Assessing the Effectiveness of Health Educational Posters in Community Health Centers

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Abstract

With the intention to take advantage of the time that patients spend waiting to be seen in clinics, this project employed visually attractive, quick response (QR) code equipped, educational posters into patient and waiting rooms of the UNHS clinics, aiming to: 1) Increase patient knowledge regarding their own health 2) Improve patient adherence to follow up visits 3) Encourage dialog between the patient and physician 4) Asses the patient usage of QR codes.

The comments and patient attitude shows promise for continuity and expansion of this project. Most patients had very positive and encouraging feedback on the open-ended portion of their questionnaire. In addition, UNHS staff was very satisfied with the educational materials. Based on UNHS request, a member of their staff was provided with the original poster designs, since UNHS mentioned the possibility of further expanding on the project.

At this point of the project, the sample size is insufficient for statistical analysis, but so far the results indicate that a larger majority of people in the study thought the questionnaire was effective than not. If future studies increase the sample size and broaden the categorical levels, statistical analyses may be performed.
The project found that in the one-week period that the QR codes were tracked UNHS patients did not utilize them. This may indicate that patients 1) don’t have a QRC reader, 2) are not familiar with the technology, 3) prefer not to use the technology, or 4) need additional instructions or assistance to use the technology. Conversely, one-week is a relatively brief period and likely inadequate to assess the full potential of this technology. QR codes are a relatively new technology that needs further research to determine efficacy in the community health center setting. This pilot study demonstrated some challenges to using this technology. Nonetheless, QR codes are a promising method of providing education, do not take up a lot of space in the posters, and are very easy to create. If QR codes continue to grow in popularity, their usage may increase and community health centers may want to consider them as a mode of health education.

**Keywords:** Quick response codes, educational posters, phone data, federally qualified health centers, diabetes, colorectal cancer, screening, lower respiratory disease, heart disease, and prenatal health.

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**Introduction**

The idea for this project first arose after I visited several clinics and noticed that in many places the patients would spend a significant amount of time in waiting rooms, many of them interacting with their smart phones or simply staring down at the floor. My initial thought was to somehow make use of the time that patients spend in waiting rooms by offering them an opportunity to learn about their health. At first I was not sure how I was going to achieve my goals. Several project ideas came up, but they did not meet the requirements that I was looking
for. Some project ideas were very costly; others were very time consuming or simply did not meet the budget requirements. Finally, with guidance from my academic advisor, Dr. Consuelo H. Wilkins Executive Director of the Meharry-Vanderbilt Alliance, the decision was made to use educational posters as the method for achieving the proposed goals.

The choice to use posters was made on the basis that I sought to incorporate an educational tool that was sustainable at UNHS, was low cost to produce and caused no burden on the UNHS’s budget or staff’s commitment. The posters fulfilled the latter requirements since to my advantage the Meharry-Vanderbilt Alliance agreed to pay for all poster expenses, and after manufactured and placed on their strategic location, the posters require virtually no time or capital from UNHS in order to keep serving their purpose. In addition many UNHS clinics had recently undergone remodeling and were filled with empty furniture pieces which I though could perfectly be used to accommodate my posters, since UNHS staff prohibited me to hang posters from the wall, and I found stands for each of the posters.

