

The Safe Environment for Every Kid (*SEEK*) Model

**Promoting Children's Health, Development
and Safety**

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on Child and Family Maltreatment
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Outline

- Background
- The *SEEK* model
- The impact of *SEEK* on health professionals
- The impact of *SEEK* on child maltreatment
- Cost effectiveness

Child Health Professionals' Roles re. Child Abuse & Neglect

- Diagnosis
- Treatment
- Reporting to CPS, police



Another Role Child Health Professionals Can Play

Prevention

- Screening
- Interventions
- Advocacy

Why Preventing Child Maltreatment is So Important?

- It's common

Why Preventing Child Maltreatment is So Important?

- It's common
- **772,000** children
 - substantiated in 2008



(US DHHS. *Child Maltreatment - 2008, 2010*)

Why Preventing Child Maltreatment is Important?

- It's common
- Morbidity
- Mortality

Physical Health

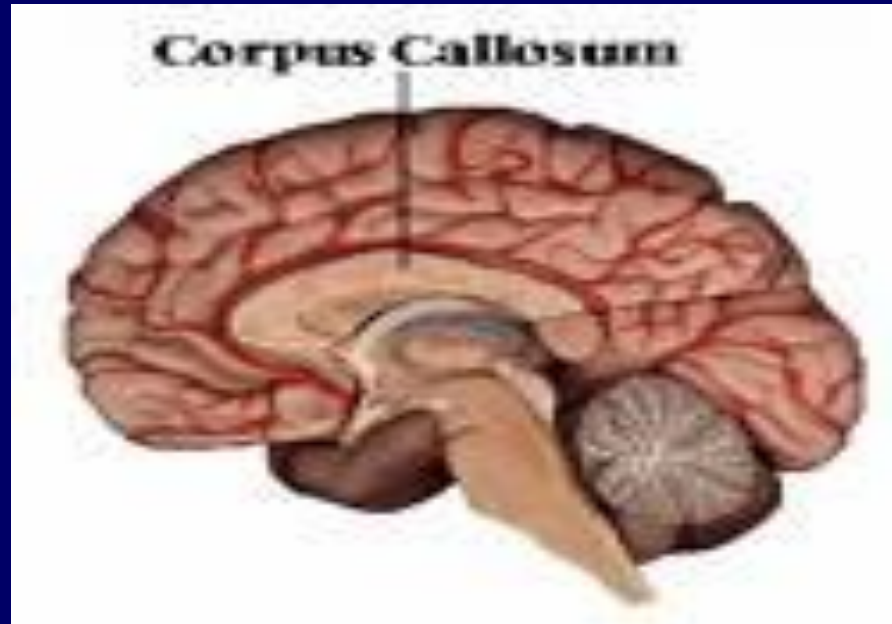
Cognitive Development



Social Development

Emotional Health

Childhood neglect is associated with reduced corpus callosum area



Teicher et al, *Biological Psychiatry*, 2004; 56 (2): 80-85

Adverse Childhood Experiences (ACEs) Study

ACEs increase risk of adult heart disease*

1. Emotional abuse	1.7 x
2. Physical abuse	1.5 x
3. Sexual abuse	1.4 x
4. Emotional neglect	1.3 x
5. Physical neglect	1.4 x
6. Domestic violence	1.4 x
7. Mental illness	1.4 x
8. Substance abuse	1.3 x
9. Household criminal	1.7 x



- After correction for age, race, education, smoking & diabetes

Why Preventing Child Maltreatment is Important?

- It's common
- Morbidity
- Mortality
- Our opportunity to intervene
- Our responsibility to intervene

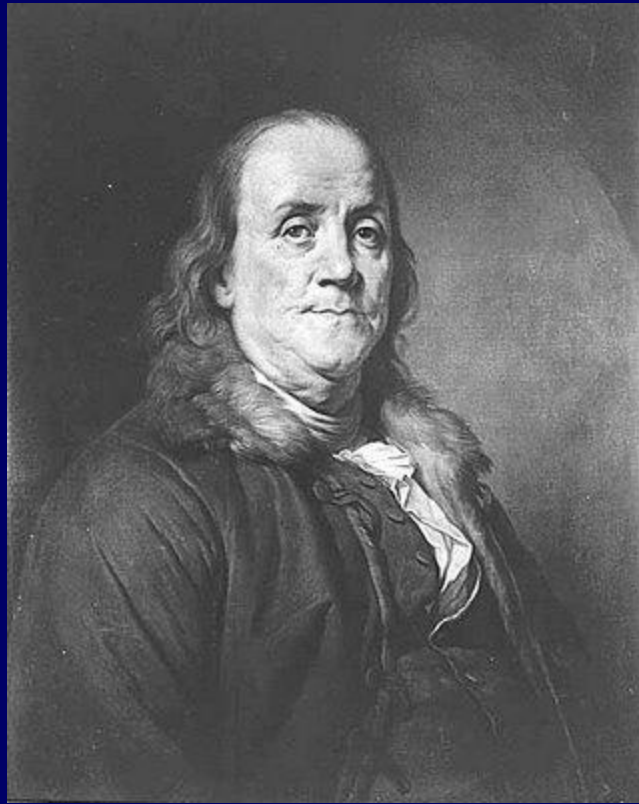
Cost



\$104 billion annually

Prevent Child Abuse America, 2008





An ounce of prevention
is worth
a pound of cure

Ben Franklin, 1733

The Potential of Prevention

Effective prevention
should yield

many benefits, including

less child abuse & neglect



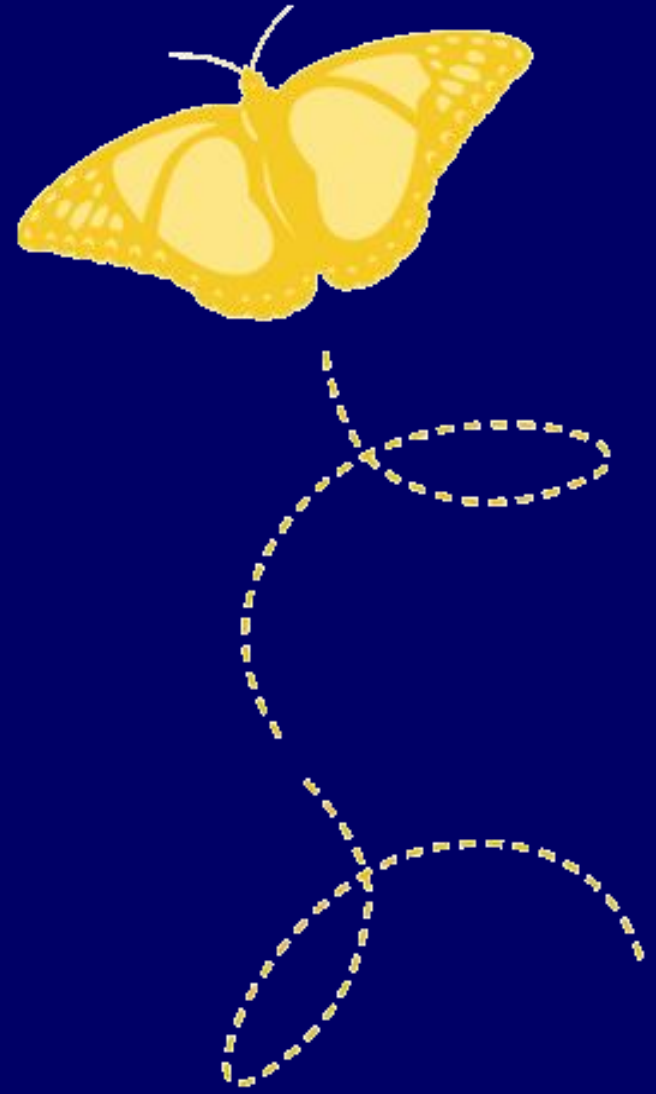
Prevention

of child maltreatment



Promotion

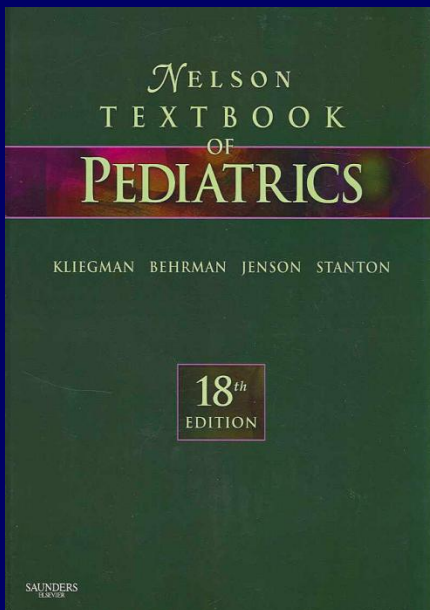
of children's health,
development and safety



The Field of Child Health Care

“As physicians who assume a responsibility for children’s physical, mental & emotional progress, pediatricians must be concerned with social and environmental influences

which have a major impact on the health & well-being of children & their families”



SEEK

*a Safe Environment for
Every Kid*



Dubowitz et al, *Pediatrics*, 2009;123:858

Funded by

Office on Child Abuse and Neglect, US DHHS

The Centers for Disease Control & Prevention

Doris Duke Charitable Foundation

The *SEEK* Team

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- > 200 pediatric residents, pediatricians, pediatric nurse practitioners

The *SEEK* Model

- Specially trained health professionals (HPs)
- Parent Screening Questionnaire (PSQ)
- Brief assessment of identified problems
- Initial management
- HP/social worker team
- *SEEK* resources – parent handouts
- Collaboration with community agencies

Targeted Psychosocial Problems

Parents experiencing:

- Food insecurity
- Major stress
- Depression
- Substance abuse
- Intimate partner (domestic) violence



Parent Screening Questionnaire (PSQ)

- brief
- easy to read
- answer yes/no
- convenient, time to complete
- voluntary

A Safe Environment for Every Kid (SEEK) Parent Screening Questionnaire (PSQ)

Dear Parent or Caregiver: Being a parent is not always easy. We want to help families have a safe environment for kids. So, we're asking everyone these questions. They are about issues that affect many families. If there's a problem, we'll try to help. Please answer the questions about your child being seen today for a check-up. If there is more than one child, please answer about the youngest. Filling this out is voluntary.

Today's date: ____/____/____

Child's name: _____

Child's date of birth: ____/____/____

Relationship to child: mother, father, other: _____

PLEASE CHECK

- Yes No Do you have the telephone number for Poison Control?
- Yes No Do you have a smoke detector for your home?
- Yes No Is there a gun in your home?
- Yes No During the past month, have you often been bothered by feeling down, depressed or hopeless?
- Yes No During the past month, have you often been bothered by having little interest or pleasure in doing things?
- Yes No Do you often feel lonely?
- Yes No Do you often feel your child is difficult to take care of?
- Yes No Do you often feel under extreme stress?
- Yes No Do you often find you need to hit/spank your child?
- Yes No In the last year, have you been hit, slapped, kicked, or otherwise physically hurt by a partner (for example, a husband, boyfriend, or other intimate partner)?
- Yes No In the last year, has your partner ever forced you to have sex you didn't want?
- Yes No In the last year, did you ever feel afraid of your partner?
- Yes No Have you ever felt you ought to cut down on drinking or drug use?
- Yes No Have people annoyed you by criticizing your drinking or drug use?
- Yes No Have you ever felt bad or guilty about your drinking or drug use?
- Yes No Have you ever had a drink first thing in the morning?
- Yes No Does your partner drink a lot or use drugs?
- Yes No Do you think your partner has a problem with alcohol or drugs?
- Yes No Does anyone smoke tobacco at home?
- Yes No Are there any problems you'd like help with today?

