Iowa Obstetric Social Needs and Health Literacy

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Introduction

Study: Context and summary

I was blessed to work with a variety of providers during my time in medical school. As a learner, I found some physicians emphasized teaching more than others, both with us students and with patients. When a patient encounter was finished, I noticed providers most often talked at (rather than with) the patients about diagnosis, treatment, and follow up. Occasionally, providers would do a teaching session or include supplemental information in the after-visit summary. How much do patients learn and retain from these interactions? Is the vocabulary chosen understood by the patient? I must remind myself that words like "hypertension" should be phrased as "high blood pressure" so all patients may understand.

Health literacy (as a component of education) is one of five social determinants of health (SoDH): healthcare, education, social and community context, economics, and built environment. Obstetric patients face a unique situation as it pertains to the five determinates. Things like nutrition, physical safety, stable housing, transportation to numerous clinic visits, and cost of living now applies to both mother and child. As primary care providers, it is important to deliver quality care; in doing so, we MUST address social influences on health.

Prior work demonstrates that SoDH affect over 80% of health outcomes. Further, health literacy is only proficient in 12% of Americans. Poor health literacy has been linked to increased morbidity, mortality, and negative outcomes for obstetric patients. Collectively, this suggests that barriers exist in identifying patients with low health literacy and delivering patient education to fit their needs.

This study was designed to collect and analyze qualitative perspectives of experiences with health literacy and social needs among pregnant women receiving prenatal care in Iowa obstetric care clinics (WinnMed, Boone County Hospital, North Dodge Clinic, UIHC provider and resident clinics, Free Medical Clinic, Broadlawns Medical Center). For the purposes of the service distinction project, this paper will focus on the results and interventions at the Free Medical Clinic (FMC). This site was added to provide an emphasis on service, as it cares for patients who are mainly uninsured/underinsured and fall below the federal poverty level.

Subjects for this study were invited to consider participation in qualitative surveys during routine screening that occurred at each Iowa obstetrics care clinic. Surveys included validated screening questions to identify SoDH with an emphasis on health literacy. All questions focused on the individual patient's perspectives related to their experiences with social needs in their communities.

Research Objectives

(1) Identify disparities of individual patients and community needs as it pertains to social determinates of health in pregnant individuals of Iowa.

(2) Assess the relationship between low health literacy and other social needs during pregnancy.

(3) Explore whether the rates of low health literacy are significant and if they differ between urban vs rural Iowa.

(4) Gather patients' suggestions for improved education at routine obstetric visits.

Relevance and Importance of the Research

Results from this study were used to inform health outcome improvement efforts within participating obstetric care clinics, specifically by improving initiatives used to address inadequate health literacy and other social needs.

Literature Review

Background and Significance

The World Health Organization defines social determinates of health (SoDH) as "non-medical factors that influence health outcomes".[1] Further, they are "conditions in which people are born, grow, work, live, and age".[1] The 2015 County Health Rankings found that only 16% of health outcomes are associated with clinical care, leaving over 80% of remaining outcomes being influenced by SoDH.[2] This suggests that population health can be improved most by addressing socioeconomic contributors. One way through which providers can act is improving patient health education, as health literacy is not a stagnant factor. Currently, only 12% of Americans demonstrate proficient health literacy, meaning they can obtain and understand health information to make decisions regarding their health.[3] Regardless of a patient's literacy, adults are more likely to gather health information from their provider than printed materials.[2] Current methods employed by providers that have shown to improve patient health literacy include teach-back (patients repeat provider's teachings back in their own words) and supplemental handouts with images.[4] There is currently no standard protocol to screen patients for health literacy, and there are no universal precautions employed for providers to practice as if all patients had low health literacy.[4] Further, many providers will choose not to employ these practices given the lack of time and resources.[4] This negatively impacts patients, specifically those who are pregnant.

