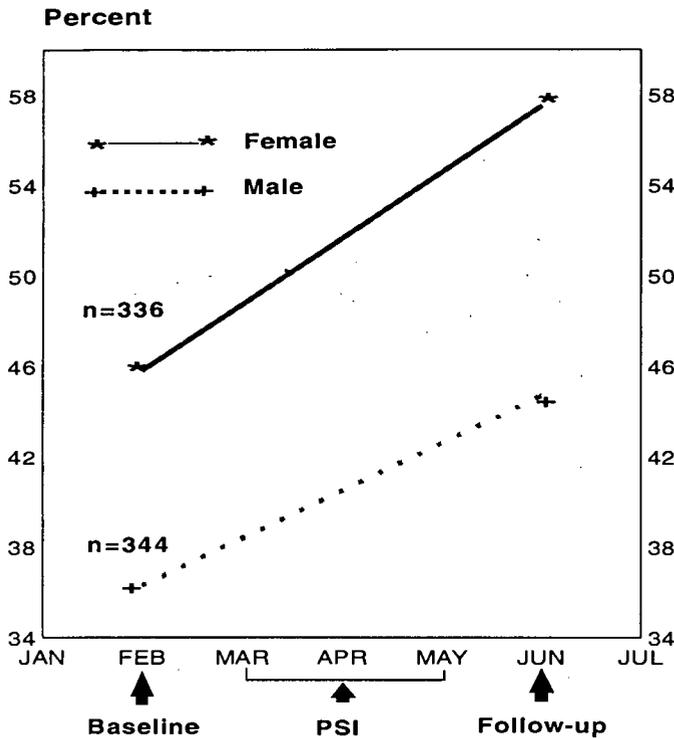
2) Gender

- Although some demographic and behavioral risk factor characteristics placed students at a disadvantage at baseline, improvements were clearly observed for these students at follow-up. Depending on the specific characteristic, similar or proportionally greater increases in desired responses from baseline to follow-up were observed for students with these characteristics in relation to other students (Figures 8-14).
- When compared to girls, boys showed lower levels of desired responses at baseline and at follow-up. However, both girls and boys showed parallel improvement in each of the four outcome measures (Figure 8).