Please give this form to the doctor or nurse you're seeing today. Thank you.

This questionnaire will become a part of your child's medical record.
If you would like resources on any of the issues covered here, please ask your doctor or nurse

PSQ

PSQ Intro

- *Empathic*: “Being a parent is not always easy”
- *Universal*: “We’re asking everyone ...”
- *Provide context*: “We want to help families have a safe environment for kids.”
- *Builds on what’s accepted*: injury prevention

Hypothesis 1

Training health professionals (HPs) to address risk factors for CM will significantly improve their:

- Attitudes
- Knowledge
- Comfort level
- Perceived competence
- Practice

SEEKI HP Demographics

Practice	Pediatric resident clinic
HPs	92 residents

	Intervention (N=49)	Control (N=43)
Mean age	29	28
Female	74%	72%
Prior experience, median # cases		
Child maltreatment	2	2
IPV	0	0

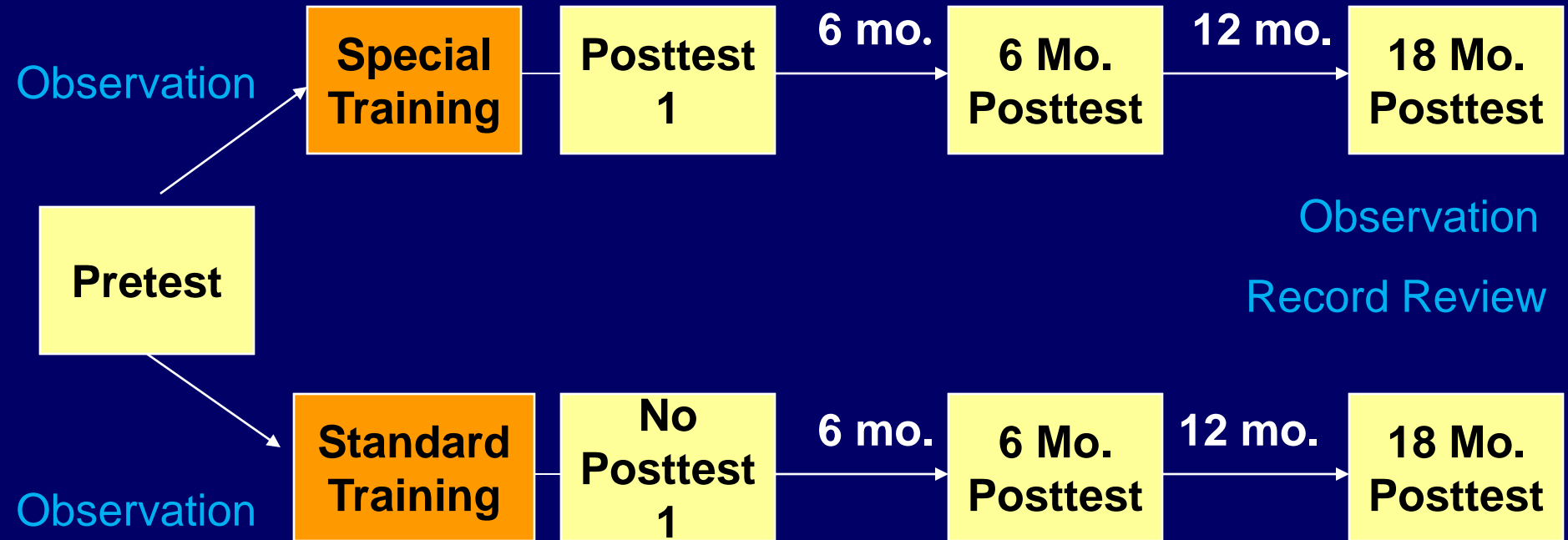
SEEK II HP Demographics

Practices	18 pediatric private practices	
HPs	102 pediatricians & pediatric nurse practitioners	
	Intervention (N=56)	Control (N=46)
≤10 years in practice*	57%	31%
Female	71%	68%
Community: Urban*	33%	8%
Suburban	63%	92%
< 25% of patients insured by MA*	74%	95%
Prior experience, median # cases		
Parental substance abuse	5	3
Parental depression	10	10

* < .05

HP Training & Evaluation

SEEK



Control

Assessment Measures

- HP Questionnaire (HPQ)
- Medical record abstraction
- Direct observation of HPs conducting checkups

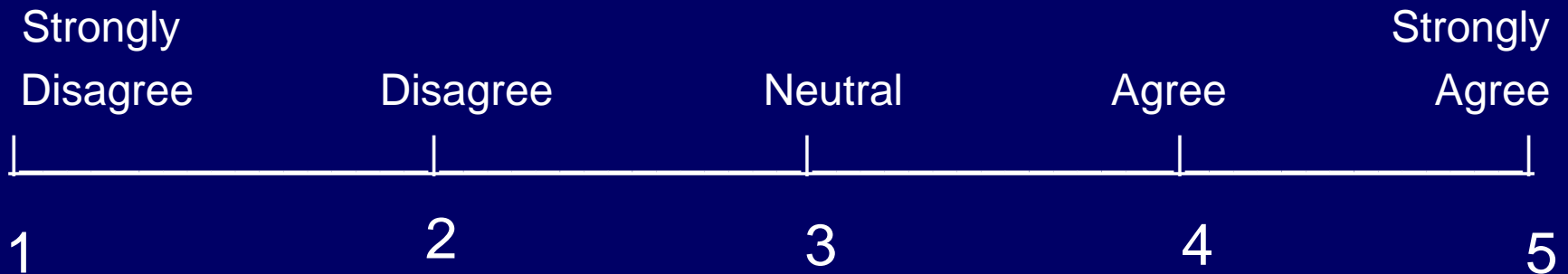
HP Questionnaire (HPQ)

- **Self-report** by HPs
 - baseline, 6 and 18 months
 - assessed HP's attitude, knowledge, competence, comfort and practice - regarding each risk factor

Example of Vignette

You are seeing 1-week-old CJ for his first well baby visit. The parents moved to Baltimore shortly before the baby was born. Ms. J is staying home while Mr. J works. She voices no concerns and the baby seems fine.

Examples of responses to a scenario

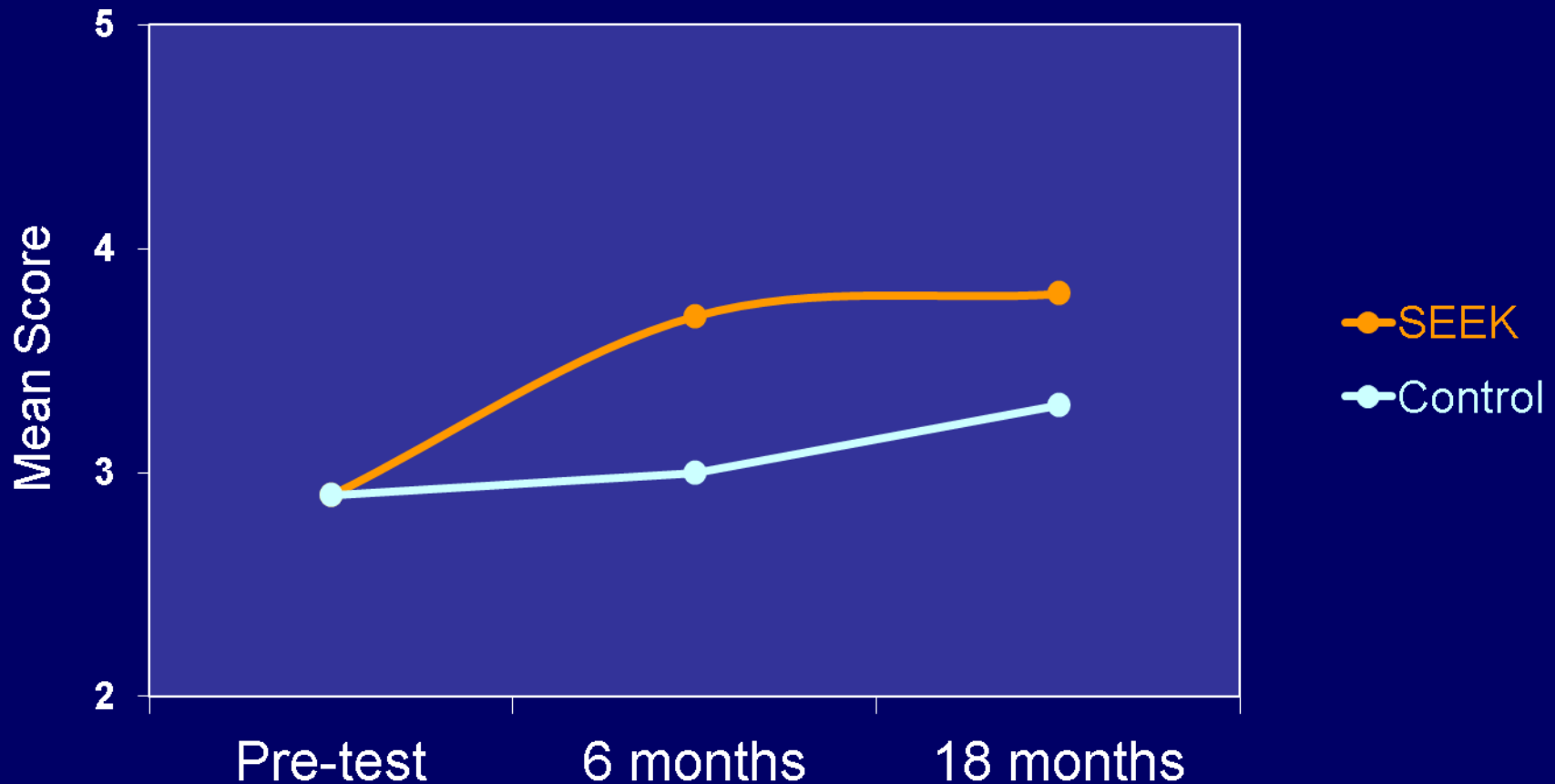


I usually talk to new mothers about post-partum depression

Most parents are unwilling to disclose their own problems to their child's doctor

