

Empowering Community Health Workers in Guatemala

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Abstract

Introduction: Community health workers (CHW) have been integral in helping middle- and low-income countries. This research paper discusses the benefits of the involvement of CHWs in health screenings.

Methods: Health screenings were performed for three rural communities in Guatemala in 2021, alongside a church in Zacapa, to identify community wide health risks. The screenings included a detailed questionnaire that collected demographic data, height and weight, a blood glucose check, a hemoglobin check, and a blood pressure reading. Additional nutritional data was collected to understand diet patterns and habits. In-depth educational sessions were done with the CHWs, emphasizing preventive care, and the teach-back method was used to verify the effectiveness of instruction.

Results: Educational efforts were measured by accurate demonstrations and correct answers to questions at the end of the sessions. The results yielded 47% of the CHWs displayed a correct return demonstration on the first try, 33% did on their second try, and 20% on their third.

Conclusion: Using the methods described above and the data collected on previous trips, the study allowed for health screenings and education, along with the resources to continue screenings independently. Some limitations of this study include participant age or previous illness, along with the missing data from the 2020 trip, which was postponed due to COVID-19. Recommendations include first-aid response training to combat the limited emergency medical services and additional studies to continually educate the communities in Guatemala.

Introduction

Globally, a shortage of skilled and professionally trained healthcare workers has brought to light the importance and usefulness of community health workers. Community health workers (CHWs) are defined by the World Health Organization as members of the community who are not trained health professionals, chosen and trained to work in their own communities (Huang et al., 2018). The value of CHWs goes beyond the fact that they are already conveniently placed in their communities of need, but rather the fact that they can provide care centered around their community's needs. A CHW can be of any age, gender, nationality, or even educational level (Lehmann et al., 2021). The most important requirement needed to be a CHW is a willingness to learn and a dedication to their community.

The COVID-19 pandemic that devastated the world shed light on the many insecurities that are found in the public health sector, including Guatemala. Not only did Guatemala suffer from health and social insecurities, but there was a nutritional strain as well. Travel restrictions inherently caused many to have limited access to food in rural areas, as well as a significant rise in prices to accommodate the restrictions put into place (Ceballos et al., 2021). For a country that already has high rates of malnutrition in children, as high as 48%, limited access to affordable and fresh foods creates a massive impact (Corvalán, 2017). This was shown when completing health screenings in the rural areas of Guatemala, where participants were found to have high blood sugar or low hemoglobin, both of which are largely affected by dietary choices. When asked about their diets, many were not aware they had access to Chaya, a Mayan spinach high in nutrients used to combat anemia (Amaya et al., 2019).

Guatemala is considered the fifth

poorest economy in Latin America and the Caribbean (Overview, 2021). A very large percentage of the Guatemalan population is made up of indigenous peoples, who are disproportionately affected by chronic illnesses. Health structures were also compared to those in the United States, including the emergency medical services that were used to take care of critical patients. In conjunction with the health screenings, cultural awareness was used to communicate with members of the community. The primary aims of this study were to provide health screenings for communities in Guatemala and to educate community health workers as an intervention to address a community need. These are significant due to the lack of healthcare and healthcare education in rural and indigenous populations.

Methods

To empower community health workers who are willing and able to devote their time and energy to their community, it is necessary to invest proper time and training in the workers. For this research, the teaching method was used to instruct the community health workers. The CHW's role in the health screenings was to interview patients and register them in the registry, followed by an educational class at the end of the screening. The purpose of assigning them interviewing roles in the health screenings is to have them familiarize themselves with the health problems and diet patterns that are experienced in the community. Assigning the CHWs to the questionnaire was also an attempt to close a trust gap that can be found when foreigners providing outside health services arrive and leave (Mohajer & Singh, 2018). The screenings were translated from English to Spanish prior to arrival in Guatemala. CHWs are extremely important in this role, as they are the first

point of contact with the patient prior to the health screening and can use their local knowledge and beliefs to explain health in simple terms, as well as share care and concern to motivate behavioral change (Mohajer & Singh, 2018).

