SUPPORTING PATIENT-PROVIDER COMMUNICATION AT A COMMUNITY MOBILE CLINIC USING THE *ASK ME THREE* © BROCHURE

by

Jessica Parcher

A project brief submitted to the Faculty of the University of Delaware in partial fulfillment as a requirement to earn the degree of Doctor of Nursing Practice

Spring 2024

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ACKNOWLEDGMENTS

I would like to thank Dr. Susan Conaty-Buck for her time, her dedication, and her persistence in guiding, and at times dragging me through the steps to complete this project. Thank you as well to Dr. Laurie Ruggiero who put in the time and effort to ensure my brief accurately reflected the community members this project served, and for teaching me the importance of inclusivity in healthcare language.

Thank you to Heather Milea and the H.E.A.L.T.H for All team for educating me on the intricacies of addressing community patient needs and allowing me the space to implement my project. The work that H.E.A.L.T.H for All does is extremely impactful, and I am glad to have been influenced by it.

Finally, thank you to my friends and family. You have been supportive and understanding as I have completed this project and my degree. Whenever I had doubts you helped me see the light at the end of the tunnel and I could not be more appreciative.

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ABSTRACT

Background: Limited health literacy (LHL) is linked to individuals facing significant social and economic disparities exacerbated by deficiencies in social determinants of health (SDOH) (i.e. limited income and education), resulting in challenges in communication with healthcare providers (National Academies of Sciences, Engineering, and Medicine, 2021; Perez-Stable & El-Toukhy, 2018; Schillinger, 2021; Stormacq et al., 2018). LHL may manifest as reduced question-asking behavior during medical encounters, which is associated with decreased engagement, less information acquisition, and lower satisfaction with communication, ultimately hindering personal health management (Barton et al., 2020; Brach, 2024; Lord et al., 2021; Perez-stable & El-Toukhy, 2018; Rudd, 2022; Schillinger, 2021; Stormacq et al., 2018; Swiatoniowska-Lonc et al., 2020; Tracy et al., 2022; Winiger et al., 2018). This project aimed to enhance participant communication with the provider by introducing the *Ask Me Three* © (*AM3*) brochure developed by the Institute for Healthcare Improvement (IHI) (2007).

Methods: This quality improvement project was launched following Institutional Review Board (IRB) approval and implemented over a three-month period. Participants were recruited for voluntary inclusion from the H.E.A.L.T.H for All ® (H4A) community mobile program. Volunteers utilized the *AM3* © brochure and completed three surveys: a Demographics Questionnaire, the *All Aspects of Health Literacy Scale* © (*AAHLS*), and the *Ask Me Three* © Satisfaction Questionnaire. The project evaluated the impact of the

AM3 © brochure in enhancing participants' communication behaviors, information acquisition, and perception of partnership in healthcare encounters.

Results/Findings: Thirty-eight individuals from six community sites participated in the project. Participants were primarily 51-65 years old, of Black or African American and White race, and had varying levels of education and income. The mean aggregate *AAHLS* © score (M=17.7; Range 7- lower health literacy skills to 21- higher health literacy skills) demonstrated that the population had adequate health literacy (HL) skills suggesting that participants did not exhibit the expected LHL associated with lower income and educational attainment as suggested by research. All participants who used the *AM3* © brochure reported an enhanced sense of partnership with their provider, and 89% reported increased acquisition of health-related information. The use of the tool to pose three questions suggests improved communicative behavior.

Conclusion: One accessible tool, the *AM3* © brochure, may aid providers in improving patient communication by assisting patients to frame the conversation and summarize key discussion points to identify and understand the importance of their health concerns and determine actionable steps. Improved clarity on these aspects equips patients to better address their specific health needs.

Keywords: Health literacy, *Ask Me Three* ©, Mobile clinic, Patient-provider communication.

Chapter 1

INTRODUCTION

The Agency for Healthcare Research and Quality (AHRQ) defines health literacy (HL) as the "ability to find, process, and comprehend basic health information" that is the cornerstone to acting on and making decisions about one's health (Brach, 2024). HL is affected by social determinants of health (SDOH) such as limited income, educational attainment, and racial and ethnic minorities (Dihn et al., 2018). By HL's definition, limited health literacy (LHL) occurs when individuals have a degree of difficulty interacting with the health system due to their difficulty in finding, processing, and comprehending basic health information. LHL contributes to health inequities faced by individuals who fall into the health disparity gap (those with less access to social and economic resources) as it creates a barrier to effective interaction with the health system (Perez-Stable & El-Toukhy, 2018; Schillinger, 2021; Stormacq et al., 2018). This leads to higher disease burden, increased mortality and morbidity, and higher health system costs (Coughlin et al., 2020; Rudd, 2022).

Improving or strengthening HL provides a window of opportunity for individuals facing social and economic challenges to effectively interact with the health system, particularly during the patient and provider healthcare encounter. The aim of this quality improvement project is to improve patient-provider communication at a community mobile health program that offers screening events and primary care services to

individuals with reduced access to resources and a higher risk of poor health related outcomes. The project seeks to validate the concept that a structured question asking tool, the *Ask Me Three* © (*AM3*) brochure licensed by the Institute for Health Improvement in 2007, enhances communication between the patient and provider, resulting in improved information sharing and patient sense of partnership.

1.1 Problem Description

Interpersonal communication between providers and patients is frequently disrupted by LHL. LHL results in difficulties understanding health instructions from the provider and affects how the patient engages with the provider to obtain or clarify health information (Coughlin et al., 2020; Eggly et al., 2011; Menendez et al., 2011; Perez-Stable & El-Toukhy, 2018). Patients with inadequate HL skills have greater difficulty managing their health, which potentially influences the false perception that providers have a more authoritative role during the health-care encounter. There are several frameworks and toolkits available for organizations working to implement practices and policies to support improved HL (Brach, 2024; U.S. Office of Disease Prevention and Health Promotion [ODPHP], 2010). While these resources strongly encourage the use of practices that support HL, not all organizations have the awareness or capacity to make HL an objective for improvement. This may result in decreased knowledge of LHL effects on short-and-long term outcomes, thus reducing adoption of HL best practices.

A common theme amongst individuals with LHL is not asking the provider questions (Aboumater et al., 2012; Borge et al., 2021; Kim et al., 2020; Meijers et al., 2020; Menendez et al., 2011). Asking questions is a valuable intercommunication skill as

it engages the patient in their care, offers structure to the conversation, and fills information gaps (Barton et al., 2020; Lord et al., 2021; Perez-stable & El-Toukhy, 2018; Swiatoniowska-Lonc et al., 2020; Tracy et al., 2022; Winiger et al., 2018). Asking questions may encourage the patient to be a partner in their care, leading to an equal patient-provider interaction. Evidence demonstrates tools promoting question-asking during the patient-provider interaction increase communication effectiveness leading to changes in behavior that contribute to improved health outcomes and reduced health disparity (Barton et al., 2020; Lord et al., 2021; Perez-stable & El-Toukhy, 2018; Schillinger, 2021; Stormacq et al., 2018; Swiatoniowska-Lonc et al., 2020; Tracy et al., 2022; Winiger et al., 2018). Question-asking behavior has been associated with greater patient and provider satisfaction, increased comfort with asking providers questions, greater information acquisition, and improved decision-making capacity (Barton et al., 2020; Keinki et al., 2021; Kim et al., 2020; Li et al., 2017; Lord et al., 2021; Michalopoulou et al., 2010; Ousseine et al., 2018; Tracy et al., 2022).

1.2 Background

1.2.1 Social Determinants of Health

Health literacy strongly correlates with social determinants of health (SDOH) which are defined as " the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks" (Office of Disease Prevention and Health Promotion [ODPHP], n.d.a; National Academies of Sciences, Engineering, and Medicine, 2021; Perez-Stable & El- Toukhy, 2018; Schillinger, 2021; Stormacq et al., 2018). The primary

domains of SDOH include interpersonal and community relationships, access to and quality of healthcare and education, the safety and resources of an individual's environment, and employment and poverty. These domains are the factors that set the stage for positive or negative health outcomes (National Academies of Sciences, Engineering, and Medicine, 2021). For example, communities with limited access to resources such as books, a good school system, and nearby libraries play a role in how an individual's HL develops (Rudd, 2022). In turn, HL creates a cyclic effect in improving social and economic standing through its influence on school progression, high school completion, job opportunities, and income. Individuals affected by social determinant factors of income and education have worse health related outcomes, including increased mortality and morbidity, decreased life expectancy, greater disease burden, and higher health system costs (National Academies of Sciences, Engineering, and Medicine, 2021; Perez-Stable & El- Toukhy, 2018; Schillinger, 2021; Stormacq et al., 2018). A 2018 analysis of the cost burden of health disparity relating to lower educational attainment and racial and ethnic minorities exemplifies the impact of SDOH on health (LaVeist et al., 2023) with aggregate medical costs in these groups amounting to over $220 billion (LaVeist et al., 2023).

1.2.2 Health Literacy

Assessing an individual's degree of HL has often been performed through measures of literacy (the ability to read and write) and numeracy (the understanding of basic numbers and computations) (Centers for Disease Control and Prevention [CDC], 2022). Table 1 and Table 2 depict the *Program for the International Assessment of Adult*

Competencies [PIAAC] (2018) literacy and numeracy statistics at a county, state, and national level. Based on the PIAAC data, which was collected from 2011-2018 and augmented with 2013-2017 American Community Survey data on individuals 15-65 years of age in 40 different countries (including the United States), 20% of Delawareans had difficulties understanding and comprehending material, and 31% struggle with numeracy (Program for the International Assessment of Adult Competencies [PIAAC], 2018).

Table 1

Literacy and Numeracy Levels in U.S. and Delaware (2011-2018)

	Literacy		**Numeracy**	
	National	Delaware	National	Delaware
Level 1[a] (<226 points)	22%	20%	32%	31%
Level 2[b] (226-275 points)	32%	35%	32%	35%
Level 3[c] (>/=276 points)	46%	45%	36%	33%

Note. [a] Risk of difficulties understanding or comprehending print and numerical material; individuals can perform more simple tasks
[b] Nearly proficient but struggle with text-based information and numeracy tasks; may perform two-three step tasks
[c] Proficient working with information (including numerical) and ideas in text; individuals can understand, interpret, and synthesize information and evaluate reliability of resources

Data obtained from the PIAAC. (2018). *U.S. skills map: State and county indicators of adult literacy and numeracy.* National Center for Education Statistics. https://nces.ed.gov/surveys/piaac/skillsmap/

Table 2

Literacy and Numeracy Level by Delaware Counties (2011-2018)

County	HL level	Literacy	Numeracy
New Castle			
	Level 1_a	19%	30%
	Level 2_b	34%	35%
	Level 3_c	47%	35%
Kent			
	Level 1	22%	34%
	Level 2	37%	36%
	Level 3	41%	30%
Sussex			
	Level 1	21%	32%
	Level 2	37%	37%
	Level 3	42%	31%

Note. [a] Risk of difficulties understanding or comprehending print and numerical material; individuals can perform more simple tasks
[b] Nearly proficient but struggle with text-based information and numeracy tasks; may perform two-three step tasks
[c] Proficient working with information (including numerical) and ideas in text; individuals can understand, interpret, and synthesize information and evaluate reliability of resources
Data obtained from the PIAAC. (2018). *U.S. skills map: State and county indicators of adult literacy and numeracy.* National Center for Education Statistics. https://nces.ed.gov/surveys/piaac/skillsmap/

The most recent data from the University of North Carolina at Chapel Hill (UNC) (2014) provides a predictive model of estimated HL and numeracy skill average using national census blocks based on the U.S. Census and 2011 five-year American Community Survey files. The data map of Delaware demonstrates areas with disproportionate levels of inadequate HL skills compared to surrounding towns with different socioeconomic characteristics (see Appendix A). For instance, although New Castle County literacy levels are higher than neighboring counties there are areas of LHL consolidation. In Wilmington, there are upwards of 58% of people with a basic or below basic HL level, far exceeding its neighboring town of Hockessin (23% of the population has basic or below basic HL) which has a higher socioeconomic profile (University of NC [UNC], 2014; United States Census Bureau, 2024). This, in part, may be due to a higher presence of individuals of minority, lower income levels, higher poverty rates, less educational attainment, and individuals with a primary language other than English in Wilmington (see Table 3) (PIAAC, 2022; United States Census Bureau, 2024).

Table 3

Wilmington vs. Hockessin Demographics (2020-2022)

	Wilmington, DE	Hockessin, DE
Population	70,898	13,478
Employment	62.1%	58.7%
Total Households	32,239	4,937
Race/Ethnicity-Hispanic or Latina/o	9,429	555
Bachelor's Degree or Higher	35.2%	69%
Lack Healthcare Coverage	4.5%	2.6%
Speak a Language other than English	N/A	11.1%
Foreign Born	8%	8.6%
Poverty	22.2%	1.9%
Median Income	$52,768	$164,848

Note. Data obtained from the United States Census Bureau. (2024). *Wilmington City, Delaware*. https://data.census.gov/profile/Wilmington_city,_Delaware?g=160XX00US1077580 and United States Census Bureau. (2024). *Hockessin, Delaware*. https://data.census.gov/profile/Hockessin_CDP,_Delaware?g=160XX00US1035850

1.3 Significance

Research providing insight into LHL's effect on health outcomes are studies evaluating individuals with chronic illnesses. Numerous studies demonstrate the correlation between LHL and higher incidence of multimorbidity, decreased use of preventative services, decreased ability to manage health conditions, higher incidence of poor disease outcomes, and decreased healthy behaviors (i.e., smoking, following dietary and fluid restrictions, medication adherence, etc.) (Amaral et al., 2020; Marciano et al., 2019; Shah et al., 2020). When superimposed on reduced access to resources, the effects of LHL are even more profound (Magnani et al., 2018). Poor medical-related outcomes lead to a higher burden of care, increase all-cause mortality, increase disability, decrease quality of life, and higher health system costs (Amaral et al., 2020; Magnani et al., 2018; Marciano et al, 2019; Shah et al., 2020). In one cost impact analysis of HL, there was an estimated range of $106-$238 billion annual economic burden related to the consequences of LHL (i.e., hospitalizations and emergency room trips). This was, however, based upon the 2003 National Assessment of Adult Literacy (NAAL) which has not been updated (Vernon et al., 2007) and no comparable data was identified.

