I, Megan M. Baird, hereby submit this original work as part of the requirements for the degree of Master of Science in Health Education (Public & Community Health).

It is entitled:
Positive Neighborhood Safety Factors and Their Relationship to Depressive Symptoms in Adults with Diabetes

Student’s name: Megan M. Baird

This work and its defense approved by:

Committee chair: Liliana Guyler, Ph.D.

Committee member: Amy Bernard, Ph.D.
Positive Neighborhood Safety Factors and Their Relationship to Depressive Symptoms in Adults with Diabetes

A Thesis Submitted to the Office of Graduate and Professional Studies at University of Cincinnati in partial fulfillment of the requirements for the degree of Master of Science in Health Promotion and Education Program School of Human Services College of Education, Criminal Justice, & Human Services

by

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Chair of Committee Liliana Rojas-Guyler, PhD, CHES

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ABSTRACT

Background: Diabetes is quickly becoming one of the most prevalent conditions within the United States, affecting people of all ages, races, and socio-economic backgrounds. Not surprisingly, mental health disorders, such as depression, tend to coincide with a life-changing diagnosis such as that of diabetes. A great deal of literature already exists examining the relationship that support networks can have on one’s quality of life and ability to cope with diabetes and minimize depression. However, little documentation can be found that evaluates how neighborhood safety can play a role in one’s health, especially someone with diabetes, and how these safety factors can predict feelings of depression among the diabetic patient. Therefore, the current study evaluated positive neighborhood safety factors and their relationship to depressive symptoms in adults with diabetes.

Methods: A secondary data analysis of a subset of data from the 2013 annual Community Health Status Survey conducted by Interact for Health, a local health foundation in Cincinnati, OH, was used for the current analysis.

Results: The data were analyzed through regression analysis to assess the relationship between positive community support, safety factors, and depressive symptoms among adults with diabetes. The results of the regression analysis showed that there is significance between: 1.) mentally unhealthy days and having a medical home, 2.) neighborhood safety and support factors and mentally unhealthy days, 3.) depression diagnosis and neighborhood safety and support factors; therefore, the research question “Do positive neighborhood safety factors and support factors help predict depressive symptoms among adults with diabetes?” was answered in a positive way.
Conclusions: Diabetes is quickly becoming one of the most prevalent conditions within the United States, affecting people of all ages, races, and socio-economic backgrounds. Not surprisingly, mental health disorders, such as depression, tend to coincide with a life-changing diagnosis such as that of diabetes. Little documentation exists that evaluates how neighborhood safety can play a role in one’s health, especially someone with diabetes, and how these safety factors can predict feelings of depression among the diabetic patient. Therefore, the current study evaluated positive neighborhood safety factors and their relationship to depressive symptoms in adults with diabetes. It is necessary that demographic and personal factors, as well as environmental influences (such as neighborhood safety and support factors), be addressed in order to maximize the educational benefit for each patient. Open and honest communication, using techniques such as motivational interviewing, must first take place between diabetic patients and health educators so that assessment of not only the patient’s medical background, but also their physical, psychological, and spiritual backgrounds and beliefs can take place in order to create the most effective and well-rounded plan for improving health behaviors and outcomes among these patients.

Keywords: health education, community, depression, diabetes, support, neighborhood, safety, health
ACKNOWLEDGEMENTS

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In addition, I would also like to thank my colleagues at TriHealth for their continued support and willingness to be flexible with my work schedule while I pursued my graduate studies and this research project. Lastly, I would like to thank my husband, Nick, a type I diabetic patient, for his unconditional love, support, and belief in me throughout the course of my graduate studies and this research project-you are truly an inspiration to me and this thesis project is dedicated to you and the many other diabetic patients living with this chronic illness.
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<td>HbA1c</td>
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<td>SF-12</td>
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INTRODUCTION

