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Improving Patient Satisfaction and Preventative Health Service Utilization for Limited English Proficiency Immigrants at Pearl Medical Centr

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Improving Patient Satisfaction and Preventative Health Service Utilization for Limited English-Proficiency Immigrants at Pearl Medical Centre

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Abstract

Background: Despite research efforts to address health disparities within immigrant communities, immigrant health continues to lack the attention from healthcare stakeholders it needs. Many immigrants already face dire health threats like extreme poverty, political unrest, and mental health concerns in their countries of origin, making them even more vulnerable to poor physical, mental, and social health outcomes upon arrival to the United States (U.S.). The purpose of this project was to improve patient satisfaction and increase immigrant use of preventative care by utilizing appropriate interpreter services. *Method:* The Quality improvement (QI) project involved surveying limited English proficiency (LEP) immigrants older than 25 years using a standardized patient satisfaction survey instrument that was administered with the help of an interpreter over a period of 3 months at a primary care clinic in Louisville. *Results:* Outcomes measured in this project includes patient satisfaction with healthcare services in a primary care clinic and use of preventative services. Associations were analyzed using nonparametric tests and the correlation between patient satisfaction and increase in use of preventative services was not conclusive due to limited data. Although the impact of the intervention could not be fully evaluated, patients' satisfaction was high after implementation. *Discussion:* Language barriers can adversely impact access to care, incumber care quality, and be damaging to the health outcomes of those with LEP thereby affecting patients' satisfaction. Patient's satisfaction with communication impacts preventative health service use. *Conclusion*: Additional longitudinal studies are needed to truly ascertain the impact of patient satisfaction on the use of preventative health services amongst LEP immigrant population.

Keywords: preventative healthcare, limited English proficiency, communication barriers, immigrants in the United States, health disparities, interpreter services, patient satisfaction.

Improving Patient Satisfaction and Utilization of Preventative Health Services for Limited English Proficiency Immigrants at Pearl Medical Center

Migration is increasing worldwide and immigrants to the U.S. navigate a complex health system (International Organization for Migration [IOM], 2019). Globally, the number of international migrants in 2019 was 272 million, which is about 3.5% of the world's population (IOM, 2019). Under perfect conditions, as with anyone, immigrants must select and apply for health insurance, find a primary care provider accepting both new patients and their insurance, understand automated telephone menu systems or appointment scheduling websites, and learn to navigate health care facilities. These barriers can prove to be insurmountable for immigrants with limited literacy, limited English proficiency, or lack prior experience with comparable health systems (Yun et al., 2016). Compared with those who speak English proficiently, people with limited English proficiency (LEP) are more likely to misunderstand their diagnosis, treatment, and follow-up plans, use medications incorrectly, lack informed consent for surgical procedures, suffer serious adverse events, and report a lower-quality health care experience (Green, Rosu, Kenison, & Nze, 2018). Good communication between patients and medical providers is the core of effective healthcare and key in improving patient's satisfaction.

Statement of Purpose

The purpose of this project was to improve patient satisfaction and increase immigrant use of preventative care by utilizing appropriate interpreter services. Assessment of LEP patient satisfaction allows primary care providers to explore the degree to which their services meet the needs of the population in question. In addition, assessment findings can be used to make necessary changes aimed at improving patient satisfaction.

Research question: In LEP immigrants at a primary care clinic in Louisville, does the use of a language interpreter service and individualized patient education improve patients' satisfaction and increase utilization of preventative health services?

Review of Literature

Immigrants are less likely to meet health management goals such as making healthy choices, achieving health autonomy and equality, and overall health improvement, due to various barriers and gaps in access to health care. The U.S. Department of Health and Human Services through the Healthy People 2020 disparities summary chart shows an example of this: 78.3% of persons born in the U.S. had a primary health provider, compared to 65.1% for those born outside the U.S. (2014). Limited English Proficient immigrant populations have unequal access to primary care services and are less likely to receive proper health screening or preventive health service recommendations. This population faces numerous health care disadvantages because of low-income status, race and ethnicity, lower educational achievement, varying degrees of health literacy, and limited English proficiency (Griswold et al, 2018). Over the past twenty years, crises like those in Somalia, Yemen, Iraq, and Haiti have caused displacement and increased migration (Doocy et al., 2015). However, it should not be assumed that the healthcare needs and experiences of every immigrant population is identical (Omenka et al., 2020). For example, many immigrants from some African countries face severe health threats such as extreme poverty, war, and mental health issues in their countries of origin (Omenka et al., 2020). In contrast, examination of overall health status of Southeast Asian immigrant females found health needs related to prenatal, postpartum care, and infertility (Jinseon & Insook, 2018). Female immigrant workers in Korea also reported gender-based discrimination and workplace violence which can impact their mental health (Jinseon & Insook, 2018). Thus, there is already

