

Health Literacy and Depression in the Context of Home Visitation

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Now for a health promotion perspective.

I'm going to tell you about the second in a series of studies on a home-based intervention that aimed to promote functional health literacy in disadvantaged parents who participated in 7 home visiting programs around the country. I reported the first study in this forum last year.

We implemented the health promotion model of health literacy described by our 2010 keynoter Don Nutbeam. According to that model, we viewed health literacy as a life skill needed to manage personal and family health and health care. This life skill is a personal and community asset that can be built through health promotion activities.

We integrated HL promoting practices into the usual activities of home visitation, a preventive intervention that supports growing disadvantaged families and healthy development of children by sending public health nurses, social workers and/or trained paraprofessionals into their homes weekly or monthly during pregnancy and early parenting.

We chose home visitation as the channel for promoting maternal health literacy for several reasons:

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- Health education and skills development, primary methods for promoting health literacy, are the usual activities of home visitation, along with case management.
- There is an existing national infrastructure of programs, which is now expanded to all the States and Territories under health reform.
- As a population, visited families are characterized by low literacy and limited access to healthcare.
- Parents participating in home visitation are new healthcare decision makers for growing, at-risk families. Most of these families will gain access under health reform and will need significant support to obtain the benefits of health care. Successful efforts can benefit entire families through their lifetimes with short- and long-term benefits to healthcare and the schools.
- Home visitors' unique access, frequent extended encounters, and long term trusting relationships position them to observe and influence the complex interaction of multiple factors that determine a parent's health literacy. Many of these factors are not readily visible or modifiable in a clinical setting.

We conducted a two-year quasi-experimental seven- group cohort study using four waves of measurement and a matched comparison group. Seventy-two home

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visitors collected data on 2572 parent-child pairs during 6 to 36 months of service using the Life Skills Progression (LSP) instrument. The LSP is used widely to monitor outcomes of home visitation and to tailor interventions to particular families. It is approved as a measure of progress to new federal benchmarks of program effectiveness.

In the health promotion model, health literacy is context-specific and content specific, so that health literacy for a person with diabetes is different, from health literacy for a new parent or a person with breast cancer. This intervention addressed maternal health literacy.

Further, health literacy is viewed as an underlying construct; it cannot be measured directly. But it can be estimated by what individuals actually do for health with the information and support available to them. In other words, by their health and healthcare actions, practices and behaviors. These things are not health literacy in themselves. Rather, they are indicators of the skills and motivations that enable a person to obtain, understand and use information and services to improve or maintain health – that's health literacy.

Using two scales derived from the LSP, we examined two aspects of parental health literacy. Parents' improvement in what we call **healthcare literacy** was demonstrated by changes in **healthcare practices** such as having and using a medical home, and a dental home, completion of prenatal care, appropriate use of the emergency room, being up to date on well-child checks and IZs.

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Improved parental **self-care literacy** – management of personal and child health at home- was estimated by **health practices** such as support of child development, maintenance of safe environments, and adult behaviors important to both parent and child health like smoking and drug use.

The primary finding of the initial study was that overall, parents in home visitation improved their health literacy **regardless of reading level**; and those with lower estimated reading ability made the greatest gains. And so we concluded that home visitation is potentially an effective channel to promote health literacy.

This month, WellPoint, the Nation's largest health benefits co, begins implementing the intervention in four state Medicaid plans with intent to expand to 8 more states. The implementation is part of a primary care Medical Home model that integrates home-based outreach to bridge clinic and home.

The current study, funded by the National Library of Medicine through a contract with University of Washington, is a secondary analysis of the data to investigate links between health literacy and depression. An estimated 7.5 million parents are depressed in a given year, with negative impacts on about 15 million children. A few studies have linked depression and literacy, that link is not well understood. Depression is prevalent in home visitation. In our study population, 25% were depressed at intake. Other studies report up to 61%.

Previous studies suggest that both depression and low health literacy interfere with parents' utilization of adult and child healthcare services. Further, it is thought that

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low health literacy and depression interfere with the delivery of healthcare and home visitation services. So we hypothesized that health literacy and depression are closely related; and that depression interferes with home visitors' ability to promote parental health literacy.

We used a subsample of about 750 parents in six sites. Home visitors assessed both health literacy and depression in these parents at each of four points: at initiation of service (after two hours of intense observation, interviews and assessments) and again after six months, 12 months and 18 months of service. Correlation analysis showed that at each assessment point better depression scores (less depression) were consistently and positively correlated with use of information and services, healthcare literacy ($r=21-22, p<.001$) and with self-management of personal and child health ($r=42-49, p<.001$), self-care literacy. So health literacy and depression were closely related, as we hypothesized.

Here is the good news. Both depressed and not-depressed parents significantly improved their health literacy scores. And depressed parents made the greatest gains. At initiation of service, there were major gaps between depressed and not-depressed parents on most items in both health literacy scales. After 12-18 months in home visitation, the gaps nearly closed. Parents demonstrated improved ability to manage health and healthcare, *especially* in the face of depression. And so we conclude, in opposition to our second hypothesis, depression does not prevent significant improvement in health literacy.

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There is more to the story. We did see a statistically significant but small reduction in the overall depression rate after 12-18 months of service, from 23 to 21%. Highly significant improvements in health literacy occurred even where improvements in depression were minor. This suggests that the effect on health literacy was separate from the effect on depression. We saw a 29% reduction in untreated depression.

So part of the improvement in parents' health literacy scores is related to utilization of mental health services. Among the 101 parents depressed throughout the service period [they came in depressed and stayed depressed], 69% were in treatment at least some of the time. Compare this with previous reports of 20% of persistent cases obtaining treatment. Of 50 parents who developed symptoms during service, 62% obtained treatment (n= 31), exceeding a previously reported rate of a 13.5% for emergent cases.

Non-treatment for depression has been attributed to stigma, and to lack of services, insurance, transportation, and childcare [10]. The participating home visitation programs and their client families also face these barriers; so it seems the home visitors were relatively successful in motivating and supporting parents to overcome multiple barriers to care. This suggests that parents increased their understanding and utilization of mental health services, demonstrating improved health literacy.

You can read the details soon. The study is accepted for publication in the *Maternal and Child Health Journal*.

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Meanwhile, NLM has funded our next study, which will examine impacts of parental health literacy on child development.