The Efficacy of Prenatal Home Visits on Birth Outcomes in At-Risk Pregnancies
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INTRODUCTION

Prenatal home visit programs provide pregnant women with health care, education, and social support, during pregnancy. Home visits have been associated with positive birth outcomes including decreased premature birth rates and increased birthweight. Low birthweight (LBW) and very low birthweight (VLBW) are associated with an increased risk of complications following birth. LBW and VLBW are common in at-risk pregnancies and can be a result of premature delivery, intrauterine growth restriction, and factors such as maternal race, age, health, and socioeconomic status (Boston Children’s Hospital).

This project aims to review the literature in an effort to determine the efficacy of home visits on premature delivery and birthweight in at-risk pregnancies. Establishing a positive association between home visits and birth outcomes for at-risk pregnancies can help medical professionals identify and recommend patients who may benefit from enrollment in a home visit program and can also increase government and state funding for home visit programs.

QUESTION AND PICO

Question: How efficacious are prenatal home visits on birth outcomes in at-risk pregnancies?

Population: At-risk pregnant mothers

Intervention: Prenatal home visits during pregnancy

Control: No prenatal home visits during pregnancy

Outcome: Birthweight and preterm delivery

METHODOLOGY

Study types: Retrospective cohort, randomized control trial, quasi-experimental cohort, systematic review

Keywords: “at-risk” pregnancy, home visits, LBW, preterm delivery

Inclusion criteria:

At-risk - participants have at least one of the following risk factors: Medicaid insured, low income, <18 years of age, domestic violence, or suboptimal access to prenatal care

RESULTS

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<th>Author and Study Type</th>
<th>Methods</th>
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<td>Jeyal et al. (2013)</td>
<td>Quasi-experimental retrospective cohort</td>
<td>Cohort: At-risk pregnant women intervention: Average gestational age enrollment at 18 wk, received between 16 to 26 home visits. Outcomes measured: BW and preterm birth</td>
<td>Compared with ≤3 home visits, &gt;8 home visits by 26 weeks was associated with a OR of 0.38 for preterm birth (95% confidence interval CI) (0.16-0.87).</td>
<td>Minimized selection bias by limiting analyses to “at-risk” receiving home visits. Limits enrollment to &lt;26 wk gest. to maximally intervene in high-risk population.</td>
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<td>Siso et al. (2016)</td>
<td>Retrospective cohort</td>
<td>Cohort: MOMS, program, singleton birth. Intervention: Paraprofessional home visits + education sessions. Outcomes: Birthweight and gestational age at birth, as they correlate to number of home visits.</td>
<td>Number of visits significantly increased birthweight and gestational age. Each visit was linked to an ~62 g increase in birth weight and ~0.38 week increase in gestational age.</td>
<td>Controlled for 10 covariates (e.g. maternal age, ethnicity, marital status) when performing regression analysis.</td>
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<td>Sasi et al. (2011)</td>
<td>Systematic review</td>
<td>Cohort: pregnant women who participated in prenatal home visiting studies published between 1985 and 2005. Intervention: prenatal home visiting. Outcomes measured: prenatal care utilisation, preterm or gestational age, or birth weight.</td>
<td>More evidence suggests that prenatal home visiting may improve the use of prenatal care, whereas less evidence exists that it improves neonatal birth weight or gestational age.</td>
<td>26 studies were analyzed which helps in preventing overestimation of results. The studies were varied and included RCTs, retrospective and prospective cohort case control.</td>
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<td>Jee et al. (2009)</td>
<td>Randomized control trial</td>
<td>Cohort: 891 ‘at-risk’ pregnant women eligible Healthy Families Intervention: Randomized to intervention group with bi-weekly home visits or control. Outcomes measured: LBW, preterm birth</td>
<td>LBW among the intervention group, 5.1%, control group, 9.8%, AOR=0.43, 95% CI=0.21, 0.89. Birth weight was 41g&gt; than control.</td>
<td>Randomization. Provides insight into how home visitors assist the expectant mother to achieve an optimal pregnancy experience.</td>
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<td>Roman et al. (2014)</td>
<td>Quasi-experimental retrospective cohort</td>
<td>Cohort: Maternal Infant Health Program (MIHP): Medicaid; singleton birth. Intervention: At-risk home risk screening, care coordination, and motivational interviewing. Outcomes: LBW, VLBW; preterm birth, very preterm birth.</td>
<td>MIHP significantly reduced odds of LBW, VLBW, preterm birth and very preterm births. MIHP intervention especially advantageous for black women.</td>
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<td>Williams et al. (2011)</td>
<td>Retrospective cohort</td>
<td>Cohort: 2253 eligible mothers who were referred to HANDS between July 2011 and June 2012 and received a minimum of one prenatal home visit. A matched comparison group of women did not receive a HANDS visit. Intervention: Kentucky Health Access Nursing Development Services (HANDS) is a voluntary, home visiting program serving first-time, high-risk mothers. Outcomes: Preterm birth, LBW, child maltreatment; prenatal care; gestational hypertension; maternal complications; maternal weight gain; breastfeeding</td>
<td>HANDS participants: had lower rates of preterm delivery and low birth weight infants.</td>
<td>Using data from live birth certificates had advantages by ensuring that data are collected consistently between both HANDS participants and the comparison group. Data collection was not subject to interviewer or recall bias.</td>
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METHODOLOGY (continued)

Home visits - a professional providing a social or medical service at home; professionals included physicians, nurses, social workers, registered dietitians, mental health providers, child development specialists, paraprofessional nurses. Services may have been tailored to individual needs or standardized across all study participants.

Low birth weight: defined by a weight of <2500g.
Very low birth weight: defined by a weight of <1500g.
Preterm birth: defined by <37 weeks gestation.
Very preterm birth: defined by <32 weeks gestation.

DISCUSSION

Home visits provide at-risk pregnant mothers with access to healthcare, education, and social support. The services provided during home visits have proven to be beneficial in reducing negative birth outcomes measured as LBW and preterm delivery. The most advantageous results have been shown when this intervention is initiated early in the pregnancy and a dose-dependent relationship has been observed. Mothers receiving home visits during pregnancy have been shown to have a statistically significant risk reduction in delivering an infant with LBW. Because of this, it is important to educate physicians on which patients may benefit from enrollment in a home visit program, inform physicians on available home visit programs in their community, and encourage policy makers to expand funding for these beneficial programs.

REFERENCES