Background

It is estimated that around 85 million people in the U.S. over the age of 13 own a smart phone.\textsuperscript{1} Furthermore, it has been proven that smartphones can play a very important role in patient education and disease self-management.\textsuperscript{2} Guided by such data, this project gave patients who own a smartphone several means to use the devise in order to better their health. One such way was by introducing QR codes to the posters. This type of barcode was first created by the automotive industry of Japan, but their ability to encode and decode large amount of information at extremely rapid rates has made it increasingly popular amongst the general public.\textsuperscript{3} Most individuals with a smart phone can freely download the QR scanner, which is another advantage to the use of QR codes for health education in low-income areas.
UNHS is a private, non-profit organization that works towards meeting the comprehensive health care needs of the underserved patients of Nashville TN. Considered a federal qualified health center (FQHC), this health care system consists of several primary care clinics, dental offices and other health care programs. UNHS as well as other FQHCs around the United States, experience low follow-up visit rates, limited federal funding, and short clinic visits, all are factors that compromise patient care. In the case of short patient visits, the ability of physicians to increase patient knowledge regarding their health is limited due to time. With the intent to take advantage of the time patients do spend waiting to be seen by health care providers in clinics, this project used visually attractive, QR code equipped, educational posters displayed in patient and waiting rooms with the aims to: 1) Promote learning by increasing patient knowledge on the benefits of disease prevention and different ways they can better their health. 2) Improve adherence to follow up visits by informing patients on the importance of disease prevention 3) Encourage dialog between the patient and physician by sparking the patient’s interest towards their own health. 4) Assess the patient usage of QR codes by tracking every time each code was accessed.

Methodology

Project Strategy:

A pilot poster was designed and incorporated into the waiting room of the UNHS, Madison clinic. This poster was designed to tackle relevant and broad health care topics of the Tennessee patient population. The poster emphasizes ways to prevent the overall top three causes of death in Tennessee, which according to a 2013 report by the Tennessee Department of Health are: heart disease, cancer and lower respiratory disease.
The pilot poster original design was much different from the final product. Other medical students, Meharry-Vanderbilt Alliance staff and UNHS staffs were all asked to provide input on the pilot poster all throughout the designing process and patients were asked to voluntarily fill out an anonymous questionnaire after it was created. Based on the feedback gathered, three new educational posters geared towards meeting the demands of the UNHS’s management and needs of the UNHS patient population, were designed. Some of the posters were translated to Spanish due to the high volume of Spanish speaking patients seen in many of the UNHS clinics. Taking this into account the posters in Spanish were placed strategically in the clinics that were known to have large numbers of Spanish speaking patients.

Questionnaire:

Over 55 patients were asked to fill out the questionnaire, from that number only 10 questionnaires were filled. The questionnaire was anonymous and aimed to gather patient demographic information and their feedback on the poster’s content and effectiveness on meeting all four of the previously mentioned project goals as well as whether they thought the posters were visually attractive or not. Random patients of different backgrounds, ages 18-55 were asked to participate. The original number of filled questionnaires intended was 30 but due to time constraints and a missed calculation on the number of patients that would actually opt to properly fill out the questionnaire, only 10 of them were used.

QR codes:

All posters include QR codes that direct patients to online educational videos and educational websites. The videos and websites were chosen based on the relevance to the poster’s distinctive topics. All the codes were individually tracked for usage. The tracking was done through QR
Stuff data analysis, a registered trademark of Denso Wave Inc. This company tracked how many times each individual QR code was accessed in a period of one week. The tracking also includes what time the code was scanned and the type of mobile device used to do so. Prior to their release into the clinics, all the QR codes were individually tested for tracking accuracy using two different mobile devices. Results indicated that the QR codes were not accessed once during the time period they were tracked. In order to continue tracking the QR codes on the future, the membership to QR stuff should be re-activated. In order to do so a monthly fee is necessary. Once the membership expired, I was not able to continue tracking the QR codes, but the QR codes can still be used for their intended purposes.

Poster designs:

There were a total of four different posters created for this project, they were titled 1) Pilot poster 2) Pilot poster in Spanish 3) Diabetes Management 4) Prenatal health in Spanish. The posters were designed using the Microsoft PowerPoint computer program. Every topic in the posters was supplemented with facts regarding the importance of disease prevention and QR codes which lead to a video or an educational website; in addition, other QR code independent resources like phone applications, websites addresses and toll free phone lines were included. The topics of the posters were strategically designed. The decision to make posters on diabetes prevention and another in Spanish that dealt with prenatal health was made after a meeting with UNHS staff. At the meeting I presented my pilot poster. It was at this meeting where UNHS asked me to tackle the specific themes. They mentioned that diabetes and prenatal health in Spanish were amongst the two main areas they wished to educate their patients on. In addition to the request from UNHS, some of the early questionnaires included comments from the Spanish-
speaking patients who specifically requested material in Spanish. The questionnaires also found that Diabetes management was a specific topic of interest among the interviewed patients.