Prior to departing on the trip to Zacapa, Guatemala, a questionnaire was formulated to collect data on the patients seen in the community during the health screening. This questionnaire included general demographic information and in-depth questions. These were formulated, and then translated into Spanish. These questionnaires were discussed and filled out by each person who attended the health screening by a CHW. Additionally, a health screening form (represented in Figure 1) and a training brochure (represented in Figure 2) were both made prior to the trip to aid in the screening. The health screening form included sex, age, height, weight, blood glucose, the last time food was consumed, blood pressure, hemoglobin, and body mass index (BMI). These values were obtained and documented on the form as the patient went through the health screening. The training brochure served as a guide and visual for each CHW during the educational session that was held after the health screenings. Focusing on basic preventive care and knowing when to refer sick patients to a higher level of care is the most important aspect of the educational session training of the CHWs (Rosales et al., 2020).

Each person that walked into the health screenings had a questionnaire filled out as well as a basic health screening done prior to having a medical consultation with the team's physician. Once the health screening was done, the results were reviewed for each patient and then compared to normal values. Additionally, the patients were asked if they were experiencing any symptoms and if they had

any chronic diseases for which they were actively seeking recurring medical attention. These chronic illnesses were noted and documented in the patient's health screening for future reference. The interaction between the patient and the healthcare professional was done with patience, time, and adequate health training and capabilities. To achieve the best quality patient-centered care, cultural competence is helpful to understand and reduce disparities that are found in healthcare (Ahmed et al., 2018). One factor that largely affects ongoing care for patients once they have been evaluated by a medical professional is a limited level of culture-related knowledge, skills, and experience from the provider (Ahmed et al., 2018). The acknowledgement of these factors and bringing awareness to them helps create a safer place of trust between the patient and provider. This can be achieved by evaluating one's inner self and feelings about the culture and then addressing the barriers found within.

Once the health screenings were completed for the day, the community health workers were gathered in a group and given a presentation from the group leaders. It was crucial to note that one of the most important goals of the training was to emphasize basic preventive care and knowing when to refer sick patients to a higher level of care (Lapidos et al., 2019). Starting the session by explaining the importance of preventive care was to ensure that everyone knew the primary reason for doing the health screenings. It was necessary to remind each person there that the only qualification they needed to be a community health worker was to be dedicated to their community and have the willingness to learn (Lehmann & Sanders, 2021). Together, a presentation was formulated to explain the importance of preventive medicine and health screenings

in the community. Then, blood pressure checks, hemoglobin checks, and blood sugar checks were demonstrated, and the CHWs ability to perform the checks were evaluated. The team made sure to include an informational piece about the regular

values that should be found for each reading, which is represented in Figure 3. After the session, the CHWs were asked questions about the verbal education and skills education to evaluate the effectiveness of the training session.

Figure 1

Health Screening form in Spanish and English, used by graduate students and CHWs to obtain assessments

Nombre: _____

Sexo: _____

Edad: _____

Altura: _____

Peso: _____

Glucosa: _____

¿Ha comido en las últimas 8 horas?: Sí No

Presión Sanguínea: _____

Anemia: _____

BMI: _____

Visión: _____

Notas:

Select an area to comment on

Name: _____ Vision: _____

Sex: _____

Age: _____

Height: _____

Note: Figure 1 demonstrates the health screening form that was filled out by the graduate students with the help of the community health workers for each participant and that was then reviewed with the provider. BMI in Spanish is índice

Notes:

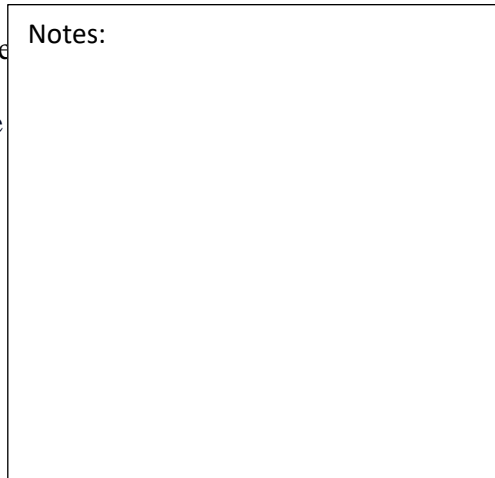


Figure 2

Translated Educational Brochure

Note: Figure 1 demonstrates the health screening form that was filled out by the graduate students with the help of the community health workers for each participant and that was then reviewed with the provider.

Figure 2

Translated Educational Brochure



"La salud medica es importante para todos de vez en cuando, pero la salud publica es importante todo el tiempo."