an existence of huge health weaknesses upon arrival in the U.S., which can only get worse without appropriate access to healthcare services needed amongst these groups as well as other groups of immigrants (Omenka et al., 2020).

A qualitative study by Ali and Watson (2018) identified language barriers as the biggest obstacles in providing adequate, appropriate, effective, and timely care to patients with limited English proficiency. The burden of chronic diseases in this population is increasing and limited cognizance, access to diagnostic testing, and inadequate treatment for chronic diseases can lead to complications necessitating complex treatments, and adverse health outcomes that are preventable (Doocy et al., 2015). Those with LEP who need interpreter services (IS) for health care encounters may be at higher risk for encountering barriers to optimal health management (Njeru et al, 2017).

Interpreter service is a necessity in resolving the issue of language barriers in healthcare institutions and improving the satisfaction of both patients and medical providers. In a review by Joseph, Garruba, and Melder, (2018), parents of children presenting during an emergency reported higher levels of satisfaction with hospital-trained interpreters compared with using family and friends as interpreters. Jaeger et al. (2019) argued that while the use of friends and family to interpret comes with no monetary cost and is often readily available, their interpretation is usually substandard when compared to that of professional language interpreters since emotional prompts might be interpreted to a less important form. The risk of more translational errors and omissions is a concern, as is the case of the interpretations being embarrassing depending on what topic the patient is wanting to address with the provider and the family member who is present (Jaeger et al., 2019). Primary care providers need to utilize trained

in-person or telephone interpreters to help deliver applicable health education regarding patients' medical needs, appropriate follow up appointments, and use of preventative health services.

Preventative healthcare aids in maintaining health and discovering diseases at the onset. Limited English proficiency can negatively affect care access and the acceptance and utilization of preventive health services by immigrants. Also, they may not initially be receptive to the notion of preventive care, as these services may not have been available in their countries of origin or may not be consistent with their beliefs about health care (Griswold et al, 2018). In a study to examine the relationship between demographic factors, preventive health practices, chronic conditions, and health status of underserved Bangladeshi Americans, a majority reported not having an up-to-date physical/dental exam, colorectal, cervical, or breast cancer screening (Wu & Raghunathan, 2020). Results of this study demonstrates a need for development and implementation of language-appropriate and cultural interventions to address the unique healthcare needs and preventative healthcare of the studied population (Wu & Raghunathan, 2020).

Theoretical Framework

The theoretical framework for this project is the Leininger's Theory of Culture Care Diversity and Universality. The theory argues that it is the job of nursing to discover the culturally universal components of care and find diverse ways of caring. Shown in Figure 1, it also emphasizes that culturally congruent care is essential for human wellbeing (Zaccagnini & Pechacek, 2021, p. 25). According to Gonzalo (2019), cultural knowledge plays a very vital role for nurses on how to interact with patients. It alerts nurses to be aware of various ways in which the patient's culture and faith beliefs provide resources for their experiences with illness, misery,

and even death (Gonzalo, 2019). It helps nurses and other healthcare providers to be empathetic and reverent of the diversity that is often very present in health care (Gonzalo, 2019).

A major principle of any quality activity is that it yields improvement through change (Agency for Healthcare Research and Quality [AHRQ], 2015). Using the Plan-Do-Study-Act (PDSA) framework shown in Figure 2, critical components to the improvement of LEP patient satisfaction using language interpreters and individualized patient education can be developed. Answering the questions of what we are trying to accomplish, how will we know that a change is an improvement, and what changes can we make that will result in improvement are key pieces of the PDSA cycle (AHRQ, 2015). In the "Plan" stage, the important elements involved securing live and phone interpreters, training medical assistants and other providers on phone interpreter use, and establishing a network of specialist providers in the community that have available interpreter services when a referral is necessitated. The "Do" stage is fixated on the implementation of appropriate language interpreter use and patient specific education. The "Study" stage was defined by tracking LEP patients' preventative office visits and evaluating measures that includes completion of screening tests and patient satisfaction survey. In the final "Act" stage, ensuring the program served all LEP patients in the practice was prioritized.