Results

QR code tracking found that the codes were not used in the one-week period that 12 posters were up in the different clinics of UNHS. A total of ten patient surveys were filled out on the pilot poster. The questionnaires reported the following data:

Graph 1: The graph displays topics from the pilot posters that the patients were interested in learning about. The data consists of how many times each topic was marked. Some patients marked more than one topic per questionnaire:

Based on the data obtained from graph 1, the diabetes management poster was designed. The Spanish pilot poster and the Prenatal health in Spanish posters were made on response to specific request from UNHS management and based on comments made by some Spanish speaking patients on their open-ended portion of the questionnaire.
Graph 2: Reports how visually attractive each patient found the poster, where the Y-axis is the number of patients that marked each category on the X-axis.

Graph 3: Displays how much the patients felt that the information they learned had potentially improved their health. The Y-axis shows the number of patients that chose each of the categories represented on the X-axis.

Graph 4: The following Graph shows how much the patients felt that the posters had persuaded them to adhere to follow-up visits.

Graph 5: The following shows how much the patients felt that the poster had motivated them to learn about their health, where the X-axis is the number of patients that chose each category on the Y-axis.
felt that the poster had persuaded them to start dialog with their physician. The Y-axis displays the number of patients that picked each of the different categories on the X-axis.

**Graph 6:** Displays how much the patients

**Discussion:**

The comments and patient attitude shows promise for continuity and expansion of this project. Most patients had very positive and encouraging feedback on the open-ended portion of their questionnaire. In addition, UNHS staff was very satisfied with the educational materials. Based on UNHS request, a member of their staff was provided with the original poster designs, since UNHS mentioned the possibility of further expanding on the project by making more posters and/or even converting the material into digital slides which they can play on televisions, which they are installing within the following months on many of their patient waiting rooms. The response from UNHS throughout the whole process of development was one of the biggest pushing factors for this project. This project was founded on the idea that it would be as burden free as possible for UNHS, which according to their responses was accomplished. In addition this project could be replicated basically anywhere since the program used to design the posters, PowerPoint, is widely used and relatively simple to operate. In addition the cost to print out similar materials is relatively inexpensive as well.
At this point there is not a big enough sample population to run accurate statistical analysis, but so far the results indicate that a larger majority of people in the study thought the questionnaire was effective than not. This reveals the need to increase sample size and look at broadening the categorical levels (instead of just limiting it to just the categories of "effective" and "non-effective"; which would lend itself to more sophisticated techniques in categorical analysis).

The study also found that in the one-week period that the QR codes were tracked, they were not used, but this period was relatively brief and longer tracking might provide a larger scope on the potential use for this technology. In addition, the inaccessibility of the internet by patients in the waiting room in the clinics of UNHS makes access to QR codes much more difficult, because patients have to use their smart phone data to access the codes. This is a slower process compared to having wireless Internet access and in some cases usage of phone data may be limited or costly for patients.

The QR codes do not take up a lot of space in the posters and are very easy to create. Another aspect to consider is that QR codes are a relatively new technology and if they continue to grow in popularity, their usage may increase. Furthermore, if UNHS decides to provide patients with free access to wireless Internet in while at their clinics than the QR codes may be more readily utilized.

**Recommendations**

UNHS has a lot of potential and can be do a great job educating their patients while they wait in patient rooms to be seen by their physician. All UNHS clinics have Wi-Fi available to staff, but not to patients. Perhaps if UNHS decides to make Wi-Fi available for patients than methods like QR codes or website address could be used to reach their patients while at the clinic. On one
of the last meetings I had with UNHS staff, they mentioned that several televisions were going to be installed into most of their waiting rooms and that perhaps they were going to use the electronic version of my posters as part of the programing. In my opinion this would be a great way to accomplish many of the intended goals. Many advantages of using a television to get messages to viewers are that the amount of information they can share is much greater in comparison to using posters and sometimes patients may be more inclined to pay attention to a television than other visual material.