1.3.1 Health Literacy and Asking Questions

One consequence of LHL is ineffective communication with healthcare providers due to inadequate skills in obtaining, comprehending, and utilizing health information. Indicated as an area of improvement by Healthy People 2030 and the AHRQ (2024), ineffective communication related to LHL may impact individuals of racial and ethnic minorities, individuals with less educational attainment, and individuals with limited

English proficiency (Dihn et al., 2020; Perez-Stable & El-Toukhy, 2018; Schillinger, 2021). Patients with LHL may feel a sense of shame and fear that their inability to understand health-related discussions will be discovered (Brach, 2024; Eggly et al., 2011; Menendez et al., 2011; Perez-Stable & El-Toukhy, 2018). If shame and fear are coupled with a sense of deference to provider authority, the patient may have difficulty interacting with the provider and risk becoming a bystander in their health-related decisions (Eggly et al., 2011; Menendez et al., 2011; Perez-Stable & El-Toukhy, 2018). Common provider related contributors to ineffective communication include gaps in training on communication skills, HL, cultural competency, and implicit biases. Implicit biases have been linked to reduced information acquisition in individuals who are members of racial and ethnic minorities (National Academies of Sciences, Engineering, and Medicine, 2021; Perez-Stable & El-Toukhy, 2018).

One form of communication affected in those with LHL is reduced question-asking behavior. Reduction in patients asking questions has remained a challenge with multiple studies demonstrating a quantitative difference in the number of questions asked and the type of questions asked during a healthcare encounter (Aboumatar et al., 2012; Meijers et al., 2020; Menendez et al., 2016). Qualitative research has demonstrated patient specific themes in difficulty knowing what questions to ask, feeling there is no time to ask questions, and fearing the provider would misconstrue questions as criticism (Borge et al., 2021; Toibin et al., 2017). Research demonstrates providers, due to multiple factors, have had difficulty in encouraging questions during the patient visit; this difficulty contributes to patients' sense that there is no opportunity to ask the provider

questions and obtain the information they want to know for their health (Borge et al., 2021; Menendez et al., 2011; Perez-Stable & El-Toukhy. 2018; Reid et al., 2022; Swiatoniowska-Lonc et al., 2020).

1.4 Problem Statement

Reduced question-asking behavior correlates with decreased participation (making the patient an unequal partner within the patient-provider relationship), decreased information acquisition, reduced quality of life measures, and diminished satisfaction with communication (Katz et al., 2006; Keinki et al., 2021; Kim et al., 2020; Li et al., 2017; Ousseine et al., 2018). These factors impact health as patients may find it more difficult to manage their health needs, leading to higher disease burden and higher health system costs (Perez-stable & El-Toukhy, 2018; Rudd, 2022; Schillinger, 2021; Stormacq et al., 2018).

1.5 PICOT Practice Question

(P) In individuals aged 18 years and older presenting for primary care or health screening services from a mobile clinic offered to individuals in medically underserved communities (I) will use of the Ask Me Three © communication tool (O) improve patient-provider interaction and satisfaction with health communication (T) within a 3-month period.

Chapter 2

REVIEW OF THE LITERATURE

Chapter Two is a literature review, which is a systematic process using reliable databases and a predetermined search strategy to answer the PICOT question (Moran, 2020). This review defines the scope of a problem, determines the presence of a literature gap through analysis of research on what is known or not known about the problem, and identifies evidenced-based solutions. A systematic search of literature is important as it "supports the value and/or the need to study the phenomenon of interest" (Moran, 2020). The following details the search strategy and evidence outcomes. The evidence was analyzed to identify common themes to illustrate the significance of SDOH factors of limited income, educational attainment, and racial and ethnic minority; LHL, and communication on health outcomes, as well as search for potential solutions to address the problem in clinical practice.

2.1 Search

The search began as a general inquiry into the dynamic concepts of HL using known national resources. Grey literature, defined as resources disseminated independently of commercial publications (Paez, 2017), relating to health literacy were examined and themes and keywords obtained for further exploration. The six reliable resources appraised included the United States Health and Social Services (HSS) (Healthy People 2030), the Agency for Healthcare Research and Quality (AHRQ), the

National Academy of Medicine (NAM), the Institute for Healthcare Improvement (IHI), and National Academy of Science (NAS), and the Centers for Disease Control and Prevention (CDC).

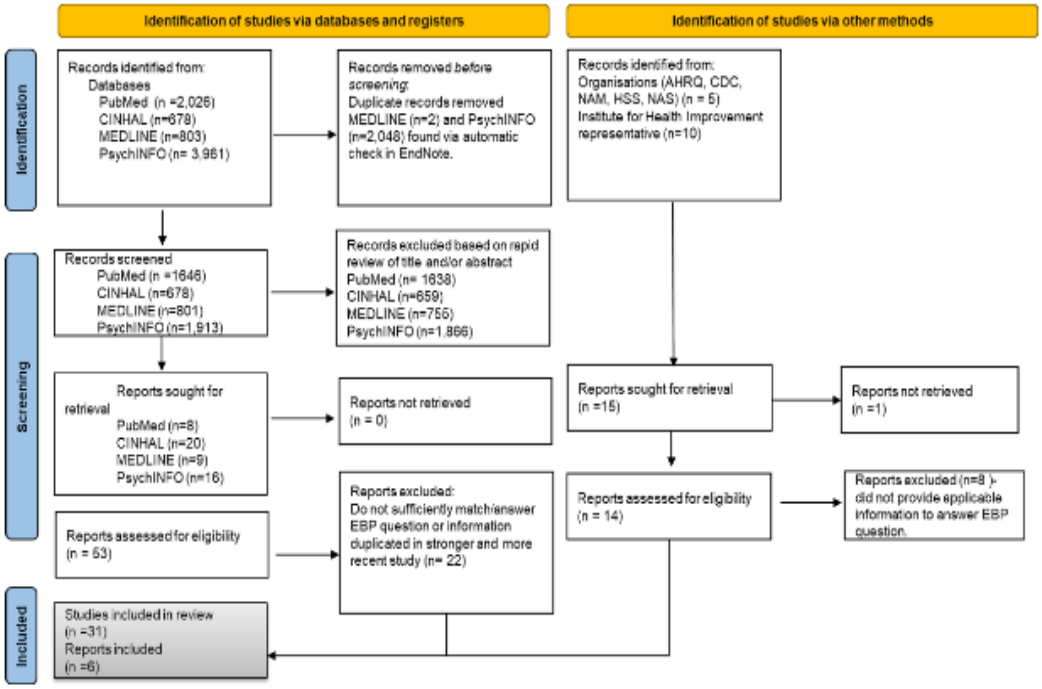
A broad and narrow search of PubMed, CINAHL, PsychINFO, and MEDLINE was initiated to delve into the core components of HL, determine the correlation between social determinants of health, health disparity, and HL; determine HL influence on health outcomes, and determine how an HL intervention (in this case encouraging questions) may make the patient-provider interaction more effective. Keywords used in the search were health literacy, provider-patient communication, socioeconomic status, social determinants of health, information acquisition, patient satisfaction, asking questions, question-asking behavior, and health outcomes. Inclusion criteria included adults 18 years and older. Exclusion criteria included children less than 18 years of age, and research on patients receiving palliative or hospice services. A broad year restriction was applied (2000-2023) due to varying amounts of search results.

The PRISMA flow chart (Figure 1) depicts search results and article selection. From all sources a total of 5,644 articles were discovered. EndNote was used to discard 2,030 duplicates. A total of 4,918 articles were discarded via rapid review of title and abstract and 53 articles were selected as potential sources. Of these, 22 articles were discarded due to duplicate information or not sufficiently answering the PICOT question. A total of 15 reports were obtained from government agencies stated earlier; one report was not attainable, and eight reports were discarded for inapplicability. A total of 31 articles and six reports have been included in the review.

Evidence was appraised using the Johns Hopkins Evidence-Based Practice Appraisal Model (Dang & Dearholt, 2018). A summary of the appraised literature, including evidence strength and quality, is included in Appendix B.

Figure 1

PRISMA Flow Chart



Note. Adopted from Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* (Online), *372*, n71–n71. https://doi.org/10.1136/bmj.n71

2.2 Results of the Search and Synthesis

This review and synthesis of evidence defines HL as a concept to support behavioral change and link HL to communication with healthcare providers through information sharing, patient satisfaction, and asking more questions during a healthcare encounter.

Reports from healthcare related agencies (AHRQ, CDC, HSS, NAM) accessed through a search engine, define HL as a construct that enables an individual to successfully interact with a health system equitably. Multiple articles have linked deficiencies in SDOH (e.g. low income and low educational attainment), resource inequities, and the disparity gap with LHL leading to poor health outcomes (Perez-Stable & El-Toukhy, 2018; Schillinger, 2021; Stormacq et al., 2018). LHL strongly correlates with lower educational attainment, race and ethnicity, lower English proficiency, age greater than 65, and lower income (Borge et al., 2021; Dihn et al., 2020; Schillinger et al., 2021). In cross-sectional analysis, Eggly et al. (2011) discovered that patients who were Black asked fewer questions than patients who were White ($p= 0.008$; $M_{Black}= 7.83$, $SD= 7.81$; $M_{White}= 11.56$, $SD= 9.23$). A later study by Menendez et al. (2016) supported these findings when evaluating question-asking behavior in a surgeon's office, finding patients who were a not White asked fewer questions than patients who were White (5+/-4 vs. 9 +/-7; mean difference -4; 95% CI, -7 to 0; $p= 0.032$). Researchers from both studies suggested the difference between numbers of questions asked may partially be due to social disempowerment, a greater mistrust in the healthcare system and providers, and avoidance of asserting power, thus disrupting the traditional authoritative patient-provider

interaction (Eggly et al., 2011; Menendez et al., 2016). Individuals with LHL in these populations may have greater difficulty managing health needs, understanding health information, navigating the health system, and communicating with providers (Perez-Stable & El-Toukhy, 2018; Schillinger, 2021).

Examining research of patients with chronic disease provides the best perspective on health impacts associated with LHL. In a cross-sectional analysis, Amaral et al. (2022) demonstrated a positive correlation between LHL with multimorbidity as demonstrated by an odds ratio (OR) increase from 1.71 (1.25-2.33) for two comorbidities to an OR of 2.71 (2-3.68) for four comorbidities. The hypothesized reasons for this association included lower levels of self- management and health behaviors and decreased access to care (Amaral et al., 2022). Magnani et al. (2019) demonstrated positive correlation between LHL and poor outcomes in hypertension, diabetes, obesity, coronary artery disease, tobacco use, congestive heart failure, and stroke. In a scoping review, Shah et al. (2021) determined patients with chronic kidney disease with higher levels of HL had a higher degree of disease knowledge. Additionally, higher HL was associated with medication adherence, diet and fluid adherence, and better overall self-management. Marciano et al. (2019) evaluated patients' HL and the direct effect on diabetes outcomes in a meta-analysis and concluded patients with higher HL had better diabetes knowledge (n=20, r= 0.308, $p < 0.001$), as well as lower glycosylated hemoglobin levels (n= 36, r= -0.048, p= 0.027). These studies establish the association HL has on the outcomes related to chronic illness. As part of HL is the ability to understand and use information in the context of health, LHL may reduce the ability to understand health education, apply

health information, and communicate health needs. Limited abilities in these areas may result in a reduction of preventative services used, self-efficacy, engagement, autonomy, and shared decision-making, which impacts health outcomes. In an integrative review, Perez-Stable et al. (2018) and Stormacq et al. (2018) demonstrated how improved HL positively affected quality of life, health behaviors, and use of preventative services; the researchers found that these improvements helped to mediate the effects of certain social determinants of health, including race and ethnicity, income, and education. Improved communication from HL interventions has demonstrated an increase in participation, empowerment, and decision- making leading to improved quality of care and disease self-efficacy (Magnani et al., 2019).

2.2.1 Question-Asking Behavior

Literature demonstrating the correlation between LHL and patient question-asking behavior is consistent. In 2012, Aboumatar et al. demonstrated individuals with LHL asked fewer medical questions (95% CI; 4.46; 3.37-5.89, p= 0.02); then, researchers Menendez et al. (2016) demonstrated similar results revealing patients with LHL continued to ask fewer questions (5+/-4 vs 9+/-7; mean difference, -4; 95% CI, -7 to -1; p= 0.002). Questions asked by patients with LHL were more practical in nature (i.e., "where can I go to get labs?"), and less about complex medical care issues and therapeutic regimen (Menendez et al., 2016). These results were partially duplicated in other studies, including an observational study that collected data on the number and quality of questions patients asked their provider (Meijers et al., 2020). Data was collected between two periods of time, 2007-2008 (n=533 consultations) and 2015-2016

(n=437 consultations); after comparison, researchers found that fewer questions were asked in the 2015-2016 data compared to the 2007-2008 data, and the questions that were asked were more practical than medical in nature (2007-2008, n= 654 questions asked, M= 3.8; 2015-2016, n= 475 questions asked, M= 2.8; coef. -0.46; SD 0.10; 95% CI-0.66-0.20, p= 0.00) (Meijers et al, 2020). These studies demonstrate that reduced question-asking behavior has remained a persistent issue and represents the potential difficulties individuals have when communicating with providers, including knowing how to formulate questions for the more complex aspects of their health.

Researchers have reported patients with LHL had lower levels of participation as well as reduced question-asking behavior (n= 57, median= 7 vs 10, p= 0.70) (Katz et al., 2006). Low participation levels may account for the reduction in question-asking behavior; however, those with LHL tended to be less participatory in their medical encounters due to feelings of shame, deference to the authority of the provider, or limited capacity to manage disease modifying behaviors. Katz et al. (2006) demonstrated patients with lower HL required greater repetition of instructions to gain comprehension (p= 0.13). Ousseine et al. (2018) data demonstrated patients' perceived difficulties with asking questions associated with HL level and how this contributed to difficulties with shared decision-making (OR 6.28; 95% CI; $p < 0.001$). These results suggest individuals with greater HL skills better understand health information and formulate questions based on their health needs and experiences.