Without the presence of a competent interpreter, it will be difficult for a health care provider to understand the intricacies of a non-English speaking immigrant's culture, thereby hindering the provision of culturally competent care and diminishing the impact of viewing the whole person rather than as simply a set of medical symptoms. With a purposive sample of 13 Arabic-speaking persons with experience of using interpreters in health care encounters, Hadziabdic and Hjelm (2014) revealed that face-to-face interpretation was the preferred method of interpretation in health care for most people. Data that were collected by four focus-group

interviews and analyzed with qualitative analysis, revealed that participants in this study agreed that face-to-face interpretation allowed them to observe the interpreter's verbal as well non-verbal language. Telephone interpretation was the desirable method in uncomplicated care situations where face-to-face interpretation was not available (Hadziabdic & Hjelm, 2014). Whatever the decision is with regards to the type of interpreter used, one of the goals of healthcare is to ensure patient satisfaction.

The emergence of patient satisfaction as a key measure in the assessment of healthcare systems and in predicting health outcomes should not be overlooked (Hayek et al., 2020). Patient satisfaction signifies how pleased a patient is with the care received. It is a feeling of serenity experienced by patients when they perceive that their healthcare needs have been met by the healthcare provider. Some factors that may affect patient satisfaction with care received include patient's socio-economic status, provider attitude, long wait time, type of service received (telephone consultation versus face-face), and cost of care (Tranberg et al., 2018; Omenka et al., 2020). In a complex system like primary care where diverse patients seek care, differences in perceived quality of healthcare or satisfaction may exist in patients' interactions (Hayek et al., 2020). A patient's relationship with his or her health care provider is a crucial element in the summation of their healthcare experience.

Method

Study design/setting/subjects

A cross-sectional survey was utilized to interview LEP immigrants over the age of 25 years who sought primary care services at the clinic in Louisville, Kentucky. Many of these patients came from Access Care Adult Day and Healthcare Center (ADHC) which is an adult day center that serves members of Hispanic, Arabic, Russian, Vietnamese, and Korean

communities. ADHC provides services including meal preparation, personal care, physical activities, companionship, and transportation of patients to doctor's appointments at the primary care clinic. Data was collected over a three-month period beginning mid-September 2021 with a total of 16 participants. Inclusion criteria included participants aged ≥25 years old, as children and young adults are more likely to learn languages more easily when compared to adults or older adults (Guven & Islam, 2015). Those with chronic health conditions such as diabetes, chronic obstructive pulmonary disease, and hypertension were also included. The survey was given to participants who had at least one previous office visit with the provider. Any immigrant that spoke English fluently and did not require an interpreter was excluded from the study. Anyone who did not consent to participate in the study was also excluded.

Measures/Survey instrument

The short-form instrument (the PSQ-18), of the valid and reliable Patient Satisfaction Questionnaire (PSQ III) was utilized (Appendix A). The PSQ-18 contains 18 items that represents each of the seven domains of satisfaction with primary care provider measured by the PSQ-III: general satisfaction, technical excellence, interpersonal features, communication, financial aspects, time spent with doctor, and accessibility and ease (Marshall & Hays, 1994). Demographic data including age and gender were also collected. No personal identifiers such as name or address were included.

The PSQ-18 yields separate scores for each of the seven different subscales/domains (Appendix B): General Satisfaction (Items 3 and 17); Technical Quality (Items 2, 4, 6, and 14); Interpersonal Manner (Items 10 and 11); Communication (Items 1 and 13); Financial Aspects (Items 5 and 7); Time Spent with Doctor (Items 12 and 15); Accessibility and Convenience (Items 8, 9, 16, and 18). To evaluate the level of satisfaction, an average numerical score for each

domain was determined and the average of the answers per domain were categorized into 5 groups (Appendix C and D) based on the average range: 0–1 (1 = not satisfied at all), 1.01–2.0 (2 = not satisfied), 2.01–3 (3 = satisfied on average), 3.01–4.0 (4 = satisfied), 4.01–5.0 (5 = very satisfied) (Hegazy et al., 2021).