I don't really know how to help Ms. J if she needed additional social support

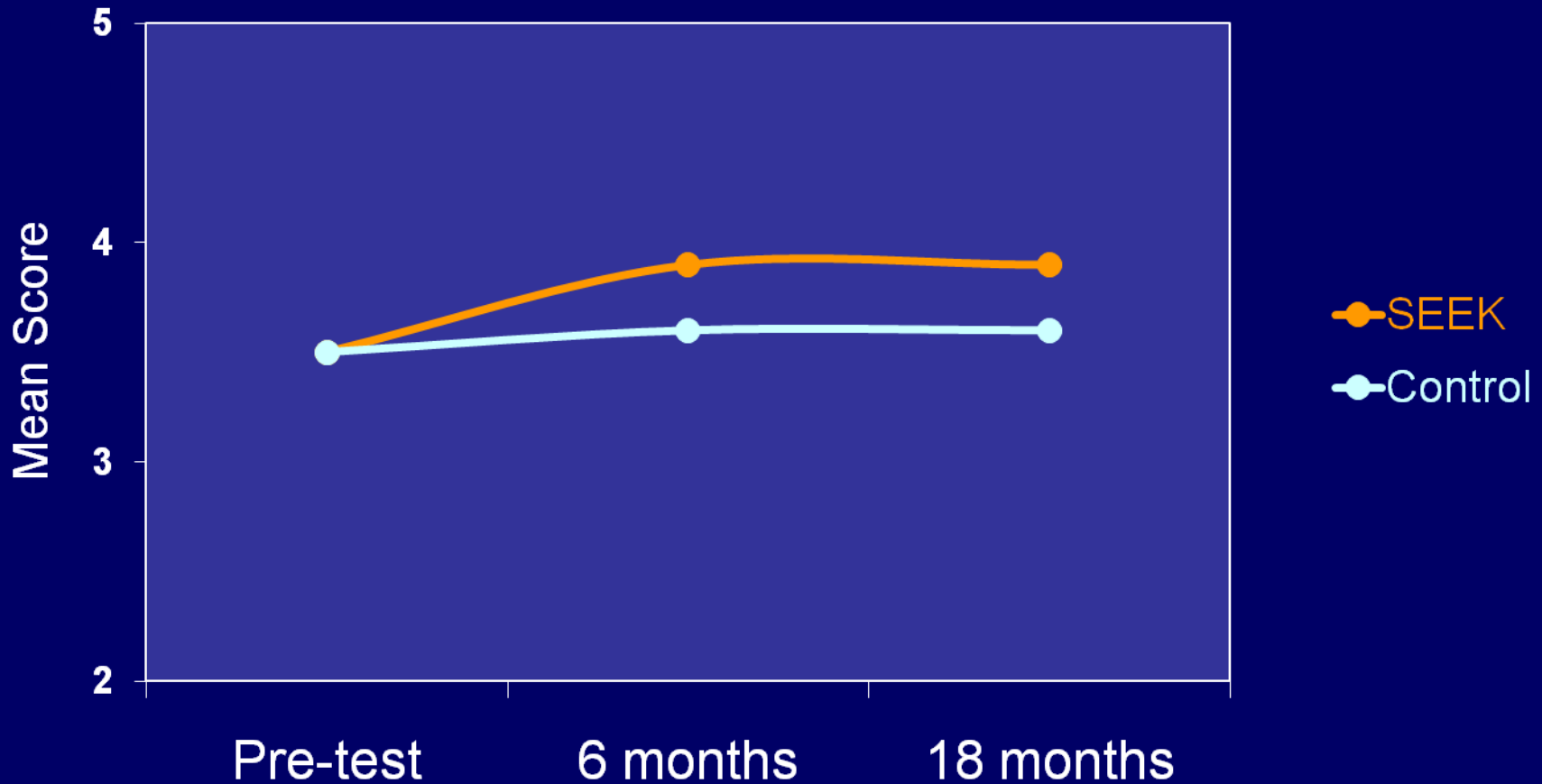
SEEK I: HP Self-report Sense of Competence



Range: 0 - 5
 $\alpha = .68$

$P < 0.01$ (pretest - 18 months)

SEEK I: HP Self-report Practice Behavior

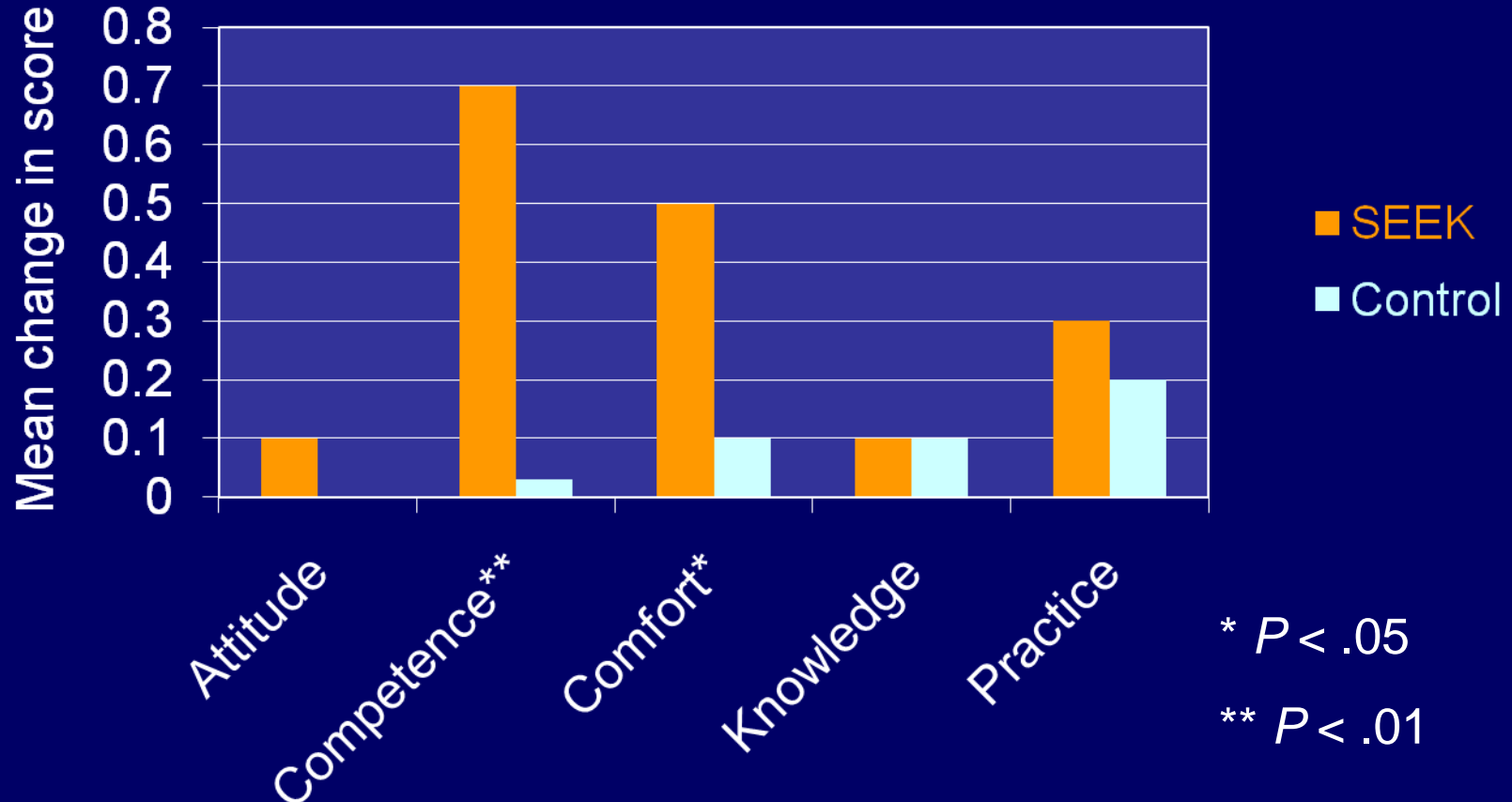


Range: 0 - 5
 $\alpha = .72$

$P = 0.03$ (pretest - 18 months)