On the other hand, if UNHS decided that they wanted to expand on this project, the ground has been set for them to do so. I do recommend that the questionnaire may be further redesigned so that statistical models can be used to better measure the results gathered.
Appendix

- Pilot poster

  Attention grabber: “The top three leading causes of death in Tennessee are: Heart disease, cancer and lower respiratory disease." The poster also includes a picture of a very welcoming African-American nurse.

<table>
<thead>
<tr>
<th>Pilot poster topics:</th>
<th>Resources</th>
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<tbody>
<tr>
<td>Managing diabetes</td>
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<tr>
<td></td>
<td>• Poster fact: Adults with diabetes are 2 to 4 times more likely than people without diabetes to die of heart disease or experience a stroke. [5th leading cause of death in TN].</td>
</tr>
<tr>
<td></td>
<td>• QR code: To a video created by the American Diabetes Association (ADA). The video gives patients information on how to create a healthy food plate.</td>
</tr>
<tr>
<td></td>
<td>• Diabetes Goal Tracker: Phone application by the American Association of Diabetes Educators (AADE). This phone application was designed to inform patients about diabetes; as well as to help them create and keep track of different goals, aimed to help patients manage their diabetes.</td>
</tr>
</tbody>
</table>
| Colorectal cancer screening | • Poster fact: If everyone 50 years or older had regular colorectal screening tests, at least 60% of deaths from this cancer could be avoided. ⁸  
• Benefits of colorectal cancer screening: [www.cdc.gov/cancer/crccp/](http://www.cdc.gov/cancer/crccp/) website by the Center for Disease Control and Prevention (CDC), colorectal cancer control program. This site provides patients with information on the benefits of colorectal cancer screening and the different screening test available.  
• QR code: To a video of Tom Frieden, director of the CDC, commenting on the benefits of colorectal cancer screening. |
| Benefits of breast exam and mammogram | • Poster fact: “Mammography has been shown to reduce mortality due to breast cancer by approximately 20-25% among women aged 40 years and over.” ⁹  
• Early Detection Plan- Breast Cancer: This is a phone application designed by the National Breast Cancer Foundation (NBCF), Inc. This phone application is designed to guide users on when to schedule their mammograms and breast exams based on their age and family history of breast cancer. The application also reminds users of upcoming dates and includes a video on breast health awareness.  
• QR Code: To a video on breast health awareness by the NBCF, Inc. |
| Benefits of quitting smoking | • Poster Fact: “If you quit smoking today your risk for developing heart disease, cancer, stroke and lower respiratory disease will decrease significantly. ¹⁰,¹¹”
• How to quit smoking help line: Toll free phone line created by the CDC, available on English and Spanish. The phone line is designed to provide help to those who wish to quit smoking.
• QR Code: Video playlist from the CDC about former smokers and how they managed to quit smoking. |

This poster also includes a comment encouraging patients to start a dialog with their physician, “Talk to your physician about the benefits of regular check-ups, disease prevention and ways to live a healthier life.”
The top three leading causes of death in Tennessee are:
Heart Disease  
Cancer  
Lower Respiratory Disease

**Did You Know...**

Adults with diabetes are 2 to 4 times more likely than people without diabetes to die of heart disease or experience a stroke (5th leading cause of death in TN). To learn more on managing diabetes download the “AADE Diabetes Goal Tracker” phone app.

If everyone 50 years or older had regular colorectal screening tests, at least 60% of deaths from this cancer could be avoided. Learn more: www.cdc.gov/cancer/crccp/

**Mammography** has been shown to reduce mortality due to breast cancer by approximately 20-25% among women aged 40 years and over. To learn how to perform a self-breast exam and manage mammography appointments download the free “Early Detection Plan: Breast cancer” phone app.

If you quit smoking today your risk for developing heart disease, cancer, stroke and lower respiratory disease will decrease significantly. To learn tips on quitting cigarette smoking call 1-800-QUIT-NOW (1-800-784-8669) or 1-855-DEJELO-YA (1-855-335-3569) toll free.