Providers play an important role in a patient's question-asking behavior. The AHRQ recommends providers encourage questions during medical encounters, but this

does not always occur (Brach, 2024). Research by Menendez et al. (2016) and Reid et al. (2022) demonstrated that providers had low rates of encouraging questions. Menendez et al. (2016) demonstrated only 29% of hand surgeons encouraged questions, and Reid et al. (2022) found only 14 of 161 (0.07%) cardiologists asked if their patients had questions. Yet another study evaluating communication found patients (n= 250) did not feel providers encouraged them to ask questions 28.4% of the time (Swiatoniowska-Lonc et al., 2020). Barton et al. (2020) found even with use of a question prompt tool, oncology providers did not change the amount of information given to a patient, leaving an average of 50% of patients desired questions unaddressed. There may be a variety of factors that influence provider information exchange, including time available to spend with the patient; Barton et al. (2020) highlighted how providers with limited time may standardize the information they give based upon what they believe is important to the patient, but not always what the patient wants to know.

2.2.2 Benefits of Question Prompt Tools

Question prompt tools are resources providing either a broad list of medical related questions a patient may choose to ask during their healthcare visit or provide specific questions in a more structured format. There is a variety of research evaluating the effect of question prompt tools on communication through outcomes related to question-asking behavior, information exchange and acquisition, and patient satisfaction. Question prompt tools have been created by different organizations to meet specific health related needs. In a systematic review of 199 articles researchers found some evidence that question prompt tools (specific tools not detailed) resulted in increased

question-asking behavior and a greater amount of information sharing from providers in the intervention groups (Sansoni et al., 2015). Sansoni et al. (2015) also found that question prompt lists increased patient satisfaction; these results were variable and influenced by the provider-patient relationship and provider endorsement of the tool. Another systematic review of 10 randomized controlled trials (RCTs) revealed a variety of findings of different significance. First, question prompt lists increased the number of questions patients asked related to diagnosis, test, and procedures. This aligns with earlier findings that patients (who do not have a question prompt tool), ask fewer medical questions. Some RCT studies agreed that question tools increased question-asking behavior as well as patient satisfaction (Keinki et al., 2021). Additionally, the researchers found some support that less participatory patients may find benefit in question prompt tools as they help to formulate questions (Keinki et al., 2021).

A quasi-experimental study evaluated a question prompt tool specific to patients with cancer; the researchers discovered question prompt tools were best delivered with provider endorsement (Amundsen et al., 2018). When providers addressed use of the question prompt tool early in the visit, questions from the intervention group were higher ($M= 35$, $SD= 25$ intervention group; $M= 19$, $SD= 12$ control group; $t= 2.8$, $p= 0.08$) compared to the control group (Amundsen et al., 2018). Amundsen et al. (2018) also determined the tool did increase the number of questions patients asked (primarily relating to prognosis and treatment), however the results were not significant ($M= 23$, $SD= 17$ intervention group; $M= 17$, $SD= 15$ control group; $t= -1.84$, $p= 0.70$). In another study, researchers used questions from the AskShareKnow (ASK) tool as an intervention

(Shepherd et al., 2011). Study results determined the tool enabled greater information acquisition resulting in higher shared decision-making scores (using the OPTION tool) (36 vs 25, p= 0.001, difference 11.5; 95% CI 5.1-17.8), as well as improved communication about evidence scores (21.4 vs 16.6, $p < 0.001$, difference 4.7; 95% CI 2.3-7) (Shepherd et al., 2011).

Using a pretest-posttest method, Kim at al. (2020) found that patient perception of communication and information acquisition were higher with use of a question prompt tool, and patients felt like active participants in the interaction. Similarly, Tracy et al. (2022) performed a longitudinal qualitative study examining the Question Builder App and ASK tool in participants 18 and older (n= 31); the results demonstrated that patients felt more empowered with use of a question prompt tool and perceived the tool to be helpful in prioritizing health-related questions.

Kim et al. (2020) discovered that using a question tool increased quality of life measures; supporting this finding is another study evaluating the relationship between communication and African American patients' quality of life (Li et al. 2017). Li et al. (2017) demonstrated the correlation between quality-of-life scores and information needs with comfort asking questions. Data suggested that individuals who felt more comfortable asking the provider questions reported less issues with getting the information they needed and reported higher quality of life scores. Conversely, if patients faced more communication barriers and their information needs were not fully met, they reported lower quality of life scores (Li et al., 2020).

2.2.2.1 Ask Me Three © Brochure

The *AM3* © brochure has been utilized in a variety of settings to increase the number of questions asked during an appointment, frame, or structure the patient-provider conversation, and increase patient satisfaction. Michalopoulou et al. (2010) performed a study using the *AM3* © brochure demonstrating its use increased visit satisfaction and a vast majority (91%-97%) of patients found the brochure helpful in increasing the information they received from the provider. Similar results were found in a more recent study where patients reported that use of the *AM3* © brochure during their physiotherapy appointment increased their empowerment to ask questions and decreased their fear of asking questions (Toibin et al., 2017). In 2015, Lapiz-Bluhm et al. utilized the *AM3* © tool at an ethnic festival during free health screenings. They found most patients were unaware of the tool before it was presented to them at the festival, and 97% of 280 participants reported they would be comfortable with using the tool during a future healthcare appointment. During a follow-up interview three months later 39.13% of participants had seen their healthcare provider, and 100% had used the *AM3* © tool. Those participants reported the tool helped "structure communication with the provider, made it easier to ask questions, and reminded them what questions to ask" (Lapiz-Bluh et al., 2015).

Two articles provided by an IHI representative provided information on utilization of the *AM3* © in a pilot program. The largest pilot occurred at Wisconsin's Community Health Centers (WCHC). These centers implemented *AM3* © with the goals of increasing patient engagement, increasing patient satisfaction, and improving patient-

provider communication. The results of the study were not as expected. The pilot found the *AM3* © brochure did not play a significant role in increasing satisfaction, but when the *AM3* © brochure was provided with education and guidance patient activation increased (pre-test mean=61.5, post-test mean=65.4, $p<0.5$) (Wisconsin Collaborative for Healthcare Quality [WCHQ], 2010). Winiger et al. (2021) used the *AM3* © brochure to create an education video for status-post myocardial infarction patients to watch prior to discharge. Pre-and-post test results demonstrated the use of this educational design was effective in increasing information retention (control pre-and-post difference 0.17; intervention pre-and-post difference 1.5) (Winiger et al., 2021).

2.3 Purpose Statement

The purpose of this practice change project is to improve patient-provider communication in communities affected by factors such as limited income and lower educational attainment, which contributes to LHL. Enhancing communication between providers and patients with LHL is theorized to improve care management leading to better health outcomes with increased patient satisfaction, decreased disease burden, and reduced health related costs.

2.4 Project Recommendation

Evidence demonstrates a correlation between reduced question-asking behavior and LHL leading to difficulties in communication during a healthcare encounter (Katz et al., 2006; Meijers et al., 2020; Menendez et al., 2011; Ousseine et al., 2018). Question prompt tools support an increase in positive communication outcomes and question-asking behavior in individuals with LHL by providing structure to the conversation and

promoting questions without fear of disrupting the patient-provider interaction (Lapiz-Bluh et al., 2015; Toibin et al., 2017).

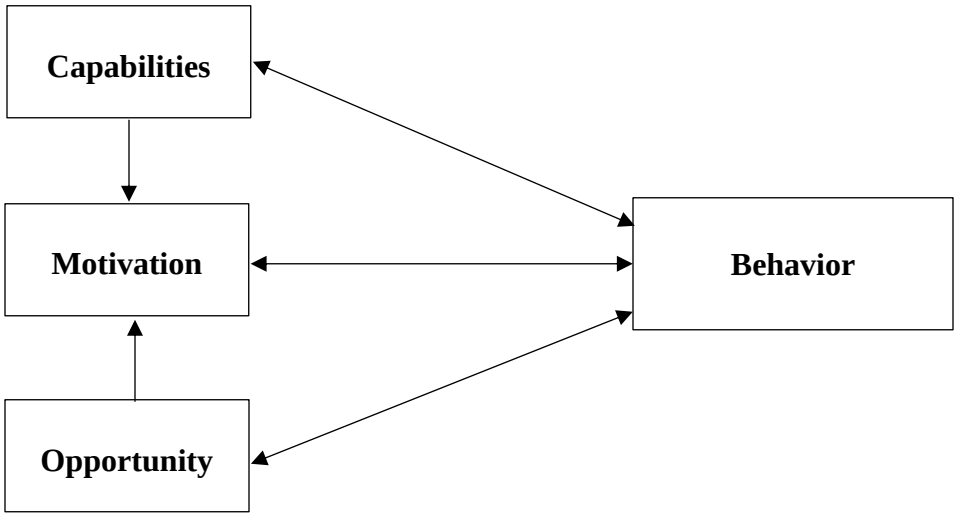
The primary aim of this project is to improve communication between participants and the provider at a mobile unit serving medically underserved communities in Wilmington, Delaware (DE). The *AM3* © brochure is a research-supported, structured question prompt tool that is low-cost and easily implemented (IHI, 2007). Subjective data obtained will measure the success of the following objectives when using the *AM3* © brochure: (a) participants will report greater perception of knowledge acquisition; (b) participants will report an increased sense of partnership with the provider; and (c) participants will increase communicative behavior.

2.5 Theoretical Framework

The Capabilities, Opportunity, Motivation, Behavior (COM-B) Change Model (Figure 2) is distinctly beneficial in guiding this project as it identifies three core requirements (the capability, the opportunity, and the motivation of a patient) of behavior change and identifies factors that facilitate or inhibit behavior change (Michie & West, 2020). Addressing more than one of these core components is recommended to achieve optimal behavior change (Jackson et al., 2014; Michie & West, 2020).

Figure 2

The Capabilities, Opportunity, Motivation, Behavior (COM-B) Change Model



Note. Figure recreated from Michie, S., van Stralen, M. M., & West, R. (2011). The behavior change wheel: A new method for. characterizing and designing behavior change interventions. *Implementation Science: IS*, *6*(1), 41-42. https://doi.org/10.1186/1748-5908-6-42

The first factor, Capability, encompasses the ability (physical and mental) to comprehend and process knowledge and plan for action (Jackson et al., 2014). The second factor, Opportunity, includes all factors independent of the individual that may affect behavior change. Opportunity has two subcategories: physical (meaning the environment where the change will take place) and social (the cultural norms that guide our way of thinking) (Jackson et al., 2014; Michie & West, 2020). Cost, accessibility, patient-provider communication, and fear of stigma or discrimination are examples of opportunity factors (Jackson et al., 2014).

The last factor, Motivation, is the driving force for behavior modification and is influenced by an individual's opportunities and capabilities (Michie et al., 2011; Michie & West, 2020). Motivation encompasses reflective and automatic processes; reflective processes allow individuals to evaluate and plan for change and are affected by perception of issues like illness, treatment, self- management skills, or expected outcomes (Jackson et al., 2014). Automatic processes stem from emotions and impulses and are altered by moods and stimuli turning a behavior into something someone wants to do instead of something they have to do (Jackson et al., 2020).

Limited health literacy directly interferes with an individual's ability to interact with the health care provider and get the information needed to manage health. Promotion of health literacy skills- in this case asking questions with the *AM3* © brochure- gives patients the capability to communicate and partner with their provider. As communication is bidirectional, optimal benefit is achieved when the environment maximizes opportunities for the patient to participate effectively in communication with their healthcare provider. Per the model, addressing the opportunity and capability components of COM-B-will have a positive influence on the motivation to continue being an active partner in the patient-provider relationship and continue using communicative skills to promote positive health outcomes.

Chapter 3

METHODOLOGY

This chapter focuses on methodology, which describes the plan to implement a project to answer the clinical question (Moran, 2020a). This section first describes the framework used to guide translation of the evidence into a clinical practice solution, and uses a Strengths, Weaknesses, Opportunities, and Threats analysis (SWOT) to identify facilitators and barriers of project implementation (Terhaar et al., 2021). The methodology section will describe the intervention, measurement tools, ethical considerations, project timeline, data collection and analysis, project evaluation and close-out, and plan for dissemination. The Institutional Review Board (IRB) approved project implementation July 28, 2023 (see Appendix C).

3.1 Framework

The Promoting Action on Research Implementation in Health Services (PARiHS) Framework explains how the interaction between three different dimensions (evidence, context, and facilitation) impacts the implementation of an innovation (Kitson et al., 1998). The PARiHS Framework guides the translation of this project by highlighting the barriers and supports that inform successful strategies to implementation. Each dimension is individually categorized by specific characteristics and potential impact upon implementation (White, 2021). The evidence includes a combination of research,

expertise, and patient opinion; evidence is divided into low and high categories, which are dictated by the level of the research's rigor (Kitson et al., 1998).

The context in this framework includes the environment of the organization where the proposed innovation will be implemented. Understanding the culture, leadership, and measurement capabilities of a practice environment will suggest if adoption of an innovation will be supported or prevented (White, 2021). Kitson et al. (1998) defines facilitation as the process of "making things easier for others." When implementing an innovation, the facilitator garners support by addressing co-worker attitudes, skills, habits, and evidenced-based knowledge. Facilitators may promote action by being a champion for change and encouraging the adoption of an innovation (Kitson et al., 1998). A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis (Terhaar et al., 2021) was conducted to assess the various components of the PARiHS model and identify the barriers and facilitators of the project.

3.1.1 Strengths, Weaknesses, Opportunities, and Threats (SWOT)

3.1.1.1 Strengths

The H.E.A.L.T.H (*health, engagement, access, learning, teaching, humanity*) for All ® (2021) program has several key organizational assets. First, there is strong leadership and support of practice changes initiatives benefiting community members facing socioeconomic difficulties. This is evident within the organization's mission statement as well as program goals that include "addressing social determinants of health though new and innovative programs…." and "promoting health and wellness in the workplace, educational and community settings' (H.E.A.L.T.H For All [H4A] ®, 2021).

The clinical lead at H4A ®, a Family Nurse Practitioner (FNP), is committed to the program and to the community that the program serves. There was demonstrated motivation to support patient HL with the FNP already employing aspects of health literacy practices. This, in conjunction with the *AM3* © brochure, enhances bidirectional communication and potentially improves health outcomes. The roles and responsibilities of the lead clinician are clear, and tasks are appropriately delegated. The program coordinates with multiple facilities located in communities of high need and has assistance in outsourcing some resources, such as medical social workers or diabetes educational programs.

3.1.1.2 Weaknesses

Health literacy is not a well-recognized SDOH. While initiatives are underway in DE to improve HL recognition, there continues to be a need for greater standardization amongst healthcare organizations to improve communication through HL interventions. H4A ® does not have an official HL initiative or tool to enhance communication. This program is led by a single FNP who may at times lack resources such as privacy, time, and staff assistance. The program is simple in its internal organizational structure with an FNP, a care coordinator, and a remote front office administrator at the Nurse Managed Primary Care Center at University of Delaware. With a single FNP, mobile clinic days with back-to-back patients may make it difficult to implement a new tool.