Low health literacy has been associated with increased hospitalization, morbidity, and mortality.[5] Studies have also shown correlations of lower health literacy to negative health behaviors and outcomes in obstetric patients.[6,7,8]

- Preconception counselling: Patients with low health literacy are less likely to have received preconception counselling and miss more prenatal appointments then those with adequate health literacy.[7]
- Prenatal medications and supplements: Pregnant patients with low health literacy have lower rates of prenatal vitamin use and lower rates of prescription medication adherence.[7]
- Smoking: Low health literacy is associated with higher percentage of smoking during pregnancy compared to adequate health literacy.[7]
- Labor: Obstetric patients with low health literacy are at greater risk for cesarean delivery and major perineal laceration.[6]
- Exclusive breastfeeding: There are lower rates of exclusive breastfeeding at 2 months in post-partum women with low health literacy compared to adequate health literacy.[6]
- Follow-up: Women with gestational diabetes were less likely to complete post-partum glucose testing if they had low health literacy.[8]
- Depression: Patients with low health literacy were more likely to have post-partum depression at 6 weeks.[7]

The state of Iowa is particularly vulnerable in missing the opportunities to screen and address health needs and health literacy in obstetric patients, as there are increasing rates of delivery unit closures (41 units closed since 2000).[8] Half of Iowa counties are without a hospital or birth center and only 9 counties have 2 or more hospitals or birthing centers (Dubuque, Black Hawk, Johnson, Linn, Polk, Pottawattamie, Scott, Sioux, Woodbury).[9] Counties where the only delivery unit closed between 2000-2018 had higher rates of patients without a prenatal visit in the first trimester and had lower total prenatal visits.[8] Similarly, mothers with lower

education levels in counties where the birthing unit had closed also delayed initiation of prenatal cares and attended fewer total prenatal visits.[8] Screening for social needs at one or all of prenatal visits is the first step to improving health outcomes in obstetric patients in Iowa.

Gaps in Existing Knowledge

This study was an initial investigation into health literacy and other social needs of obstetric patients in Iowa communities. This information, along with patient preferences for solutions, is critical to ongoing development of effective patient-centric interventions and resource support.

Methods

Research Design

This research was approved as consent-exempt by the Institutional Review Board (IRB) at the University of Iowa. WinnMed, Boone County Hospital, North Dodge Clinic, UIHC provider and resident clinics, Free Medical Clinic (FMC), and Broadlawns Medical Center partook in the study. WinnMed and Boone County Hospital were included as part of my CRSIP rural project. North Dodge Clinic, UIHC provider and resident clinics, and Broadlawns Medical Center were included to increase N value in a future research assessment. The FMC was included as part of my service distinction tract.

This study lasted 8 weeks (November-December 2023) at the FMC. Survey distribution occurred on Thursday evenings, as this was the day that obstetric patient visits were scheduled. My research team and I managed distribution, offering hard copy surveys in English, Spanish, Swahili and French (Appendix A) to patients presenting for either a prenatal or postpartum visit. The exempt information document was also made available as a hard copy in the patient's preferred language (Appendix B). By completing and returning the survey, patients have agreed to participate. Each survey was individually numbered to allow response rate calculations. Minors and non-pregnant females were excluded. There was no control group.

Information from invited subjects was only accessible and reviewed by members of my research team. The team and I transcribed the responses and analysed data on a secure UIHC intranet shared research drive. No identifiable information was recorded.

Practical Considerations

No clinic records were accessed, limiting any risks associated with the study. No directly identifiable information was recorded.

The only protected health information obtained on patient surveys was zip code. Zip code was obtained as a necessary component to identify community needs. Given that zip code covers a range of territory, it is unlikely that any individual will be identified from this information alone.

Because this survey is confidential and without patient identifiers, there was a possibility of a survey being completed multiple times by the same subject. This was mitigated by having the patient agree that she had not previously filled out the form in the first question.

Results

Patients at the FMC had a 77.5% response rate (31/40)

Demographics

Table 1: Demographic Summary*

Age	45% - 20-29 19% - 30-34 29% - 35+
Race	65% - Hispanic/Latino 29% - Black/African American 3% - Asian 3% - White
County of residence	71% - Johnson 10% - Muscatine 6% - Washington 3% - Dubuque
Marital Status	77% - Married / life-partner 13% - Single
Insurance	39% - Unknown 32% - Self-pay 6% - Governmental 3% - Commercial
Education	29% - Some or no high school 23% - High school diploma 13% - Some college 3% - Trade, technical, vocational school 16% - College graduate 6% - Advanced degree
Income	39% - < $26K 13% - $26-50K 13% - $50-100K
Internet Access	26% - No reliable access to the internet
Pregnancy status	68% - Pregnant 20% - Postpartum

*Missing percentages represent patients who declined to answer that specific question.