**Talk to your physician about the benefits of regular check-ups, disease prevention and ways to live a healthier life.**

- Pilot poster in Spanish:
  Attention grabber: “The top three leading causes of death in Tennessee are: Heart disease, cancer and lower respiratory disease.” The poster also includes a picture of a very welcoming Hispanic female nurse.

<table>
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<tr>
<td>Diabetes website in Spanish: <a href="www.Diabetes.org/es/">www.Diabetes.org/es/</a> is a website in Spanish created by the ADA that gives patients information about ways they can manage their diabetes.</td>
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<tr>
<td>QR code: To a YouTube® video in Spanish created by the ADA. The video is about a Hispanic family who suffers the loss of a family member due to diabetes.</td>
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<tr>
<td>Colorectal cancer screening:</td>
<td>posters fact: If everyone 50 years or older had regular colorectal screening tests, at least 60% of deaths from this cancer could be avoided. 8</td>
</tr>
<tr>
<td>Benefits of colorectal cancer screening: <a href="www.cdc.gov/spanish/cancer/colorectal/">www.cdc.gov/spanish/cancer/colorectal/</a> a website in Spanish created by the CDC. The website gives patients multiple information on the importance of colorectal cancer screening.</td>
<td></td>
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<tr>
<td>QR code: To “www.cdc.gov/spanish/cancer/colorectal/” the same website previously mentioned.</td>
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</tr>
<tr>
<td>Benefits of breast exam and mammogram</td>
<td>Poster fact: “Mammography has been shown to reduce mortality due to breast cancer by approximately 20-25% among women aged 40 years and over.” 9</td>
</tr>
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<td>Breast Cancer education website: “<a href="www.breastcancer.org/es">www.breastcancer.org/es</a>” is a website in Spanish created by Breastcancer.org. This website provides users with information on breast cancer screening and benefits.</td>
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</tbody>
</table>
| Benefits of quitting smoking | • QR Code: To [http://www.breastcancer.org/es](http://www.breastcancer.org/es) is a website in Spanish created by Breast Cancer organization. This website provides users with information on breast cancer screening and benefits.  

- Poster Fact: “If you quit smoking today your risk for developing heart disease, cancer, stroke and lower respiratory disease will decrease significantly.\(^{10,11}\)”  
- How to quit smoking help line: Toll free phone line created by the CDC, available in English and Spanish. The phone line is designed to provide support to those who wish to quit smoking.  
- QR Code: to a website created by the CDC. The Website deals with the importance of quitting smoking and different ways one can achieve this. The address to the website is: [http://www.cdc.gov/spanish/especialescdc/dejarfumar/?mobile=nocontent](http://www.cdc.gov/spanish/especialescdc/dejarfumar/?mobile=nocontent)  

Other aspects of this poster include a comment encouraging patients to start dialog with their physician “Talk to your physician about the benefits of regular check-ups, disease prevention and ways to live a healthier life.”
Diabetes Poster:

Attention Grabber

- “Complications of Diabetes Include: Heart disease, stroke, kidney failure, glaucoma, blindness, bacterial and fungal infections, nerve damage, lower extremity amputations, high blood pressure, etc.” The poster also includes a picture or a healthy tuna salad.

Diabetes facts and recommendations (All the information used for this poster was obtained)

- A healthy diet and exercise plan are the best things for managing and controlling your diabetes.
- Often, people with diabetes don't know where to begin. One way is to change the amount of food you are already eating.
| from the ADA official website.\textsuperscript{12}) | Focus on filling your plate with non-starchy vegetables and having smaller portions of starchy foods and meats.  
- The right meal plan will help you improve your blood glucose, blood pressure, and cholesterol numbers and also help keep your weight on track.  
- In addition to formal aerobic exercise and strength training, there are many chances to be active throughout the day. Just getting up once an hour to stretch or walk around is better than sitting for hours on end. Take every opportunity you can to get up and move. |
|---|---|
| Resources: | - Address to ADA website: [www.Diabetes.org](http://www.Diabetes.org) This website created by the ADA gives users information on ways they can manage their diabetes.  
- QR code: To a video created by the American Diabetes Association (ADA) regarding guidelines on how to create a healthy food plate  
- Free phone app: Diabetes Goal Tracker: Phone application by the American Association of Diabetes Educators (AADE). This phone application was designed to inform patients about diabetes as well as help them create and keep track of different goals, aimed to help patients manage their diabetes. |
How to Manage Your Diabetes...