- C. Everett Koop

GRACIAS POR TODO LO QUE HACEN!

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Intervenciones de
Educación de Salud
para aumentar la
conciencia de
desnutrición y la
colección de datos
en Zacapa,
Guatemala.

Guía de
Entrenamiento

TU TRABAJO:

Folleto Educativo y
Cuestionario de Nutrición
e Información
Demográfico;
*[solamente en la
primera visita]*

-El participante tiene que llenar la encuesta principal, luego revisar el folleto educativo, y llenar la encuesta final.

- El participante tiene que llenar el cuestionario.

- Se coleccionaran los documentos, y seguidamente se escribirá la municipalidad y el numero de identidad del registro en el examen y en el cuestionario.

Registro:

[en cada visita]

- Se tomarán los signos vitales del participante y se escribirán en la columna apropiada en el registro.

ALTURA

-El participante tiene que quitarse los zapatos y pararse en frente de la pared con la espalda contra la pared.

-Tomar la parte de metal de la cinta métrica y ponerla en el piso al lado del participante.

-Usar el pie para detener la parte de metal en el piso.

-Tomar el otro lado de la cinta métrica y jalarlo hasta que llegue a la cabeza del participante.

-Documentar la altura en centímetros.

PESO

-El participante se quitará los zapatos si ya no lo ha hecho.

-El participante se parará en la balanza.

-Se documentará el peso en kilogramos.

PRESION ARTERIAL

-Se le preguntará al participante que se siente en una silla, que coloque el brazo en una mesa, y se asegura de que no cruce las piernas ni los tobillos.

-Se colocará el esfigmomanómetro para medir la presión arterial en la parte de arriba del brazo, asegurándose que quede bien ajustado en el brazo.

-Encender el monitor, dejar que el esfigmomanómetro se infle, y luego que se desinfle.

-Documentar la presión arterial.

GLUCOSA EN LA SANGRE Y HEMOGLOBINA

-Se le dirá al participante que se siente en una silla.

-Ponerse los guantes.

-Encender el glucómetro e insertar la tira reactiva para medir la glucosa en la máquina.

-Limpiar la punta del dedo anular del participante con una toallita de alcohol.

-Seguidamente, pinchar al lado del dedo en el área que se limpio.

-Colocar una gota de sangre al final de la tira reactiva para medir la glucosa.

-Mientras el glucómetro procesa los resultados, encender el HemoCue.

-Colocar una gota de sangre en el microcuvette.

-Después, decirle al participante que se ponga un algodón en el área sangrada.

-Documentar el nivel de glucosa en la sangre y hemoglobina.

-Limpiar el área sangrada del dedo con una toallita de alcohol y ponerle una curita.

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*Asegurase de vigilar el glucómetro para que no se apague antes de documentar el resultado.



“Medical health is important for everyone from time to time, but public health is important all of the time.”

-C. Everett Koon

Your Job:

Educational Brochure and Nutrition Questionnaire and Information Demographic: [only in the first visit]

- The participant has to fill out the main survey, then review the educational brochure, and fill out the final survey
- The participant has to fill in the questionnaire
- The documents will be collected, and then the municipality and the registration number will be written in the examination and in the questionnaire

- Vital signs will be taken from the participant and will be written in the appropriate column on the record.

Thank you for everything they do!

Katelyn Espenship, MPH
Dr. Oswald Attin
Liberty University

Translated by Andrea Harper, MPH



Interventions by Health Education to increase the awareness of malnutrition and the data collection in Zacapa, Guatemala.

Guide to training

Height

- The participant has to take off their shoes and stand in front of the wall with their back against the wall
- Take the metal part of the tape metric and put on floor next to participant
- Use your foot to stop the metal part on the floor
- Take the other side of the tape measure and pull it until it reaches the head of the participant
- Document the height in centimeters

Weight

- The participant will remove their shoes if they haven't already
- The participant will stand on the scale
- Document the height in kilograms

Blood Pressure

- The participant will be asked to sit down in a chair
- Place their arm on the table and make sure they do not cross their legs or ankles
- Use the sphygmomanometer to measure blood pressure in the upper part of the arm, making sure it fits snugly on the arm
- Turn on the monitor and let the sphygmomanometer inflate and after it deflates document the blood pressure