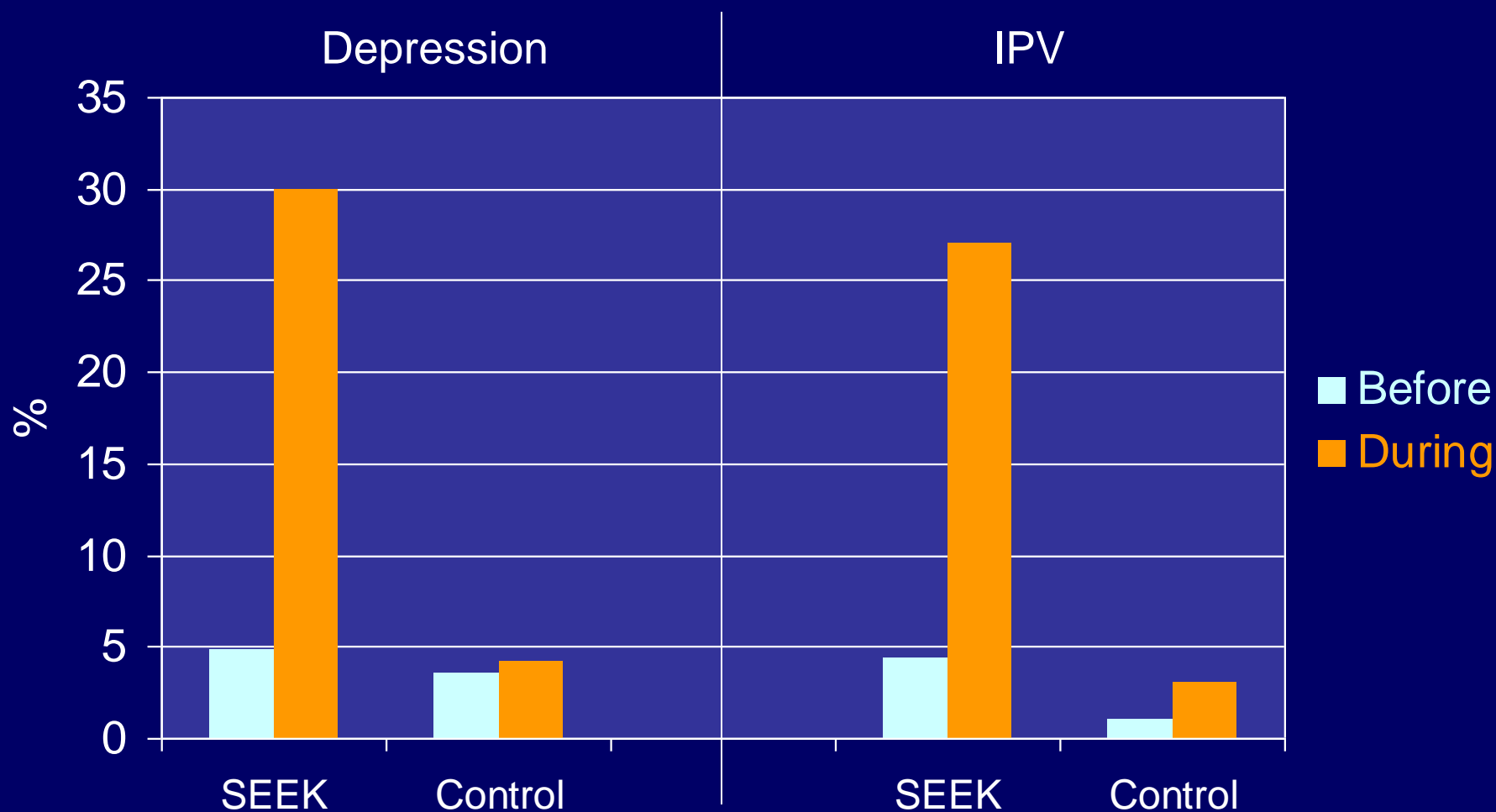
SEEK II Self-Report

Baseline - 36 months

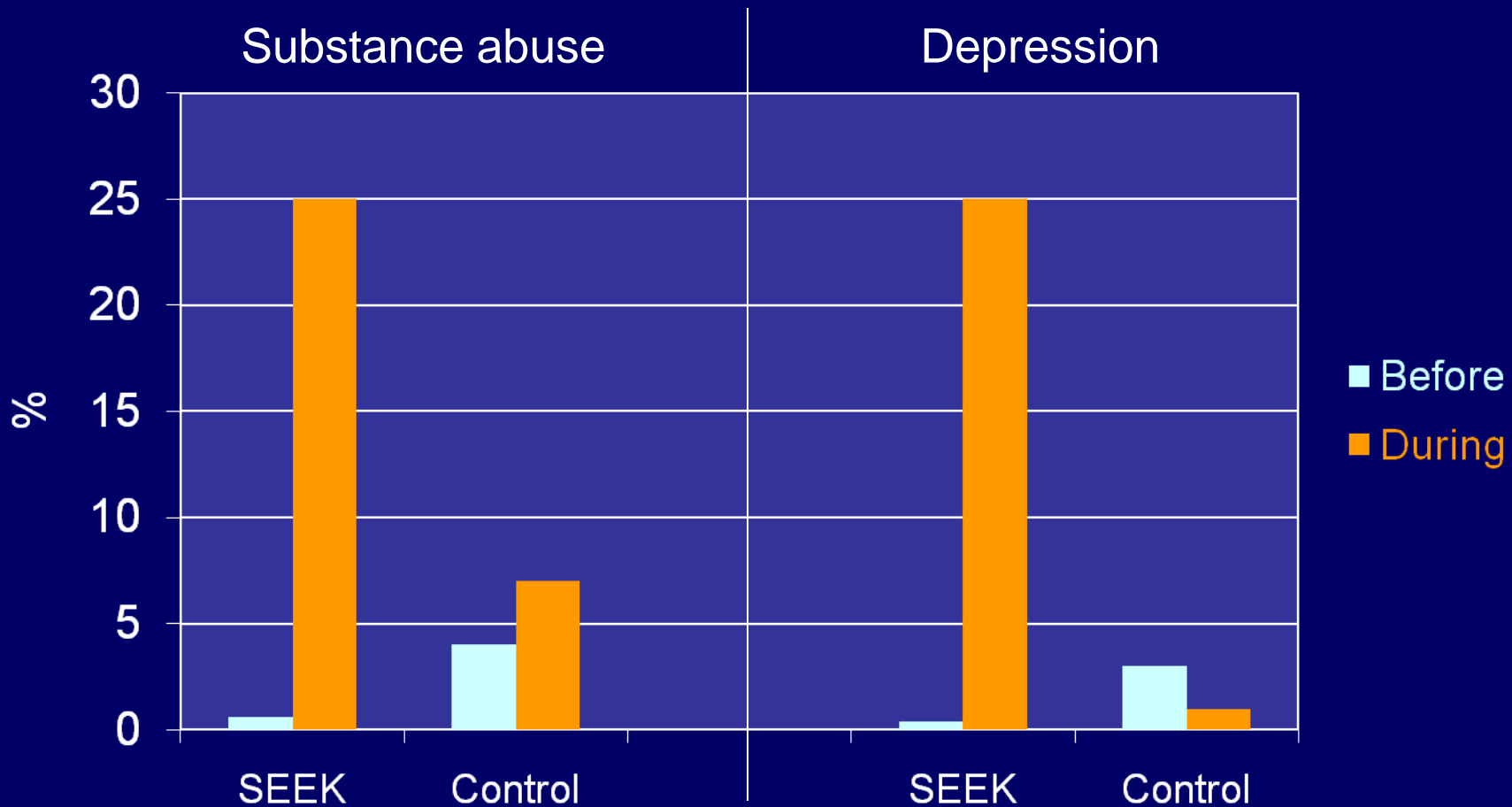


P values controlling for % of patients on MA in the practice, years HP in practice, baseline scores, and random effect of practice

SEEK I: Rates that Problems were Screened for at Regular Checkups based on medical record review



SEEK II: Rates that Problems were Screened for at Regular Checkups based on medical record review

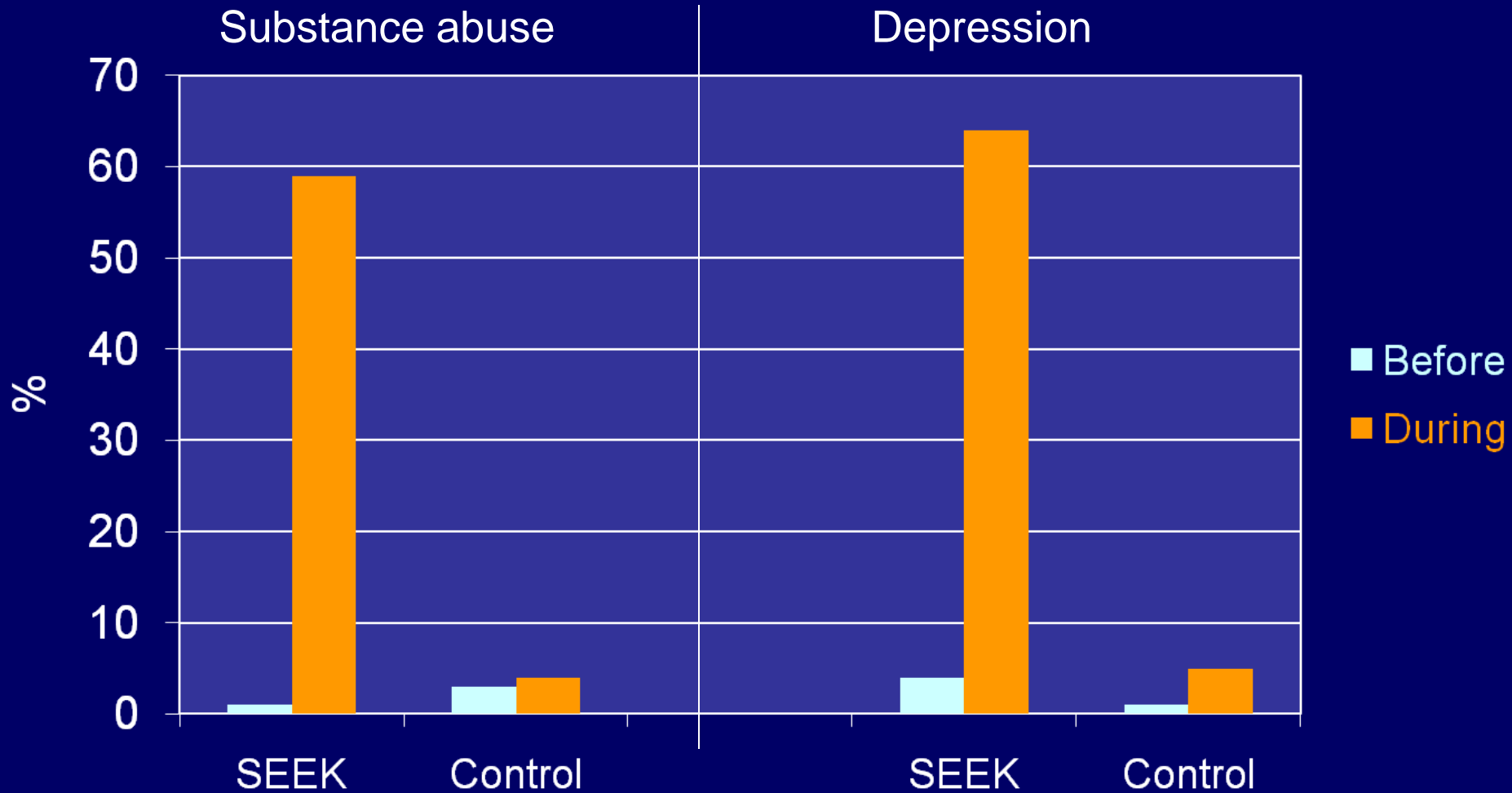


Observed Checkups *SEEK II*

- Observation of HPs conducting checkups
 - 3 at baseline
 - 3 at end of study



SEEK II: Rates that Problems were Screened for at Regular Checkups based on direct observations



In most instances,
when screening revealed a problem,
an assessment followed, and when
necessary, some action was taken

In Sum

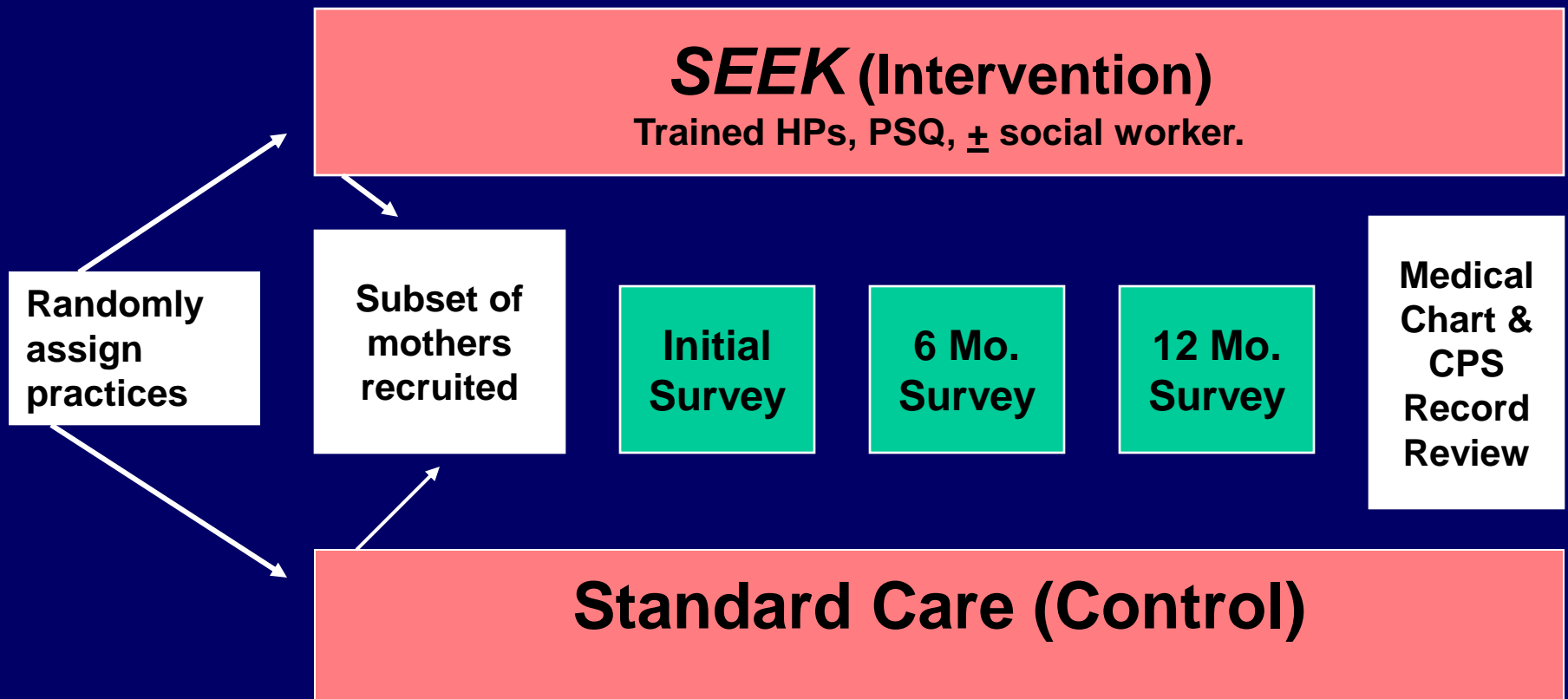
- Improved HP attitudes and behavior regarding the risk factors, based on:
 - HP self-report
 - Medical chart review
 - Direct observation
- In *SEEK* I and II
- Sustained for up to 36 months