Diabetes

Diabetes, or diabetes mellitus as it is formally known, is an endocrine disorder in which hyperglycemia occurs because the body is unable to properly use blood glucose for energy (American Diabetes Association [ADA], 2014). The two most common types of diabetes are Type I and Type II. Type I diabetes occurs most often in children and young adults. With this type of diabetes, the pancreas stops producing insulin altogether as the beta cells that manufacture insulin are destroyed over time. There are a few reasons as to why this phenomenon may occur and includes theories such as a viral infection or auto-immune disorder attacking the body, but the cause of type I diabetes is largely idiopathic in nature. Patients with type I diabetes control their disease through changes in diet, exercise, and daily insulin injections. In type II diabetes, the pancreas still manufactures insulin; however, the pancreas either does not produce enough insulin or the body does not know how to properly use the insulin being produced resulting in hyperglycemia. Type II diabetes occurs mainly in middle-aged and older adults; however, with the influx of obesity in the United States this type of diabetes is being seen more often in young adults and even children. Patients with type II diabetes manage their disease through diet modification, exercise, oral anti-diabetic medications, and possibly insulin as well (Lemone & Burke, 2004).

According to recent data from the Centers for Disease Control and Prevention (CDC) for 2012, 29.1 million people, or 9.3% of the United States population had some form of diabetes. Out of those 29.1 million people, 21 million were actually diagnosed with the disease while 8.1 million were undiagnosed. More specifically in 2012, 28.9 million people, or 12.3% of the population, aged 20 years and older were diagnosed with diabetes. Out of that total, 15.5 million
of those diagnosed were men while 13.4 million were women. The majority of those adults diagnosed fell within the age range of 45-64 years old (Centers for Disease Control and Prevention [CDC], 2014). As the data revealed, diabetes does not discriminate when it comes to age and gender. It also affects all races and ethnic groups as well. However, with that said, diabetes is more prevalent among certain groups than others. According to the CDC’s 2012 statistics of Americans aged 20 years and older, American Indians/Alaskan Natives make up the largest ethnic group of people affected by diabetes with 15.9% of that population diagnosed with the disease. Non-Hispanic Blacks came in second with 13.2% of their population edging out the Hispanic population with a prevalence of 12.8%. Asian-Americans were next with 9.0% of their population aged 20 and up affected by diabetes while Non-Hispanic Whites had the lowest prevalence at 7.6% (Centers for Disease Control and Prevention, 2014). Overall, diabetes is currently the 7th leading cause of death in the United States (American Diabetes Association, 2014). The reason for this is mainly due to the other co-morbidities that can accompany diabetes such as heart disease, stroke, and kidney failure. Patients with diabetes are 2-4 times more likely to have heart disease and 2-6 times more likely to suffer from stroke than those without diabetes. In addition, having diabetes also increases the possibility of blindness and non-traumatic amputation/nerve damage than those without the disease (Lemone & Burke, 2004).

**Depression**

Depression is defined as a type of mood disorder in which an individual’s emotional tone of sadness is sustained over time therefore affecting behavior, personality, and perception (Townsend, 2003). Depression has been prevalent in human history since the beginning of time. According to the International Society for Mental Health Online, major depression is one of the top causes of disability within the United States alone affecting approximately 19 million
Americans each year. Although depression does not discriminate, it does have a greater impact on individuals based on demographic factors such as gender, age, social class, and marital status. Depression occurs more often in women than in men; however, it tends to happen in greater numbers of women at younger ages and, subsequently, in greater numbers of men at older ages. Depression is also found to be more prevalent among members of lower socio-economic classes than those of higher social classes. In addition, marital status can also play a role when it comes to depression among individuals. Those persons who are single or divorced tend to have a higher incidence of depression than their married counterparts (Townsend, 2003).