3.1.1.3 Threats

There are several threats to this project's implementation. First, there is great diversity among the individuals presenting for care. This has the potential to create

inconsistency and unpredictability related to individuals participating in the project. Previous patients have been historically hesitant to participate in a project that includes completion of a lot of paperwork possibly due to mistrust in the medical community. Contributing to this is a higher incidence of persons with LHL and socioeconomic disadvantages demonstrating hesitancy to fill out paperwork or read materials. Furthermore, the H4A ® site is open to other students who are either completing their own research studies or in their undergraduate community nursing practicum. This may interfere with data collection as participants may not want to be included in more than one project or answer multiple surveyor questions. If participants of the "Supporting Patient-Provider Communication at a Community Mobile Clinic using the *Ask Me Three* © Brochure" inadvertently go to a student instead of the FNP for screening, their data cannot be counted as the other University of Delaware students are not included in the IRB protocol.

3.1.1.4 Opportunities

The H4A ® program aligns with other stakeholder initiatives to reduce the health disparity gap by addressing social determinants of health, such as access to care and improved HL (Stormacq et al., 2018). The FNP and program coordinator within the program are motivated to make changes and adapt to different methods to help their communities learn skills meant to manage their health. This includes HL skills that enhance patient-provider interaction. The program reaches communities that are shown to have a higher incidence of LHL, which increases the potential benefit of this project.

3.2 Intervention

The *AM3* © brochure (Appendix D) is an existing validated tool developed by the Partnership for Clear Health Communication at Pfizer and the National Patient Safety Foundation and licensed by the Institute for Health Improvement (2007). This tool was developed to increase patient-provider communication and patient participation by asking three questions- *What is my main problem? What do I need to do?* And *why is it important for me to do this*? (IHI, 2007). This tool is easy to use and is ideal for communities with a higher incidence of LHL as it is designed to encourage question-asking behavior (IHI, 2007).

The *AM3* © brochure and other similar communication tools are found to have a positive impact on patient participation, question-asking behavior, and improved information acquisition (Keinki et al., 2020; Kim et al., 2020; Lapiz-Bluhm et al., 2015; Michalpoulou et al., 2010; Toibin et al., 2017), and may be beneficial to individuals in medically underserved populations. The purpose of this project is to promote participant use of the *AM3* © brochure during a health screening or primary care visit with the provider and evaluate how it impacts participant perception of information acquisition, satisfaction, and comfort with asking questions. Permission was granted to use the *AM3* © brochure by the Institute for Health Improvement after signing an online agreement form.

3.3 Measurements

Three questionnaires were used to measure outcomes in this project (see Appendix E): The participant Demographic Questionnaire, the *All Aspects of Health*

Literacy Scale (AAHLS) ©, and the *Ask Me Three* © Satisfaction Questionnaire (Aboumater et al., 2012; Chinn & McCarthy, 2012; King et al., 2023; Michalopoulou et al., 2010). The Demographic Questionnaire was developed and formatted by the DNP Project Lead using the *Clinicians and Groups-Consumer Assessment of Healthcare Providers* (AHRQ, 2020) (a patient satisfaction survey developed by the AHRQ) to ensure appropriate language and inclusivity. The demographic questions selected were most applicable to the factors that impact HL (i.e. education, age, socioeconomic status, and income). The question relating to income was modified to assess the income based on a four-person family above or below the current Federal Poverty Line (FPL). This was done based upon feedback from the project site regarding hesitancy individuals have portrayed when answering income survey questions in other research projects conducted at H4A ®.

The *AAHLS* © (Chinn & McCarthy, 2012) was developed as a method of evaluating HL based on previous literature by HL expert Nutbeam (2000). The creators of *AAHLS* © conceptualized a tool to capture the complexity of HL and how it affects the interaction of individuals with the health system. Studies using *AAHLS* © demonstrated accuracy in correlating different HL domains with information seeking, self-management, self-efficacy, communication satisfaction, and incidence of information avoidance (Campbell & Erikson, 2023; Chen et al., 2022). The subscales and total *AAHLS* © scores used in other studies demonstrated comparable findings to other validated HL measurement scales and are sensitive to groups with limited English proficiency and social determinants of health (namely education, living environment, and

employment) (Karasneh et al., 2020; Kim et al., 2023; Vasan, 2020). Previous studies have adapted the tool to meet their needs by excluding certain elements of the scale finding and reliability and validity remained adequate (Kim et al., 2023). This tool is important to this project as it assesses the difficulties individuals with LHL have with interpersonal communication and question-asking behavior. This is significant as this project seeks to determine if individuals with LHL, as research suggests, will find greater benefit when using the *AM3* © enhances tool to enhance communication with the provider.

Statistical analysis of *AAHLS* © shows adequate reliability (Cronbach's alpha coefficient= 0.75); individual subscales, however, lose some internal consistency (functional subscale= 0.82, communicative subscale= 0.69, and critical subscale= 0.42). The *AAHLS* © authors conducted content validity which was determined to be adequate through principal component analysis; construct validity showed significant association between subscales (functional and communicative, $r= 0.393$, $p < 0.001$; functional and critical, $r= 0.59$, $p= 0.036$; communicative and critical, $r= 0.186$, $p= 0.017$). Bivariate analysis revealed associations between ethnicity and total *AAHLS* © scores as well as between individual functional and communicative subscale scores. Age was associated with critical HL scores (greater age correlated with lower scores) and higher levels of education were associated with higher total *AAHLS* © scores. There was no association between two subscale measures relating to critical HL and participant characteristics or perception of health. Permission to use and adapt the *AAHLS* © tool was granted by

author Deborah Chinn on June 23, 2023. Questions not relating to the study and had no significant impact on the classic study were removed.

The *Ask Me Three* © Satisfaction Questionnaire was formatted by the DNP Project Lead using prior research of a questionnaire focusing on the satisfaction and success of using the *AM3* © brochure to enhance the patient-provider interaction as well as the role of question-asking in shared decisions and interaction with the provider (i.e. partnership) (Aboumater et al., 2012; King et al., 2023; Michalopoulou et al., 2010). No specific (available) tool has been developed to directly assess the effect of the *AM3* © brochure and the questions chosen were ideal for determining the outcomes of the project aim and objectives.

3.4 Setting

The H4A ® mobile program focuses on serving individuals with social inequities in communities with less access to health services and resources. The H4A ® program has one lead clinician who provides community health screenings (i.e. blood pressure and blood glucose readings) and addresses primary episodic and chronic care needs. Screening events and primary care visits occur in varying locations that have partnered with the program. Often for screening events the FNP uses whatever space is available and sets up stations for blood pressure and blood sugar checks. If an individual being screened has an acute complaint the FNP finds a place of privacy to address this. Primary care visits are appointments based at a few select locations. Through coordination with employees at these locations the FNP is placed in a private space for patients to arrive and be seen. These appointments are longer to address multiple needs. Care provided

includes physical exams, women's health care, care of acute conditions, care coordination with specialties, assistance with health care benefits, and physical and sports physicals.

The program started in 2021 after an initial pilot study in 2020 and partners with the Lieutenant Governor's Office, the University of Delaware Partnership for Healthy Communities, and Highmark Blue Cross Blue Shield of Delaware. Program goals align with national initiatives to address social determinants of health by increasing access to street level care. This setting is ideal for this practice improvement project as many individuals seen at H4A ® fall into the health disparity gap and are at higher risk of communication difficulties from LHL.

3.5 Participants

Participants were selected via convenience sampling from varying community sites (community centers, senior centers, senior living, libraries, etc.) in Wilmington, DE. Individuals who met the inclusion and exclusion criteria and wished to see the FNP for screening or had an appointment to address an ongoing health concern were invited to use the *AM3* © brochure. To participate, individuals had to be 18 years or older and speak and comprehend basic English. Individuals excluded from the project included anyone younger than 18 years old, individuals who could not speak or comprehend basic English, and prisoners or individuals in an incarcerated partial work-release program. There were sites where "Supporting Patient-Provider Communication at a Community Mobile Clinic using the *Ask Me Three* © Brochure" was not introduced as individuals at these sites were considered incarcerated while on a court mandated transitional program after release from prison, or the site primarily served children under 18 years of age.

3.6 Implementation Plan

The implementation phase began following IRB project approval. In the first week of implementation the DNP Project Lead educated the H4A ® FNP on the step-by-step implementation process for use of the "Supporting Patient-Provider Communication at a Community Mobile Clinic using the *Ask Me Three* © Brochure" including the timeline, roles, responsibilities, and maintaining participant confidentiality.

At each eligible project site, the DNP Project Lead asked potential participants if they wished to use the *AM3* © brochure. The DNP Project Lead followed a standardized script to introduce the project purpose, use of the *AM3* © brochure, and the benefits and risks of the project. A poster about the project as well as inclusion and exclusion criteria were visible, and participants were asked if they met these criteria. The standardized invitation offered all participants assistance with completing or reading all questionnaires and the *AM3* © brochure. Potential participants were made aware their visit with the provider would not be affected should they decline participation in the project.

Upon agreement to participate, all participants received a packet with the *AM3* © brochure, the Demographic Questionnaire, the *AAHLS* ©, and an *Ask Me Three* © Satisfaction Questionnaire. The questionnaires in each packet had corresponding numbers so the DNP Project Lead could make data correlations. Before participants saw the FNP they were asked to complete the Demographic Questionnaire and *AAHLS* © with or without assistance as requested. The DNP Project Lead offered Spanish versions of the questionnaires and the *AM3* © brochure to increase the comfort of individuals who spoke and could comprehend English but may have preferred to read in their native language. A

goal of providing the *AM3* © brochure for participants to take home in the language of their choice was to encourage use of this tool in future visits and use in other healthcare settings. After filling out the pre-visit questionnaires the participant saw the FNP who encouraged use of the *AM3* © brochure and assisted with reading the questions as needed. A clipboard and pen were provided to all participants to write down the answers to the *AM3* © brochure questions if desired. Clipboards and pens were sanitized after each participant used them. Following the visit with the FNP, participants completed a post-visit *Ask Me Three* © Satisfaction Questionnaire and handed it directly to the DNP Project Lead.

3.7 Project Timeline

The first phase of the project ran from 05/05/2022 to 4/19/2023 and included problem and literature gap identification, the literature review, and PICOT development. Phase Two of the project occurred from 5/15/2023 to 7/14/2023 and included setting evaluation, methods development, and IRB protocol preparation, submission, and revision. Phase Three, (project implementation), started 8/29/23 and began with the DNP Project Lead providing education to the H4A ® FNP. Active volunteer participation began 9/5/23 and ended 12/7/23.

Project closeout included a final interview and evaluation of the implementation process and preliminary outcomes beginning 12/7/23. Data collection was an ongoing process throughout the participant enrollment period, however, formal data analysis occurred between 12/7/23 to 01/08/24. In the final phase, the DNP Project Lead prepared for dissemination of project findings which were presented to practice site personnel and

the University of Delaware School of Nursing Faculty. Significant findings were detailed in a method for public presentation on 4/2/24.

3.8 Ethical Considerations

Approval by the IRB indicates the project procedure, evidenced-based tools, and scripts follow specific guidelines to protect the ethical rights of human participants. To maintain confidentiality, any personal or identifiable information was only accessible to the DNP Project Lead. The DNP Project Lead and the FNP completed CITI training and followed all procedures related to confidentiality and data security as required.

This project had a few potential benefits including obtaining the information needed to manage their health and enhance communication for greater health satisfaction. The *AM3* © brochure helps individuals interact with the provider and gain the information they need to better manage their health needs. Participants had no risks associated with inclusion in this project and individuals whose decided against participation received care as usual by the provider.

3.9 Data Collection, Analysis, Maintenance & Security

The IRB defined this project as not meeting the parameters of "human subject's research." As no identifiable information was collected consent was not required. Once participants completed the Demographic Questionnaire, the *AAHLS* ©, and the *Ask Me Three* © Satisfaction Questionnaire, they handed them directly to the DNP Project Lead who placed them in a locked box during implementation hours. Only the DNP Project Lead had a key to this box. The locked box was transported by the DNP Project Lead to

the home office. The questionnaires were placed in a locked drawer in the home office that is not accessible by anyone but the DNP Project Lead.

The DNP Project Lead performed a weekly data transfer from the paper questionnaires to a Microsoft Excel spreadsheet saved to an encrypted thumb drive. The data was only accessible via the encrypted thumb drive. Once data was transcribed the paper questionnaires were placed back in the locked drawer. At project conclusion, data from the questionnaires and the encrypted thumb drive were locked in the home office drawer and kept for a duration of three years.

All data was analyzed by the DNP Project Lead using descriptive statistical functions on Microsoft Excel. Responses to the Demographic Questionnaire were analyzed per question type: ethnicity/race, age, income, and education. The *AAHLS* © was coded numerically; questions 2-7 were coded *often* (3), *sometimes* (2), *rarely* (1) and question one was reverse coded as *rarely* (3), *sometimes* (2), and *often* (1) due to negative wording (meaning the question indicates a HL skill is not present compared to the other positively worded questions where a HL skill is presumed to be present). The sum of the responses was calculated with a higher score representing greater participant engagement in communicative skills. The mean (M) and standard deviation (SD) of the aggregate responses of each question were calculated and displayed in table format. Frequency distribution was utilized to demonstrate the answer frequency for *AAHLS* © and *Ask Me Three* © Satisfaction Questionnaire responses. Percentages of *Ask Me Three* © Satisfaction Questionnaire were calculated and compared to the objectives (see Figure 3).

Figure 3

Calculation of Data per Objective

Objective 1 **Increased perception of knowledge acquisition**

- The percentage of participants who will report perception of knowldge acquisition using the *AM3* © brochure over a 3 month period will be calculated as follows:
- [(# of participants reported increased perception of knowldge acquisition using the *AM3* © brochure over a 3-month period)/(Total # of participants who used the *AM3* © brochure)]x100

Objective 2 **Increased sense of partnership with the provider**

- The percentage of participants who will report increased sense of partnership related to decision-making using the *AM3* © brochure over a 3 month period will be calculated as follows:
- [(# of participants reported increased partnership sense of partnership related to decision-making questions using the *AM3* © brochure over a 3 month period)/(Total # of participants who used the *AM3* © brochure)]x100

Objective 3 **Improved communicative behavior**

- The percentage of participants who will report having asked more questions using the *AM3* © brochure over a 3 month period will be calculated as follows:
- [(# of participants reported asking questions using the *AM3* © brochure over a 3 month period)/(Total # of participants who used the *AM3* © brochure)]x100

3.10 Project Evaluation

Throughout the project the DNP Project Lead held weekly feedback sessions with the FNP to review barriers to implementation and ensure the IRB protocol was being followed. Once the data was collected the DNP Project Lead obtained FNP insight into

the intervention (see description in “Project Closeout”) and applicability to ongoing practice and sustainability, which will be discussed in Chapter 5. At the Project’s conclusion the FNP of H4A ® was provided with the data and its implications to practice.