Study Hypothesis II

The *SEEK* model of primary care will help reduce the rate of CM, measured by:

- Parent self-report
- Medical chart data
- Child protective services (CPS) reports

SEEK Study Design



Participants

- Mothers of children < 6 years
- English speaking
- Child not in foster care
- Bringing child for a checkup

Mothers' Demographic Characteristics

	<i>SEEK I</i>	<i>SEEK II</i>
N	558	1119
Demographics	low income, urban	middle class, suburban
Race	mostly African American	mostly white
Mean age	25 years	34 years
Education	66% high school or more	90% some college or more
Employed	37 %	55 %
Married	9 %	89 %
Family income	-	56% > \$75,000

Children's Demographic Characteristics

	<i>SEEK I</i>	<i>SEEK II</i>
N	558	1119
Mean age	0.5 years	2.1 years
Gender	52% male	52% male
Race	92% African American	81% white
Insurance	93% Medicaid	91% private

Parent-Child Conflict Tactics Scale (CTS – PC)

- Parent's report of psychological and physical aggression in disciplining a child
- Starts with positive approaches, escalates with increasingly violent behaviors
- Adequate reliability, validity

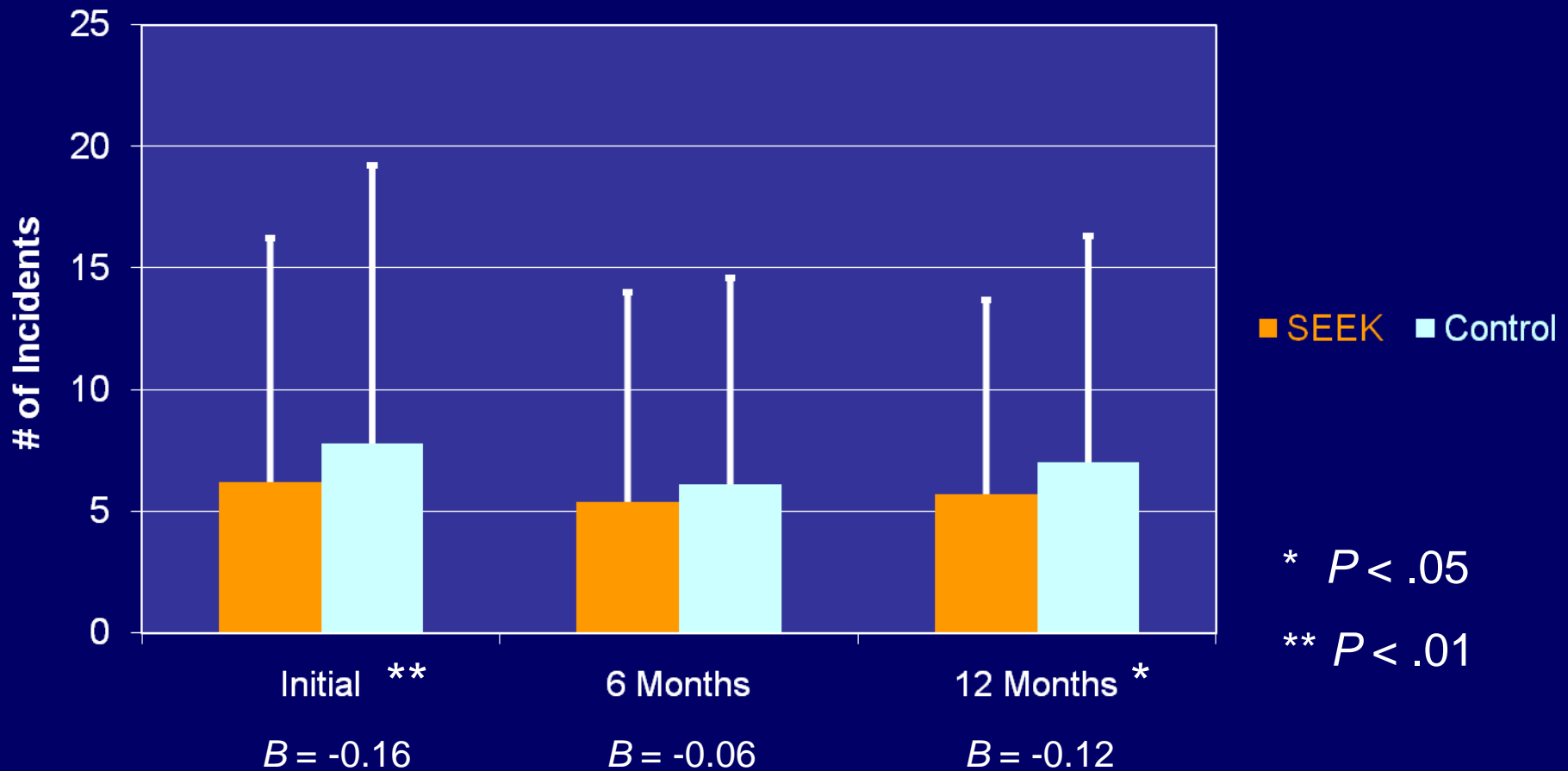
SEEKI: CTS-PC Results

CTS-PC Subscale	Intervention (<i>n</i> = 308)	Control (<i>n</i> = 250)	<i>P</i>
	Mean (<i>SD</i>)	Mean (<i>SD</i>)	
Psychological Aggression	7.5 (14.9)	9.1 (16.4)	ns
Physical Assault - Minor	3.5 (8.3)	5.0 (12.4)	ns
Physical Assault Severe or Very Severe	0.11 (0.75)	0.33 (1.96)	0.04*

* One-tailed t-test

SEEK II: CTS-PC Results

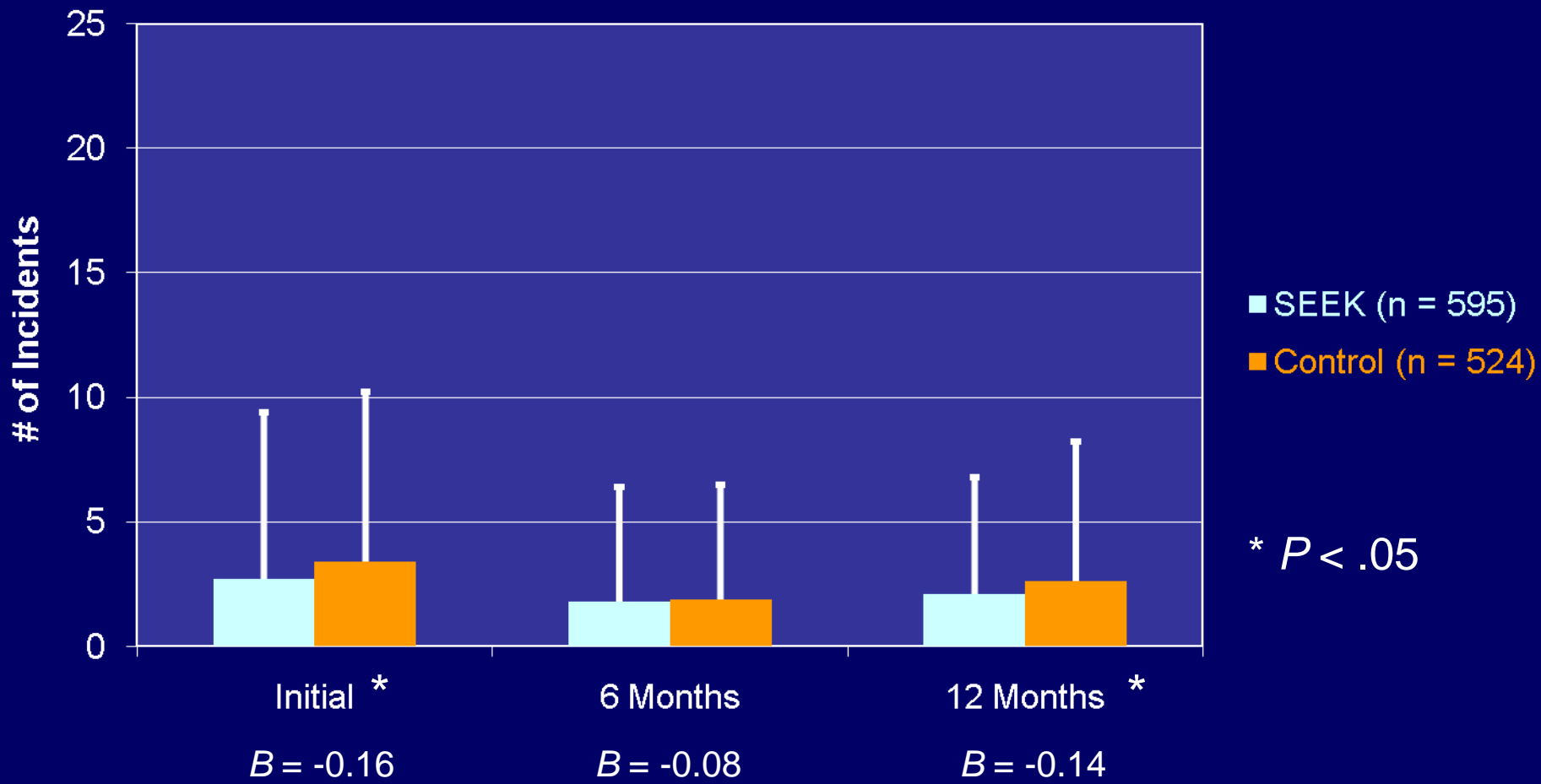
Psychological Aggression



P values based on a mixed effects regression model, including random effects for family and practice, controlling for child's race and age, family income, level of mother's education, and mother's marital status. Std. *B*s represent differences between *SEEK* and control in SD units.

