

Program: NURSE HOME VISITATION PROGRAM

Population Served:

Size: In July 1998, the program was serving approximately 2,500 families in 10 states

Age: The program targets younger women (under age 19)

Other Characteristics: Target population is mothers and their families who are first-time, low-income parents.

Studies: 4 experimental

Program Components

<u>Component</u>	<u>Provided by</u>	<u>Duration</u>	<u>Description</u>
Home visits	Nurses (who work for the department of health, visiting nurse associations, or hospitals) Nurses are trained with a 2-week course and carry a caseload of no more than 25 persons.	Visits begin during the second trimester of pregnancy and continue through to 2 years following birth. Visits typically occur weekly to monthly and last 75 to 90 minutes.	A nurse home visitor is assigned to the family and works with that family for the duration of the program. Nurses help parents address three areas: improvement of the mother's development, the care that parents provide their child, and the family's planning, educational achievement, and participation in the workforce. Nurses also provide a comprehensive educational program designed to help parents provide better care for their child. The nurses also help parents clarify their goals and develop problem-solving skills.
Resource referral	Nurses	Throughout the program	The nurses help parents connect with various community resources as well as involve other family members in caring for the child.
Nursing supervision	Nurse supervisor	Throughout the program	The nurse supervisor provides guidance to visiting nurses and oversees program implementation. Weekly individual supervisory conferences as well as weekly group conferences are held.

Program Objectives/Goals:

The program has three goals:

1. To improve pregnancy outcomes by helping women alter health-related behaviors such as smoking, alcohol consumption, and drug use.
2. To improve child health and development by teaching parents how to provide more responsible and competent care.
3. To improve families' economic self-sufficiency by helping parents plan for future pregnancies, further their education, and secure employment.

The program focuses on small, achievable goals that can be accomplished between nurse visits and is based on the assumption that nurses are in the best position to help families achieve these goals.

Costs:

Average annual program cost is \$3,000 per family. It is estimated that a 3-year program can be established for 100 families at a cost of \$780,000.

Program: NURSE HOME VISITATION PROGRAM

Study 1:

Olds, D.L., Henderson, C.R., Tatelbaum, R., & Chamberlin, R. (1988). Improving the life-course development of socially disadvantaged mothers: A randomized trial of nurse home visitation. *American Journal of Public Health*, 78(11), 1436-1445.

Study Objectives and Measurements:

Objective:

To evaluate the effectiveness of the program.

Measurement instrument:

Interviews of the women were conducted at the time of registration for the program and again at the 6th, 10th, 22nd, and 46th months of the children's lives. Records from county departments of social services were also used.

Evaluation:

Type: Experimental, with four possible groups (2 control groups, 2 experimental groups).

Statistical techniques: General linear model, logistic-linear model, log-linear model.

Significance level: $p \leq .05$ for significant findings, $p \leq .10$ for trends

Population evaluated: 354 women from a small, semi-rural Appalachian region of New York State who were bearing their first child. 165 women were randomly assigned to one of two control groups that were later combined into one control group; 90 women were randomly assigned to an experimental group that received home visits during pregnancy only (the pregnancy group), and 99 women were randomly assigned to an experimental group that received home visits during pregnancy and 2 years into the child's life (the pregnancy/infancy group). Women who were young (under 19), single, and from low SES families were targeted. Women were enrolled in the program in the first 30 weeks of pregnancy.

Key Findings:

Educational achievement:

At the 6-month interview, 59 percent of the pregnancy/infancy group and 27 percent of the control group had graduated from school or enrolled in an educational program. This difference was statistically significant ($p < .05$).

At the 10-month interview, this trend ($p < .10$) was seen only in women unmarried at registration. Among unmarried women, 60 percent of the pregnancy/infancy group and 31 percent of the control group had graduated from school or enrolled in an educational program.

At the 22-month interview, there were no differences among the three groups.

At the 46-month interview, there were no overall education achievement differences among the three groups.

Throughout the follow-ups, there were no education differences between the pregnancy group and the control group.

Employment, child care, and public assistance:

At the 22-month interview, poor, unmarried women in the pregnancy/infancy group had worked 2.5 times longer than poor, unmarried women in the control group.

At the 46-month interview, poor, unmarried women in both experimental groups were working longer than poor, unmarried women in the control group.

Program: NURSE HOME VISITATION PROGRAM

Subsequent pregnancies:

Poor, unmarried women in the pregnancy/infancy group were less likely to have had a subsequent pregnancy at the 22-month follow-up than their counterparts in the control group. Poor, unmarried women in the pregnancy/infancy group had an average of .17 subsequent pregnancies, and those in the control group had an average of .51 subsequent pregnancies.

At the 46-month interview, women in the three groups were equally as likely to have had subsequent pregnancies. For poor, unmarried women, however, women in the pregnancy/infancy group were less likely to have had a subsequent pregnancy (.58 pregnancies vs. 1.02 pregnancies).

Overall:

Poor, unmarried women in the experimental groups were 82 percent more likely to be employed, had 43 percent fewer subsequent pregnancies, and delayed a subsequent pregnancy 12 months longer than their control counterparts.