3.11 Project Budget

Expenses were the responsibility of the DNP Project Lead and included costs related to copying and printing, translation services, and accessories needed for project completion (clipboard, pens, sanitizing wipes). The total expenses amounted to $151.00.

3.12 Project Close Out

The project concluded with the DNP Project Lead presenting the preliminary results to the H4A ® FNP. A final interview with the H4A ® FNP included an examination of strengths and weaknesses of the implementation process and the utilization of the *AM3* © brochure. This information is discussed in greater detail when reviewing the sustaining ability of the project in Chapter 5.

3.13 Dissemination Plan

Formal findings will be disseminated to the provider at H4A ® and shared with the University of Delaware faculty as required for degree completion. The DNP Project Lead will prepare the findings for publication and a poster for the conference presentation.

Chapter 4

RESULTS

The following chapter discusses the results of the data collected from the measurement tools. First the demographic data will be presented, followed by descriptive statistics used to determine if using the *AM3* © brochure was successful in meeting the aim and objectives of the project. This data will be compared to prior studies of these objectives.

4.1 Results

Seven different community sites were attended throughout the implementation phase with a total of 44 out of 200 individuals agreed to participate in the project. Data collected from six of 44 participants was excluded as two participants did not use the brochure during their visit with the FNP and another four participants did not complete the *Ask Me Three* © Satisfaction Questionnaire. Most participants (95%) were recruited during screening events and two participants were recruited during chronic primary care encounters (see Table 4). One participant requested a Spanish version of the brochure and questionnaire during the implementation period; however, this individual was one of the six participants who were excluded from the project due to incompletion of the surveys.

Table 4

Implementation Sites and Participation

	Participants Who Used AM3 © (n=38)		Participants Offered to Participate (n=142)		Total Participants Seen at H4A ® (N=200)	
	Total #	% of Total	Total #	% of Total	Total #	% of Total
Site 1[a]	19	44.7%	55	38%	84	42%
Site 2[a]	3	7.8%	10	7%	13	6.5%
Site 3[a]	6	15.7%	60	42%	76	38%
Site 4[a]	5	13.1%	8	7%	13	6.5%
Site 5[a]	3	7.8%	9	6%	12	6%
Site 6[b]	2	5.2%	0	0%	2	1%

Note. [a] Screening Events
[b] Primary Care Visits
Supplement data obtained from H4A ®.

Of the 38 participants who used the *AM3* © brochure, 50% were Black, 44.8% were White, and 5.2% wrote "other" without specifying their race. Three participants identified as Hispanic while the majority (89.4%) described themselves as non-Hispanic and one participant preferred not to answer. A total of 78.8% of individuals were over the age of 50; 44.7% had an income less than $19,720. All demographic data is depicted in Table 5.

Table 5

Participant Demographics

Age (years)		**Income**	
18-30	3 (7.9%)	< $19,720	17 (44.7%)
31-40	1 (2.6%)	> $19,720	2 (5.3%)
41-50	4 (10.5%)	< $30, 000	3 (7.9%)
51-65	18 (47.4%)	> $30,000	12 (31.6%)
65+	12 (31.6%)	Prefer not to say	4 (10.5%)
Race/Ethnicity		**Education**	
White	17 (44.8%)	8th grade or less	1 (2.6%)
Black/African American	19 (50%)	Some high school, but did not graduate	2 (5.3%)
Asian/Native Hawaiian/Native Indian/Native Alaskan	0 (0%)	High school graduate/GED	12 (31.6%)
Other	2 (5.2%)	Some college or 2-year degree	8 (21.1%)
Hispanic	3 (7.9%)		
Non-Hispanic	34 (89%)		
Prefer not to answer	1 (2.6%)		

The *All Aspects of Health Literacy Scale* © aggregate scores varied, but overall participants demonstrated adequate HL behaviors (M= 17.7, SD= 2.56, median=18, mode=19; range 7-21) with the lowest possible score of 7 indicating lower HL skills and the highest possible score of 21 indicating higher HL skills. Demographic subcategories of education and age were combined to improve the participant sample size to improve numbers for exploratory analysis. No clear patterns were observed between *AAHLS* © scores and the demographics subcategories of income, education, age.

Table 6

AAHLS © Scores per Demographic Subcategories

Demographics	Mean	Standard Deviation	Mean and SD with outlier removed	
Education				
Less than High school Degree (n= 3)	17.66	1.52		
High school grad or GED (n=12)	18	1.09		
Some college or 2-year degree (n= 8)	17.75	1.4		
4+ college degree (n= 14)	17.35	3.71	18.15	2.3
Prefer not to say (n= 1)	19	N/A		

Income				
< 19,720 (n= 16)	17.62	1.45		
> 19,720 (n= 2)	16	4.24		
< 30, 000 (n= 5)	17.8	2.58		
> 30,000 (n= 10)	17.9	3.8	19	1.24
Prefer not to say (n= 4)	19.25	1.25		
Age				
18-40 (n= 8)	15.87	3.9	17.14	1.67
51-65 (n= 18)	18.5	1.66		
65+ (n= 12)	17.75	2.12		

Note. Range 7-21; 7= lower HL skills, 21= higher HL skills.

As depicted in Table 6, educational attainment was not noted to change *AAHLS* © scores as expected. Important to note, however, is the existence of a single outlier who scored a 7 on the *AAHLS* ©. When this number was removed from the data, the aggregate *AAHLS* © score for a 4+ college degree increased (M= 18.15, SD= 2.3). This outlier also affected the age domain of 18–50-year-olds; when removed the aggregate *AAHLS* © scores increased from a mean of 15.87 (SD= 3.9), to a mean of 17.14 (SD= 1.67). Apart

from individuals reporting an income of > $19,720 (M= 16, SD= 4.24), there appeared to be a more consistent upward pattern of increased *AAHLS* © scores before the removal of the outlier, however, the difference between means were minimal (range 0.1-1.62).

The means of all individual *AAHLS* © questions were calculated (see Table 7). The mean of question one (M= 2.6) demonstrates that participants sometimes or rarely needed assistance with reading health-related material. The means of questions two through six ranged between 2.28 and 2.8, indicating that skills such as finding and understanding health-related information and communicating with the provider were at least sometimes present. Question seven, with a mean of 1.89, indicates that participants had greater difficulty with questioning a provider based on their independent research. Appendix F demonstrates the answer frequency of the individual *AAHLS* © questions.

Table 7

AAHLS © Question Mean and SD

***AAHLS* © Questions**	**Mean**	**Standard Deviation**
1. How often do you need someone to help you when given information to read by the HCP (healthcare care provider)?	2.6	0.67
2. When you need help with health-related information, can you easily get a hold of someone to help you?	2.28	0.8
3. When you talk to a provider, do you give them all of the information they need to help you?	2.81	0.51
4. When you talk to a provider do you ask all the questions you need to ask?	2.60	0.54
5. When you talk to a provider do you make sure they explain anything that you do not understand	2.73	0.5
6. Are you someone who likes to find out a lot of different information about your health?	2.76	0.54
7. Are you the sort of person who might question your provider's advice based on your own research?	1.89	0.79

Note: Range = 1-3; higher score indicating better HL.

Chinn, D., & McCarthy, C. (2012). All aspects of health literacy scale (AAHLS): Developing a tool to measure functional, communicative, and critical health literacy in primary care settings. *Patient Education and Counseling*, *90*, 247-253. https://dx.doi.org/10.1016/j.pec.2012.10.019

Questions three through five of the *AAHLS* © relate directly to HL communicative behaviors, finding 63.1% of participants often asked their providers questions, 86.8% gave providers all the information they needed to know, and 81.5% made sure their providers explained anything they did not understand.

Participants were asked to consider their satisfaction with use of the *Ask Me Three* © Satisfaction Questionnaire question by responding to several questions. One question, "*do you feel you know more about your medical condition or illness after your visit?" was answered yes by* 89% of participants; all 38 participants answered "yes" to the question "*did the questions help you feel more able to be a partner in your care?"* (see Appendix G). Additionally, 100% of participants reported they found the brochure helpful during their encounter with the FNP. Approximately half (55%) of the participants reported writing in the brochure.

While not a part of the data collection design for the project, the DNP Project Lead informally recorded unprompted verbal responses from participants regarding the usefulness of the *AM3* © brochure. Due to the informal nature of collecting this information no attempt was made to collect data about the participants making the comments. Comments from participants included how they found the brochure useful as it allowed them to write down the answers to their questions; several other participants reported the brochure helped them get the information they wanted to know. These comments are consistent with the *Ask Me Three* © Satisfaction Questionnaire data. Some participants commented on how they would keep the brochure and use it with other providers; several individuals took a brochure for their parents to use.

4.2 Interpretation of Findings

Project data demonstrates a demographically varied population with fewer than expected participants meeting risk factors for SDOH deficiencies (e.g. lower and lower educational attainment), which when using national HL research standards, defined participants as being at increased risk of LHL. Contradictory to research and assumptions of the DNP Project Lead, the aggregate *AAHLS* © scores in this project found most participants had adequate HL. *AAHLS* © scores did not follow an expected pattern of increasing with higher income and educational attainment as research suggested. While limitations to the data and number of participants potentially contributed to these results, another consideration is that research has primarily used functional HL scales (i.e. reading, writing, calculations) to compare LHL and education or income. The HL domain of communication captured by the *AAHLS* © may not be as strongly associated with social determinant factors as other domains.

Most participants reported they "sometimes" or "often" used communication behaviors (such as asking questions, asking for explanation, or telling the provider the information they need to know), which was not consistent with data reported on persons with less educational attainment and lower income in research. This project does demonstrate that individuals reported benefit from using the *AM3* © brochure (as indicated by their post-survey responses) despite higher-than-expected *AAHLS* © scores; this finding is consistent with HL research and guidelines by the AHRQ stating that while some individuals have an increased risk of poor outcomes related to LHL, all patients may benefit from a universal HL approach. This project affirms the importance of

following HL universal precautions as assumptions of HL level based on a population's characteristics may not predict the derived benefit of HL resources.

The data from this project supports the use of the *AM3* © brochure at a mobile community program for the aim of increasing patient-provider communication as demonstrated in discussion of the three objectives. Objective 1, improving communicative behavior, was successful as all 38 participants agreed to use the *AM3* © brochure, thus asking three questions to improve knowledge acquisition and sense of partnership with the provider. Consistent with findings by Lapiz et al. (2015), the *AM3* © brochure was not a well-known tool to the individuals served at H4A ®, but the introduction of the tool increased participant awareness of asking questions and all participants liked using the brochure. Furthermore, similar to findings by Lapiz et al. (2015), participants discussed how the tool reminded them what questions to ask and some reported planning to use the tool at future provider visits.

Objective two, increasing perception of knowledge acquisition, was similarly successful as demonstrated by the 89% of participants reporting increased knowledge of their medical condition after using the brochure. Many participants who used the brochure reported it helped them to gain the information they needed to know for their health. These results are consistent with data obtained by Michalopoulou et al. (2010) where use of the *AM3* © brochure increased comfort with asking questions thereby increasing information obtained from the provider. Other studies demonstrating association with asking questions and increased information acquisition or decreased

unmet information needs include studies by Kim et al. (2020), Sansoni et al. (2015), and Li et al. (2017).

All participants reported an increased sense of partnership with the healthcare provider following use of the brochure, thus meeting the final objective. These results are consistent with Kim et al. (2020) whose study demonstrated how use of a question asking tool increases patient interaction with the provider, which may play a contributing role in increasing sense of partnership. Similar uses by healthcare providers or organizations highlight the benefit of provider promotion of question asking behavior and/or using the *AM3* © brochure to structure education and increase information acquisition (Amundson et al., 2018; Winiger et al., 2021).

Like other studies (Six-Means et al., 2012; WCHQ, 2010), there was an observed benefit when the provider endorsed participants' use of the brochure during their health visit and education on how to use the brochure was provided. Consistent with the results of these studies, the DNP Project Lead observed a benefit and increased participant comfort using the *AM3* © brochure when the FNP provided reinforcement on how to use the brochure and endorsed the brochure's use during participant screening events or primary care office visits. Implications of this observation are discussed when reviewing the significance and sustainability of the project in Chapter 5.

4.3 Limitations

There were several limitations to this project. First, while each site visited was in areas where persons potentially faced social and economic challenges, there were different demographics between the sites. Additionally, some participants were

employees of the community centers partnering with H4A ® which may have skewed some of the demographic data, potentially decreasing representation of the underserved communities of Wilmington, DE, thus skewing the interpretation of demographic and *AAHLS* © scores results.

Rotation of sites, time constraints, and lack of privacy may have contributed to the small number of participants, which decreases the generalizability of the findings as well as the ability to perform subgroup comparison analysis. Individuals with LHL may have been more likely to decline inclusion in a project offering a written tool, despite the assistance that was universally offered to all potential participants.

The application of the *AAHLS* © and the *AM3* © brochure used in this project deviated from how they were applied in past research. The *AAHLS* © has not been used to research the association between HL and SDOH factors in previous studies. The *AM3* © brochure in research has primarily been used during office visits and not at community screening events; although there was an intention to perform more primary care "office visit" appointments, 95% of participants were from screening events.

The results from the *Ask Me Three* © Satisfaction Questionnaire may have been influenced by response bias for several reasons. The DNP Project Lead was near the participants during their visit (due to small facilities and limited workspace), which may have caused participants to choose more positive responses. A second concern was that participants may have been rushing through the questions as many surveys were conducted at a screening event, which usually allows less time than an office visit. Participants at most sites had other activities to attend such as senior center games, the

food pantry or Medicaid appointments; these additional obligations may have caused individuals to rush through the questionnaires and not answer in a way that was truly representative of their views. Participant's positive responses to the *Ask Me Three* © Satisfaction Questionnaire may have reflected the FNP's skill level and intermittent endorsement and encouragement to use the brochure during the health encounter. Although the post-visit questionnaire asked specifically about the *brochure's* influence on information acquisition and partnership, the knowledge of the FNP and the positive relationship and rapport established with patients may have increased perception of benefit more than the brochure itself.