SEEK II: CTS-PC Results

Minor Physical Assault



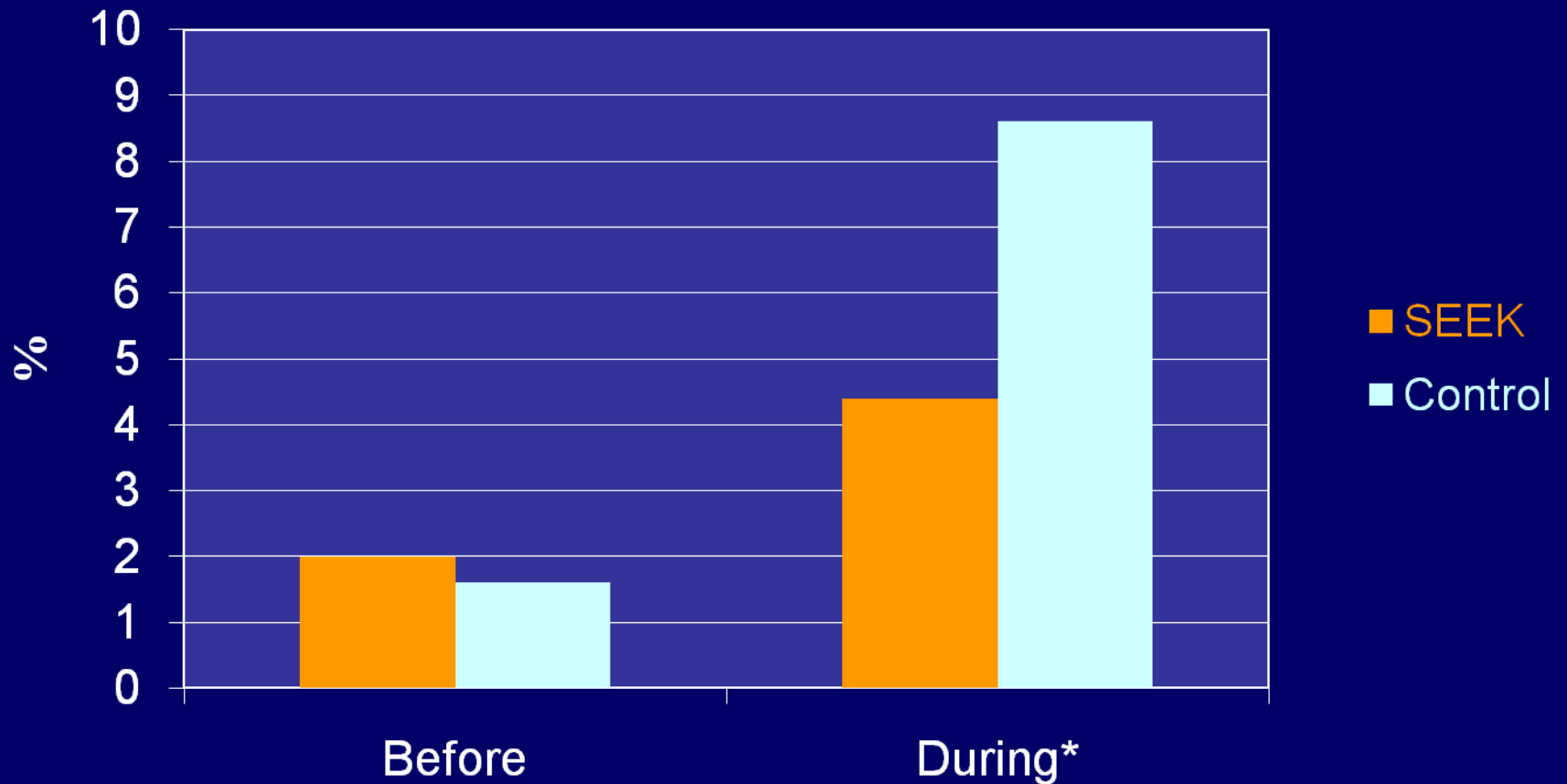
* $P < .05$

P values based on a mixed effects regression model, including random effects for family and practice, controlling for child's race, child's age, family income, level of mother's education, and mother's marital status. Std. *B*s represent differences between *SEEK* and control in SD units.

Other outcome measures

- Medical chart review
 - Abuse, neglect
 - Related problems: non-adherence, FTT, ingestions, delayed immunizations
- CPS reports
 - At family level

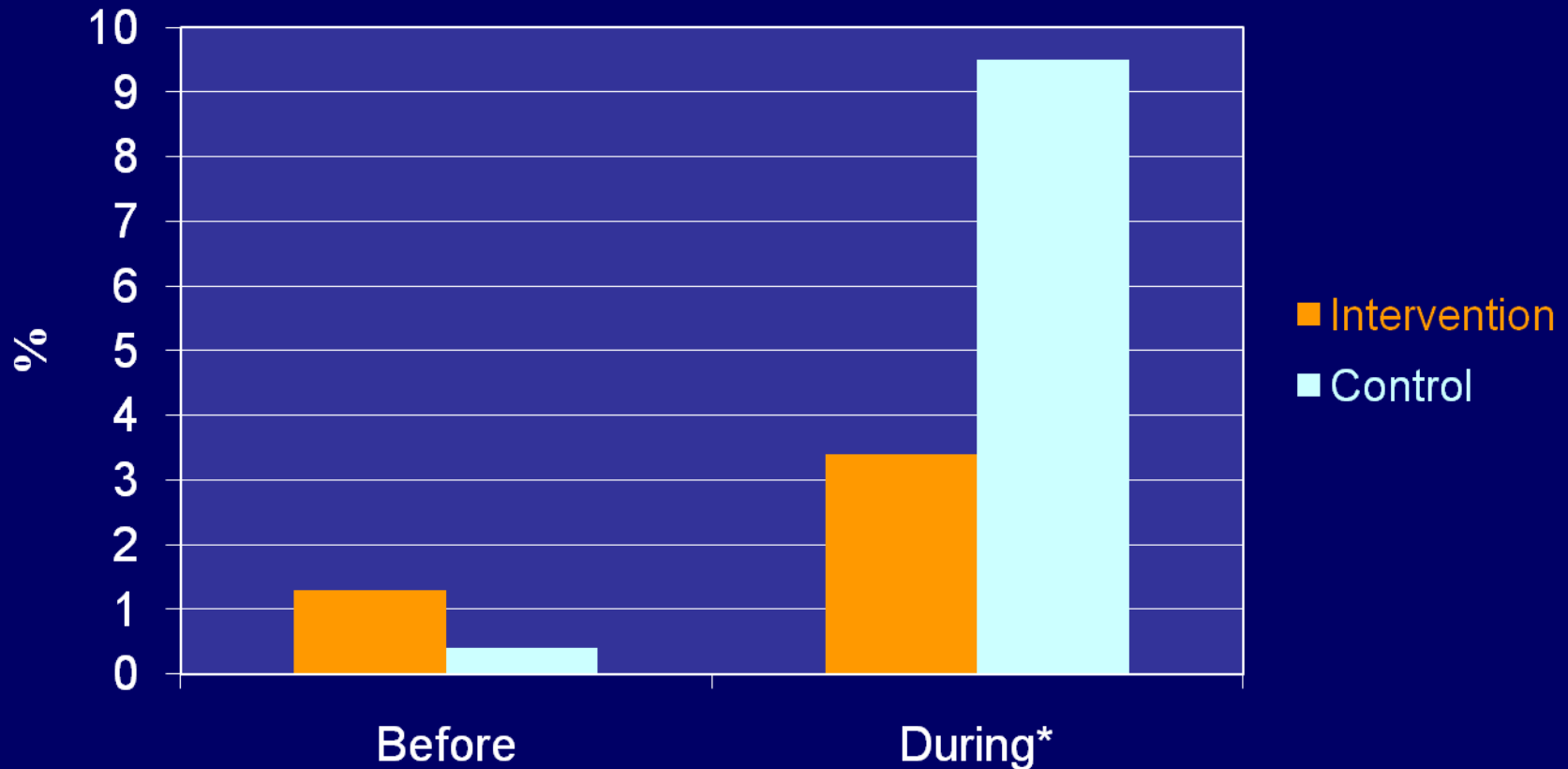
Medical Neglect: Non-compliance¹ based on chart review (*SEEK I*)



¹MD documented “non-compliance”

* $P < 0.05$

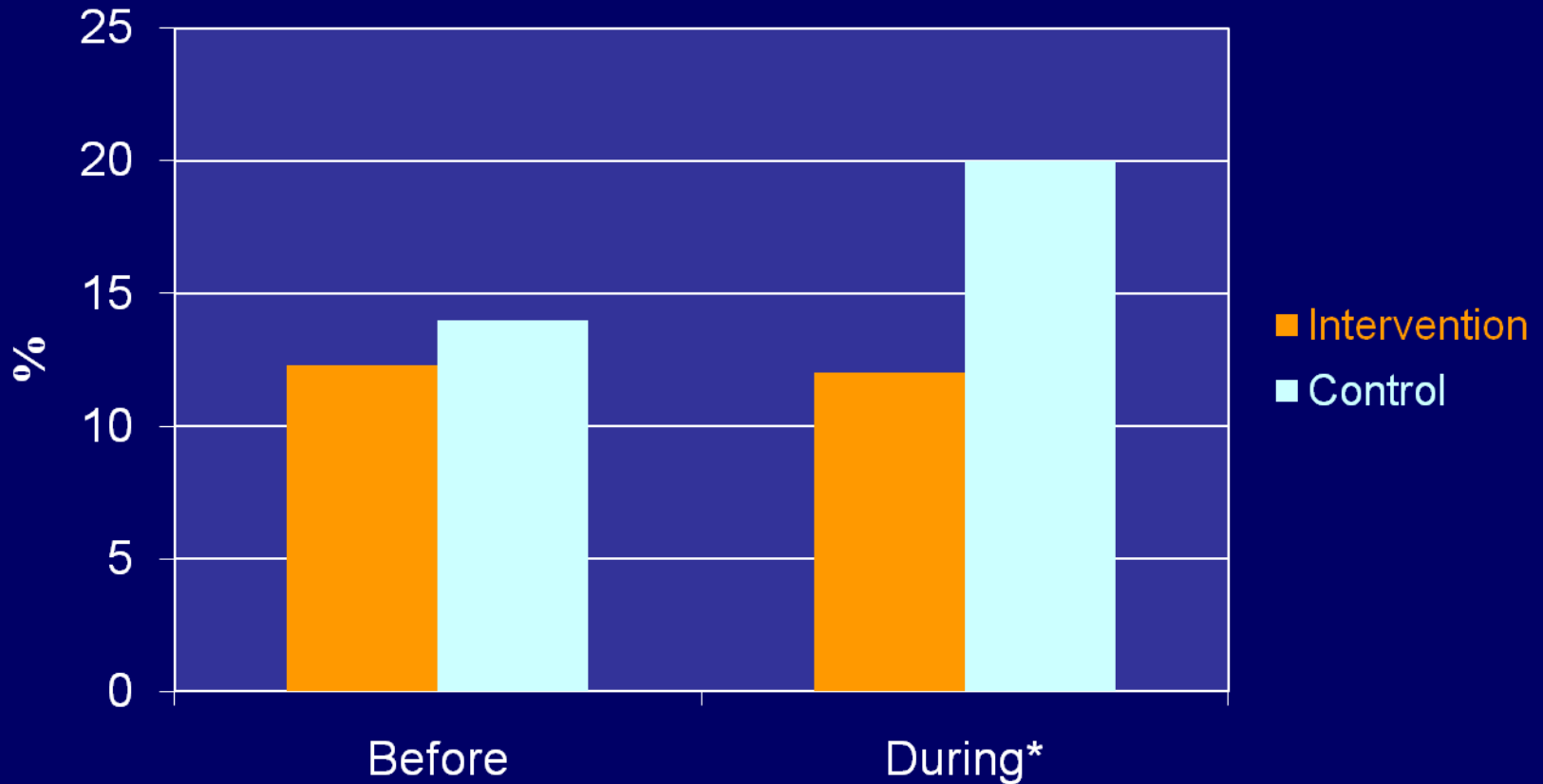
Medical Neglect: Delayed Immunizations¹ based on chart review (*SEEKI*)