Blood Glucose and Hemoglobin

- The participant will be asked to sit down in a chair
- Put on the gloves
- Turn on the glucometer and insert the test strip to measure glucose in the machine
- Clean the tip of the participant's finger with an alcohol wipe
- Next, pinch the area on the finger that you have cleaned
- Place a drop of blood on the end of the test strip to measure glucose
- While the glucometer processes the results, turn on the Hemocue
- Place a drop of blood in the microcuvette
- Then tell the participant to put a cotton ball on the bleeding area
- Document the blood glucose level and hemoglobin
- Clean the bleeding area of the finger with an alcohol wipe and put a cloth or bandage on it
- Be sure to monitor the glucometer so it does not turn off before documenting the result

Note: Figure 2 is a brochure in English that was created by a graduate student in 2019 and translated to Spanish by members of the team for use in the educational portion of the CHW training session.

Figure 3

Normal and abnormal values used as a reference for health screening

- Glucosa
 - Normal: < 140 mg/dL
 - Alto: > 140 mg/dL
- Presión Sanguínea
 - Normal: 120/80 mm/Hg
 - Hipertenso: 140/90 mm/Hg
- Anemia
 - Normal hombre: 13.2-16.6 g/dL
 - Normal mujer: 11.6 – 16 g/dL
 - Cualquier cosa debajo es anemia
- BMI
 - Bajo peso: < 18.5
 - Normal: 18.5 – 24.99
 - Sobre peso: 25 – 29.99
 - Obeso/a: > 30
- Visión
 - Miope: puede ver objetos cercanos con claridad, los objetos distantes están borrosos
 - Hipermetropía: puede ver objetos lejanos con claridad, los objetos cercanos están borrosos

- Glucose
 - Normal: < 140 mg/dL
 - High: > 140 mg/dL
- Blood Pressure
 - Normal: 120/80 mm/Hg
 - Hypertension: 140/90 mm/Hg
- Anemia
 - Normal man: 13.2-16.6 g/dL
 - Normal woman: 11.6 - 16 g/dL
 - Anything below is anemia
- BMI
 - Under weight: < 18.5
 - Normal: 18.5 - 24.99
 - Over weight: 25 – 29.99
 - Obese: > 30
- Vision
 - Myopic: can see nearby objects clearly, distant objects are blurry
 - Hypermetropia: can see distant objects clearly, nearby objects are blurry

Note: Figure 3 shows the normal values that were used as a reference during the health screening. This form was also given to the CHWs to reference in their future health screenings.

Table 1

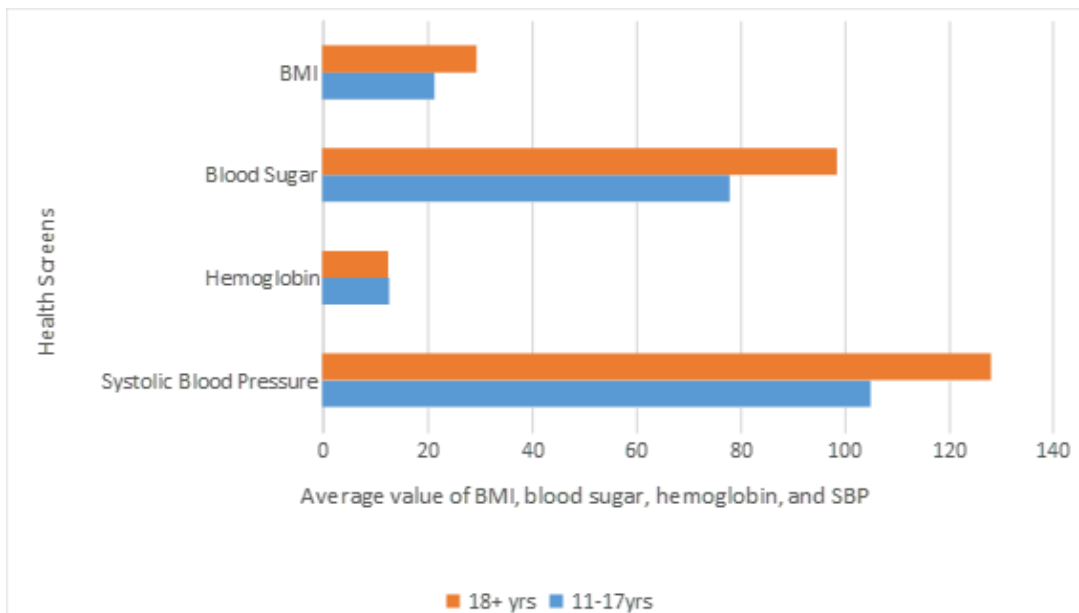
Demographic Characteristics of Total Participants in Health Screening in Zacapa, Guatemala