Procedure for data collection

Oral informed consent (yes or no) was obtained from each participant by front desk personnel (medical assistants) when the patient arrived at the office for their scheduled appointment. Medical assistants were trained to describe the purpose of the project to the patient and ask for their consent with the help of a translator. Patients who agreed to participate in the project and attended their appointments with a live interpreter, completed the survey in the office with the help of the interpreter. For patients whose office visit was completed with the help of a professional phone interpreter, the interviewer obtained oral consent from them via the interpreter, and they were allowed to complete the survey in the office using the phone interpreter or could take the survey home for completion if they had a family member that could read English and assist them in completing the survey. Surveys that were completed at home were subsequently returned to either one of the two locked boxes that was kept at Access care center and the primary care facility where they received care.

Quality control procedures such as training of three existing medical assistants, and secure retrieval of surveys from boxes, were implemented at all levels of data collection, entry, and analysis. Only the project director handled data collection, data entry, and data analysis. Study intervention was utilization of appropriate language interpreters and patient specific health education. The goal was a minimum of 15 participants. Question 5 on the survey was

erroneously removed and so no patient received a survey with question 5. Thus, domain 5 was eliminated and question 7 (which is the other part of domain 5) was rated by itself.

Data Analysis

Descriptive statistics were conducted to describe characteristics of participants by two demographics- age and gender (Table 1a and 1b). All statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) Program for Windows. Patient age was entered as a continuous variable and gender was entered as a nominal variable (1= female, 2 = male). The non-parametric chi-square test was used to measure the relationship between the outcome variable (domains of patient satisfaction and 3 months follow up), gender. The chi-square was also used to determine if there was a relationship between domains of satisfaction, and 3 month follow up visit (Table 1c). Spearman rho was used to measure the relationship between age and domains of satisfaction.

Table 1a

The demographic (gender) of LEP patients

Gender	Frequency	Percent	Valid Percent	Cumulative percent
	n	%	%	%
.	1	6.3	6.3	6.3
Female	5	31.3	31.3	37.5
Male	10	62.5	62.5	100.0
Total	16	100.0	100.0	

Note. (.) denotes patient left blank

Table 1b

The demographic (age) of LEP patients

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Age	14	49	43	92	66.93	12.755
Valid N	14					

(listwise)

Note. N= number of patients

Table 1c

Result of 3M Follow up

Follow up	Frequency	Percent	Valid Percent	Cumulative Percent
	n	%	%	%
No	10	62.5	62.5	62.5
Yes	6	37.5	37.5	100.0
Total	16	100.0	100.0	

Table 2

Associations between Satisfaction Domains and 3-Month Follow-Up Appointment Completion

Satisfaction Domain	Mean Rating (SD) (3-Month Follow-Up Completed)	Mean Rating (SD) (3-Month Follow-Up Not Completed)	X^2 (df, n)
General Satisfaction	5.00 (0)	4.13 (0.63)	8.75(4, 15)
Technical Quality	5.00 (0)	3.88 (0.72)	11.00(7, 11)
Interpersonal Manner	5.00 (0)	4.25 (0.50)	7.54(4, 11)
Communication	5.00 (0)	4.38 (0.48)	9.60(4, 16)*
Financial Aspects	5.00 (0)	3.75 (1.26)	8.03(4, 15)
Time Spent with Doctor	5.00 (0)	3.75 (0.65)	6.90(5,16)
Accessibility & Convenience	5.00 (0)	3.75 (0.50)	14.00(5, 14)*

SD = Standard Deviation, df = degrees of freedom
** p < .05*

Results

In total, 21 patients were given a survey, and 16 responded (76.2%). Of the 16 participants surveyed, 31.3% (N = 5) identified as female and 62.5% (N = 10) identified as male (Table 1a). One participant did not state their gender. The youngest participant was 43 and the oldest was 92, with an average age of 66.9 (SD 12.8) (Table 1b). Two participants did not provide their age.