¹ MD documented this

* $P = 0.002$

Child Protective Services (CPS) Reports for Abuse or Neglect (*SEEKI*)



* One-tailed t-test

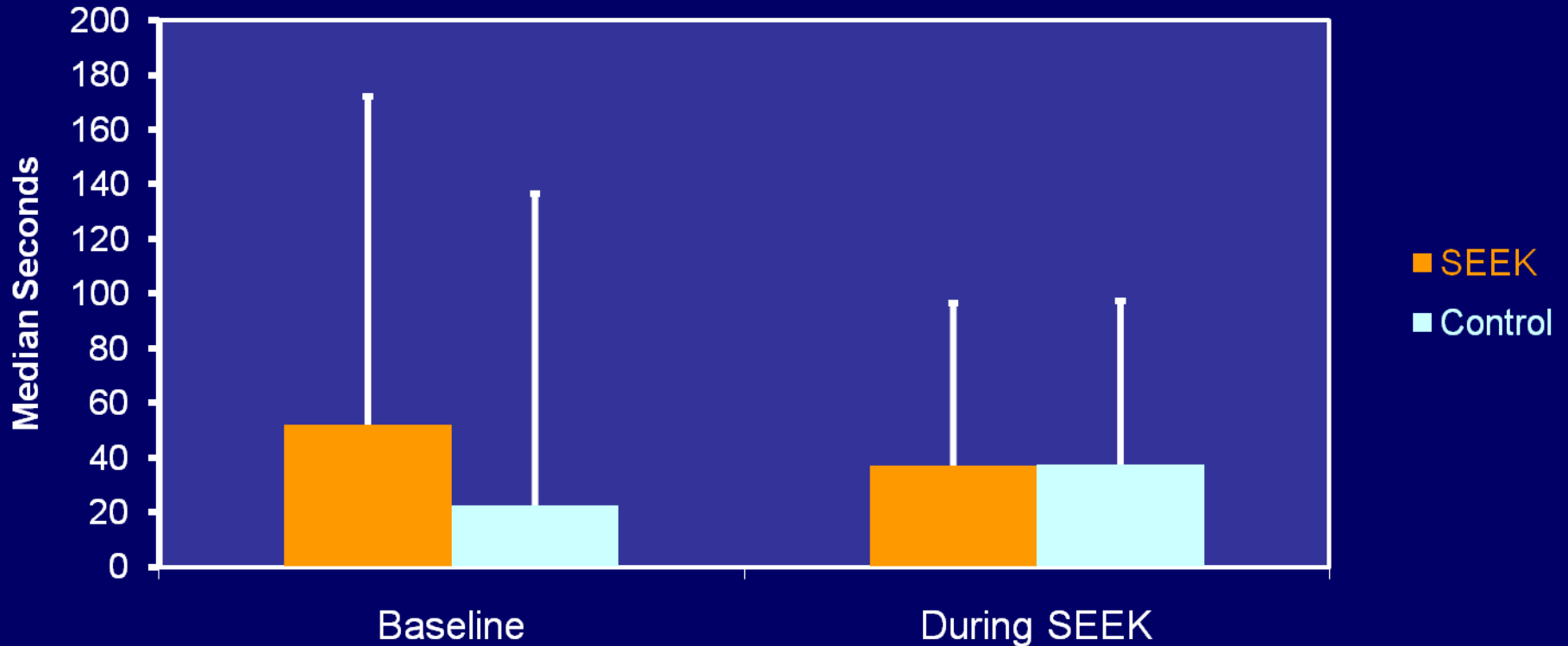
* $P = 0.04$

**“How can I do all this
in 5 minutes?”**



Time Spent Addressing Psychosocial Issues

Average time at baseline and during *SEEK II*



A Cost-Effectiveness Analysis



Lane WG, Frick K, Dubowitz H, Semiatin J, Magder L. Cost-Effectiveness analysis of the *SEEK* (A Safe Environment for Every Kid) child maltreatment prevention program. *American Public Health Association 139th Annual Meeting and Exposition*. Washington, DC. November 1, 2011.

Objectives

To determine:

- The overall cost for implementation
- The cost of implementation per child
- The cost per case of maltreatment prevented

Cost Analysis Methods

- **Cost-Effectiveness** - Determination of cost per event prevented
 - Compares \$ to \$
 - Cost of program vs. cost of event (eg,disease)
- **Cost-Benefit** – Measures all the benefits, monetary & non-monetary, long & short term

Methods

At 12 months post recruitment:

- **Psychological Aggression**
- **Physical Assault**

Parent-Child Conflict Tactics Scale (PCCTS)

- Rates adjusted for maternal age, race, income, marital status, education

Costs Measured

- Salaries for *SEEK* team members
- Health professional time
 - Training
 - Booster sessions
 - *SEEK DID NOT* require additional time spent with families
- Development and distribution of *SEEK* materials

Costs of Maltreatment

- **Estimated using published data**
 - **Children's Safety Network*** - cost data
 - **NCANDS**** - incidence data
- **Focused on lifetime medical and mental health costs**
 - HRQL, social service costs, future earnings considered - not included in final model

* http://www.childrenssafetynetwork.org/publications_resources/PDF/data/CANCostTotalUS.pdf

** <http://www.acf.hhs.gov/programs/cb/pubs/cm09/index.htm>

Costs of Maltreatment

	# of Children*	Total Costs**	Cost/Child
Physical Abuse	144,800	\$1,799,729,700	\$12,429
Mental Inj.	59,730	\$1,171,959,400	\$19,621
Combined	204,530	\$2,971,689,100	\$14,529

* Data from 2006 NCANDS

** Data from Children's Safety Network, 2007 – Medical & mental health costs only

Estimated *SEEK* Costs for 2.5 Years (\$451,352*)

Item	Yr 1	Yr 2	Yr 3
Training – HP time	\$8400	---	---
Training – <i>SEEK</i> faculty	\$2440	---	---
Boosters – HP time	\$1800	\$1800	\$900
Boosters – <i>SEEK</i> faculty time	\$1800	\$1800	\$900
<i>SEEK</i> Materials	\$400	\$400	\$400
Social Worker	\$80,000	\$82,400	\$42,436
Total	\$94,840	\$86,400	\$44,436

* If both *SEEK* and Control families had received intervention

Costs per Child

- **\$451,352** – cost for all children
SEEK and control
 - Range (+/- 25%): **\$338,514 - \$564,190**
- **88,200** children in practices
- **\$5.12 per child to implement *SEEK***
 - Range (+/- 25%): **\$3.84 - \$6.40**

Projected Maltreatment at 12 mo Follow-up by *SEEK* Exposure*

Exposure to <i>SEEK</i>	Psychol. Aggress	Phys. Assault	Either Psych. or Phys. (95% CI)
All exposed	4630	2866	6394 (2501-9389)
None exposed	5733	3925	8247 (3403-11931)
Cases Prevented	1102	1058	1852 (970-2734)

* Extrapolated from instances of maltreatment in families recruited from *SEEK* and control practices

Cost per Case of Physical Abuse or Psychological Aggression Prevented

\$451,352
(*SEEK* cost)

÷

1852
(Cases prevented)
95% CI (970 - 2734)

=

\$244 per case prevented
95% CI (\$165 - \$465)

Cost Benefit Analysis

- *SEEK* costs **\$244 per case prevented**
- Compare to **\$14,520** (Range **\$1993 – \$21,400**) cost for medical & mental health for 1 child with physical abuse or psychological maltreatment
- Therefore, *SEEK* is **cost saving**
- No need to conduct cost-benefit analysis

Strengths

- **Very conservative estimates** of child maltreatment costs – only medical and mental health costs used
- ***SEEK* intervention**
 - Low implementation costs
 - On average, did not require more time with patients compared to standard care

Conclusions

- Implementation of *SEEK* in primary care pediatric practices has the potential to...
- **Prevent child maltreatment and...**
- **Reduce health care costs**

Overall Implication

The *SEEK* model appears promising for routine screening in pediatric primary care for major psychosocial problems

to help prevent child abuse and neglect, plus

.....

The Social History

Parent Screening Questionnaire

- Systematic
- Structured (checklist)
- Targeted

In Sum

- Pediatric primary care offers a good opportunity to address major psychosocial issues facing many children & families
- *SEEK* offers a practical model for improving pediatric primary care
- Evidence that *SEEK* can reduce child abuse & neglect and harsh parenting, and possibly help promote children's health, development and safety
- *SEEK* appears cost effective