The researchers state that the nurse home visitation seems to shift a parent's focus from education to gaining employment.

Overall, the effects of the program were stronger for women in the pregnancy/infancy group than for those in the pregnancy group.

Other Information:

None

Study 2:

Olds, D., Henderson, C., Cole, R., Eckenrode, J., Kitzman, H., & Luckey, D. (1998). Long-term effects of nurse home visitation on children's criminal and antisocial behavior: 15-year follow up of a randomized trial. *Journal of the American Medical Association*, 280(14), 1238-1244.

Study Objectives and Measurements:**Objective:**

To examine the long-term impacts of the Nurse Home Visitation Program on children 15 years after the program—specifically, the impacts on children's antisocial behavior.

Measurement instrument:

Children's self-report, school records of suspension, teachers' reports of behavior in school, parent's report, Achenbach Youth Self-Report of Problem Behaviors, county records.

Evaluation:

Type: Experimental

Statistical techniques: Poisson log-linear model

Significance level: $p \leq .10$

Population evaluated: Children of mothers in the Nurse Home Visitation program from April 1978 through September 1980 in Elmira, N.Y. Women were first-time mothers, under 19, unmarried, from a low SES family, and less than 25 weeks pregnant. 184 women were assigned to one of two control groups that were later combined, and 216 women were assigned to one of two experimental groups. For this study, data were gathered from 148 of the control group's children and 176 of the experimental group's children. The mothers of 79 of the children in the experimental group had received nurse visits through the child's birth (the pregnancy group) and the mothers of 97 had received nurse visits until the child's second birthday (the pregnancy/infancy group).

Program: NURSE HOME VISITATION PROGRAM

Key Findings:Illegal behavior:

Children in the pregnancy/infancy group reported significantly fewer arrests (.17 arrests vs. .16 arrests for the pregnancy group and .36 arrests for the control group). However, children in this group also reported significantly more police stops from birth to age 15 than children in the other groups (an average of 2.25 stops versus .53 stops for the pregnancy group and .80 stops for the control group). The authors attribute this higher number of police stops to sampling or reporting artifact. Children in the pregnancy/infancy group also reported significantly fewer convictions and violations of probation (.10 convictions and probation violations vs. .06 for the pregnancy group and .27 for the control group). These effects were strongest for children of poor, unmarried mothers from low SES families. Among children in this subgroup, those in the pregnancy/infancy group experienced an average of 1.46 stops by police, .20 arrests, and .09 convictions or violations of probation. For children in the pregnancy group, these numbers were .78, .15, and .07, respectively; for children in the control group, they were 1.16, .45, and .47, respectively.

Substance use:

Children in both experimental groups born to poor, unmarried mothers from low SES backgrounds reported smoking significantly fewer cigarettes per day than children in the control group. Children in the pregnancy/infancy group reported smoking 1.5 cigarettes, children in the pregnancy group 1.32 cigarettes, and children in the control group 2.5 cigarettes. Children in the pregnancy/infancy group born to poor, unmarried mothers from low SES backgrounds reported consuming alcohol on significantly fewer days in the last 6 months than the control group. Children in the pregnancy/infancy group reported drinking alcohol an average of 1.09 days and children in the control group 2.49 days. Children in the pregnancy subgroup reported drinking alcohol an average of 1.84 days, a difference that is not statistically significant.

Low SES, unmarried mothers in the pregnancy group reported significantly more behavioral problems for their children due to alcohol and drug use—and their counterparts in the pregnancy/infancy group significantly fewer behavioral problems—than mothers of children in the control group (mean scores of .62 for children in the pregnancy group, .15 for those in the pregnancy/infancy group, and .34 for those in the control group).

School behavior:

Teacher reports did not indicate differences among the three groups.

Other Information:

This study showed few statistically significant findings, but the program seems to be effective for those in the low-SES, unmarried subgroup.

Study 3:

Marcenko, M.O., & Spence, M. (1994). Home visitation services for at-risk pregnant and postpartum women: A randomized trial. *American Journal of Orthopsychiatry*, 64(3), 468-478.

Study Objectives and Measurements:Objective:

To determine the effectiveness of the Olds model of home visitation in a large urban setting using non-nurse home visitors—specifically to determine whether the program results in increased access to services, higher levels of social support and self-esteem, decreased psychological distress, and ultimately a reduction in out-of-home placements.

Program: NURSE HOME VISITATION PROGRAM

Measurement instrument:

Interviews conducted at program entry and again at 6 months after child's birth; the substance abuse subscale of the Addiction Severity Index (ASI), the Home Observation for Measurement of the Environment (HOME) inventory, the Norbeck Social Support Questionnaire (NSSQ), the Brief Symptom Inventory (BSI), and Rosenberg's Self-Esteem Scale. The study examined results through 1 year following the child's birth.

Evaluation:

Type: Experimental

Statistical techniques: Chi-square, two-tailed t-test.

Significance level: $p \leq .05$

Population evaluated: Pregnant women at risk of out-of-home placement for their children. Women were randomly assigned to a control group or an experimental group at their first or second prenatal visit.