Education

Table 2: BRIEF Questionnaire: Responses per Question

Question	Percent of Responses Below Proficiency
1. How often do you have someone help you read hospital materials?	68%
2. How often do you have problems learning about your medical condition because of difficulty understanding written information?	52%
3. How often do you have a problem understanding what is told to you about your medical condition?	29%
4. How confident are you filling out medical forms by yourself?	68%

Using the BRIEF survey (79% sensitivity), 45% of patients at the FMC were found to have below adequate health literacy (22.6% marginal, 22.6% limited).

Methods of education patients received were communication (35% teach-back, 10% lecture), handouts (19% with images, 6% without images), websites (19%), videos (10%), and lists of local resources (6%). Open-form responses on modalities patients wished they received more of are summarized: more Spanish-speaking providers, more explanation of results and explaining medical terminology.

Lastly, 65% of patients did not always receive patient education in their preferred language.

Other Social Needs

Table 3: Patient Responses on Economic Stability*

Question	Percent Responded
1. How hard is it for you to pay for the very basics like food, housing, medical care, and heating?	19% - Not hard at all 58% - Somewhat hard 6% - Very hard
2. Do you want help finding or keeping work or a job?	45% - I do not need or want help 19% - Yes, help finding a job 6% - Yes, help keeping a job
3. What is your living situation today?	67% - I have a steady place to live 16% - I have a place to live today, but am worried about losing it in the future

*Missing percentages represent patients who declined to answer that specific question.

Table 4: Patient Responses on Health Care*

Question	Percent Responded
1. Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping?	16% - Yes 71% - No
2. During the past 12 months, were you told by a doctor's office or clinic that they did not accept your health care coverage?	13% - Yes 55% - No

*Missing percentages represent patients who declined to answer that specific question.

Table 5: Patient Responses on Neighborhood / Built Environment*

Question	Percent Responded
1. In the past 12 months, has lack of reliable transportation kept you from medical appointments, meetings, work or from getting things needed for daily living?	16% - Yes 68% - No
2. Do you feel unsafe in your daily life	6% - Yes 77%- No

*Missing percentages represent patients who declined to answer that specific question.

Table 5: Patient Responses on Social and Community Context*

Question	Percent Responded
1. If for any reason you need help with day-to-day activities such as bathing, preparing meals, shopping, managing finances, etc., do you get the help you need?	58% - I don't need any help 16% - I get all the help I need 10% - I could use a little more help 3% - I need a lot more help
2. How often does anyone, including family and friends, insult or talk down to you?	68% - Never 10% - Rarely 3% - Sometimes 3% - Fairly often
3. How often does anyone, including family and friends, threaten you with harm?	74% - Never 6% - Rarely 3% - Sometimes

*Missing percentages represent patients who declined to answer that specific question.

Discussion

Conclusion

We had an excellent response rate at the FMC (77.5%). The FMC sees a diverse patient population within Johnson and surrounding counties. Hispanic/Latino and African Americans are the majority of patients seen while Asian and whites are the minority. Only 9% of patients reported they have some sort of insurance. This may correlate with the lower income status (39% with household income < $26,000) and lower education (65% without college degree) seen in these patients.

At the FMC, 45% of patients were found to have inadequate health literacy. The BRIEF questionnaire creators recommend this be mitigated by increasing use of imagery and videos.[11] Patients at FMC report that videos are an underutilized modality (10% respond they are educated this way). Another underutilized tool is providing patients with local resources to address their SoDH.

Patients at FMC face several other social needs: 64% of patients have difficulty paying for the very basics, 25% struggle with job security, 16% are without a steady place to live, and 16% have conditions that limit their ability to do activities of daily living. Similarly, 13% of patients report they could use more help. Most patients felt safe in their daily lives, but it is still worth noting that 9% of these patients have been threatened with harm.