A total of 6 patients followed up for their 3 month visit (37.5%) and 10 did not (62.5%). The average rating for all domains was >4.00, except for domain 6 which had an average rating of 3.94 (Table 2). As mentioned previously, domain 5 was replaced with question number 7, and the average score was 3.47 (satisfied). Pearson Chi-Squares were performed for each domain to determine if there was an association between domain ratings and 3-month follow-up appointment completion. Domain 4 and domain 7 ratings were significantly associated with 3-month follow-up appointment completion (Table 2). All other domain ratings were not associated with 3-month follow-up appointment completion (Table 2).

Discussion

In this project, there was no relationship found between satisfaction level and gender. When reviewing the relationship between age and patient satisfaction within each domain, no significance was found. Thus, a patient's age and gender were not associated with patient satisfaction or follow up. The limited timeframe of this project made it difficult to fully explain the LEP population's views about their health and how they access preventative health services.

Generally, the patients in this project reported that they were very satisfied in the areas of general satisfaction, technical quality, interpersonal manner, communication and accessibility, and convenience. They reported they were satisfied with the time spent with provider. This means that improvement is needed in the amount of time a provider at this practice spends with the patient to change the satisfaction level to very satisfied. In reviewing the findings from this project, the domains 4 (communication) and 7 (accessibility and convenience) were significantly associated with 3-month follow-up visits ($\leq .05$) were. Thus, allowing the correlation coefficient to be examined to determine the strength of the relationship. Both domain 4 and 7 had a positive strong correlation with 3 month follow up visits. From the significant association found between

domain 4 (communication) and domain 7 (accessibility and convenience), we can infer that inadequate communication with provider, and a lack of accessibility and convenience of health services can hinder utilization of preventative services by LEP patients that seek primary care services at this practice. This information is useful as it establishes the importance of ensuring the use of appropriate interpreters to communicate effectively with the LEP patients in this practice and the need to remain accessible for the LEP patients.

Noticeably, some challenges were presented during this project. For instance, some patients who took their survey home did not return it. Also, time spent using the phone interpreter to complete the survey in office was an issue as it increased patient's length of stay for their office visit. This subsequently increased the cost of translation as the office is charged by the minute. Midway through data collection, ACHC started their own in-house clinic for their clients, and this impacted follow up visits considerably. Whether this was because of convenience and transportation or due to care received at the primary care clinic is unknown. It would also appear that some of the survey questions were not fully understood by the patients even with the help of the interpreter. The terms "agree" or "strongly disagree" might have been confusing depending on the question. For example, a patient who stated that they agreed with item number 10 "my doctor acts too businesslike" also stated that they strongly agreed with item 11 "my doctor treats me in a friendly and courteous manner."

Limitations

One limitation with this project was the inability to find statistical significance related to the small sample size. Another limitation was the length of project. Since surveys were handed out throughout the 3-month period, it is difficult to ascertain whether all those who did not follow up was due to satisfaction level as the time of their follow up was not due before the data

collection ended. Third, the adult day care center where some of these patients came from hired a nurse practitioner during the second month of this study. Thus, some of the missed appointments may have been the result of having more convenient access to care at another clinic, rather than being related to their satisfaction with the care received at the clinic where the project was carried out.

Finally, it is important to mention that all patients who participated were given survey forms missing question 5 which was part of domain 5 (financial aspects). This was an error that was not noticed until the data analysis stage. This would explain why question 7 was not analyzed as a domain. The ability to pay is known as a major predictor of unmet healthcare needs and an important factor in accessing patient satisfaction (Jinseon & Insook, 2018). Having this error of omission makes the data that was received from question 5 insufficient to analyze domain 5. Therefore, the full effect of patient satisfaction in relations to finance and its impact on follow up could not be determined.

Ethical considerations

The project was approved by Bellarmine university institutional review board before it was carried out. All project participants were volunteers and oral consent was obtained after thorough explanation of the purpose of the survey to each participant. No monetary compensation was given to participants, and because these patients may feel vulnerable about information being disclosed due to language barrier and their reliance on a translator, they were assured of confidentiality and no personal identifiers were collected. Surveys were given directly to the provider once complete or placed in one of the two secure boxes later collected by the project director.