Chapter 5

CONCLUSION

An individual's HL level may impact communication between patients and providers, which is a common finding in individuals with limitations in income and educational attainment. Simple to use low-cost tools, such as the *AM3* © brochure, can be a useful solution for increasing patient comfort in asking questions, improving information sharing, and enhancing patient-provider partnership. In this final chapter, the significance of improving these communication outcomes will be discussed in concordance with implications to advance clinical practice and project sustainability.

5.1 Significance

Deficits in communication between a patient and provider due to LHL have detrimental effects on health outcomes including increased disease burden, greater mortality and morbidity, and higher health system costs (Perez-Stable & El-Toukhy, 2018; Rudd; 2022; Schillinger, 2021; Stormacq et al., 2018). The data of this project suggests that by improving question asking behavior, an important aspect of communication, patients feel they can better partner with the provider to make clinical decisions and acquire more information about their health.

Benefits of improved HL skills via tools such as the *AM3* © brochure are still present even when patients believe they have adequate HL communication skills when visiting their healthcare provider. In the short term, improvements may increase a

patient's knowledge enabling them to better manage their health. In the long term, these positive behavior changes may decrease disease burden leading to increased patient satisfaction and improved quality of life. From a system's perspective, enhanced disease management may lead to decreased healthcare cost and health system burden.

Although the data from "Supporting Patient-Provider Communication at a Community Mobile Clinic using the *Ask Me Three* © Brochure" was not assessed for statistical significance, there is evidence the brochure was accepted and patients found its use beneficial. There is a practical application as the brochure is free to use (except for printing and copying expenses) and, when guidance on how to use the brochure is provided by a healthcare team member, it is an easy to use and an effective tool.

The results of "Supporting Patient-Provider Communication at a Community Mobile Clinic using the *Ask Me Three* © Brochure" affirms the importance of healthcare provider education regarding the impact of HL tools to enhance HL behavior in all patients regardless of provider or patient perceived HL status. This ideology is consistent with the AHRQ Universal Precautions Toolkit (Brach, 2024) that is widely available for use by healthcare organizations. Organizations and providers may not be aware of such tools, or they may be concerned with time constraints and potential costs versus actual benefit. This project demonstrates the use of the *AM3* © brochure is a tenable method to improve communication in a low cost and timely manner.

5.2 Implications to Advanced Practice

Advanced practice nursing (APN) embodies a holistic perspective to improve patients' health outcomes and well-being. A part of this perspective is understanding the

factors, such as social determinant factors and HL, which may define or influence a patient's ability to equitably interact with the health system. Offering patient tools to enhance communication skills and potentially mitigate uncontrollable health determinants may improve the patient-provider relationship through increased knowledge acquisition contributing to increased patient satisfaction.

The results of this project highlight the patient perspective of improved communication and how facilitation of skills by a practitioner enhances the patient experience. APNs can influence health policy changes supporting a patient's ability to improve communication and interact with the health system. Organizations such as the AHRQ, the CDC, and Office of Disease Prevention and Health Promotion have ongoing efforts to increase provider awareness of the importance of HL in the care of patients to improve their interaction and accessibility to equitable health care. While HL is being discussed more in the healthcare field, especially in association with SDOH, more providers and healthcare educators can improve HL and use resources to overcome potential barriers to patient care. Although the "Supporting Patient-Provider Communication at a Community Mobile Clinic using the *Ask Me Three* © Brochure" focused on an individual level of care, there are an abundance of opportunities for increasing the ease of healthcare navigation and access, which are a large part of HL promotion.

5.3 Sustainability

The H4A ® FNP provided insightful feedback about use of the *AM3* © brochure in the community setting. This clinician reported agreement that the brochure enhanced

engagement and increased bi-directional communication between her and the H4A ® participants, but found the brochure worked best for individuals being seen in clinic settings with a "single problem focused visit" (H. Milea, personal communication, December 14, 2023). Additionally, due to concerns with initial mistrust demonstrated by some newer H4A ® participants, the FNP suggested the *AM3* © brochure be used after an individual has been established as offering forms to new recipients of H4A's ® services can be difficult.

Weaknesses of the brochure in clinical practice include an incongruence between the brochure's limited writing space and the "multiple social and physical problems" addressed during an encounter with a patient. Additionally, the FNP noted that those with LHL may find writing in the brochure intimidating, which may be why there was an observed benefit when the FNP endorsed the use of the brochure and assisted in reading the brochure to participants if needed. The FNP suggests a change in the *AM3* © verbiage including changing the word "problem" (from the question "What is my main problem?") to "health concerns" or "health issues" (H. Milea, personal communication, December 14, 2023).

Due to the ease of access and low-cost nature of the brochure, its use is transferable to a wide range of practices and can be beneficial to all patients regardless of perceived HL status. The brochure's use at community screening events, however, may not be the ideal environment for implementation due to the fast-paced nature of these events and the lack of support that an office may provide (i.e. multiple providers, medical assistants, administrators, etc.). Successful implementation would require a

"champion(s)" who would identify organizational stakeholders to instruct on and promote use of the *AM3* © brochure by patients or providers. Approaching organizations and providers with the important relativity of addressing SDOH and HL to improve health outcomes is a valuable tool to gain buy-in as these issues are currently in the healthcare spotlight. Policies developed by organizations to educate providers on the importance of addressing HL and communication may further enhance sustainability.

There are a multitude of resources available to assist organizations in promoting use of the *AM3* © brochure and question asking behavior including the AHRQ (Universal Health Literacy Precautions Toolkit) and the IHI, which not only provides the brochure in different languages but contributes promotional material for use by providers or organizations. Obtaining provider buy-in is essential as research, and the data from this project, demonstrate improved outcomes when providers endorse participant use of the brochure or provider's actively use the brochure to frame their education to a patient.

5.4 Future Research

Verbalizations from participants indicated they had an intention to use the *AM3* © brochure in other healthcare settings, which, if true, would lead to a sustained improvement of communicative behavior. Research may benefit from evaluating the sustained use of HL question prompt tools and their implication to health. Similarly, evaluation of outcomes from the provider and patient perspective may lead to long-term policy changes that integrate HL and asking questions into institutional goals for patient health improvement. Future research would benefit from evaluating the effect of communication enhancing HL tools, such as the *AM3* © brochure, on long-term health

related outcomes such as blood pressure control and glycosylated hemoglobin. For this to occur, however, research should also focus on the development and validation of a tool that can measure the direct impact of a communication or question asking tool on a specific behavior or health related outcome.

Provider use of the brochure to frame education and summarize key points of education has been used in other studies (Six-Means et al., 2012) and appears to be well received by patients. Future research using the *AM3* © brochure in this manner may be ideal as it relieves pressure from the patient (especially if they do have LHL) and decreases the potential for information overload by keeping the discussion to three main points. Reducing the potential for information overwhelm is endorsed by the AHRQ as data shows individuals forget many medical related instructions and information is best received when reduced to 3-5 key points (Brach, 2024).

5.6 Dissemination

The "Supporting Patient-Provider Communication at a Community Mobile Clinic using the *Ask Me Three* © Brochure" was submitted to University of Delaware (UD) DNP Project Committee and presented via PowerPoint to the UD School of Nursing faculty and peers. To disseminate the knowledge gained from this DNP Project to other healthcare disciplines the plan will be to publish a manuscript in a SQUIRE format with a peer-reviewed, evidence-based journal. A poster has been developed for presentation with H4A ® at the Equity in Action Delaware conference April 18, 2024.

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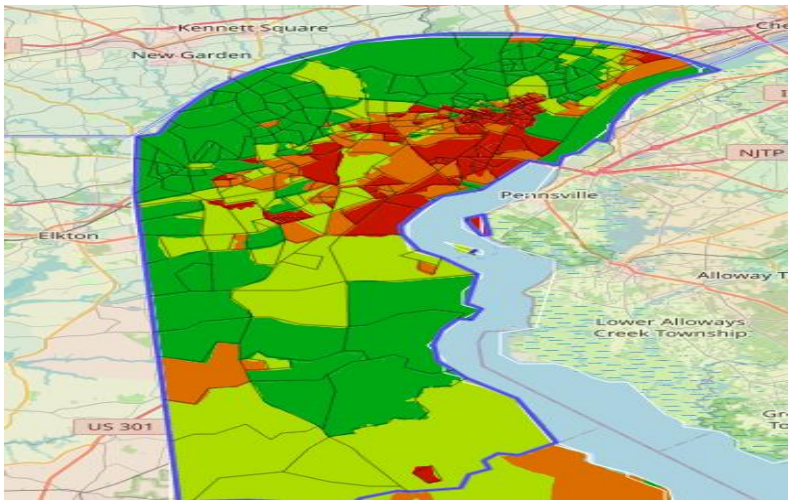
APPENDIX A

HEALTH LITERACY DISTRIBUTION, NEW CASTLE COUNTY (2014)



Note. This interactive map was developed through the University of North Carolina at Chapel Hill [UNC]. (2014). *Health literacy data map.* http://healthliteracymap.unc.edu/#. Permission granted by co-developer Stacey Bailey to copy the picture from the interactive HL map.

APPENDIX B

EVIDENCE SUMMARY TABLE

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
1	Ousseine et al. (2018)	Cross-sectional	N=2,229 online survey recipients	SDM has greater association with functional and communicative HL while critical HL has less. Difficulty asking questions correlates with health literacy and numeracy, possibly due to difficulty formulating questions. Those with higher levels of HL had less difficulty in asking questions.	No difficulties asking question associated better SDM (OR 6.28;95% CI; p= <0.001); when difficulties with asking questions was removed functional (OR-1.08; p=<0.001) and communicative (OR=1.03; p<0.001) associated with SDM	Psychometric evaluation only used subjective measures and could not compare to translated objective measures of functional HL and numeracy. Generalizability limited as member recruitment from a volunteer online advocacy group and mainly included women	III; Good
2	Shepherd et al, 2015	Quasi-experimental	Patients of a family planning primary care clinic; n=121	The implementation of ASK (ask, share, know) in prompting questions was feasible	After intervention 84% of participants asked one or more questions;	Rely on patient self-reports, reduced sample due to exclusion criteria	III; High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				and accepted by patients; participants who asked all three questions in ASK were more likely to be involved in decision making during consultation.	29% of patients asked all three questions; 87% Of those who participated in decision making 87% of patients asked one or more questions and 43% asked all three questions- after 2 weeks 49% of participants remembered all questions		
3	Lord, Borkowski, & Weech-Maldonado, 2021	Literature Review	N=5	Asking questions during a healthcare encounter (as demonstrated through review of the "Ask ME Three" tool) encourages communication between the patient and provider and patient engagement. In addition, it can increase	N/A	The review was meant to eval the use of "Ask Me Three" in the home health setting and no results populated specific to this population	V; High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				patient satisfaction.			
4	Amaral et al, 2021	Cross-sectional of Lifelines cohort study	N=2,742; patients of Lifelines outpatient clinics diagnosed with multiple conditions	Lower health literacy correlated with higher comorbidity with CKD. Older patients had greater incidence of cardiovascular disease and CKD as well as psychiatric and CNS diseases. Suggested facilitating comorbidity with low HL include poorer access to care, worse health behaviors and self-management.	Lower literacy associated with greater multimorbidity OR increase from 1.71 (1.25-2.33) for 2 comorbidities to 2.71 (2-3.68) for 4 comorbidities. Older patients with lower HL had great	Cross-sectional analysis could not assess change over time, focused mainly on functional health literacy which may have led to underestimations of low HL; data missing on albuminuria status in about half of patients; 65% answered health literacy questionnaire	III; High
5	Magnani et al., 2019	Consensus/Position Statement	N/A	Multiple studies discussed the association between limited HL and poor outcomes in cardiovascular related diseases and behaviors including HTN, DM, obesity, tobacco	N/A	N/A	IV; High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				CAD, CHF, and stroke.			
6	Shah et al., 2021	Scoping Review	N=12 articles from PubMed, MEDLINE, CINAHL, PsychInfo and Embase	Greater levels of HL correlated with greater knowledge regarding CKD disease process and communicative literacy associated with medication adherence, diet and fluid adherence, and general self-management actions.	N/A	Search limited 2005 to 2020 in English language, quality of evidence not evaluated, may not represent countries where HL vary (undeveloped countries)	V; Good
7	Meijers et al., 2020	Observational	Audio-video recorded consultations between patients and GPs in Netherlands N= 970 (437 2015-2016; 533 2007-2008)	Patient participation has a positive effect on visit outcomes and satisfaction. HL affects patient participation. question-asking behavior has changed in the last decade. Fewer medical questions being asked but increased practical questions (such as how	Total questions asked by patients 2015-2016 was lower than in 2007-2008 (coef. -0.46; SD 0.10; 95% CI-0.66 to 0.20, *p*=0.00); practical questions asked more than medical questions (coef. 3.02; SD .29; 95% CI 2.45-3)	Question asking is not the sole indicator of patient participation. Study only focused on question-asking behavior and no other expressions. Medical and practical questions with lower inter-rater agreement. Did not focus on patients and GPs.	III; Good