Characteristic	Frequency	Percent
Gender (n=182)		
Male	44	24.2
Female	138	75.8
Age (n=182)		
11-17	32	17.6
18+	150	82.4

Note: Table 1 lists the demographics of the participants who were able to provide values for all four screenings, including BMI, blood sugar, hemoglobin, and systolic blood pressure.

Figure 4

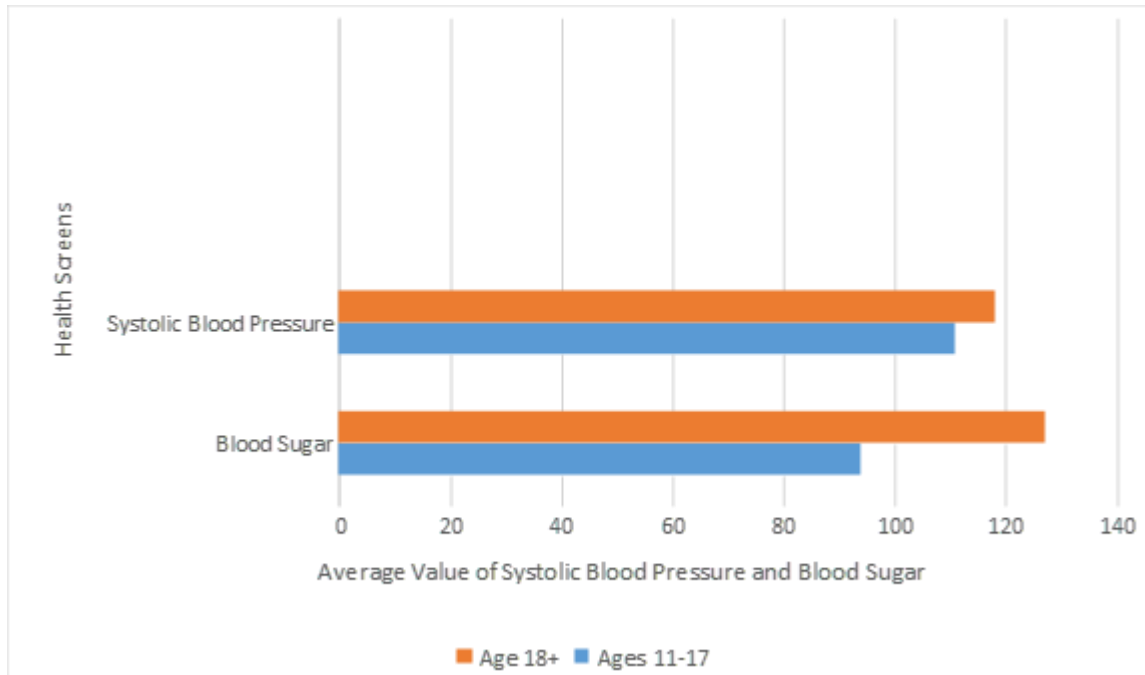
2021 Participant's BMI, blood sugar, hemoglobin, and Systolic Blood Pressure



Note: Figure 4 represents the averages of the values taken from the quantitative values of each health screening evaluated in 2021. The younger population, ages 11 to 17, is represented by the blue row, while the population of ages 18 and over is represented by the orange row.