Implications for Practice

In general, a high level of patient satisfaction was observed across all domains. However, we found lower satisfaction with the domain asking about time spent with the provider. Due to rising diversity in the U.S., it is crucial to acclimatize and be culturally receptive to a multilingual and multicultural society in need of healthcare. To effectively determine if successful outcomes such as increase in patient satisfaction and frequency of preventative health care visits by immigrants is possible, this project could be replicated at a clinic with larger LEP patient volumes. Continuing this study for a period of one year will likely yield more definitive results to better understand the level of immigrant patient's engagement with their healthcare providers and their use of preventative services. Since external factors exists that can affect use of preventative health services, future projects should explore individual and environmental factors that can negatively impact the use of preventative services by LEP populations.

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Figure 1

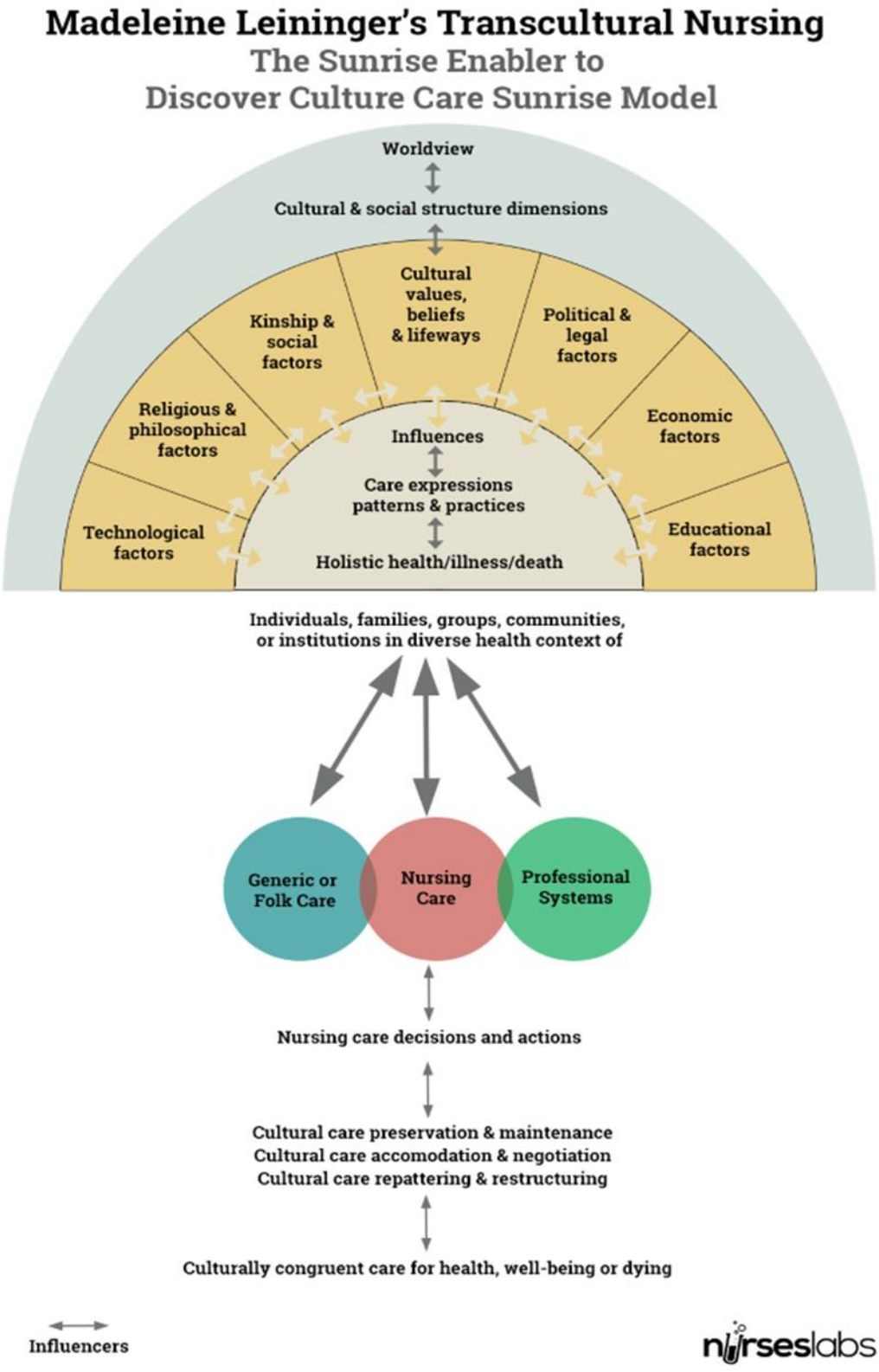
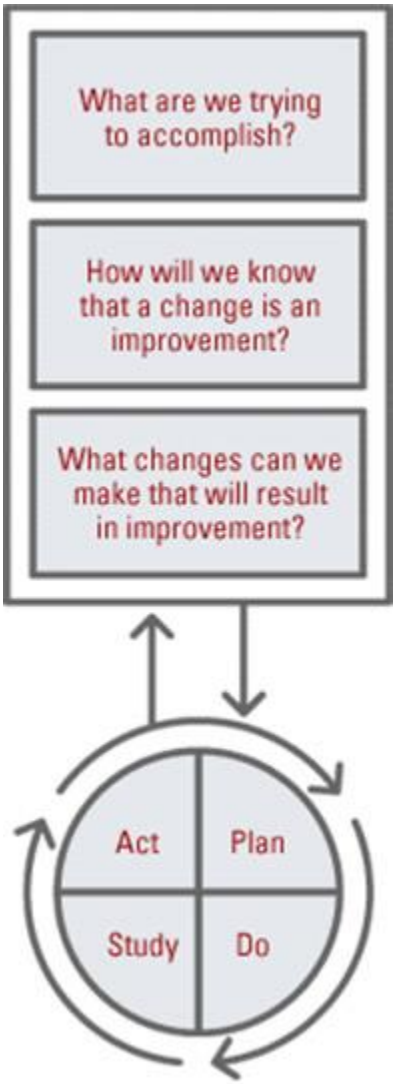

