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Comprehensive evaluation of the Pro Kind home visiting program: A summary of results

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ABSTRACT

This paper provides an overview of the German home visiting program Pro Kind. We conducted a RCT to assess the program effects. A total of 755 women with multiple risk factors were recruited; of those, 394 were assigned to the treatment group. We assessed program influences on family environment, maternal and child health, and child development until the child's third birthday in regular interviews, with developmental tests, and in dental examinations. We found small benefits on, e.g., parental self-efficacy, feelings of attachment, social support, and maternal oral health. Further, home visiting is significantly associated with increased second births.

1. Introduction

Experiences early in life are of great importance for further healthy child development. Growing up under poor socio-economic conditions, with low cognitive stimulation, or being exposed to maltreatment and neglect can have severe, long-lasting effects on neurobiological processes, human capital formation, health, and even life expectancy (Gilbert et al., 2009; Knudsen, Heckman, Cameron, & Shonkoff, 2006; Pieper et al., 2012; Walker et al., 2011).

Home visiting is a promising approach to support psychosocially and financially disadvantaged families as the threshold of participation is lower than in center-based forms of prevention (Snell-Johns, Mendez, & Smith, 2004). Meta-analyses and systematic reviews report significant but small positive program effects on parenting competencies and young children's cognitive and behavioral development (Bilukha et al., 2005; Macmillan et al., 2009; Mikton & Butchart, 2009; Peacock, Conrad, Watson, Nickel, & Muhajarine, 2013; Sweet & Appelbaum, 2004). Although home visitation has a long tradition in Europe (Kamerman & Kahn, 1993), most of the evidence stems from the United States (US). For example, in their review of reviews, Mikton and Butchart (2009) included 298 outcome evaluations on interventions to prevent child maltreatment; 82.9% from the US, none from Germany. Compared to the US, the German welfare system offers lower thresholds for socio-economic disadvantaged families, such as universal health care or unemployment insurance, and family benefits per child (Streek & Trampusch, 2005). Moreover, 22.2% of US children live in poverty compared to 10.3% in Germany (OECD, 2011), and health indicators reveal higher rates of teenage pregnancy in the US. Still, recent German population based surveys have indicated strong health inequalities between children from different socio-economic strata (e.g., Holling, Erhard, Ravens-Sieberer, & Schlack, 2007).

The home visiting program Pro Kind is closely modeled on the evidence-based Nurse Family Partnership (NFP) program (Olds, 2006). Professional home visitors offer support to the mothers from pregnancy to the child's second birthday. Visits are scheduled every other week apart from weekly visits in the first months and monthly visits in the last three months of program participation. The NFP is based upon theories of self-efficacy, attachment, and human ecology, and aims at enhancing maternal and child's

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health, child development, maternal life-course, as well as at reducing the risk for child abuse and neglect. The visits are structured by guidelines that provide the home visitors with teaching materials and topics to discuss across the different domains. However, these guidelines are flexible in use and are adjusted to the families' needs. The complexity of the intervention requires a systematic evaluation in a randomized controlled trial with interdisciplinary comprehensive methods of process and outcome evaluation as well as economic cost–benefit analysis.

The present paper provides an overview of the German adaptation of the NFP program and results from all research components: (1) process evaluation of the implementation, (2) outcome evaluation, (3) and cost–benefit analysis.

2. Material and methods

2.1 Research design and participants

We conducted a multi-site randomized controlled trial with baseline (t0), intermediate (t1: 36th week of pregnancy, t2: 6 months and t3: 12 months after birth) and post intervention measurements (t4: 24 months after birth). From November 2006 until December 2009 we recruited 755 women who were randomly assigned via a computer routine based on Efron's biased coin approach (Efron, 1971) either to the treatment or the control group. We used implementation site, maternal age (<18 vs. ≥ 18 years), and maternal nationality (German vs. non-German) as strata in the randomization.