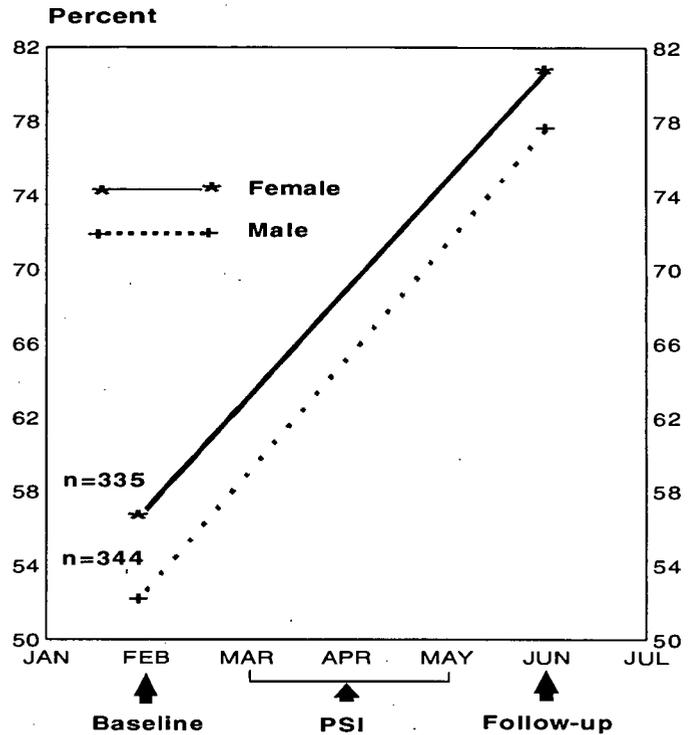
Figure 8

Effectiveness Of PSI In Relation To Gender

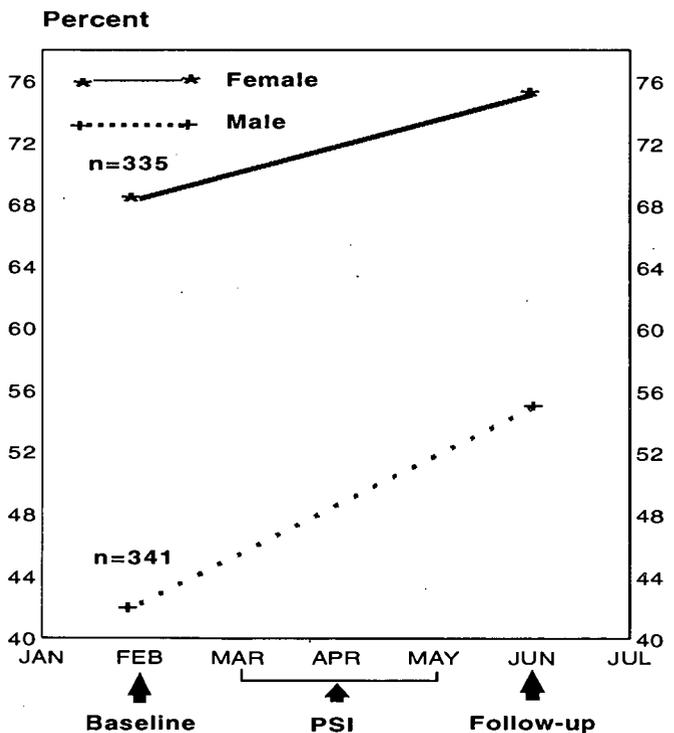
Perceptions



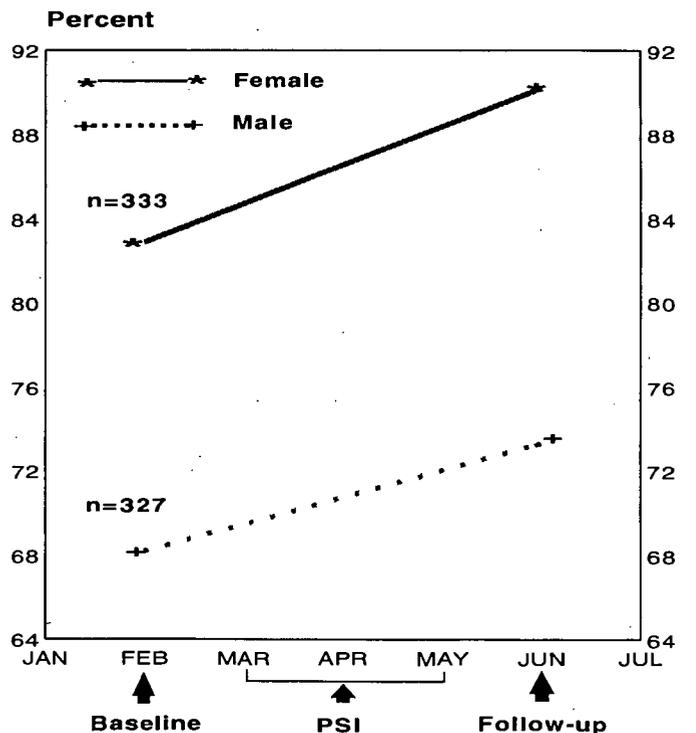
Knowledge



Attitudes



Behavioral Tendencies



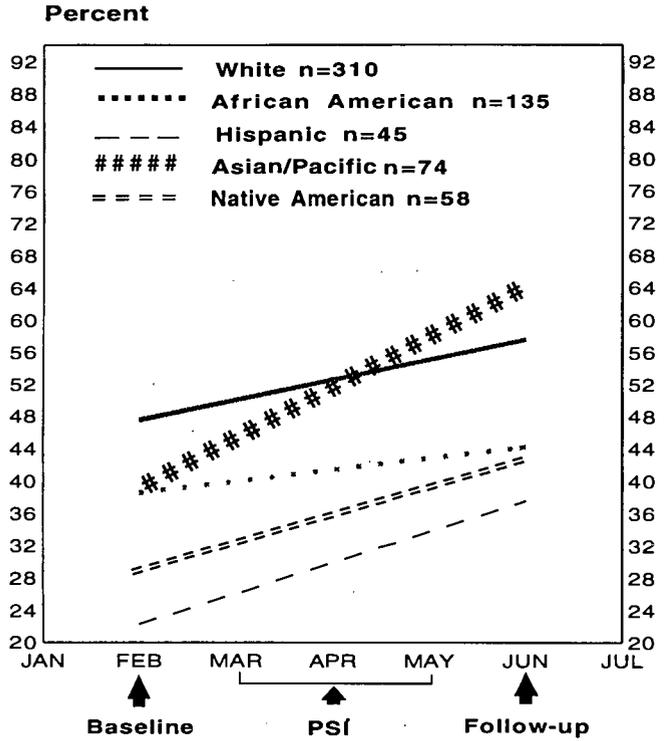
3) Race/Ethnicity

- Whites and African Americans showed improvements in all four outcome measures. African Americans showed the greatest improvements in Behavioral Tendencies, and Asian/Pacific Islanders showed the greatest improvements in Perceptions and Attitudes. Asian/Pacific Islanders, Native Americans and Hispanics showed improvements in all measures except Behavioral Tendencies (Figure 9).