The Road Ahead



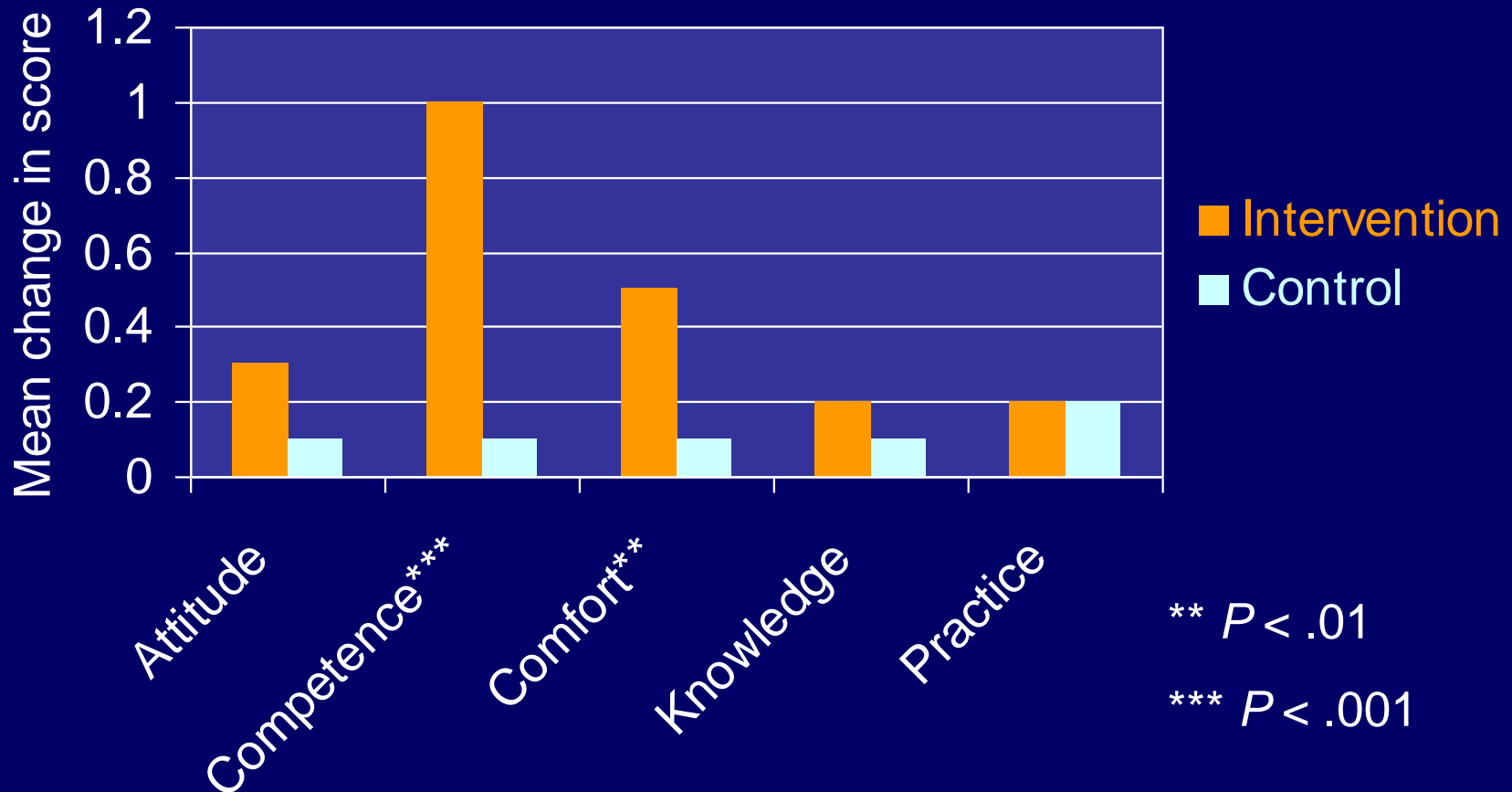
- Further replication, evaluation, refinement
- Prioritize high risk populations?
- Prioritize resident continuity clinics
- Begin prenatally
- Further probe mediation, moderation
- Dissemination

Thank You

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SEEK II HP Self-Report

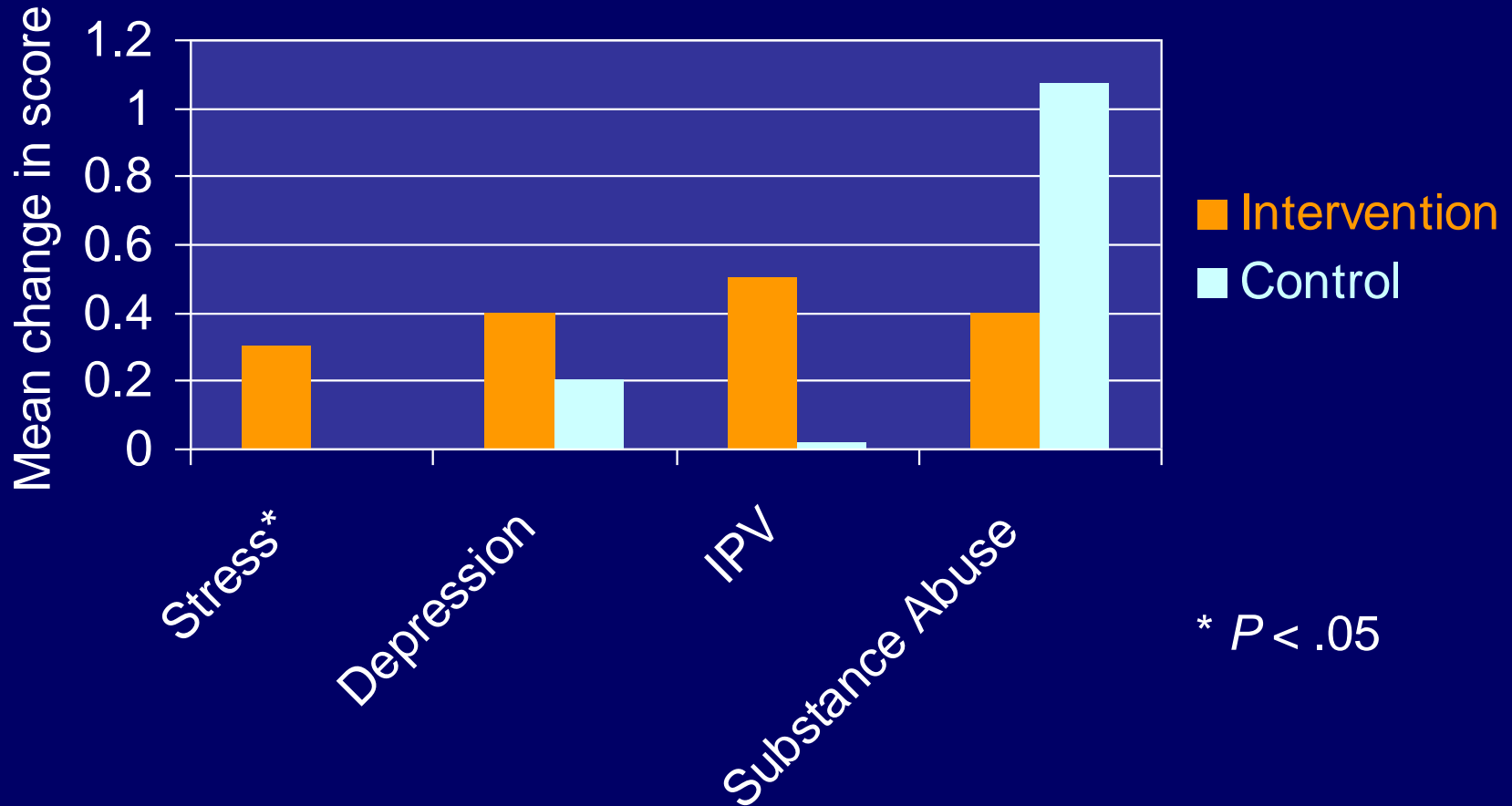
Baseline - 18 months



P values controlling for % of patients on MA in the practice, years HP in practice, baseline scores, and random effect of practice

SEEK II Self-Report: Topic Scales

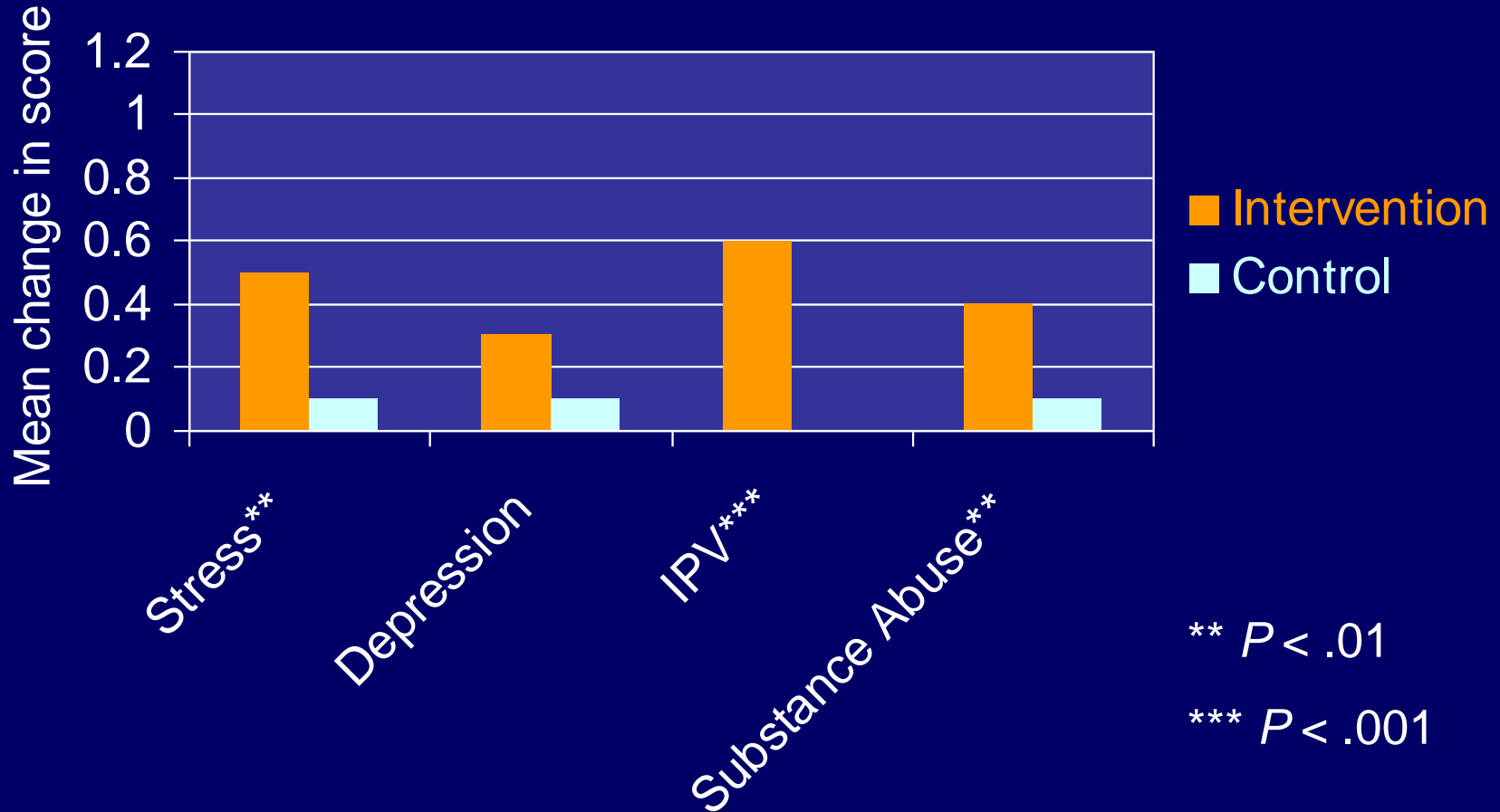
Baseline - 36 months



P values controlling for % of patients on MA in the practice, years HP in practice, baseline scores, and random effect of practice

SEEK II Self-Report: Topic Scales

Baseline - 18 months



P values controlling for % of patients on MA in the practice, years HP in practice, baseline scores, and random effect of practice