Madeleine Leininger's Transcultural Nursing
The Sunrise Enabler to
Discover Culture Care Sunrise Model
Worldview
Cultural & social structure dimensions
Cultural values, beliefs & lifeways
Kinship & social factors
Political & legal factors
Religious & philosophical factors
Economic factors
Influences
Care expressions patterns & practices
Technological factors
Educational factors
Holistic health/illness/death
Individuals, families, groups, communities, or institutions in diverse health context of
Generic or Folk Care
Nursing Care
Professional Systems
Nursing care decisions and actions
Cultural care preservation & maintenance
Cultural care accomodation & negotiation
Cultural care repattering & restructuring
Culturally congruent care for health, well-being or dying
Influencers
nurseslabs

Figure 2

Plan Do Study Act (PDSA) Cycle



AHRQ, 2015

Appendix A

Patient Satisfaction Questionnaire
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SHORT-FORM PATIENT SATISFACTION QUESTIONNAIRE (PSQ-18)

These next questions are about how you feel about the medical care you receive.

On the following pages are some things people say about medical care. Please read each one carefully, keeping in mind the medical care you are receiving now. (If you have not received care recently, think about what you would expect if you needed care today.) We are interested in your feelings, good and bad, about the medical care you have received.

How strongly do you AGREE or DISAGREE with each of the following statements?

(Circle One Number on Each Line)

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1. Doctors are good about explaining the reason for medical tests	1	2	3	4	5
2. I think my doctor's office has everything needed to provide complete medical care	1	2	3	4	5
3. The medical care I have been receiving is just about perfect	1	2	3	4	5
4. Sometimes doctors make me wonder if their diagnosis is correct	1	2	3	4	5
5. I feel confident that I can get the medical care I need without being set back financially	1	2	3	4	5
6. When I go for medical care, they are careful to check everything when treating and examining me	1	2	3	4	5
7. I have to pay for more of my medical care than I can afford	1	2	3	4	5
8. I have easy access to the medical specialists I need	1	2	3	4	5

Appendix A (continued)

Patient Satisfaction Questionnaire
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How strongly do you AGREE or DISAGREE with each of the following statements?