Fifteen communities from three German federal states (Lower Saxony, Bremen, and Saxony), including larger and medium size cities (100,000–500,000 inhabitants), as well as rural districts and small towns were engaged in this study. Women were eligible to participate in the study if they had not given live-birth before, were between the 12th and 28th week of pregnancy, received unemployment benefits or had a low income (<450€ per month), and if they had at least one additional psychosocial risk factor (e.g., poor education, psychological or physical health problems). Women with severe drug addiction were excluded from the study, as this would have entailed a more intensive treatment than provided in this preventive intervention.

Table 1 summarizes the demographic characteristics, inclusion criteria, and referral sources of participants at baseline assessment (on average at the 20th week of pregnancy) in the treatment and control group. All participating women had at least one socio-economic risk factor, and an additional psychosocial risk factor, with no significant differences regarding the total number of risk factors between the two groups ($M_{TG}=5.9$, SD=2.5 vs. $M_{CG}=5.7$, SD=2.4). Participants in the treatment and control group were comparable, except for the higher presence of a psychiatric disorder in the control group ($\chi^2_{1;755}=9.430$; $p=.003$) (see Sierau et al., 2015)".

Table 1
Demographic characteristics, inclusion criteria, and referral sources of participants at baseline assessment.

Demographic characteristics	Treatment group	Control group
Age	21.27 (4.2; 14–40)	21.53 (4.4; 14–40)
Not married	85.5%	89.2%
Born in Germany	89.1%	84.2%
Less than high school diploma	54.5%	49.5%
Over-indebtedness	47.8%	53.5%
Risk factors for child abuse and neglect		
Being under age	21.1%	17.7%
Low educational status	78.2%	74.8%
Low income	82.0%	80.9%
Low occupational status	82.0%	85.6%
Unwanted pregnancy	18.0%	16.6%
Alcohol misuse	0%	0.6%
Drug misuse	1.8%	2.5%
Being a single mother	29.2%	28.3%
Social isolation	6.1%	8.0%
Experienced custodial care	23.4%	19.7%
Neglect or maltreatment during childhood	37.6%	38.8%
Lost attachment figure during childhood	50.8%	54.6%
Violence during pregnancy	7.9%	9.1%
Life-time violence	55.3%	55.1%
Psychiatric disorder *sign.	10.9%	18.8%
Depression DASS	10.2%	13.3%
Anxiety DASS	17.0%	17.7%
Stress DASS	31.5%	28.8%
Potential for aggression	14.5%	18.6%
Referral sources		
Self-referral	14.4%	15.3%
Gynecologists	22.6%	22.2%
Child and youth welfare office	13.8%	15.3%
Job centers	15.9%	13.6%
Psychosocial counselling service	16.7%	18.9%
Others	16.7%	14.7%

Note: Age is reported in average years (*SD*; range).

2.2 Procedures

Active recruitment strategies included the involvement of local health and social service providers such as gynecologists, job centers, psychosocial counseling services, child welfare offices, schools, and midwives. We provided the local partners with information material about the aims of the program, inclusion criteria, and contact forms. Potential participants were informed about the study and, in case of interest, referred to the program. Passive recruitment strategies included articles in local newspapers, posters and information flyers in public places or community centers, as well as word of mouth recommendation.

Referred women deemed to be eligible for the program received detailed study information, gave written informed consent, were randomized to the research groups, and completed the baseline assessment. At the end of the baseline interview, each woman received a sealed envelope with information on the group she had been assigned to.

We provided members of both study groups with information on available community health and social services when they entered the program. Furthermore, to enhance study retention, we offered all participants refunds for travel expenses to prenatal care or well-child visits, financial reimbursement for regular research attendance (20–35€), and feedback on the children's developmental status. Only women in the treatment group received the home visiting program.

Face-to-face interviews, ratings of videotaped parent–child interaction, and developmental tests were conducted in the participants' homes. Examiners were female students (psychology or special needs education) who received standardized training and constant supervision in interviewing techniques and developmental testing from research staff. Examiners were blinded to the treatment condition unless the women inadvertently disclosed the information during the course of the interview. The dental examinations were conducted according to WHO criteria (WHO, 1997) in the public health departments of the communities. Furthermore, participants of both groups had to fill out a questionnaire that consisted of 22 multiple choice questions about dental visits and oral hygiene habits.

The ethical board of the German Society for Psychology approved the study design and procedures.