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1. Presented Oct 16, 2011 to HARC III – the Third Health Literacy Annual Research Conference at Northwest University, Chicago. For details see Smith, SA & Moore, EJ (In Press) Health Literacy and Depression in the Context of Home Visitation. *Maternal and Child Health Journal*. The full text article will be available online.
2. I'm going to tell you about the 2nd in a series of studies on a home-based intervention that aimed to promote maternal health literacy in disadvantaged parents who participated in 7 home visiting programs around the country. I reported findings from the initial study in this forum last year. I will review the intervention and methods, and then I'll tell you about the new findings, and what's next.
3. We implemented the health promotion model of health literacy described by our 2010 keynote speaker Don Nutbeam. We operationalized health literacy as a life skill needed to manage personal and family health and health care, and as a personal asset that can be built through health promotion efforts.
4. The intervention aimed to promote parents' HL through home visitation, a preventive intervention that supports families and healthy development of children. Programs send nurses, social workers or trained paraprofessionals into the homes of growing disadvantaged families.

We chose Maternal Child Health home visitors as the channel to promote parent's health literacy for several reasons, which are strengthened by the roll out to the Affordable Care Act:

- Parents participating in home visitation are new hc decision makers for growing at risk families. Successful efforts can benefit entire families through their lifetimes with short and long-term benefits to healthcare and the schools.
- As a population, home visited families are characterized by low income, low education, low literacy and limited access to healthcare. Most of these families will gain access under health reform and will need significant support to obtain the benefits of health care.

- HVs unique access, frequent extended encounters, and long term trusting relationships position them to observe and to influence the complex interaction of multiple factors that determine parents health literacy, which are not readily visible or modifiable in a clinical setting.
- Health education and skills development, primary methods for promoting HL, are usual activities of HV, so we could integrate HL promotion into their current practices.
- There is an existing national infrastructure of home visiting programs, which is expanded to all the States and Territories under health reform, so that it is feasible to mount a national response to health literacy through home visitation.

5. In the health promotion model, health literacy is context-specific and content specific, so that health literacy for a diabetic is different, from health literacy for a new parent or a person with breast cancer. Further, health literacy is an underlying construct; it cannot be measured directly. But it can be estimated by what a person actually does with the info and support available to them. In other words, by their health & healthcare actions, practices and behaviors. These things are not health literacy in themselves. But they are indicators of the skills that determine a parent's ability to obtain, understand and use info to maintain personal and child health. (Definition from WHO, Health Promotion Glossary 1998)

6. Using two scales derived from the Life Skills Progression instrument (LSP), we examined two aspects of parental health literacy. Parents' improvement (or regression) in "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 ER, being up to date on well-child checks and immunizations.

7. Changes in management of personal and child health at home –SelfCare Literacy – was estimated by preventive practices such as support of child development, maintenance of safe environments., and adult behaviors important to both child and parents health like smoking. These items are included in the LSP, an instrument widely used to measure outcomes and tailor interventions in HV, so the data is routinely collected and is comparable across programs.

8. The primary finding of the initial study was that overall parents in HV improved their health literacy **regardless of reading level**. Those with lower estimated reading ability made greater gains. And so we concluded that home visitation is potentially an effective channel to promote health literacy.
<http://www.innovations.ahrq.gov/content.aspx?id=2533>

9. 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. It remains under-recognized and undertreated, especially in populations with limited access to care. Depression is prevalent in home visitation. In our study population, 25% were rated depressed at intake. Other studies report up to 60%.

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 low health literacy & depression

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

We used a subsample of about 750 parents in 6 sites. Home visitors assessed both health literacy and depression in these parents at each of four points: at initiation of service (after 2 hrs of intense observation, interviews and assessments) and again after 6 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 ($r=42-49$, $p<.001$) –Selfcare Literacy. So health literacy and depression were closely related, as we hypothesized.

10. Here is the good news. Both depressed parents (on the left in these graphs) 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 the health literacy scales (compare blue bars). By 12-18 months (that's the green bars), the gaps nearly closed. Mothers demonstrated improved ability to manage health and healthcare, *especially* in the face of depression. And so we conclude, in opposition to the 2nd hypothesis, depression does not prevent significant improvement in health literacy.

These findings demonstrate it is possible to promote health literacy in poor readers and depressed adults.

There is more to the story. We saw a statistically significant but small reduction in the overall depression rate after 12-18 months of service, from 23 to 21%. Major 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.

11. Part of the improvement in parents' health literacy scores is related to utilization of mental health services. Fewer than expected parents remained depressed throughout the service period, and we saw a 29% reduction in untreated depression.

Among the 101 parents who were depressed at baseline 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 parents who developed symptoms during service ($n= 50$), 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. 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 all the details soon. The paper will be published by MCHJ. It will be available in full text online.

Also, in January, 2012 WellPoint, the nation's largest health benefits plan begins implementing the intervention in two state Medicaid plans with intent to replicated it in 10 additional states.

And, Relief International is translating to French and Creole an adapted version of the materials and training to implement the intervention in Haiti.

12. Meanwhile, National Library of Medicine has funded our next study of the data. We are examining impacts of parents' health literacy on child development. Stay tuned.

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