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				to go to a screening test) increased. This was greater in patients with limited HL.			
8	Katz et al., 2006	Mixed Method-convergent	N=57 patients visiting for appointment from Grady Memorial Hospital system	Patients with lower literacy levels have a greater tendency to ask fewer questions during their medical visits which is one determinant to reduced participation. Low HL individuals have less questions about medical care (mainly in relation to lifestyle changes/factors) (p=0.14). Lower literacy patients asked for the practitioner to repeat instructions more often (p=0.13).	Lower literacy correlated with less medical care questions during visit (median=4 vs 6 in higher HL group, *p=0.014*) Less HL asked less questions overall (median=7 vs 10, *p*=0.70) Less HL asked providers to repeat questions more often to repeat something (*p*=0.13)	Sample size small, qualitative findings are subjective, unable to control for other unmeasured characteristics that may lead to variations in question asking, and decreased generalizability of results as sample group predominantly African American.	III; Good
9	Tracy et al., 2022	Qualitative-Longitudinal study	N=31 participants older than 8 recruited	Question prompt lists (QPLs) (those tested	3 themes developed involving barriers	Participants may have expressed more	III; High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
			through social media	were ASK and Question Builder-AU) can help patients feel empowered and help prioritize what needs to be discussed. QPLs should be easy to use and easy to access. There is more acceptance of use with them if the provider endorses them.	and facilitators of asking questions and accessing health information; QPLs assisted in helping some patients recognize the role of asking questions and increased empowerment; and patients wanted QPLs to be easier to use, accessible, and normalized in visit encounters.	positivity about the tools than was genuine; some patients may have felt uncomfortable with using the tools.	
10	Aboumatar et al., 2012	Cross-sectional study of RCT	N= 41 Primary care physicians and 257 patients (Patient-Physician Partnership RCT)	Patients with low Hl were interested in participating with PCP but experienced less participatory decision-making during visits. Except for medical questions, communication between	Low literacy patient with desire to participate in decision making (76.4% (95% CI; 66.2-84.2; p=0.18) Low HL medical questions asking	Participants knew they were being taped and this may have influenced communication behavior. May have failed to capture patient-physician non-verbal language.	III; High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				low and adequate literacy levels were not significantly different. Lower HL patients reported less understanding of the condition.	(95% CI; 4.46 (3.37-5.89); *p*=0.02) Low HL psychosocial question asking (95% CI; 0.61 (0.36-1.03); p=0.23) compared to adequate HL (CI 95%; 6.82 (5.90-7.89); p=0.02) and (CI 95%; 0.9 (0.65-1.25); p=0.23) Lower overall participation PDM in low HL group no matter activation of patient or provider training (avg 64.3; p=0.04-0.76 VS avg high HL of 73.3 p=0.4-0.76	Did not eval literacy level and clinical outcomes. Smaller number of low HL in each group. Used 9th grade reading level as cut off between low and adequate HL. REALM HL measuring tool cannot capture all dimensions of HL.	
11	Winiger et al. (2021)	Quasi-experimental	N=25 patients (12 control, 13 intervention)	To address the problem of education retention prior after discharge	Control group mean score: Pre-test=6	Small sample size Recruitment challenges due to	II-Good

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
			hospitalized with MI	from hospital for acute heart events, researchers created a video using the *Ask Me Three* © brochure as a framework. This was played to patients prior to discharge. Results showed the intervention helped to increase education retention	Post-test =6.2 Difference =0.17 Intervention group mean score: Pre-test 5.5 Post test 7.1 Difference = 1.5 Change in score of control and intervention group statistically significant p=0.0056	traveling distance Difference in mean age that was not statistically significant when age was adjusted on a generalized linear analysis	
12	Michalopoulou et al., 2010	Quasi-experimental	N=64 (32 control, 32 intervention) African American participants recruited from a medical clinic in Detroit. Predominantly female, low income, low educational attainment	Ask Me Three was used by the intervention group to test the effect on cultural competency, increased visit/provider satisfaction, and fair procedures. Having a regular physician had a greater impact on satisfaction than the *AM3* © tool; there was no	97% thought the brochure was helpful. 93% asked all three questions. 93% found the questions helpful. 93% kept the brochure. 70% wrote in the brochure. 91% felt they knew more	Small sample size Focused population that may not be generalizable Absence of independent verification of patient use of the pamphlet No random selection	II-Good

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				difference in cultural competency. Patients positively received the *AM3* © tool and reported that it was helpful and gave them more information.	about their medical condition and illness after the visit. Helped to make a participant "more assertive."		
13	Stormacq et al., 2018	Integrative Review	N=16 articles met inclusion and exclusion criteria	Low socioeconomic status and social disadvantages are associated with LHL. Educational attainment has the greatest effect on HL. HL can partially mediate the effect of low SES on health status, quality of life, health outcomes and health behaviors, and using preventative services. Recommendations to improve population HL to reduce health inequities.	N/A	Limited number of included studies due to the reduced number of studies evaluating the mediating effect of HL. A variety of HL measurement tools across different studies create variability in results; some studies only focus on functional HL and not more advanced forms of HL (i.e. communicative or critical). Most included studies with	V, High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
						descriptive correlation design.	
14	Eggly et al., 2011	Cross-sectional	N=109 patient to provider (oncologist) interactions at a cancer center	Black patients asked fewer questions than White patients. Companions during an appointment promoted more questions.	Black asked fewer questions than White patients and had a tendency to ask fewer direct questions ($p=0.008$; $M_{Black}=7.83$, SD=7.81; $M_{White}=11.56$, SD=9.23).	Could only control for one possible contextual influence, focused on direct questions and made more comparisons with this data.	III, Good
15	Menendez et al., 2011	Cross-sectional	N=84 patients at orthopedic hand surgeons' office	LHL associated with reduced question asking during visit with the provider and asked fewer questions regarding medicine (i.e. treatment). Non-White patients asked fewer questions than white patients. Surgeons only encouraged questions in 29% of visits. When	LHL correlated reduced questions (5+/- 4 vs 9 +/- 7, -4.95% CI, -7 to -1, p=0.002). Patients who were not White asked fewer questions than White patients (5+/-4 vs. 9 +/-7; mean difference -4; 95% CI, -7 to 0; p=0,032).	Risk of bias, Change of subjectivity with coding, patient and provider awareness of being audio recorded, study conducted in single center and lack generalizability, only included first office visits, included only English-speaking individuals	III, High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				surgeons did ask if the patient had questions 79% affirmed that they did.			
16	Marciano et al., 2019	Meta-analysis	N=61 studies with total of 18,905 patients with Type 1 or Type 2 diabetes	HL affects diabetes outcomes including knowledge and glycated hemoglobin levels. patients' HL and the direct effect on diabetes outcomes in a meta-analysis and concluded that patients with higher HL had better diabetes knowledge (n=20, r=0.308, p<0.001, I^2=85%), as well as lower glycosylated hemoglobin levels (n-36, r=-0.048, p=0.027, I^2= 71%). They did not find a significant effect on self-care management.	Higher HL had better diabetes knowledge (n=20, r=0.308, p<0.001, I^2=85%), as well as lower glycosylated hemoglobin levels (n-36, r=-0.048, p=0.027, I^2= 71%).	N/A	II, High
17	Kim et al., 2020	Quantitative pre-test/post-test non-	N=18 patients and 3	There was a higher frequency of	Pretest mean and posttest	Small sample size.	III, Good

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
		experimental research	healthcare providers at infectious disease outpatient clinic	medical questions (about test results and medications) in a study evaluating the use of a question prompt list in patients with Human Immunodeficiency Virus (HIV). There was also an impact on quality of life when using QPL. QPL program is well accepted by patients especially if newly diagnosed.	mean differences: Question frequency (5.6 vs 0.6, p<0.1) Interaction time with provider (6.3 vs 5.4, p<0.001) Communication with PCP on scale of 0-36 (29.3 vs 29.6, p=0.799) Self-management scale 0-72 (46.2 vs 48.1, p=0.337) Quality of life scale 0-100 (69,4 vs 74.4, p=0.74)	Results were not generalizable due to convenient sampling from one hospital. Analysis does not include other factors that affect patient-provider communication, such as HL.	
18	Reid et al., 2022	Cross-sectional Analysis	N=161 patients and 40 cardiologists	Incidental finding that clinicians only encouraged questions in 14 out of 161 patient visits	Female gender is associated with greater participation (CI 0.06, 4.1, p=0.04). No significant difference in cardiologist eliciting questions and	Patients and cardiologists knew they were being audio-recorded. Included new and returning patients in the study. Limited to Black and white English-speaking patients.	III, High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
					participation (small sample)		
19	Barton et al., 2020	Secondary analysis of 3 arm quasi-experiemntal study	N=99 patients and 17 oncologists	Increased interaction in intervention groups using question prompt lists influenced information exchange by encouraging patients to prompt providers for more information. QPL had no effect on the amount of information given or the extent of information needed. 50% of patient information needs went unaddressed indicating providers give information that they perceive the patient needs.	Patient activation statements (question asking) prompted information from the provider average 3.72 times (range 0-12, SD=3.36); unprompted information from provider given avg 18.93 times (range 8-30, SD=4.86). No QPL control group prompted provider less often than Arm2 and 3 (intervention groups) (Arm 2 X=5.54; Arm 3=4.15)	Information on information needs of patients collected in only one study arm. Population of the parent study consisted of African American patients with cancer and most patients were women making results less generalizable.	III, High
20	Swiatoniowska-Lonc et al., 2020	Cross-sectional and observational	N=250 patients diagnosed with HTN recruited from	Per patients in the study, providers did not often encourage them to ask	Not encouraged questions 28.4%	Study lacked HL assessment which effects participation in provider	III, High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
			hospitalization	questions, involve them in decision-making, or discuss next steps with them. Better communication correlated with improved self-care and self-adherence.	Not involved patients in decision making 29.2% Not discussed next steps 35.2%. Correlation analysis of self-care and communication satisfaction scores positive (r=0.208-0.276) Better communication correlated with med adherence (r=-o.299, p<0.001).	consult; study did not analyze effect of gender on patient-provider communication	
21	Borge et al., 2021	Qualitative analysis	N=14 patients diagnosed with COPD and 3 multidisciplinary providers at Lovisenberg Diaconal Hospital	COPD patients reported themes: data from the provider was sparse and patients did not feel they could ask questions due to the provider seeming rushed/busy. Did not feel they had enough knowledge	Qualitative themes	Conducting the study with individual interviews may have given more insight. Possible that people with low HL not reached due to not being able to read the consent/participate, only included	III, Good

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				about the disease to know what questions to ask. It can be difficult to find health information and understand who to contact for support.		patients from one area.	
22	Lapiz-Bluhm et al., 2015	Quantitative non-experimental	N=280 attendees of community health screening event	Promotion of *Ask Me Three* © well received by participants. Participants reported comfort with using the tool with their healthcare provider. All participants who agreed to be contacted by telephone and had seen their provider since the screening event reported use of the *Ask Me Three* © questions. The tool made questions easier to ask, reminded them what	97.86% reported comfort in asking questions. Of 83 participants who volunteered to be contacted after the screening 27.71% could be reached and 39.13% saw their HCP- of those people 100% used *Ask Me Three* © and had positive feedback.	Sample from a cultural minority festival and not representative of the population. Convenience sampling increases the chance of bias. Not all participants agreed for follow-up and the study was not long enough to glean information on behavioral changes.	III, Good

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				questions to ask, and gave structure to the conversation. The questions promoted communication with the provider.			
23	Keinki et al., 2021	Systematic Review	N=10 RCTs	QPLs increased discussion and questions asked especially regarding prognosis and treatment options. Insufficient evidence on the effect of physician endorsement of QPLs on question asking. QPLs can either decrease or increase visit length. All studies found higher levels of satisfaction intervention and control groups; increased satisfaction with self-generated QPLs.	N/A	Strict inclusion criteria, no meta-analyses.	I, High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				QPLs may help information recall when endorsed by providers. QPL increased benefits to people who have difficulty asking questions and engaging with the provider.			
24	Sansoni et al., 2015	Systematic Review	N= 42 studies (combined study categories)	Varied evidence that endorsement of QPLs increased question asking. QPLs increased question asking. Some evidence shows that providers gave more information when QPLs were used. No consistent findings that QPLs increased visit length or anxiety. Most studies provided suggestive not definitive findings.	N/A	Rapid review of studies	III, High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
25	Amundsen et al., 2018	Quasi-experimental	N=93 patients (31 control, 30 QPL, 32 combined QPL and education) Recruited from Cancer Outpatient Clinic at UNN at 3 different time periods.	More questions were asked in intervention group (but not statistically significant); more questions were asked when provider endorse use of QPL at start of the visit; providers were instructed to encourage questions but only did so in 15% of visits; QPL intervention group asked more questions about prognosis, disease, and treatment; practical questions were more common in control group. Intervention did not increase anxiety and there was no change in how information	Increase in the number of questions patients asked (primarily relating to prognosis and treatment), however the results were not significant (M=23, SD=17 intervention group; M=17, SD=15 control group; t=-1.84, p=0.70).	Single center study and small sample size Different sized control and intervention groups Less generalizable	II, High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				was retrieved.			
26	Shepherd et al, 2011	Quasi-experimental	N=36 P (18 intervention and 18 control)	In a simulated patient asking three questions during a real PCP visit asking questions increased information and patient participation	Assessing Communication about Evidence and Patient Preferences (ACEPP) increased in intervention group (21.4 vs. 16.6, p<0.001, difference 4.7 with 95% CI 2.3-7) OPTION (shared decision-making tool) increased with intervention group (36 vs 25, p=o.oo1, difference 11.5 with 95% CI 5.1-17.8)	Small sample and control decreased validation effect ACEPP. Some family physicians detected standardized patients but were blind to the study purpose. More female than male physicians	II, Good
27	Dihn et al., 2020	Exploratory Cross-sectional study	N=528 participants at a tertiary hospital in Vietnam diagnosed two or more chronic illnesses.	HL was associated with age >65 years, socioeconomic status, social support, and comorbidity status. Education and income were the	Multivariate model results: Education was positively associated with 7 of 9 HL measures on the Health Literacy	Only one hospital was used at a specific point in time and may not be representative of the population. The associations in the study	III, High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				most significant predictive factors of changes in HL. Better HL was associated with education beyond 12th grade, ages <65 years, and having a lower comorbidity index. The more comorbidities one had the greater association with lower HL scores. Comorbidity is associated with difficulties appraising information and finding good health information. Education is associated with provider relationships, managing health needs, appraising health information, engaging with providers, understanding health information,	Questionnaire (HLQ) with 95%CI (2.74-3.92, p<0.01); income was positively associated with 7 of 9 HLQ domains (2.89-3.94, p<0.01). Age younger than 65 years associated with 4 of 9 domains (3.64-3.87, p<0.01). Comorbidities associated with 2 of 9 HLQ domains (2.80-3.76, p<0.05).	should not be construed as causality.	