A healthy diet and exercise plan are the best things for managing and controlling your diabetes.

Often, people with diabetes don't know where to begin. One way is to change the amount of food you are already eating. Focus on filling your plate with non-starchy vegetables and having smaller portions of starchy foods and meats.

The right meal plan will help you improve your blood glucose, blood pressure, cholesterol numbers and also help keep your weight on track.

In addition to formal aerobic exercise and strength training, there are many chances to be active throughout the day. Just getting up once an hour to stretch or walk around is better than sitting for hours on end. Take every opportunity you can to get up and move.

Access “www.Diabetes.org” for more information on the ideal diabetic meal and exercise plan. You can also download the “AADE Diabetes Goal Tracker” free phone app to help you keep track your personal goals.

Talk to your physician about the benefits of regular check-ups, ways to manage your diabetes and live a healthier life.
## Prenatal Health in Spanish

<table>
<thead>
<tr>
<th>Attention grabber</th>
<th>• “If you are pregnant, than follow this advices.” The poster also includes a picture of a pregnant woman caressing her abdomen.</th>
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</thead>
</table>

| Prenatal health facts and recommendation (All information and recommendations were obtained from the Family Doctor organization website.¹³) | • One of the most important things that you can do for yourself and your baby is to eat a well-balanced diet. There are a couple of foods for which you should be more careful. In order to avoid getting an infection, be certain to cook your meats, eggs and seafood well. You should eat four or more portions of dairy food daily.  
• Avoid more than one caffeinated drink per day this includes coffee and caffeinated soda.  
• Take 1,000 mcg (1mg) of folic acid everyday, since this can lower your risk of having a premature birth.  
• Try to exercise at least 30 minutes every day. Many women swear that exercising makes delivery a lot easier. Walking and swimming are excellent options. If you did not exercise before being pregnant, make sure that you start slow, avoid exercising in excess, listen to your body.  
• Remember not to smoke, consume illicit drugs or alcohol. Also avoid saunas, Jacuzzis and hot tubs. |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|

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¹³) Information obtained from the Family Doctor organization website.
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<tr>
<td>• QR code: To a Spanish educational video on prenatal health, created by the National Institute of Health (NIH).</td>
</tr>
<tr>
<td>• Prenatal Health Resources:</td>
</tr>
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[http://www.nlm.nih.gov/medlineplus/spanish/prenatalcare.html](http://www.nlm.nih.gov/medlineplus/spanish/prenatalcare.html) is a website in Spanish created by the NIH. This website gives patients multiple resources and information on prenatal health.

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**Sestas Embarazada, Sigue estos consejos!**

Una de las cosas más importantes que usted puede hacer por sí misma y por su bebé es comer una dieta balanceada. Hay unos cuantos alimentos con los que usted tiene que tener más cuidado al comer. Debe cocinar muy bien la carne, huevos y pescado para evitar riesgo de una infección. Lave todas las frutas y los vegetales. Coma 4 o más porciones de alimentos lácteos cada día. Sustituya café u otras bebidas con cafeína, no tome más de 10 2 tazas al día.

Toma 1000 mcg (1 mg) de ácido fólico diario, ya que esto disminuye el riesgo de tener un embarazo prematuro.

Trata de hacer por lo menos 30 minutos de ejercicio diario. Muchas mujeres dicen que el hacer ejercicios hace que el parto sea mucho más fácil. Caminar y nadar son excelentes opciones. Sustituya no hacer ejercicios antes de estar embarazada, empíeza lentamente, no se ejercite en exceso. Escucha a tu cuerpo.