According to the DSM-V (American Psychiatric Association [APA], 2000), depression can be classified into 4 different stages or types. They include: transient depression, mild depression, moderate depression, and severe depression. Transient depression is similar to what an individual may feel when dealing with life’s everyday disappointments. Common symptoms include feeling “down”, tired, and maybe even crying (Townsend, 2003). With mild depression, the symptoms of transient depression are exacerbated and include additional symptoms such as anger, anxiety, guilt, withdrawal, self-blame, as well as physical symptoms such as headache and backache. In other words, a person experiencing mild depression would present with symptoms similar to that of a normal grief response (Townsend, 2003). An individual with moderate depression may experience symptoms associated with dysthymic disorder. Dysthymic disorder is a depressive state that does not exhibit a loss of contact with reality, but is more severe than mild depression. A person with moderate depression may tend to exhibit more self-destructive behavior and lower self-esteem as well as a decreased interest in personal hygiene and in activities that were once pleasurable (Townsend, 2003). Severe depression is typically diagnosed as major depressive disorder. At this stage, suicidal ideation is strong, even though
the individual’s energy level is low and thought process slowed. A person in this stage of depression is in a total state of despair, unable to feel any pleasure or positive emotion at all. Social isolation and delusional thinking are also common at this stage as well. Physical symptoms such as constipation, anorexia, and impotence are also very common (Townsend, 2003).

**Diabetes & Depression**

A diagnosis of diabetes can be a life-altering event for both patients and their families. For many people, their current way of life in terms of dietary and self-care practices comes under much scrutiny. Suddenly, patients are expected to adhere to different lifestyle changes and modifications that they will need to uphold and maintain for the rest of their lives. What used to be a care-free way of living is suddenly overcome by strict carbohydrate counting and multiple daily finger sticks. With the thought of complications such as heart attack, stroke, kidney failure, amputation, and blindness looming overhead, in addition to the challenges of a new lifestyle and medication regimen, it is easy to see how patients can begin to experience psychological problems, such as depression and anxiety, in conjunction with a diagnosis of diabetes. Even though maintaining a hemoglobin A1c (HbA1c) level of 7.0% or less minimizes these complications greatly, achieving this goal for many patients may seem like a daunting task, especially if they are experiencing feelings of denial or self-doubt about their diabetes diagnosis and control over the disease. Previous studies suggest that there is a strong correlation between diabetic patients and depressive symptoms. One such article from the Journal of Family and Community Medicine stated that, “Patients who have diabetes and a co-morbid psychiatric disorder (such as depression and anxiety) are more at risk of poor treatment outcomes than those without a psychiatric disorder” (Al Hayek, Robert, Al Dawish, et al., 2013). This worsening in
patient outcomes ultimately results in greater patient suffering and increased healthcare costs. In fact, diabetic patients are twice likely to have depression and anxiety as their non-diabetic counter-parts (Al Hayek, Robert, Al Dawish, et al., 2013). For many diabetic patients, the feelings of depression, anxiety, guilt, shock, anger, and helplessness occur at the time of diagnosis. Even after having lived with diabetes for many years, these feelings still remain constant for many patients (Wu, Liang, Wang, et al., 2011).

**Coping, Support Networks, & Quality of Life with Diabetes**

Recent studies have shown that self-management education, as well as various support groups, have a positive impact on treatment outcomes and disease management for diabetic patients therefore alleviating some of the anxiety and depression that a patient may feel with regard to their disease. In order to promote self-management education, patients must first identify their self-efficacy when it comes to diabetes (Wu, Liang, Wang, et al., 2011). How well does the patient understand their disease process? Do they know the many ways in which uncontrolled diabetes can affect their body? Are they competent when it comes to their medications and how they work within their body to stabilize their blood sugar levels? A patient’s self-efficacy is enhanced when they are competent and confident in their knowledge of and ability to control their diabetes therefore resulting in greater treatment outcomes of the disease (Wu, Liang, Wang, et al., 2011).