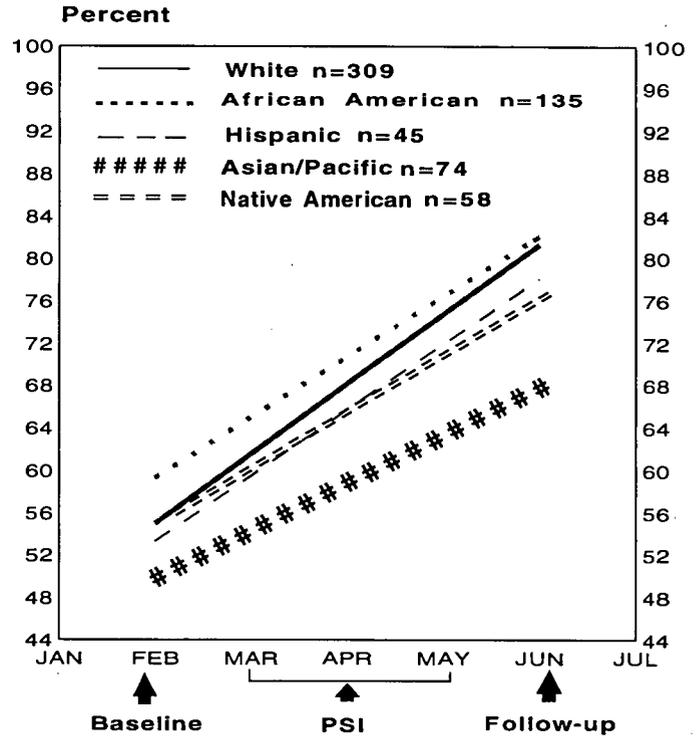
Figure 9

Effectiveness Of PSI In Relation To Race/Ethnicity

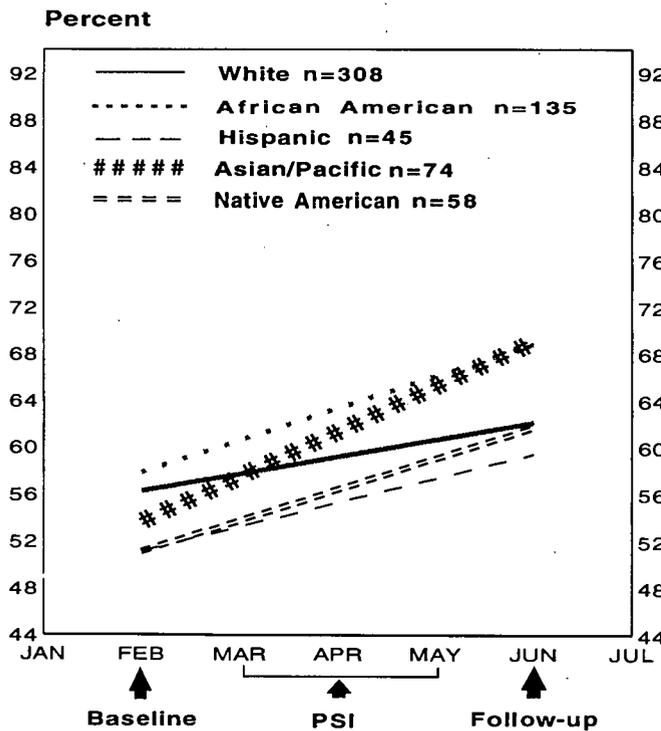
Perceptions



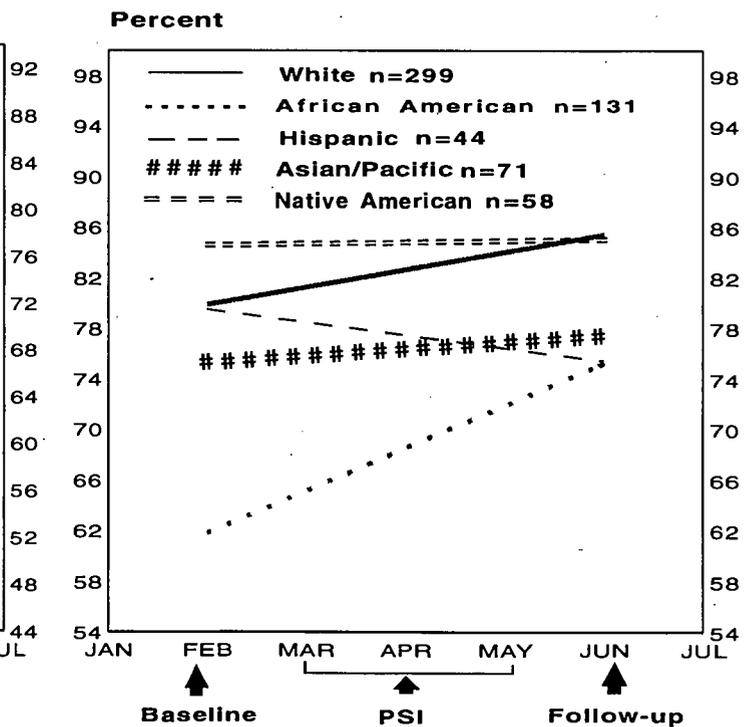
Knowledge



Attitudes



Behavioral Tendencies



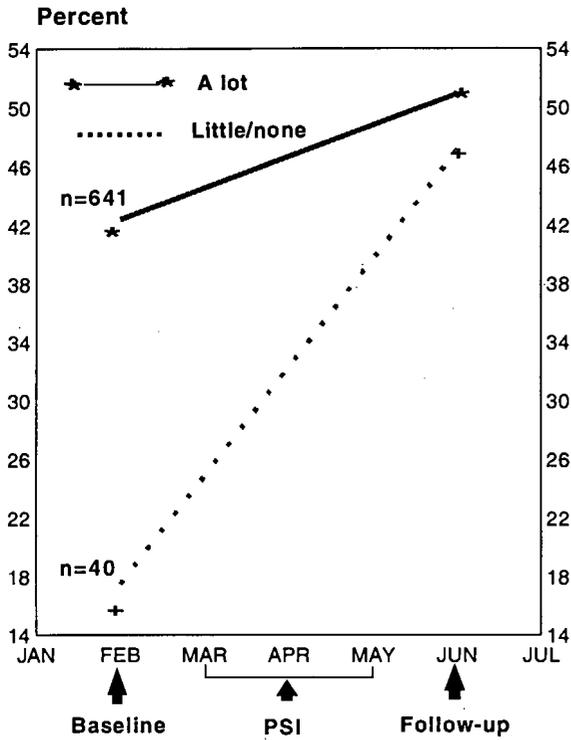
4) Parental Involvement

- Students who reported a lack of parental involvement showed lower levels of desired responses for Perceptions, Attitudes and Behavioral Tendencies at baseline than students who reported parental involvement. Increases in these measures following the program were proportionally greater for these students than for students who reported parental involvement, bringing students of both groups very close in levels of desired responses at follow-up. Increases in Knowledge were observed, but were proportionally lower for students who reported lack of parental involvement (Figure 10).

