

Home visiting nurses - preventing crime by improving pre-natal and infant health and development

David L Olds looks at how pre-natal and early years care can play a role in crime prevention.

Pregnancy and the early years of a child's life offer an opportune time to prevent a host of adverse maternal and child outcomes that are important in their own right, but that also have significant implications for the development of criminal behaviour. Over the past 30 years, our team of investigators has been involved in developing and testing a programme of prenatal and infancy home visiting by nurses aimed at improving the health of mothers and children and their future life prospects. Known as the Nurse-Family Partnership (NFP), this programme is different from most mental health, substance abuse, and crime prevention interventions tested to date in that it focuses on improving neuro-developmental, cognitive, and behavioral functioning of the child by improving prenatal health; reducing child abuse and neglect and neuro-developmental and behavioral dysregulation; and enhancing family functioning and economic self-sufficiency in the first two years of the child's life. These early alterations in biology, behaviour, and family context are expected to shift the life course trajectories of children living in highly disadvantaged families and neighborhoods away from psychopathology, substance use disorders, and risky sexual behaviours (Olds, 2007). The programme is designed to alter those influences early in life that contribute to early onset 'conduct disorder' (Moffitt, 1993).

Programme design

The programme is designed for low-income, socially disadvantaged mothers who have had no previous live births. The home visiting nurses have three major goals: to improve the outcomes of pregnancy by helping women improve their prenatal health; to improve children's health and development by helping parents provide more sensitive and competent care of them; and to improve parental life-course by helping parents plan future pregnancies, complete their education, and find work (Olds, 2007).

Testing its effects

Since 1977, the programme has been tested with different populations, living in different contexts, and at different points in the history of the United States (Olds, 2007). In each of the three trials, women were randomised to receive either home visitation services or comparison services. Randomised controlled trials are considered the most valid way of ascertaining the impact of interventions. The first trial, conducted in Elmira, New York, enrolled a primarily white sample (N=400). The second, conducted in Memphis, Tennessee, enrolled a sample that was nearly entirely African-American (N=1138 for the prenatal phase and 743 for the infancy phase of the trial). The third

study, conducted in Denver, Colorado (N=735), registered a large sample of Hispanics and systematically examined the impact of the programme when delivered by paraprofessionals (individuals who shared many of the social characteristics of the families they served) and by nurses.

Results

We looked for consistency in programme effects across those trials before assigning much importance to any one finding. The following findings were present in at least two of the three trials, and in most cases where the programme effects were not present in the third, the absence of effect can be attributed to differences in measurement designs, or to shifts in social and policy contexts in the history of the United States (Olds, 2007).

Improved pre-natal health

Women visited by nurses during pregnancy, compared to women randomly assigned to comparison services, improved their diets, reduced their use of cigarettes, and had fewer hypertensive disorders or pregnancy. These prenatal factors contribute to children's neuro-developmental and behavioral regulation.

Fewer childhood injuries

In the first two trials in which we were able to reliably assess all of the children's health care encounters in the first two years of life, nurse-visited children, compared to their control group counterparts, had fewer encounters for injuries. Injuries are the leading cause of death among children and young adults, and they sometimes reflect abusive or neglectful care of the child, which is a significant risk for future violent criminality.

Fewer subsequent pregnancies and increased inter-birth intervals

The programme has consistently reduced the rates of subsequent pregnancies and increased the intervals between births. These reductions in closely spaced subsequent births contribute to the health of subsequent children and make it easier for vulnerable parents to focus their limited time and resources on the care of the first child.

Increased maternal employment

We have found that nurse-visited mothers enter the work force in the second year of the child's life to a greater extent than do women assigned to control conditions.

Reduced use of welfare

In the first two trials of the programme, nurse-visited mothers used welfare less than did women assigned to the control group. This finding was not replicated in the Denver trial, as it was conducted in the midst of major reforms in the US social welfare system, which created significant disincentives for poor

families' use of welfare.

Improved mental health

Children visited by nurses during pregnancy and the first two years of the child's life exhibited fewer mental health problems at school entry and antisocial behaviors in the first half of adolescence.

Improved school readiness

Nurse-visited children, and especially those born to mothers with fewer psychological resources to support their children's learning, had improved language and cognitive development, achievement in maths, and behavioral adjustment at school entry.

Effects found in first trial of programme for child age 15

We have followed the sample in the first trial for the longest period of time and found important enduring benefits for mothers and children up to the first child's 15th birthday (Olds, et al., 1997; Olds, et al., 1998).¹

Benefits to Mothers

Nurse-visited mothers had 61% fewer arrests, 72% fewer convictions, and 98% fewer days of incarceration during the 15-year period following the birth of their first child. We think this is due to their making appropriate choices about their lives that led to the protection of themselves and their children.

Benefits to Children

By their 15th birthday, children visited by nurses, as compared to controls, had 48% fewer substantiated cases of child abuse and neglect, 59% fewer arrests, and 90% fewer adjudications as a 'person in need of supervision' for incorrigible behaviour.

The importance of using nurses

In our third trial of this programme, we found that nurses produced beneficial effects for children that were approximately twice as large as those produced by paraprofessional visitors. These findings are consistent with the disappointing findings of separate randomised trials of home visiting programmes delivered by paraprofessional visitors (Olds, Sadler, & Kitzman, 2007).

Estimates of cost savings

In 2004, the Washington State Institute for Public Policy estimated that government and society save \$17,000 for every family served in the Nurse-Family Partnership (Aos, et al., 2004). The Rand Corporation has produced similar estimates (Karoly, Kilburn, & Cannon, 2005).

Public investment in the programme

Our team held off on offering the programme for public investment until we had evidence that the programme effects were replicable, enduring, and economically viable. In recent years, we created a non-profit organisation in Denver, Colorado known as the Nurse-Family Partnership National Service Office to help new communities develop the programme following the model tested in our scientifically controlled trials. The National Service Office develops the programme in concert with local communities and monitors the performance of each local programme to ensure accountability and to conduct continuous quality improvement. Today, the programme is operating in 22 states and on any one day is serving 13,000 families. Careful

attention is being given to ensure that the programme is being conducted in accordance with the programme model tested in the randomised trials (Olds, 2007).

Our approach to international replication of the programme is to make no assumptions about its possible benefits in societies that have different health and human service delivery systems and cultures than those in which the programme was tested in the United States. Given this, our team has taken the position that the programme ought to be adapted and tested in other societies before it is offered for public investment. We are working currently with partners in England, Holland, Germany, and Australia to adapt and test the programme with disadvantaged populations in those societies. While it is possible that the need and impact of this intervention may be diminished in societies with more extensive health and social welfare systems than are found in the United States, it is possible that the programme may have comparable effects for subgroups that do not make good use of those other services and resources that are available to them.

David L. Olds is Professor of Paediatrics and Director, Prevention Research Center for Family and Child Health, University of Colorado.

Note

1. These findings reflect a reanalysis of data from the Elmira trial using an updated analytic method conducted in 2006. See <http://www.nursefamilypartnership.org/resources/files/PDF/DavidOldsinterview1-24-06.pdf> for details.

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