Recuerda no fumar, ni consumir drogas o alcohol. También evita los saunas, jacuzzis y tinas calientes.


Hable con tu doctor sobre otras cosas que debas hacer durante tu embarazo.

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- Poster Photographs
Did You Know...

- Diabetes and 2.5% of all deaths are preventable by initiating and maintaining lifestyle changes and taking medications as prescribed.
- The leading cause of death in the US is heart disease or vascular disease.
- By age 65, 1 in 5 adults or older had regular screenings, blood pressure, or inpatient treatments for heart disease.
- Women are more likely to die from heart disease than men.
Complications of Diabetes Include:
Heart disease, stroke, kidney failure, glaucoma, blindness, bacterial and fungal infections, nerve damage, lower extremity amputations, high blood pressure, etc.

How to Manage Your Diabetes...
A healthy diet and exercise plan are the best things for managing and controlling your diabetes.

Often, people with diabetes don’t know where to begin. One way is to change the amount of food you are already eating. Focus on filling your plate with non-starchy vegetables and having smaller portions of starchy foods and meats.

The right meal plan will help you improve your blood glucose, blood pressure, cholesterol numbers and also help keep your weight on track.

In addition to formal aerobic exercise and strength training, there are many chances to be active throughout the day. Just getting up once an hour to stretch or walk around is better than sitting for hours on end. Take every opportunity you can to get up and move.

Access “www.Diabetes.org” for more information on the ideal diabetic meal and exercise plan. You can also download the “AADE Diabetes Goal Tracker” free mobile app to help you keep track your personal goals.

Talk to your physician about the benefits of regular check-ups, ways to manage your diabetes and live a healthier life.
Questionnaire

Assessing the Effectiveness of Quick-Response-Code Equipped Posters in Patient Waiting Rooms of Federally Qualified Health Centers.

Please circle your gender: male   female

How old are you:

What is your ethnicity?

1) Which topics were you interested in learning about?
   □ Diabetes  □ Colorectal Cancer Screening  □ Mammography  □ Quitting Smoking

2) Which quick response code did you decide to follow? (Please check all that apply)

3) Did you find the poster visually attractive?

   1  2  3  4  5
   (not at all) (very little) (Somewhat) (a lot) (Extremely)

   Why?

4) Did you learn any information that can potentially better your health from the posters?
What did you learn?

5) After reading the poster and following one the quick response codes do you feel that you are more likely to come back to the clinic for a regular check up?

1  2  3
4  5
(not at all) (very little) (Somewhat) (a lot)
(Extremely)

Why or why not?

6) After learning form the poster do you find yourself more motivated to learn about your own health?

1  2  3
4  5
(not at all) (very little) (Somewhat) (a lot)
(Extremely)

Why or why not?
7) After reading the poster do you feel that you are more likely to start-up dialog with your physician regarding your health?

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(not at all) (very little) (Somewhat) (a lot)

(Extremely)

Why or why not?

8) Do you have any suggestions on how we can make this poster better for you?

References


which secures the safety of fishery products using the QR code and a digital signature,"

*OCEANS '04. MTTS/IEEE TECHNO-OCEAN '04*, vol.1, no., pp.476,481, 9-12 Nov. 2004
doi: 10.1109/OCEANS.2004.1402962


5- Grumbach K, Bodenheimer T. A primary care home for Americans: putting the house in

   http://health.state.tn.us/statistics/PdfFiles/TnDeaths11.pdf

7- "Diabetes Health Concerns." *Centers for Disease Control and Prevention*. Centers for

8- "About the Program Colorectal Cancer Control Program (CRCCP)." *Centers for Disease
   Control and Prevention*. Centers for Disease Control and Prevention, 1 Aug. 2013. Web. 21

9- "California Burden of Chronic Disease." Centers for Disease Control and Prevention.

    <http://nihseniorhealth.gov/lungcancer/causesandriskfactors/01.html>.

11- "Smoking and Older Adults - American Lung Association." *American Lung Association*.
    smoking/facts-figures/smoking-and-older-adults.html>.