Yet, the question still remains as to which method of self-management education is best-peer led support groups or support groups led by a medical professional? A study from 2012 evaluated the effectiveness of a peer-led self management support group on community dwelling older people in China. Because of a lack of healthcare professionals and resources to meet the demands of a fast-growing diabetic population in China, peer led support groups were assessed
in an effort to promote diabetes education and self-management while keeping costs at a minimum (Shen, Edwards, Courtney, et al., 2012). The peer leaders for each group received four consecutive weeks of basic diabetic instruction (BDI) from a healthcare professional. Topics such as diet, exercise, foot care, and medication were discussed. Once the BDI training was completed for the peer leaders, two peer leaders then oversaw a group of 10-12 participants to disseminate the information they had learned and to also lead social support and self-efficacy (SSS) enhancing activities among the group. These SSS activities included group exercise classes and group shopping trips to the grocery, for example (Shen, Edwards, Courtney, et al., 2012). Peer-led support groups may not only be more economical, but also provide participants with a sense of comfort and community. There is a sense of “this person gets me” or “this person can relate to me because they have walked in my shoes” that participants may not find when being part of a support group led by a non-diabetic medical professional. Patients may tend to be more receptive to a teacher that is experiencing the same problems and frustrations as they are.

Regardless of whether or not the support group is peer lead or lead by a healthcare professional, it is important to remember that gaining the trust of participants, as well as the promotion of sharing among members, is crucial for the success of the group and ultimately the self-management education being taught. Diabetic education is highly individualized in nature because the disease process and medication management can be so different for each patient. Therefore, it is imperative that demographic and personal factors, as well as environmental influences, be addressed in order to maximize the educational benefit for each group member. A 2012 study out of Denmark revealed that most patients who participated in a support group benefited from the experience. Participants were cited as experiencing a sense of relaxation by
being in a group with other people like themselves who could relate to the idiosyncrasies of having diabetes. Other members reported “no longer feeling alone” as well as an increased sense of motivation to gain control of their diabetes as a result of the support group (Due-Christensen, Zoffmann, Hommel, et al., 2011). Positive quantitative results were also found in this study as well. Stress and depression decreased as well as HbA1c values resulting in better glycemic control in patients post-study (Due-Christensen, Zoffmann, Hommel, et al., 2011).

**Impact of Safe Neighborhoods on Health**

The safety of a neighborhood can have a huge impact on the health and well-being of its inhabitants. Regardless of socio-economic status and even with adequate access to medical care, neighborhood safety is a strong indicator of the health of its residents (Billimek & Sorkin, 2012). If a neighborhood is viewed as unsafe, residents will be less likely to want to go outside and leave their homes. By remaining stagnant, inhabitants are at an increased risk for weight gain due to high levels of inactivity (Billimek & Sorkin, 2012). For a patient with diabetes, a low activity level paired with an increase in weight can have detrimental effects on blood glucose and HbA1c levels. In addition, a fear to leave the home may cause residents to miss physician appointments as well as fail to pick up prescriptions from a local pharmacy. This type of non-compliance to their medical regimen also affects blood glucose and HbA1c levels as well. As these levels become more and more out of control, the likelihood of complications such as heart attack, stroke, and kidney, eye, and nerve damage increases. As more problems arise, so do feelings of depression, anxiety, and self-doubt (Billimek & Sorkin, 2012).

**Purpose of Study**

The purpose of this study was to evaluate the relationship between positive neighborhood safety factors and depressive symptoms among adults with diabetes. Much of the
literature published thus far has assessed the benefit community support groups can play on increasing diabetes self-management and, in turn, result in better glycemic control among diabetic patients. However, the aim of this study was to take that notion a step further in order to evaluate whether or not positive neighborhood safety factors aid in prediction of depressive symptoms among diabetic adults. At this time, little data exists regarding the influence of neighborhood safety factors such as accessibility to reliable transportation, accessibility to a physician office or pharmacy, a safe environment to promote exercise (such as the presence of sidewalks, parks, etc.), as well as a feeling of security when leaving the home in conjunction with the emotional well-being of diabetic patients. One of the goals of this study was to bring neighborhood safety factors into the equation and evaluate their effect on depression with regard to diabetes.