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				and navigating the health system.			
28	Perez-Stable & El-Toukhy, 2018	Organization Expertise (National Institute of Minority Health and Health Disparities)	N/A	Patient-provider communication affected by factors associated with racial/ethnic minority, limited English proficiency, and low health and digital literacy. Clinicians who are not culturally competent and lack communication skills, hold implicit biases that contribute to communication deficits. Recommendation includes improving patient-provider communication as a "pathway" to decrease health disparities and increase health equity.	N/A	N/A	IV, High

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
29	Schillinger, 2021	Literature Review	N/A	Populations coined as "disadvantaged" have worse health outcomes and lower levels of health literacy. HL is both a determinant and product of socioeconomic inequities and the disparity gap. HL strongly correlates with educational attainment, race/ethnicity, and lower English proficiency leading to worse communications and worse health outcomes. HL can partially mediate the effects of poor outcomes related to these groups.	N/A	None	V, High
30	Li et al., 2017	Cross-sectional	N= 479 cancer patients identified from parent	Patients with increased comfort in asking questions and had	Patients with increased comfort in asking questions	Cross-sectional design, patients recruited from single	III, Good

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
			study at hospital	higher unmet informational needs had better quality of life scores. Conversely if patients faced more communication barriers and had unmet information needs, they had lower quality of life scores (r=-0.2, p=0.0; r=-0.31, p=0 and r=-0.9, p=0.4; r=-0.15, p=0.0 respectively)	and had higher unmet informational needs had better quality of life scores. Conversely if patients faced more communication barriers and had unmet information needs, they had lower quality of life scores (r=-0.2, p=0.0; r=-0.31, p=0 and r=-0.9, p=0.4; r=-0.15, p=0.0 respectively).	state, some counties not included as they did not have enough African American population, recall bias, low reliability of measurement scale, not able to control for demographic effect on patient and provider relationship.	
31	Toibin et al., 2017	Quasi-experimental	N=20; 10 control, 10 intervention with use of the *Ask Me Three* © brochure	Participants reported decreased fear that information was being withheld, decreased fear that questions would be misconstrued as criticism, and feeling able to ask questions	Quantitative measurements showed no improvement in HL in both control and intervention groups as did participation (p</= 0.01).	None reported	II, Good

Article #	Author & Date	Evidence Type	Sample, sample size, & setting	Study findings that help answer the EBP question	Observable Measures	Limitations	Evidence level &
				when unsure of something. *Ask Me Three* © increased empowerment to ask questions and seek clarity.	Qualitative measurements included those mentioned.		

APPENDIX C

INSTITUTIONAL REVIEW BOARD (IRB) PROTOCOL UNIVERSITY OF DELAWARE AGREEMENT

Institutional Review Board
210H Hullihen Hall
Newark, DE 19716
Phone: 302-831-2137
Fax: 302-831-2828

DATE:	July 28, 2023
TO:	Jessica Parcher
FROM:	University of Delaware IRB
STUDY TITLE:	[2078191-1] Supporting Patient–Provider Communication using the Ask Me Three © Brochure
SUBMISSION TYPE:	New Project
ACTION:	NOT HUMAN SUBJECTS RESEARCH DETERMINATION
DECISION DATE:	July 28, 2023

Thank you for your New Project submission to the University of Delaware Institutional Review Board (UD IRB). According to federal regulations, this project does not meet the definition of human subject research under the purview of the IRB.

The following definitions were used in making the NOT HUMAN SUBJECTS RESEARCH determination:

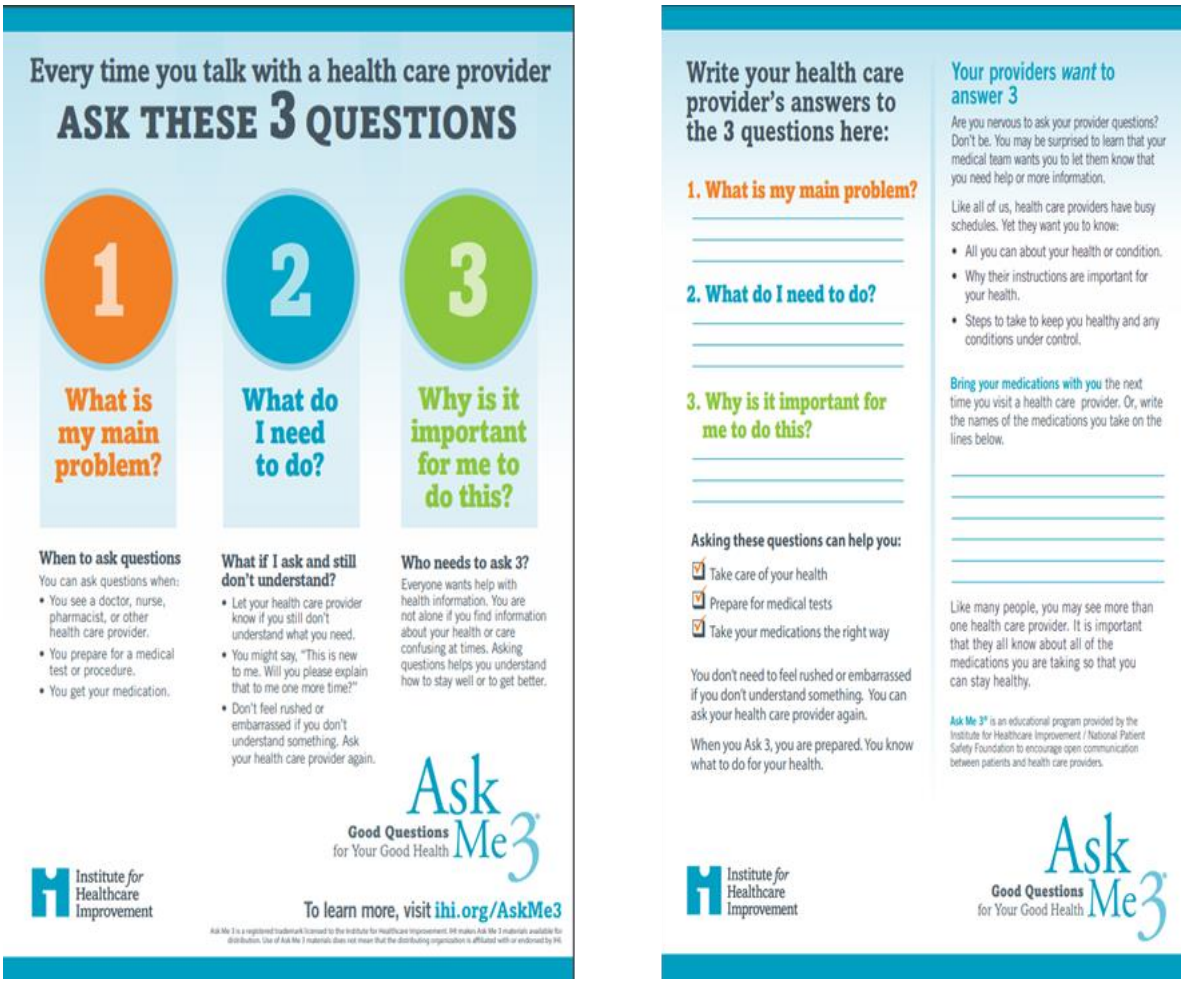
- **Research** means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge.
- **Human subject** means a living individual about whom an investigator (whether professional or student) conducting research: (i) Obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or (ii) Obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens.

No further action with the IRB Office is required at this time. Please consult with our office if any major changes to the reviewed project, relevant to the definitions above, were to be proposed.

A copy of this correspondence will be kept on file by our office. If you have any questions, please contact the UD IRB Office at (302) 831-2137 or via email at hsrb-research@udel.edu. Please include the study title and reference number in all correspondence with this office.

APPENDIX D

ASK ME THREE ©



Note: Downloaded from Institute for Healthcare Improvement [IHI]. (2007). *Ask Me Three.* https://www.ihi.org/resources/Pages/Tools/Ask-Me-3-Good-Questions-for-Your-Good-Health.aspx

APPENDIX E

MEASUREMENT TOOLS

Demographic Questionnaire

What is your age?	What is your annual income?	Are you Hispanic or Latino origin or descent?	What is your race? Mark one or more	What is your highest level of education?
a. 18-30 b. 31-40 c. 41-50 d. 51-65 e. 65+	Less than $19,720 More than $19,720 Less than $30,000 More than $30,000 Prefer not to say	a. Yes, Hispanic or Latino b. No c. Prefer not to say	a. White a. Black or African American b. Asian c. Native Hawaiian or Pacific Islander d. American Indian or Alaska Native e. Other (write in) _____	a. 8th grade or less b. Some high school, but did not graduate c. High school graduate/GED d. Some college or 2-year degree e. 4-year college graduate f. More than 4+ college degree

Agency for Healthcare Research and Quality [AHRQ] 2020 Clinicians and Groups-Consumer Assessment of Healthcare Providers and Systems. .https://www.ahrq.gov/sites/default/files/wysiwyg/cahps/surveys-guidance/cg/guidance-cg-cahps.pdfp

All Aspects of Health Literacy Scale ©

	Please select one answer		
How often do you need someone to help you when you are given information to read by your doctor, nurse, or pharmacists (providers)?	☐ Often	☐ Sometimes	☐ Rarely
When you need help with health-related information, can you easily get ahold of someone to assist you?	☐ Often	☐ Sometimes	☐ Rarely
When you talk to a provider, do you give them all the information they need to help you?	☐ Often	☐ Sometimes	☐ Rarely
When you talk to a provider, do you ask the questions you need to ask?	☐ Often	☐ Sometimes	☐ Rarely
When you talk to a provider, do you make sure they explain anything that you do not understand?	☐ Often	☐ Sometimes	☐ Rarely
Are you someone who likes to find out a lot of different information about your health?	☐ Often	☐ Sometimes	☐ Rarely
Are you the sort of person who might question your provider's advice based on your own research?	☐ Often	☐ Sometimes	☐ Rarely

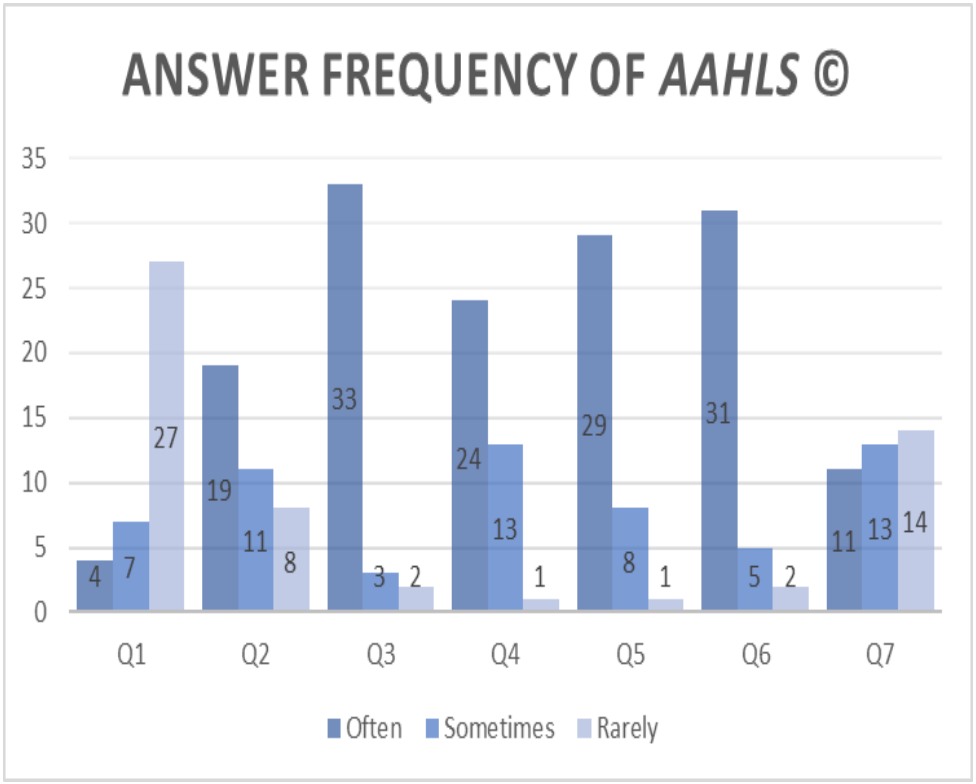
***Ask Me Three* © Satisfaction Questionnaire**

	Please select one answer	
Did you find the brochure helpful?	**□ Yes**	**□ No**
Did you write in the brochure?	**□ Yes**	**□ No**
Do you feel you know more about your medical condition or illness after your visit?	**□ Yes**	**□ No**
Did the questions help you feel more able to be a partner in your care?	**□ Yes**	**□ No**

Michalopoulou G, Falzarano P, Arfken C, Rosenberg D. Implementing Ask Me 3 to improve African American patient satisfaction and perceptions of physician cultural competency. *Journal of Cultural Diversity*. 2010 Summer;17(2):62-7. PMID: 20586368; Aboumatar, H., Carson, K., Beach, M., Roter, D., & Cooper, L. (2012). The impact of health literacy on desire for participation in healthcare, medical visit communication, and patient reported outcomes among patients with hypertension. Journal of General Internal Medicine, 28(11), 1469-1479. https://doi.org/10.1007/s11606-013-2466-5; King, S., Garrison, M., Fraser, M., Wiley, M., Sharek, H., Gaine, S., & Kosteroski, W. (2023). Empowering patients with a shared communication tool: A patient-oriented multimethods pilot study. *Journal of Patient Experience, 10, 1-8. https://doi.org/10.1177/2374373523116042*

APPENDIX F

AAHLS © ANSWER FREQUENT CHART



APPENDIX G

ASK ME THREE © SATISFACTION QUESTIONNAIRE ANSWER FREQUENCY (%)

	Yes	**No**
Did you find the brochure helpful?	100%	0%
Did you write in the brochure?	55%	45%
Do you feel you know more about your medical condition or illness after your visit?	89%	11%
Did the questions help you feel more able to be a partner in your care?	100%	0%

Michalopoulou G, Falzarano P, Arfken C, Rosenberg D. Implementing Ask Me 3 to improve African American patient satisfaction and perceptions of physician cultural competency. *Journal of Cultural Diversity*. 2010 Summer;17(2):62-7. PMID: 20586368; Aboumatar, H., Carson, K., Beach, M., Roter, D., & Cooper, L. (2012). The impact of health literacy on desire for participation in healthcare, medical visit communication, and patient reported outcomes among patients with hypertension. Journal of General Internal Medicine, 28(11), 1469-1479. https://doi.org/10.1007/s11606-013-2466-5; King, S., Garrison, M., Fraser, M., Wiley, M., Sharek, H., Gaine, S., & Kosteroski, W. (2023). Empowering patients with a shared communication tool: A patient-oriented multimethods pilot study. *Journal of Patient Experience, 10, 1-8. https://doi.org/10.1177/2374373523116042*