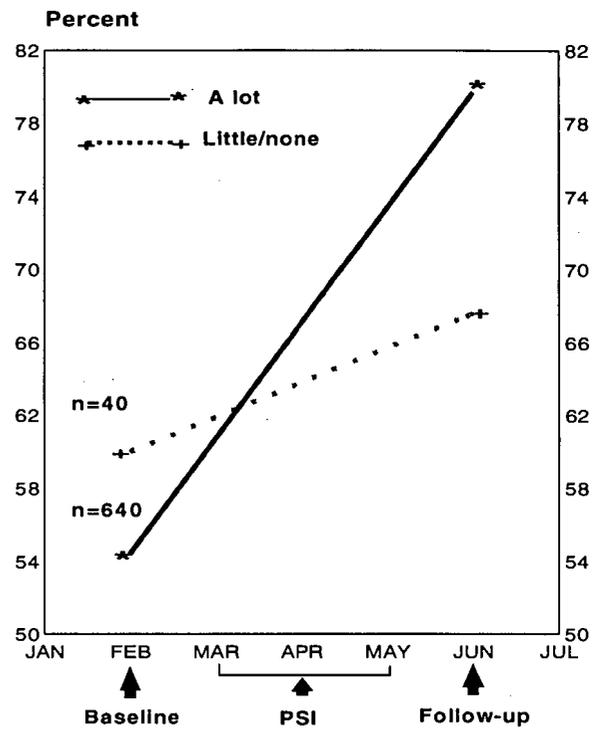
Figure 10

Effectiveness Of PSI In Relation To Parental Involvement^a

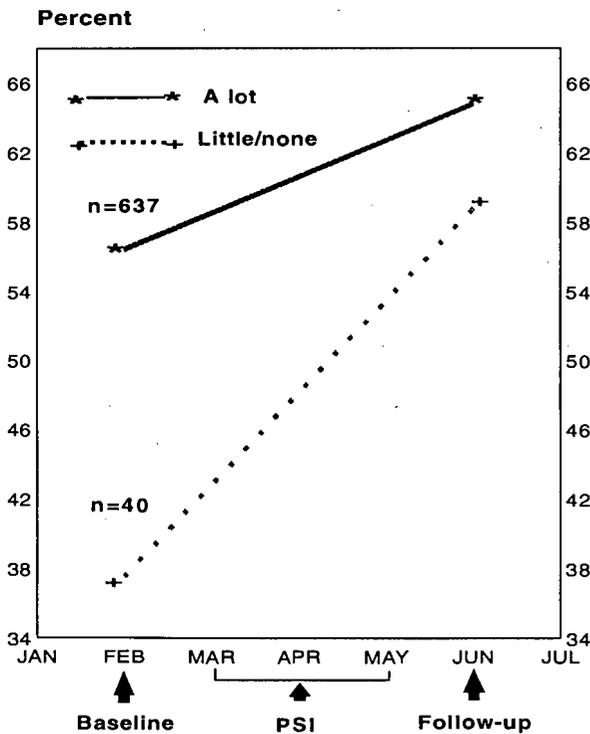
Perceptions



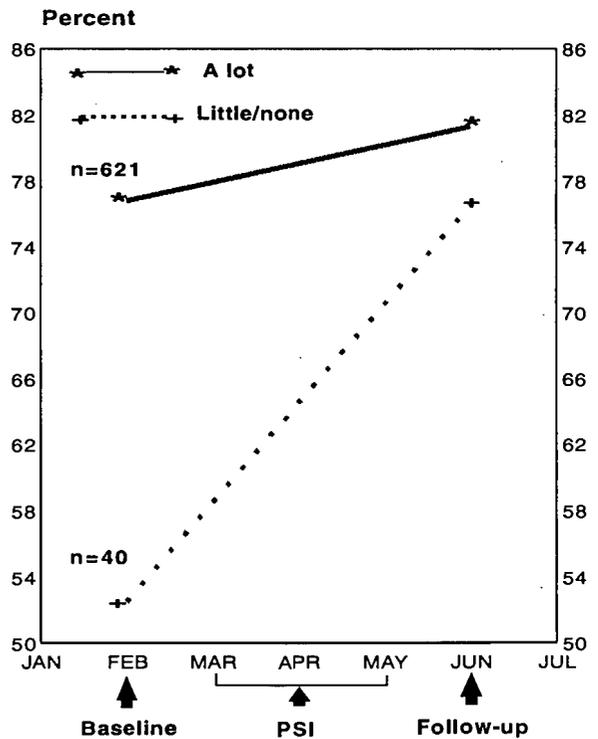
Knowledge



Attitudes



Behavioral Tendencies



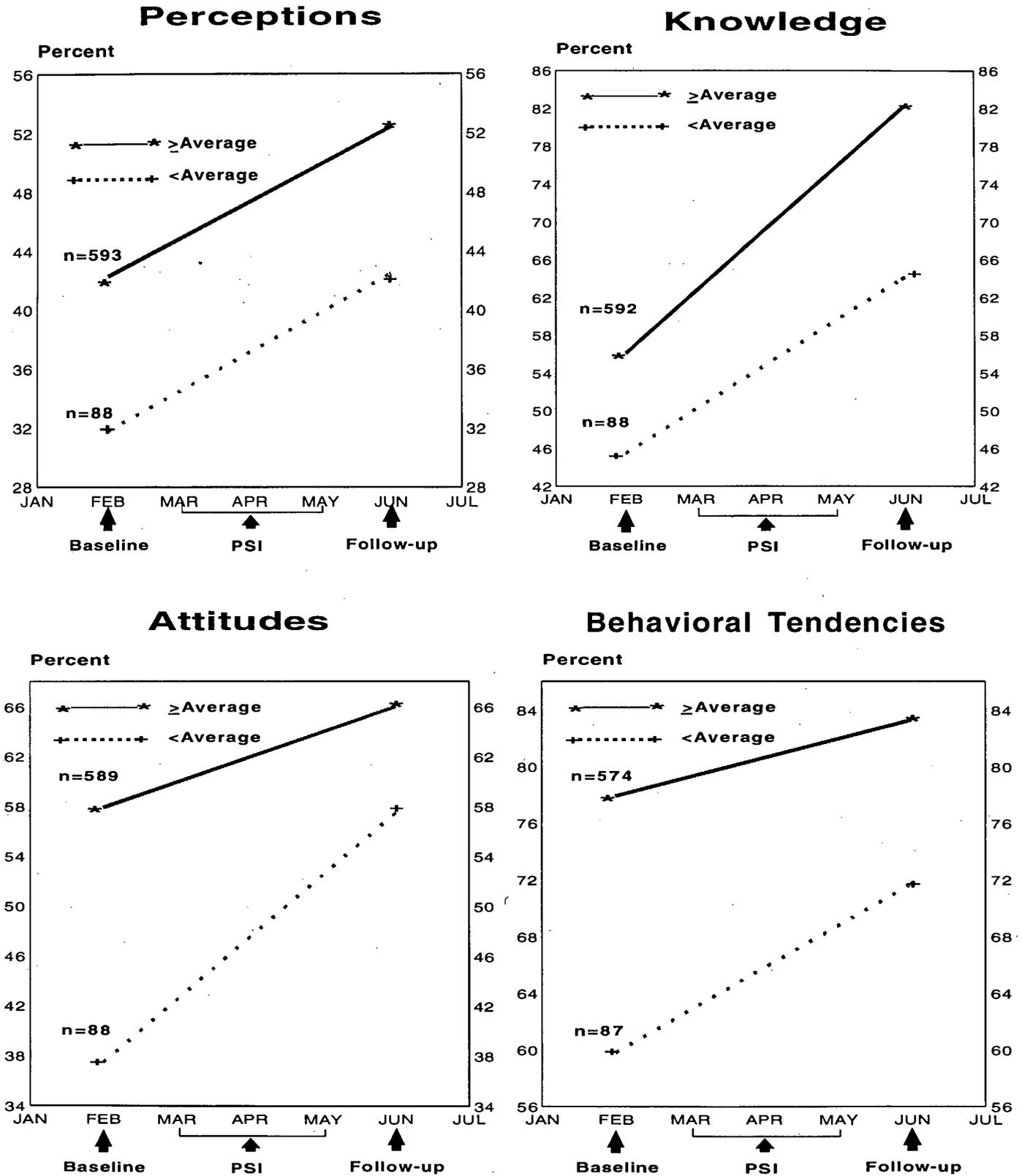
^aParental involvement is a combined variable derived from parental monitoring and perceived parental caring.

5) Academic Performance

- Students who reported less than average academic performance showed lower levels of desired responses for Perceptions, Knowledge, Attitudes and Behavioral Tendencies at baseline and follow-up. However, improvements were observed that paralleled those of students who reported average or better academic performance (Figure 11).

Figure 11

Effectiveness Of PSI In Relation To Academic Performance^a



^aAcademic performance is a combined variable derived from grades received, perceived performance in relation to peers, and educational goals.

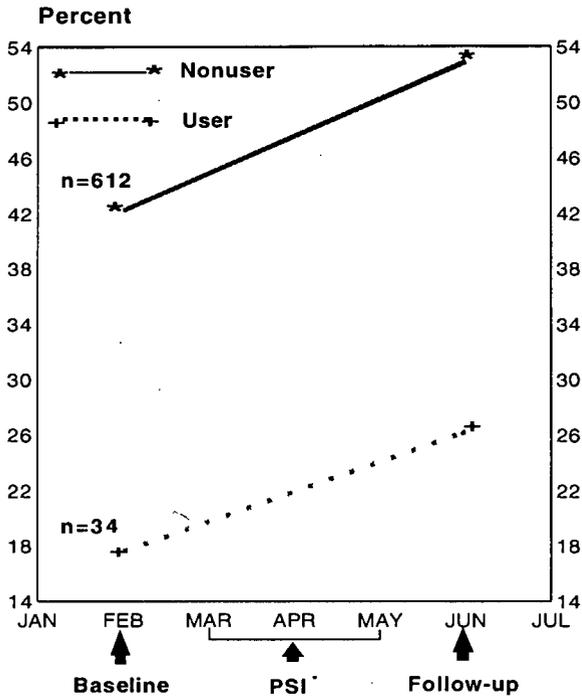
6) Substance Use

- Students who reported substance use showed lower levels of desired responses at baseline and follow-up for Perceptions, Attitudes and Behavioral Tendencies. When compared to students who did not report substance use, these students showed parallel improvement in Perceptions, proportionally greater improvement in Behavioral Tendencies, but little change in Attitudes. Baseline and follow-up levels of Knowledge were comparable for substance users and nonusers (Figure 12).