**Research Question**

One research question is posited: Do positive neighborhood safety factors and support factors help predict depressive symptoms among adults with diabetes?
METHODOLOGY

Recruitment

The local health foundation, Interact for Health, conducts an annual Community Health Status survey. The present study consisted of a secondary data analysis of a subset of data from the 2013 study. The following sections describe participants, procedures, and instrumentation in greater detail.

Participants

Study participants were adults age 18 years and older who completed the Greater Cincinnati Community Health Status Survey, 2013. A total of 4,929 randomly selected adults from a 22-county area surrounding the Cincinnati, OH area were interviewed via telephone between August-September 2013. The final number of participants utilized for this study were determined by the number of those participants that reported having been diagnosed as diabetic.

Procedures

All procedures were reviewed and approved by the University of Cincinnati Institutional Review Board for the protection of Human Subjects. Because study participant data was already pre-existing and non-identifying, a non-human subject research determination was sought upon approval of the study proposal by the thesis committee. Jennifer Chubinski with Interact for Health and Eric Rademacher with the UC Institute for Policy & Research were contacted regarding permission for use of the Greater Cincinnati Community Health Status Survey, 2013 for the research project as well as access to the de-identified data file containing this information. User agreements were completed in order to use the survey data for the research project and can be found on Appendix A.
Instrumentation

The study looked at factors from the Greater Cincinnati Community Health Status Survey, 2013 in order to assess the relationship between positive community safety and support factors and depressive symptoms among adults with diabetes. A complete listing of questions from the survey can be found on Appendix B. The select cases function was utilized to select participants who reported having ever been told by a doctor or nurse practitioner that they had diabetes (n=918).

Demographics. Seven of these factors included demographic characteristics such as age, sex, race/ethnicity, education level, income level, employment status, and insurance status. A table containing this information for the general sample surveyed can be found on Appendix C. These particular characteristics were measured using multiple choice questions such as yes/no and Likert-type scale, for example.

Health & Health Care Access. Three of the factors focused on health care access of the participant and included questions such as how long it had been since the study participant had visited a healthcare professional for a routine check-up, if there was one particular clinic, health center, or doctor’s office that the study participant usually went to when sick or needed advice about health, and when the study participant was sick or needed advice about their health to which one place did they usually go. These three factors were evaluated using a combination of yes/no, Likert scale, and multiple choice questions.

Neighborhood Characteristics. The next six factors measured the study participant’s neighborhood characteristics and included questions such as would the study participant rate their neighborhood as a healthy place to live, availability of recreational facilities in the neighborhood, whether there are shoulders/sidewalks on streets in the community that allow for
safe walking/jogging/biking, whether people can depend on each other in the community, whether living in the community gives its inhabitants a secure feeling, and whether people in the community know where they can get help in the neighborhood if in trouble. Again, these questions were addressed in both a yes/no and Likert scale format.

**Depression & Mental Health.** The SF-12 mental health summary focused on the depression measure for the study participants. Questions within this health summary were presented in a Likert scale format as well and focused on topics such as how much the participant felt calm and peaceful, their energy level, and how much they felt downhearted and blue during the past 4 weeks.

**General Health Rating.** One question focused on the general health status of survey participants in order to assess how they rated their health. This question was presented in a Likert scale format and looked at whether participants rated their health as excellent, very good, good, fair, or poor.

**Data Analysis**

Data was obtained via Eric Rademacher at the UC Institute for Policy & Research following the proper permissions from Interact for Health. The database was saved on a password protected computer. The raw data was provided as an SPSS file and then analyzed in the following way: Data was examined for skewness, missing data, and other factors to ensure a clean dataset. Descriptors of frequency, proportion, and central tendency were identified for each variable. Interactions were assessed and finally a regression analysis was done to assess the relationship between positive community support, safety factors, and depressive symptoms among adults with diabetes. All p values were set at <.05.
RESULTS