Figure 5

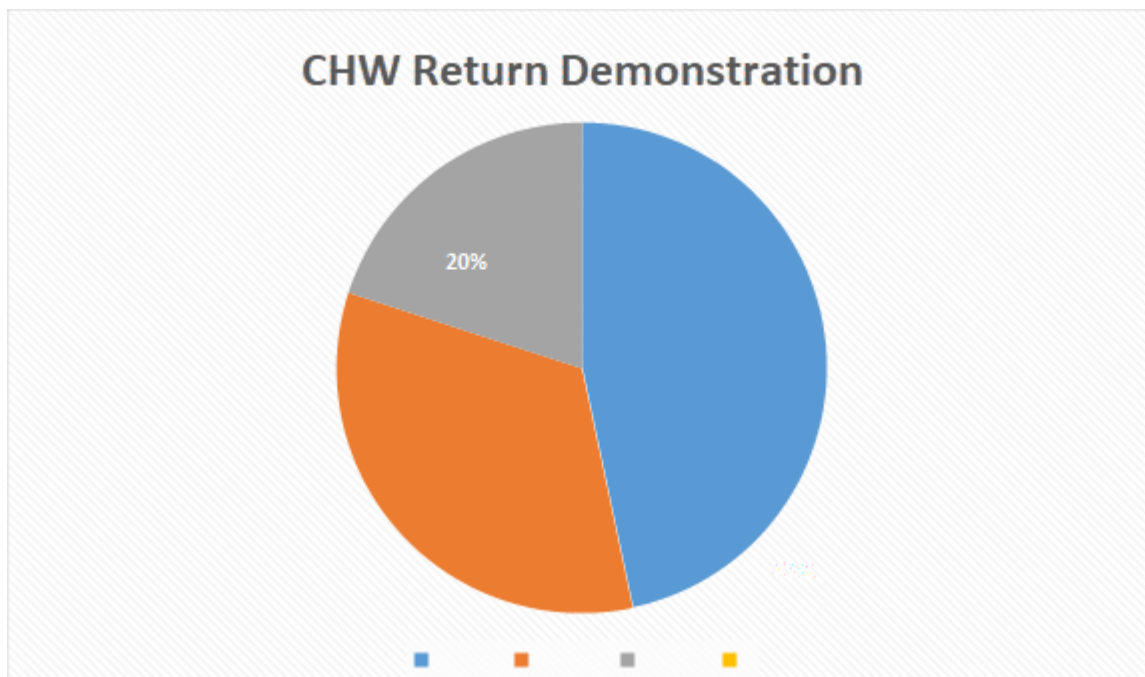
2019 Participant's BMI, blood sugar, hemoglobin, and Systolic Blood Pressure



Note: Figure 5 represents the averages of the values taken from the quantitative values of each health screening evaluated in 2019. The younger population, ages 11–17, is represented by the blue row, while the population of ages 18 and over is represented by the orange row. There is less data represented here due to the absence of collection of hemoglobin and BMI in prior findings.

Figure 6

Community Health Worker Return Demonstration Effectiveness



Note: Figure 6 is a visual representation of the percentage of community health workers who did a correct return demonstration on the first try, second try, or third try after the educational session.

Results

The data above does not represent every single participant that attended the health screenings. The total was more than 237, but some data could not be used due to gaps in information that did not allow for a full depiction of the data. There were more participants over the age of 17 (82.4%) in comparison to those who were between the ages of 11 and 17 (17.6%); additionally, there were more female participants (75.8%) in comparison to their male counterparts (24.2%). The data represented by the figures above showed that participants over the age of 17 had higher BMIs, higher systolic blood pressures, and lower hemoglobin values than those participants who were between the ages of 11 and 17. The same was found to be true when comparing the data with the 2019 data

for systolic blood pressure and blood sugar. The health screenings also indicate that diabetes and kidney disease are among the most common health issues, which are closely related to nutritional habits and the age of the participants.

Figure 6 indicates how effective the educational efforts and sessions were with the community health workers, based on the return demonstration and questions asked at the end of the session. Almost half of the group was able to do an accurate return demonstration of the skills taught and answer the questions at the end correctly on the first try. The other half was able to do this on the second and third tries.

Discussion

This result from the health screenings correlates with the fact that young

adolescents between the ages of 10 and 14 have the lowest risk of death of all age groups, although between the ages 10 to 24 have the highest probability of dying in many countries including Latin America (World Health Organization, 2021). Though this is the case, deaths are not related to chronic illnesses such as hypertension or diabetes but rather unintentional injuries, violence, mental health, alcohol, and drug use, etc. (Huang et al., 2018).

The World Health Organization states that to have effective teaching and educational approaches to increase the number of rural health workers worldwide, it is important to focus on rural education, regulatory, financial, and personal and professional support (O'Sullivan, 2020). This was accounted for by the educational methods that were previously discussed. This will produce skilled and satisfied rural health workers, but it is important to note that this dedication requires continued dedication, development, and support. Without this, the development of a successful rural workforce is likely to fail and will not have sufficient tools to succeed (O'Sullivan, 2020).