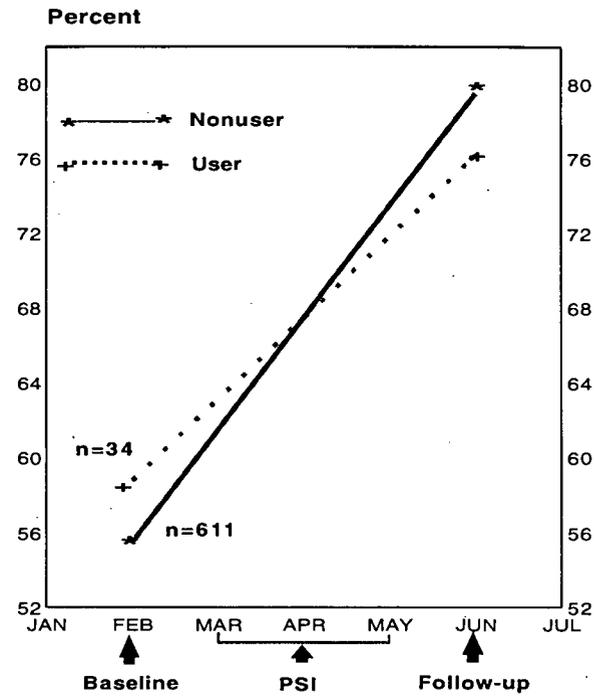
Figure 12

Effectiveness Of PSI In Relation To Substance Use^a

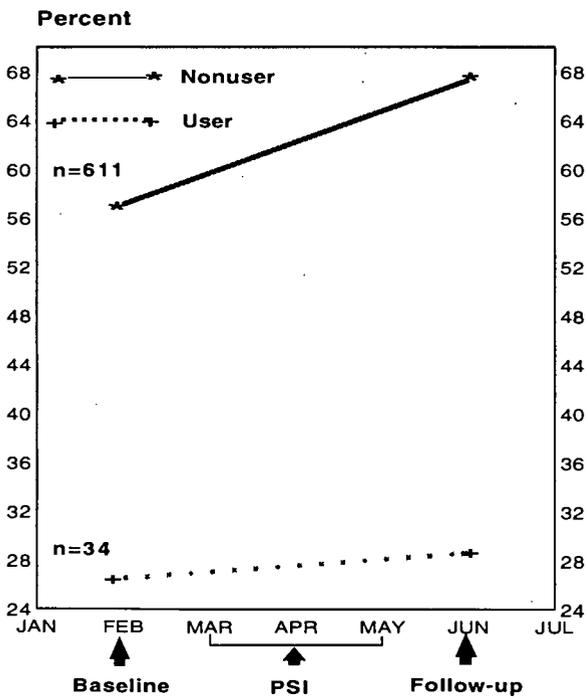
Perceptions



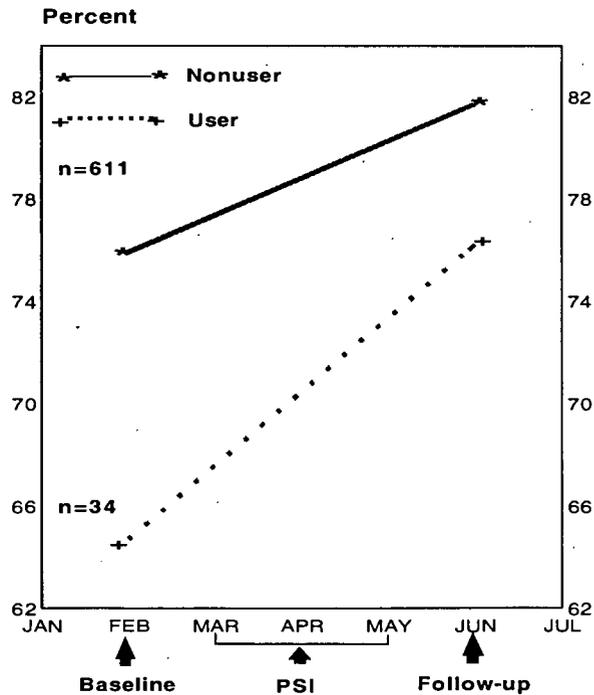
Knowledge



Attitudes



Behavioral Tendencies



^aSubstance use is a combined variable derived from any use of tobacco, alcohol, or illegal drugs.

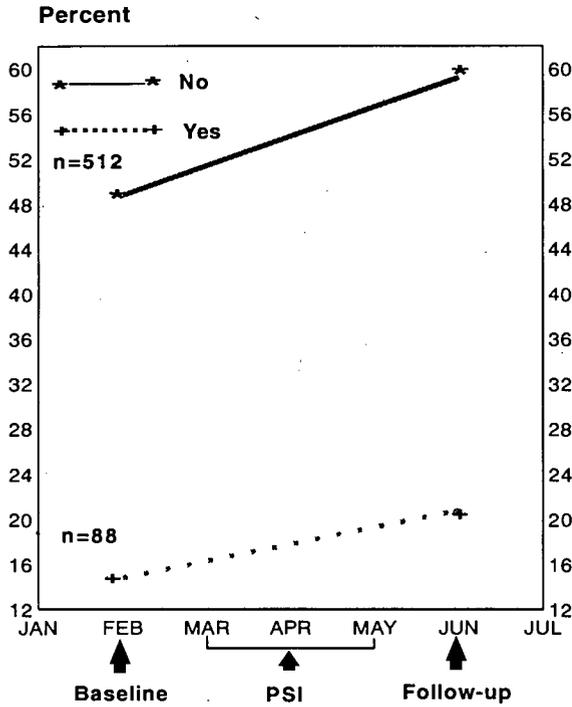
7) Previous Sexual Experience

- Students who reported having had previous sexual experience showed much lower baseline and follow-up levels of desired responses for Perceptions, Attitudes and Behavioral Tendencies than students who reported no sexual experience. For these measures, students with sexual experience showed parallel improvement to students without sexual experience. Students with sexual experience showed higher levels of Knowledge at baseline than students without sexual experience, and similar levels to other students at follow-up (Figure 13).

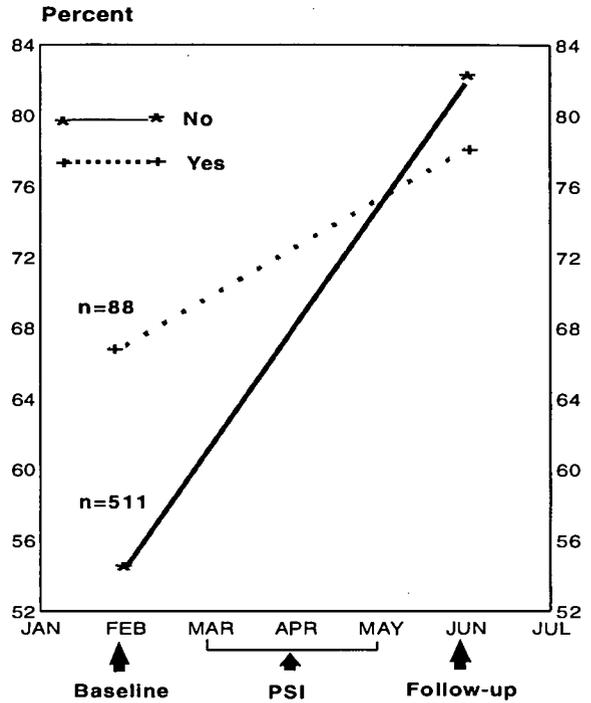
Figure 13

Effectiveness Of PSI In Relation To Previous Sexual Experience^a

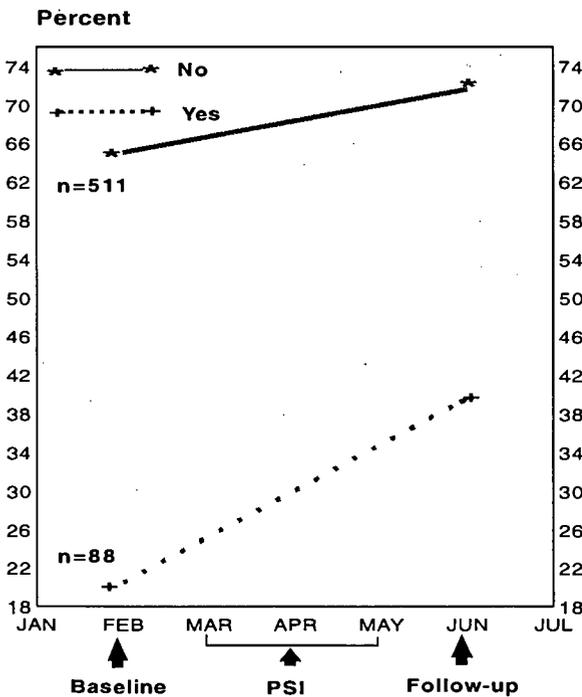
Perceptions



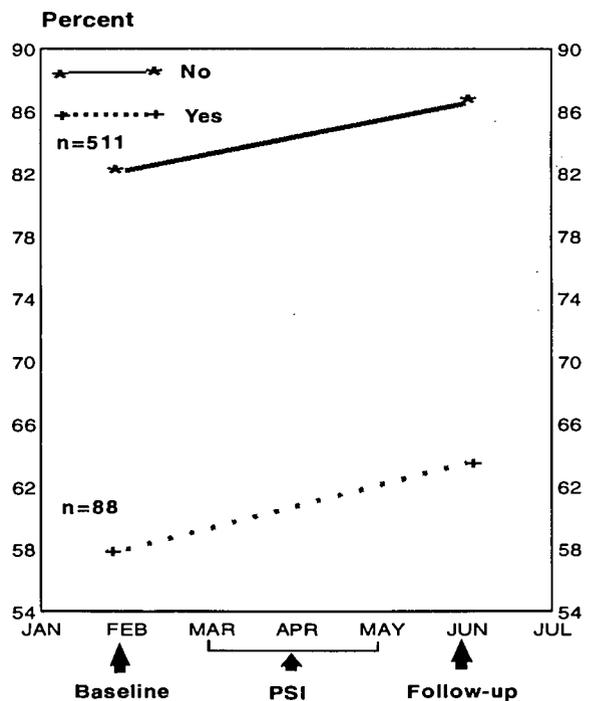
Knowledge



Attitudes



Behavioral Tendencies



^aPrevious sexual experience is defined as having had sexual intercourse.