Demographics

The demographic components analyzed for this study consisted of sex, age, education level, employment status, race/ethnicity, income level, and insurance status for both general sample participants totaling 4,929 people and diabetes sample participants equaling 918 people. Data analysis revealed that nearly twice as many females at 67.0% (n=615) completed the survey than males at 33.0% (n=303) among the diabetic population who participated in the survey. This trend is consistent with that of the general sample for the survey in which 66.7% (n=3,289) of participants were female and 33.3% (n=1,640) of participants were male. The survey responses also revealed that among the diabetic population polled, 31.5% (n=286) of participants were within the 65-74 year old age group. With regard to education level, the general survey sample indicated that the largest group of folks that completed the survey at 35.8% (n=1,758) had only a high school level education. This finding compares to that of the diabetic population polled in which 39.7% (n=363) of participants indicated “high school graduate” as their highest education level completed. These results show that there appears to be a slightly lower educational achievement level among the diabetic population.

When looking at employment status among the general population sampled, 43.4% (n=2,113) of people were employed either full time or part time. However, in sharp contrast, among the diabetic sample population 58.9% (n=535) of people identified themselves as unemployed, disabled, or retired. These results indicate a lower rate of employment among the diabetic population sampled versus the general sample population. With regard to race, among the general population sampled, the overwhelming majority of respondents were white at 76.5% (n=3,705). Likewise, within the diabetic population, 71% (n=644) of those surveyed were white.
as well. However, even though more of the survey respondents were white, a higher rate of 6.6% was present among the diabetic African American population (25.9%, n=235) as compared to the general African American population surveyed (19.3%, n=935). Therefore, these results indicate that there are a higher number of African Americans among the diabetic sample than the general sample. When assessing poverty status, the survey revealed that among the diabetic population 41.6% (n=294) of people are above 200% FPL. This finding is actually less than the general sample surveyed with 55.9% (n=2,158) of people above 200% FPL. The last demographic component assessed was insurance status. According to survey results, within the diabetic population 93.4% (n=856) of people identified themselves as having some type of medical insurance. This finding is actually greater than that of the general sample with only 89.9% (n=4,421) reporting being insured.
Table 1 Diabetic Subsample Demographic Characteristics

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<tr>
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<tr>
<td>Female</td>
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<td>Not Insured/Don’t Know</td>
<td>60</td>
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General Health Status

Within the diabetic population, of those participants surveyed 19.8% (n=157) stated that they considered their general health to be either excellent or very good as compared to 35.2% (n=323) of the general population who rated their general health as good. This category represented the largest number of diabetic survey participants. Lastly, 47.8% (n=428) of the diabetic population rated their general health as fair or poor. In comparison, out of the general sample as a whole, 44.0% (n=2,164) of participants rated their health as either excellent or very good. In addition, 31.6% (n=1,558) of participants rated their general health as good and 24.4% (n=1,201) rated their health fair or poor. These results indicate that among the diabetic population, fewer participants rated their health as excellent in comparison with the general survey sample. In contrast, more people within the diabetic population rated their health as fair or poor when compared with the general sample. These results are comparable to pre-existing literature that suggests people with diabetes view their health as poorer than those folks without diabetes.
<table>
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<tr>
<td>Very Good</td>
<td>132</td>
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<td>35.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td>129</td>
<td>14.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.42</td>
<td>0.988</td>
</tr>
</tbody>
</table>
Health Care Access

Within the survey, three questions were presented that focused on health care access for participants. The first question asked how long it had been since the participant visited a health care professional for a routine checkup. Among the diabetic population, 96.5% (n=886) of participants reported having seen a health care professional for a routine checkup within the past 1 year. The second question addressed whether there is one particular clinic/health center/doctor’s office that that participants go to when sick or needing advice about their health. Amid the diabetic population, 95.3% (n=872) of people responded that yes, they do visit a particular clinic/health center/doctor’s office. The third question focused on which type of place participants went to when sick or needing advice about their health. Among the diabetic population, 76.6% (n=663) of people stated that they sought care at a private doctor’s office whereas 12.4% (n=107) of people mentioned that they received care at a community-based health center/public health clinic. Additionally, 8.5% (n=74) of people polled revealed that they used a hospital outpatient department in order to receive routine care. These results are comparable to those of the general survey population.