When conducting interviews with the participants who were found to have abnormal blood pressure readings, blood glucose readings, and hemoglobin readings, each participant's nutritional habits were identified to determine similarities in health risks in the community. These findings were used as a learning opportunity, given the importance of this knowledge in preventing the development or further worsening of Type II diabetes. There is a large percentage of people in low- and middle-income countries, such as Guatemala that are diagnosed with diabetes, approximately 75% to be exact (Flood et al., 2017). Shockingly, of the 75% of people diagnosed with diabetes in low- and middle-income countries, only 29% are taking a medication regimen to help control their blood sugars (Duffy et al.,

2020). It is crucial for diabetics to be able to self-manage diabetes safely and effectively.

Guatemala imposed strict measures to control the spread of COVID-19. As a result, rates of food insecurity increased. These restrictions were necessary for the safety of the Guatemalan people but caused secondary effects on the country's economy. A large percentage of the country's economic growth depends on agricultural output, and though this sector was exempt from governmental limitations, there was still an evident disruption in the trade as well as shortages of employees (Ceballos et al., 2021). When households in rural communities were questioned about how this change affected them directly, it was noted that there was a decrease in the amount of food available in their local markets, as well as an increase in prices. Due to lower reported incomes, which were also a result of COVID-19, rural communities experienced a great deal of nutritional insecurity. It was quite evident that this was still the case when performing the health screenings in May and that most people were just trying to get by on the less expensive foods they had at home. Eighty percent of households interviewed for this study reported an increase in fruits and vegetables, while ninety-one reported an increase in grains (Ceballos et al., 2021). These findings emphasize the need to educate this population about maintaining a balanced diet of fruit and vegetable servings throughout the day.

A major strength of the health screening assessments done in various areas of the Zacapa District of Guatemala was that this trip was an accumulation and continuation of two previous trips that had begun the work and assessments in these communities. Because of this, there was access to baseline assessment information on participants from previous years. Additionally, steps were taken to improve the work of previous trips by implementing more

culturally appropriate and competent care in the areas of work. The data that was obtained from previous groups helped determine what additional assessments were needed. Another strength of the health screening assessments and educational sessions with community health workers was that three of the six team members spoke fluent Spanish, which allowed for less need for translation services and a better capability of communicating with the participants. Being able to speak the native tongue also builds rapport and trust with the participants. The government of Guatemala donated several leftover medication samples that were able to be distributed for free to the participants of the health screening, which was another benefit to outreach efforts, as many of the participants that came did not have the money or access to purchase these medications.

Conclusions

Even with our teams' short time in Guatemala, health screenings and education were provided to a large population. Our team was able to leave supplies, a registry, and education in these communities, which allows them to continue the health screenings on their own so they can monitor their health. With the education and resources provided, our hope is to see the health screen readings improve, as well as the nutrient density of this population's diet, to lessen the burden of chronic diseases.

Limitations

A limitation of the study is the gaps of missing data that were mentioned previously, as some of the participants were too young to have their blood checked or their blood pressure measured. This created a discrepancy in the data when it was compiled and evaluated during the final steps of the study. An assessment tool that potentially would have been of value is noting the

participants who previously had a diagnosis of hypertension, diabetes, or anemia prior to having their assessments done during our health screenings. This would have been a good measurement of how well they were managing their chronic illnesses. Additionally, data from the previous trip was missing BMI values and hemoglobin values, so these were unable to be compared to previous years. Due to the COVID-19 pandemic, international travel was halted, and a group was unable to continue the health screenings in 2020, leaving over a year gap in data that could have been collected and studied. This was a major limitation, as there is a large gap of missing data that could have shed light on blood pressure, hemoglobin, and blood sugar trends.

These health screenings in various communities in the Zacapa district could not have been made possible if it were not for the support of a local church organization in Guatemala that has been working with teams from Liberty University for the past three years to determine the communities that need the most assistance and outreach. Leaders from this church were our liaisons in Guatemala; they transported us, housed us in safe areas, and fed us while we were there. This church also provided a large number of volunteers who worked alongside our team and learned the process of health screenings in order to become community health workers.