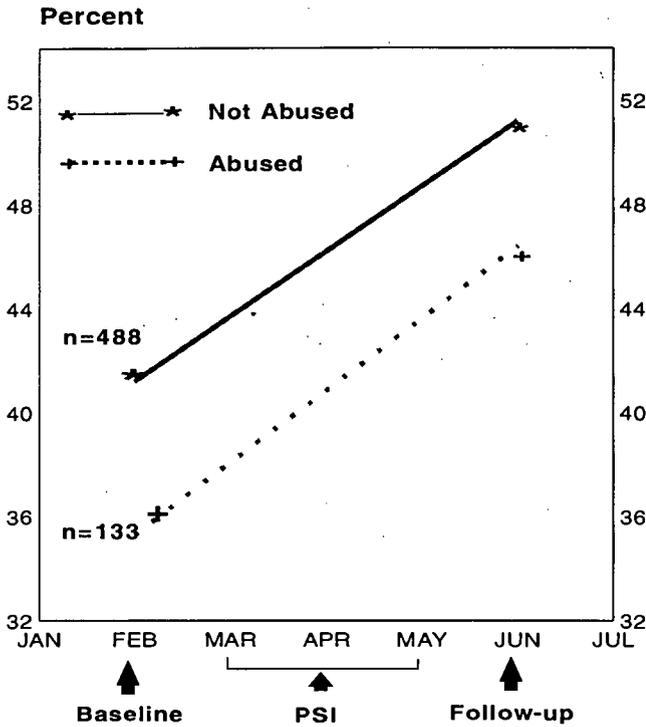
8) History of Physical Abuse

- Students who reported a history of physical abuse showed lower levels of desired responses for Perceptions, Attitudes and Behavioral Tendencies at baseline than students without a history of physical abuse. Students with a history of physical abuse showed parallel improvements in Perceptions, and proportionally greater improvements in Attitudes and Behavioral Tendencies in relation to students without this history. Follow-up levels of desired responses were comparable for Behavioral Tendencies. Students of both groups showed similar levels of Knowledge at baseline and follow-up (Figure 14).

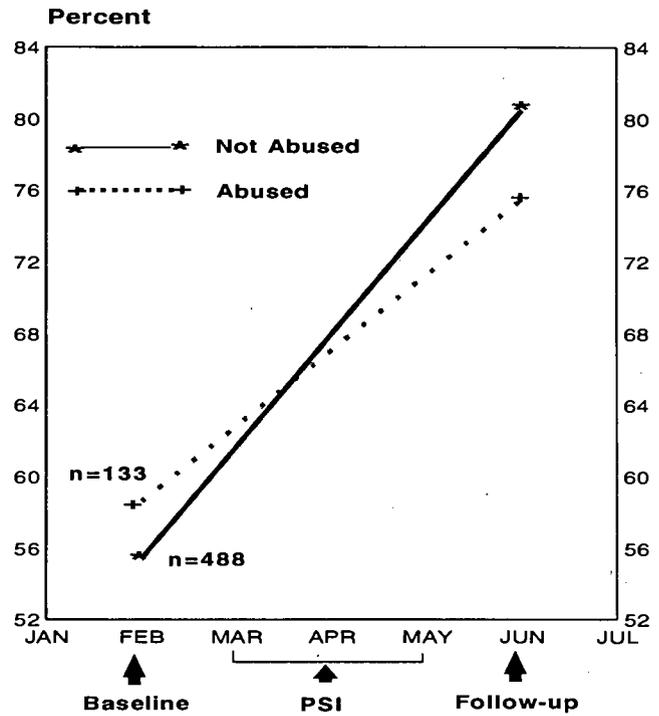
Figure 14

Effectiveness Of PSI In Relation To History Of Physical Abuse^a

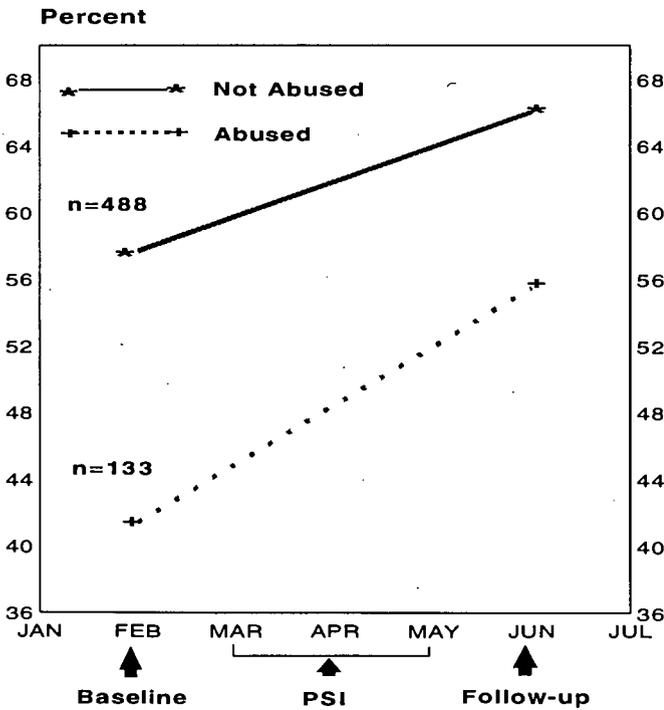
Perceptions



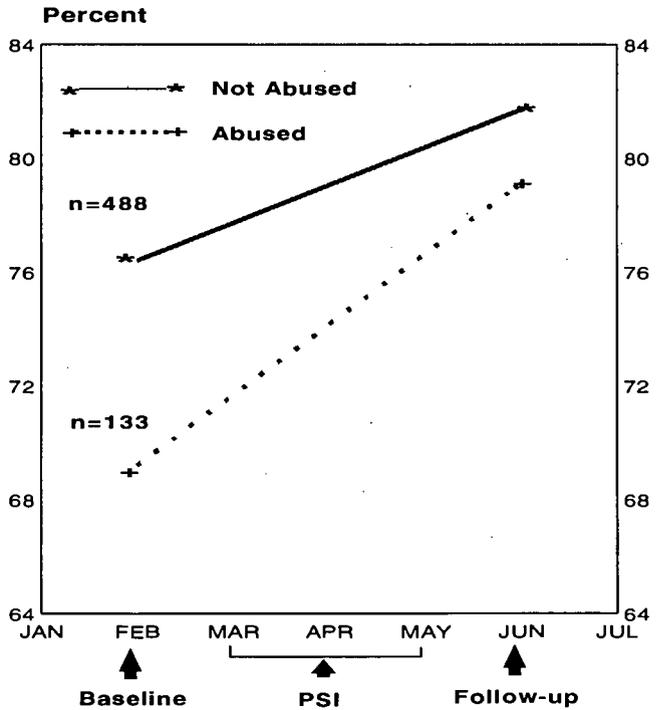
Knowledge



Attitudes



Behavioral Tendencies



^aPhysical abuse is defined as having been hit by an adult in anger, to the point of being badly hurt, or getting bruises or scars.