Key Findings:**Home environment and utilization of services:**

No significant differences between the two groups on the HOME inventory, a measure of the quality of the home environment.

Women were also asked whether they had received assistance from an agency in the past 8 months and their satisfaction with the services they received. No significant differences were found in assistance with food and housing. However, women in the experimental group reported significantly greater help accessing services such as transportation, baby furniture, and toys: 48 percent of women in the experimental group and 16 percent of the control group reported receiving transportation services; 17 percent of women in the experimental group and 5 percent of the control group reported receiving assistance with clothing; 26 percent of women in the experimental group and 9 percent of the control group reported receiving assistance with baby clothing and diapers; 22 percent of women in the experimental group and 4 percent of the control group reported receiving help with baby furniture and toys; and 45 percent of women in the experimental group and 30 percent of the control group reported receiving health care.

Social and emotional support:

Women in the experimental group reported a significant increase ($t=2.90$, $p \leq .005$) in the amount of social support received, as measured by the NSSQ, while women in the control group did not experience any change in the amount of social support received. Women in the experimental group saw an increase in network support members from 3.11 to 3.87, while control group members saw only a nonsignificant increase from 3.07 to 3.22. The study did not compare network support members between experimental and control groups.

Neither group showed an increase in self-esteem. Women in the experimental group did report a significant decline ($t=3.10$, $p \leq .002$) in overall psychological distress between baseline and follow-up.

The study showed that women in the experimental group were more likely to have a child in out-of-home placement (9 percent of births) than women in the control group (4 percent of births).

Program: NURSE HOME VISITATION PROGRAM

Other Information:

Home visitors were supervised by a social worker and nurse. Home visitors consisted of women with positive parenting experiences from the same communities as the targeted women. Home visitors received 1 month of training.

Study 4:

Olds, D.L., Robinson, J., O'Brien, R., Luckey, D.W., Pettitt, L.M., Henderson, C.R., Ng, R.K., Sheff, K.L., Korfmacher, J., Hiatt, S., & Talmi, A. (2002). Home visiting by paraprofessionals and by nurses: A randomized controlled trial. *Pediatrics*, 110(3), 486-496.

Study objectives and measurements:Objective:

To determine the effectiveness of the Olds model of home visiting by paraprofessionals and by nurses.

Measurement instrument:

Interviews with the mother, analysis of videotapes of mother-infant interactions at all lab and home postpartum assessments, analysis of videotapes of infants' emotional reactivity, Mental Development Index.

Evaluation:

Type: Experimental

Statistical techniques: t-tests

Significance level: $p \leq .05$ for significance, $p \leq .10$ for trends

Population evaluated: 735 low-income women from 21 clinics in the Denver, Colo. area. Women in the study had no previous live births and either qualified for Medicaid or had no private health insurance. Women were randomly assigned to one of two experimental groups or a control group: 245 women received home visits from a paraprofessional, 235 received home visits from a nurse, and 255 women were assigned to the control group.

Key Findings:Paraprofessional group:

Women in the group seen by paraprofessionals showed a trend toward fewer subsequent pregnancies or births in the 24 months following delivery, compared to the control group. The least squares mean for paraprofessional group women was 33 for subsequent pregnancies and 13 for subsequent births; the least squares means for control group women were 41 and 19, respectively.

Women in the paraprofessional group had significantly higher scores on measures of mother-infant responsive interaction than women in the control group (100.15 vs. 98.99).

There were no other significant findings for the paraprofessional group.

Nurse group:Maternal Outcomes:

In the group seen by nurses, women who smoked had significantly greater reductions in cotinine levels than smokers in the control group (reductions of 259.00 and 12.32 ng/mL, respectively).

Women in the nurse group were also significantly less likely to have a subsequent birth or pregnancy in the 24 months following delivery than women in the control group. The least squares mean for nurse group women was 29 for subsequent pregnancies and 12 for subsequent births; the least squares means for control group women were 41 and 19, respectively.

Program: NURSE HOME VISITATION PROGRAM

Women in the nurse group were also more likely to be employed in the second year following delivery than women in the control group. The least square means was 6.87 for the nurse group and 5.73 for the control group.

Care Giving and Child Outcomes:

Women in the nurse group showed significantly higher levels of mother-infant responsive interaction than women in the control group (least square means of 100.31 vs. 98.99).

Furthermore, children of women in the nurse group exhibited significantly less emotional vulnerability to fear stimuli than children of women in the control group (least square means were 16 vs. 25). Children in the nurse group also exhibited significantly less emotional vitality to anger stimuli than children in the control group (least square means were 19 vs. 28). They were also significantly less likely to have language delays at 21 months (least square means were 6 vs. 11).

On average, children in the nurse group had higher levels of language development at age 21 months than children in the control group (least square means were 102.22 vs. 99.49) and higher mental development at 24 months (least square means were 90.13 vs. 89.38).

Other Information:

Women in the nurse group received significantly more home visits than women in the paraprofessional group: an average of 6.5 visits during pregnancy and 21 home visits during infancy vs. an average of 6.3 home visits during pregnancy and 16 home visits during infancy.