Ethical Considerations

This was Institutional Review Board (IRB) human subjects research, approval number 3554.112918. To perform this study, we obtained ethical permissions from the Institutional Review Board (IRB), with which the authors are affiliated, including the IRB Annual Review Form, Change in Protocol Form, Investigator Agreement, Questionnaires, and Consent Forms. These consent forms explained the purpose of this

study and data confidentiality. To keep the data confidential, no names or identifying information were collected on the consent forms or questionnaires. This study was approved on December 23, 2020. To continue the confidentiality of the study, all the data acquired will be kept in a secure filing cabinet within the Department of Public and Community Health, where only the student and co-researchers will have access to the data. All data will be deleted and cross-shredded after three years. Before participating in the community health assessments, verbal and written consent from respondents was required. Those who consented were assured of their right to participate in and withdraw from the study. There was no compensation for participating in this study.

Recommendations

After having the privilege of working with the various communities and identifying needs specific to their risks, there are recommendations based on the assistance they have available from the Community Health Workers we trained. The first recommendation would be to implement a first aid response for first responders to provide medical aid while the victim waits for emergency medical services. The skills and tools that can be taught from this would be valuable to any community health worker to identify and respond to medical emergencies if they were to present at a general health screening. This is important because the most common injuries in Guatemala include firearm violence and road traffic injuries (Delaney et al., 2020). Unfortunately, the healthcare infrastructure in Guatemala does not allow for enough emergency medical services personnel, significantly increasing the time the victim has from the accident to reaching a hospital. This is due to many reasons, including the culture and community, a lack of

communication and coordination, inadequate transportation, outdated equipment, and a lack of personnel (Kironji et al., 2018). The reason there is a shortage of staff is due to inadequate budgeting for the municipal firefighters and volunteer firefighters, who make up the emergency services team, to receive training courses that can adequately prepare them for emergency situations (Delaney et al., 2020). This is a very crucial problem to address because less than 1% of populations in low-income countries have access to emergency medical transportation services (Kironji et al., 2018). This means that the care they can receive from first responders could be lifesaving.

An additional recommendation is telehealth, a strategy that has been suggested and studied to reach healthcare professionals in a low-cost manner while providing high-quality education and support in rural settings in Guatemala (McConnell et al., 2017). Telehealth is defined as the use of electronic information and telecommunication technologies to support long-distance healthcare, patient and professional health-related education, public health and health administration (McConnell et al., 2017). In-person training of these workers can be very costly and time-consuming, averaging about \$3,000 to send just one person who will provide education to Guatemala for two weeks (McConnell et al., 2017).

By implementing telehealth, CHW's can be educated and trained in a cost-effective manner on a variety of health topics. When evaluating telehealth in accordance to this research, the CHWs can be educated on the health topics discussed above, such as height and weight, blood glucose, hemoglobin, blood pressure, and nutrition. The CHWs need to be trained in the skills to perform these checks and then in the ability to dissect what the numbers and data mean. Additionally, the community would benefit from education and preventive based

resources for health-related issues such as chronic illnesses and mental health. One way to measure the effectiveness of the implementation of telehealth is to ask the CHWs and the community being reached. Any kind of healthcare is only as effective as the community's willingness to adopt it. Conducting surveys for the CHWs and the community is a way to explore the reach of telehealth and improvements that need to be made for efficient use of telehealth. Not only can telehealth help to develop CHWs but the community as a whole could benefit as well. It has the possibility to broaden the understanding of common health issues and more specific, community-based problems. Telehealth allows for a more open line of communication and an easier accessibility between health professionals and rural and indigenous communities. This is without mentioning the tremendous cost that is saved by the institution. However, telehealth requires resources and the ability to provide communities with the support to ensure its success.

Implications for Practice

This particular study addresses the

need for and importance of community health workers, specifically in low- and middle-income communities. The data gathered from the study determines there is a positive outcome when time, support, and education are given to community health workers. Additional conclusions reinforce the need for education that includes nutrition, preventive care, and information on common health issues. Providing these communities with resources to continue the screenings after the team leaves is necessary to provide a lasting impact and ensure the people in these indigenous communities are receiving sustainable healthcare.

Furthermore, additional studies are needed to understand if the training of community health workers will help educate the communities in Guatemala and provide access to care where they can receive treatment for chronic diseases. Future studies will help us understand if education does help prevent these chronic diseases as well. Further research will allow for the implementation of population-specific interventions that will reduce the prevalence of chronic diseases in these communities in Guatemala.

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