(Circle One Number on Each Line)

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
9. Where I get medical care, people have to wait too long for emergency treatment	1	2	3	4	5
10. Doctors act too businesslike and impersonal toward me	1	2	3	4	5
11. My doctors treat me in a very friendly and courteous manner	1	2	3	4	5
12. Those who provide my medical care sometimes hurry too much when they treat me	1	2	3	4	5
13. Doctors sometimes ignore what I tell them	1	2	3	4	5
14. I have some doubts about the ability of the doctors who treat me	1	2	3	4	5
15. Doctors usually spend plenty of time with me	1	2	3	4	5
16. I find it hard to get an appointment for medical care right away	1	2	3	4	5
17. I am dissatisfied with some things about the medical care I receive	1	2	3	4	5
18. I am able to get medical care whenever I need it	1	2	3	4	5

Note. Adapted from "The patient satisfaction questionnaire short form (PSQ-18)" by Marshall G.N, and Hays R.D., 1994, Santa Monica, CA: RAND Corporation.

Appendix B

Modified Patient Satisfaction Questionnaire (Domains)

Modified PSQ-18 areas of satisfaction:
General Satisfaction: 3. The health screening I have been receiving is just about perfect 17. I am dissatisfied with some things about the health screenings I received
Technical Quality: 2. I think the screening station had everything needed to provide adequate medical care 4. Sometimes the team makes me wonder if their diagnosis is correct 6. When I go for the health screening, they are careful to check everything when examining me. 14. I have some doubts about the ability of doctor who treats me
Interpersonal Manner: 10. The medical team act too business like and impersonal toward me 11. My screening team treat me in a very friendly and courteous manner
Communication: 1. The team was good about explaining the reason for health screenings 13. The doctor sometimes ignores what I tell him
Financial Aspects: 5. I feel confident that I can get the necessary health screenings I need without being set back financially 7. I have to pay for more of my health screenings than I can afford
Time spent with the provider: 12. Those who provide my health screenings sometimes hurry too much when they examine me. 15. The screening team usually spends plenty of time with me.
Accessibility and Convenience: 8. I feel I have easy access to the health screenings I need. 9. To get the health screening, we had to wait too long to be seen 16. I find it hard to get an appointment for health screenings right away 18. I am able to get health screenings whenever I need it.

Note. Adapted from "The patient satisfaction questionnaire short form (PSQ-18)" by Marshall G.N, and Hays R.D., 1994, Santa Monica, CA: RAND Corporation.

Appendix C

Instructions for Scoring the PSQ-18

The PSQ-18 yields separate scores for each of the seven different subscales/domains: General Satisfaction (Items 3 and 17); Technical Quality (Items 2, 4, 6, and 14); Interpersonal Manner (Items 10 and 11); Communication (Items 1 and 13); Financial Aspects (Items 5 and 7); Time Spent with Doctor (Items 12 and 15); Accessibility and Convenience (Items 8, 9, 16, and 18). Some PSQ-18 items are worded so that agreement reflects satisfaction with medical care, whereas other items are worded so that agreement reflects dissatisfaction with medical care. All items should be scored so that high scores reflect satisfaction with medical care (see Appendix D). After item scoring, items within the same domain should be averaged together to create domain score. Items left blank by participants (missing data) should be ignored when calculating domain scores. This means that domain scores should represent the average for all items in the domain that were answered.

Appendix D

Scoring Items

Item Numbers	Original Response Value	Scored Value
1, 2, 3, 5, 6, 8, 11, 15, 18	1	5
	2	4
	3	3
	4	2
	5	1
4, 7, 9, 10, 12, 13, 14, 16, 17	1	1
	2	2
	3	3
	4	4
	5	5

Table D1: Item numbers represent the 18 statements in the PSQ-18 survey. Responses to each statement were given a five-point scale ranging from strongly agree to strongly disagree. Items are scored so that high scores reflect satisfaction with medical care. For items 1, 2, 3, 5, 6, 8, 11, 15, and 18, scored value is higher than original response value. For items 4, 7, 9, 10, 12, 13, 14, 16, and 17, scored value equals original response value.

Domains	Average These Items
General Satisfaction	3, 17
Technical Quality	2, 4, 6, 14
Interpersonal Manner	10, 11
Communication	1, 13
Financial Aspects	5, 7
Time Spent with Doctor	12, 15
Accessibility and Convenience	9, 16, 18

Table D2: Items within each scale are averaged after scoring as shown in Table D1 above