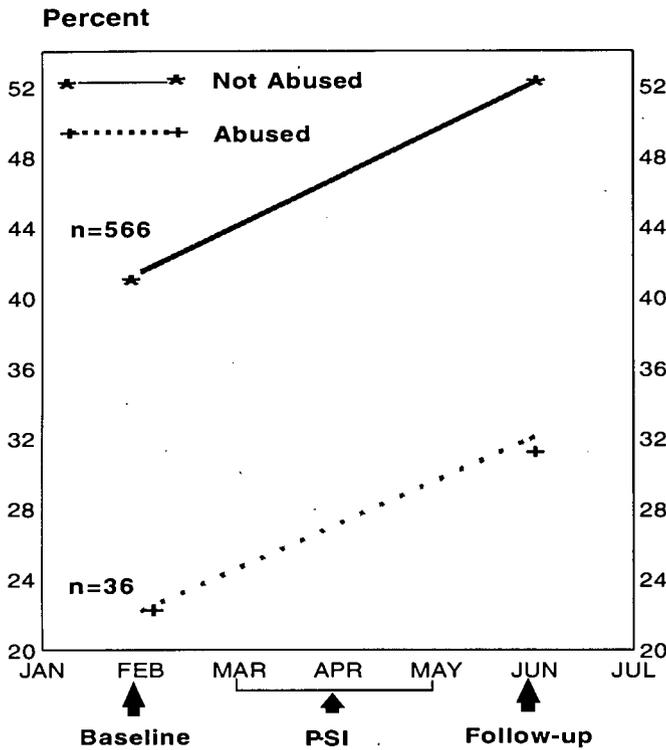
9) History of Sexual Abuse

- Students who reported a history of sexual abuse showed much lower levels of desired responses at baseline for Perceptions, Attitudes and Behavioral Tendencies than students without this history. Students with a history of sexual abuse showed parallel improvements in Perceptions, and proportionally greater improvements in Attitudes and Behavioral Tendencies. Students of both groups showed improved Knowledge, but students with a history of sexual abuse showed less improvement (Figure 15).
- The optimal effects of the PSI program in relation to a risk factor are perhaps best illustrated here, where students with and without a history of sexual abuse have widely discrepant levels of desired responses for Attitudes at baseline, and increase to exactly the same level of desired response at follow-up.

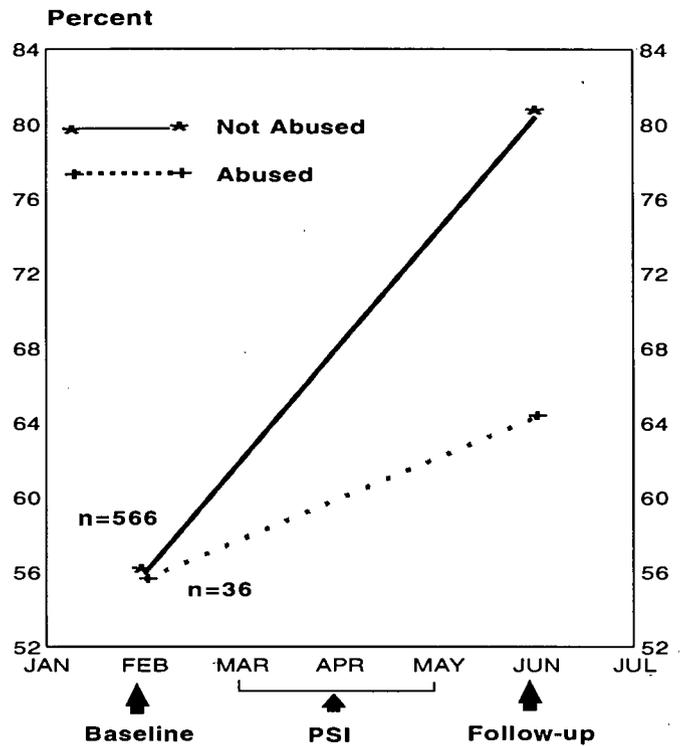
Figure 15

Effectiveness Of PSI In Relation To History Of Sexual Abuse^a

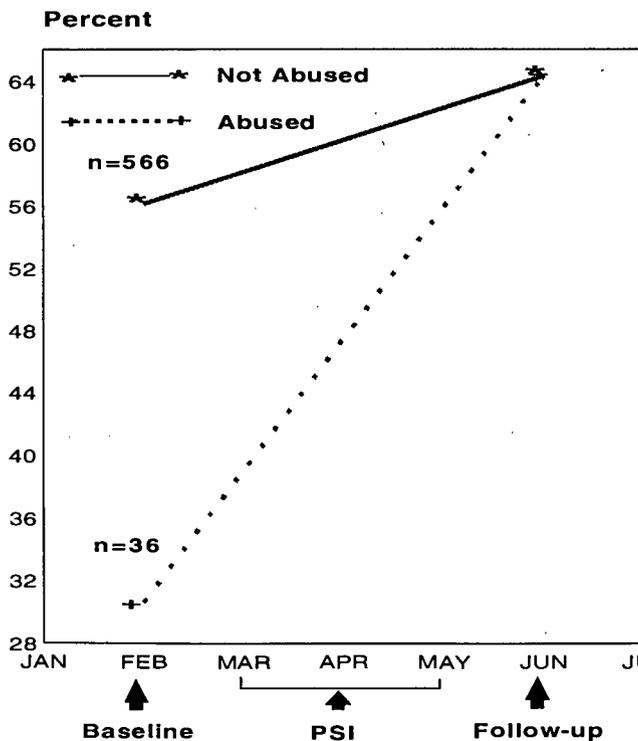
Perceptions



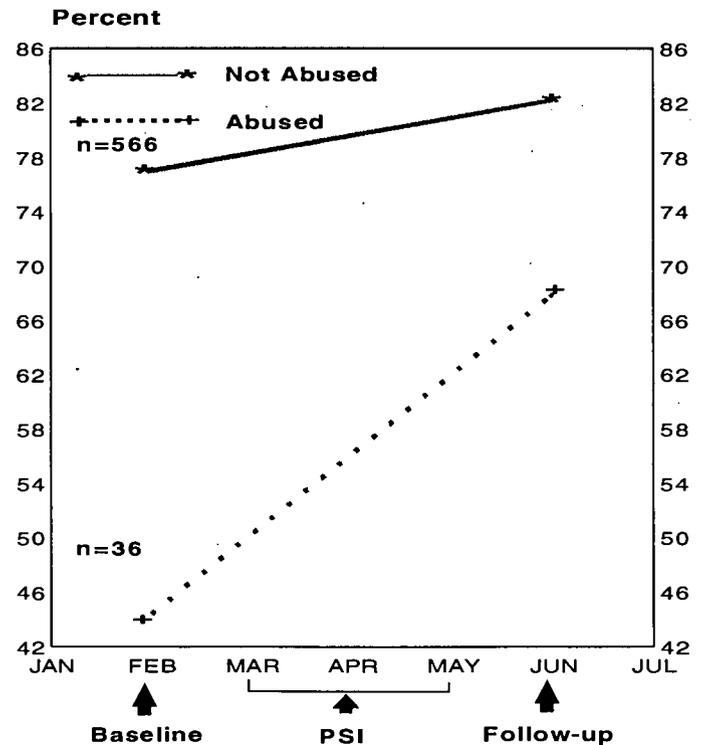
Knowledge



Attitudes



Behavioral Tendencies



^aSexual abuse is defined as ever having had sexual intercourse when forced or talked into it.

IV. CONCLUSIONS

This evaluation has shown that the PSI program can produce significant changes in the Perceptions, Knowledge, Attitudes and Behavioral Tendencies of sixth grade students. These changes clearly reflect a decrease in their acceptance of sexual involvement. Students who received the program showed statistically significant increases from baseline to follow-up in levels of desired responses, whereas students who did not receive the program showed no significant changes.

The overall effectiveness of the PSI Program was demonstrated in three ways: First, Treatment Group students showed significant improvements following the program in each of the four outcome measures. Second, Treatment Group students showed significant improvements in ability to achieve the desired responses on all four outcome measures simultaneously. Third, Treatment Group students showed improvements in nearly all measures regardless of demographic or behavioral risk factor characteristics.