Interventions

The results of this study show that we could improve patient education, specifically utilizing other educational modalities like video. Because of this, I have collaborated with Luther College to create a patient video series to educate patients on common obstetric concerns like establishing care, what to expect at recurrent visits, how to keep mom and baby healthy during pregnancy, where patients can get reliable information about their pregnancy, etc. Specific details on topics and methods of delivery are still being ironed out by participating clinics.

While this study had a focus on health literacy, it also showed that a variety of other social needs are unaddressed, and providing patients with local resources is underutilized in the clinic setting. Because of this, we are implementing resource business cards that providers may quickly give to patients (Image 1 and 2). Patients would simply scan the QR code, or type in www.find211.org on an internet browser to find local resources to mitigate the SoDH they face. The QR codes have a specific data collection to each clinic, so we would be able to track its utility at the different sites.

Image 1: Front

Image 2: Back

Lastly, the information gathered from this study argues that screening for SoDH should be a necessary component of a patient visit. Previous barriers of time and resources may be mitigated by adding these questions to an initial visit questionnaire. By screening for social needs, physicians, health care systems, and community-based resources may better address the determinants patients face to improve care delivery.

This study will lay a basis for further research. By assessing the degree to which obstetric patients in Iowa face SoDH, future studies may investigate correlations to outcomes such as health behavior or pregnancy/delivery complications in Iowa.

Limitations

After 8 weeks of recurrent visits, the FMC patient clinic was saturated- meaning the patients who were presenting had already been offered the survey at a previous visit. Had this study continued, the N value could have been larger, but would likely have followed a logarithmic curve.

This study was not offered in every language. More specifically, the FMC also sees many Arabic patients. If these individuals spoke another language that surveys were translated in, they were offered the chance to participate, but it is likely that some patients were missed because of language barriers, making this study less generalizable.

Reflection

1. Challenges, barriers, lessons learned
- The biggest challenge I faced was the scope of the project. Completing this project at 7 separate sites was a big task and the timeline to get things going always took longer than expected. I felt that I was ALWAYS busy with my research in my free time. Nearing the end of my project, and finishing up distribution at urban centers, I have learned to delegate by adding on another research partner. This has allowed me support and a chance for a lighter workload.

2. How have you become more self aware, what adjustments have you had to make to yourself image or self concept as a result of new knowledge?
- I have become more aware of the language that I use and consciously work towards educating patients with easily understood vocabulary. This project has also made me realize how we as providers underuse the ability to educate our patients on local resources.

3. How has this project/your work in SDT influenced your beliefs as a physician?
- As a physician, I know that health is influenced by things that occur outside of the hospital. Though we can't prescribe medication to address SoDH, we can use our education and skillset to help patients in this area too, and I believe it is our duty to do so.

4. How will you apply what you've learned to working with your future patients?
- A quick SoDH screen will allow me to see what barriers my patients face and help me make an appropriate treatment plan based on this. Further, I will continue to work to educate my patients using materials in a patient's preferred language, and utilize all educational modalities (video, handouts, resources, communication) to help my patients learn about their health.

5. What have you learned about multiculturalism, diversity, oppression, marginalization and how they interact with healthcare access and personal health?
- The free clinic serves a diverse group of people, many of whom are already without crucial resources needed for their health. Further, the quality of care they are receiving is lowered (lack of resources, language disparities, cultural differences). I believe this provides some apprehension or even distrust of the medical system. Because of this, patients seemed less likely to present early to establish prenatal care or return for all their subsequent visits. This is just conjecture, as these were not statistics I measured in my study. But this does reinforce that as a future provider, I should work to minimize healthcare disparities and develop trusting relationships with patients.

6. What are your future plans? How do you plan to include service work, advocacy, and creating cultural changes to your future work? What effect do you expect it to have on you personally and professionally?
- I plan on working as a family physician in the rural/underserved Midwest. I plan to continue to volunteer in my future community to mitigate healthcare barriers to those who are otherwise less likely to receive care. I find it personally fulfilling knowing I am doing everything I can to help others, but professionally, I think it allows me to be a leader in my community. Professionally, I can broaden my scope of practice by caring for a more diverse population.

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