Levels of undesired responses were generally higher at baseline for students with demographic or behavioral risk factors, and there were specific risk factors that were found to be predictive of the likelihood of giving undesired responses at baseline. Those factors significantly associated with at least one undesired outcome measure included previous sexual experience, lack of parental involvement, poor academic performance, male gender, a history of physical abuse, Hispanic ethnicity, and Native American or African American descent. The single most predictive factor was having previous sexual experience.

The effectiveness of the PSI program for students with demographic and behavioral risk factor characteristics was examined in two ways: First, in terms of the actual amount of improvement they showed from baseline to follow-up, and second, in terms of their contribution to the overall amount of improvement observed in the entire study population. Students with any one of these characteristics were generally at a disadvantage at baseline in relation to students who did not have these characteristics. Despite the lower baseline levels of desired responses shown by students with risk factors, similar and sometimes proportionally greater amounts of improvement were observed for students with than without these characteristics.

When students were divided on the basis of whether or not they were able to provide matched surveys at baseline and follow-up, two populations emerged: A lower risk population and a higher risk population. Students who were unable to provide matched surveys had a higher prevalence of each risk factor, lower levels of desired responses on each outcome measure at baseline, but proportionally greater improvements at follow-up. This was apparent in the difference between the amount of improvement in the entire study population and that in students who provided matched surveys. The entire study population (which included both students with and without matched surveys) showed 2.5 times the amount of improvement on all outcome measures combined as the group of students who provided matched surveys. Thus, the group of students without matched surveys (and with a higher risk profile) made a greater overall contribution to the amount of improvement achieved from baseline to follow-up.

It is clear that the PSI program successfully reached students with risk factor characteristics. However, the disadvantages presented to them at baseline were not entirely overcome by the program. Even with the larger gains they experienced, levels of desired responses at follow-up for students with risk factors often remained lower than for students without risk factors. The disadvantages presented to some students with risk factors prior to receiving the program cannot be changed. However, it is noteworthy that students who lacked parental involvement, had a history of physical abuse, or were of African American descent showed lower levels of desired responses than those without these characteristics at baseline but not at follow-up. This suggests that curriculum modifications which consider the influence of each predictive risk factor could further enhance program success.

Although the program produced significant improvements in each of the four outcome measures, marked differences were observed between the amounts of improvement in the four measures for the entire study population. This could suggest that the curriculum components were more successful in some areas than in others. Alternately, this could suggest that some measures are more difficult to change than others. For example, it may be easier to improve Knowledge than Attitudes. For Behavioral Tendencies, the relatively high level of desired responses at baseline could have resulted in a proportionally smaller gain. It may also be that students with certain characteristics show a differential susceptibility to some of the curriculum components. Whether the source of these differences is curriculum based, psychosocial in nature, attributable to behavioral risk factors, or any combination of these, the practical implications are the same. Modifications to

curriculum components which represent the outcome measures most difficult to change could also further enhance program success.

The findings presented here provide strong support for the first two tenets of the program evaluation model defined at the beginning of this report. Long-term studies of students who receive this intervention will be required to test the third tenet of this model, that these outcome measures affect the impact measures of age at first intercourse and the teen pregnancy rate.

V. RECOMMENDATIONS

The goals of this PSI demonstration project were to establish a new service program which addressed the Multnomah County Benchmark initiative of reducing teen pregnancy, to evaluate the overall effectiveness of the program, and to identify factors which influence program effectiveness. These goals have been achieved. Several recommendations can now be made. They are:

- To adopt PSI as the basic educational component of the teen pregnancy prevention effort delivered by Multnomah County Health Department;
- To expand the program to reach all sixth grade students in schools throughout Multnomah County;
- To maintain the emphasis on delivering the program in the early stages of adolescence, before most students have engaged in sexual activity;
- To modify the curriculum and implementation to consider the relative differences in effectiveness of the curriculum components, with emphasis on components related to measures of Attitudes and Behavioral Tendencies;
- To modify the curriculum and implementation to address the characteristics of students most likely to influence program effectiveness, including but not limited to previous sexual experience, parental involvement, academic performance, gender, a history of physical abuse, and race/ethnicity;
- To justify the time and cost associated with future implementations of the modified PSI by conducting a single evaluation to determine whether the modifications made to the program result in enhanced effectiveness: a) for targeted curriculum components, and b) in relation to targeted risk factors;
- To develop PSI “booster” sessions to reinforce retention of the PSI curriculum, to be delivered annually from seventh through tenth grades;
- To justify the time and cost associated with “booster” sessions by conducting limited annual evaluations to determine whether students who receive “boosters” are more likely to retain the PSI curriculum than students who do not receive them; and

- To use the annual “booster” evaluations to assess the long-term impact goals of PSI in increasing the age at first intercourse and reducing the rate of teen pregnancy.

SELECTED BIBLIOGRAPHY

Brindis, C. 1990. Reducing Adolescent Pregnancy: The Next Steps for Program, Research and Policy. Family Life Educator 9(1).

Brindis, C. 1991. Adolescent Pregnancy Prevention: A Guidebook for Communities. Health Promotion Resource Center: Stanford Center for Research in Disease Prevention.

Collomb, K. and M. Howard. 1988. Georgia Schools Help Teens Postpone Sexual Involvement. Journal of the Medical Association of Georgia (April), pp230-232.

Fink, A. 1993. Evaluation Fundamentals: Guiding Health Programs, Research, and Policy. Sage Publications: Newbury Park.

Franklin, C., A. Schwab, F. Danis, S. Brown, and L. Rattler. 1993. A Review of National School-Age Pregnancy and Prevention Information Clearinghouses. Child and Adolescent Social Work Journal 10(3): 225-239.

Hofferth, S. 1991. Programs for High Risk Adolescents: What Works? Evaluation and Program Planning 14: 3-16.

Howard, M. and J. Blamey McCabe. 1990. Helping Teenagers Postpone Sexual Involvement. Family Planning Perspectives 22(10): 21-26.

Howard, M. 1991. Evaluation: It Makes a Difference. Bulletin of the New York Academy of Medicine 67(6): 595-605.

Howard, M. 1992. Delaying the Start of Intercourse Among Adolescents. Adolescent Medicine: State of the Art Reviews 3(2): 181-193.

Kirby, D., L. Short, J. Collins, D. Rugg, L. Kolbe, M. Howard, B. Miller, F. Sonenstein, and L. Zabin. 1994. School-Based Programs to Reduce Sexual Risk Behaviors: A Review of Effectiveness. Public Health Reports 109(3): 339-360.

Newcomer, S. and W. Baldwin. 1992. Demographics of Adolescent Sexual Behavior, Contraception, Pregnancy, and STDs. Journal of School Health 62(7): 265-269.

Plotnick, R. 1993. The effect of Social Policies on Teenage Pregnancy and Childbearing. Families in Society: The Journal of Contemporary Human Services (June).

Postrado, L. and H. Nicholson. 1992. Effectiveness in Delaying the Initiation of Sexual Intercourse of Girls Aged 12-14. Youth and Society 23(3): 356-379.

Sarvela, D. and R. McDermott. 1993. Health Education Evaluation and Measurement: A Practitioner's Perspective. Wm. C. Brown Communications, Inc., Dubuque.

Streiner, D. And G. Norman. 1995. Health Measurement Scales: A Practical Guide to Their Development and Use, 2nd ed.Oxford University Press, Oxford.

Zabin, L. And M. Hirsch. 1988. Evaluation of Pregnancy Prevention Programs in the School Context. Lexington Books., D.C. Health and Co., Lexington.