Depression & Mental Health

The SF-12 survey was utilized in order to assess feelings of depressed mood and to evaluate mental health status among diabetic survey participants. Three questions were asked pertaining to mood and depression within the last 4 weeks including: 1.) Have you felt calm and peaceful? 2.) Did you have a lot of energy? 3.) Have you felt downhearted and blue? With regard to the first question, 52.2% (n=479) of people reported feeling calm and peaceful either all of the time or most of the time whereas 32.2% (n=296) of participants reported feeling calm and peaceful either a good bit or some of the time. Only 15.5% (n=142) of those surveyed
reported feeling calm and peaceful a little or none of the time. In reference to the second question which evaluated the amount of energy participants had, only 24.0% (n=220) of participants reported having a lot of energy either all or most of the time while 45.3% (n=415) of people said they had a lot of energy a good bit or some of the time. Of those diabetic participants surveyed, 30.6% (n=281) said that they had a lot of energy little or none of the time. The third question asked pertaining to feeling downhearted and blue revealed that only 7.8% (n=71) of participants were downhearted and blue either all or most of the time, 26.4% (n=242) felt these emotions a good bit or some of the time, while more than half of folks surveyed, 65.9% (n=603) felt downhearted and blue a little or none of the time. The number of mentally unhealthy days reported by participants was also evaluated to assess the mental health status of the diabetic population surveyed. Out of the 918 diabetic patients polled, 429 reported having at least one mentally unhealthy day within a 30 day period (M=12.90; SD=10.576).

**Neighborhood Characteristics**

Six questions were asked pertaining to neighborhood safety, support, and satisfaction. The first question asked dealt with whether or not participants viewed their neighborhood as a healthy place to live. For this question, 46.0% (n=420) of people ranked their neighborhood as excellent or very good whereas 29.4% (n=268) ranked their neighborhood as good when it came to being a healthy place to live. Only 24.6% (n=224) of people surveyed stated that they felt their neighborhood was a fair or poor place to live in terms of health. The second question addressed the availability of recreational facilities within the neighborhood of the participant. Out of those surveyed, 39.1% (n=352) felt that their neighborhood had either excellent or very good availability of recreational facilities while 26.2% (n=236) reported availability of facilities
as good. In comparison, 34.8% (n=313) of participants ranked availability of facilities within their neighborhood as either fair or poor.

The remaining four questions were comprised into a neighborhood safety and support scale. This scale assessed questions such as whether or not the neighborhood provided sidewalks/shoulders on streets for safe walking, jogging, and biking, whether or not people can depend on one another within their community, whether or not living in the community gives members a secure feeling, and if people in the community know where they can get help if they are in trouble. With regard to the presence of safe sidewalks and shoulders on streets, 64.6% (n=579) of participants stated that they strongly or somewhat agreed that an adequate amount of sidewalks and shoulders on streets existed within their neighborhood. The majority of survey participants, 74.6% (n=666), either strongly or somewhat agreed that they can depend on others within their community. In addition, 78.3% (n=712) of people polled strongly or somewhat agreed that living in their community does indeed provide them with a secure feeling. Lastly, 79.4% (n=700) of participants strongly or somewhat agreed that they know where they can get help within their community if in trouble. The results of this scale indicate that survey participants with diabetes felt positively about the safety and support factors within their community.

Scale Level Analyses. Two scales were utilized, one to evaluate Neighborhood Characteristics and one for Mental Health (SF-12). For the Neighborhood Scale, responses for items 3, 4, 5, and 6 were summed and a scale score created by computing a new variable. The reliability of this scale was in the acceptable range at Chronbach’s Alpha=0.677. Similarly, for Mental Health, a scale score was created. Items 1 and 2 stayed and item 3 was reverse coded.
(1=5 and 5=1). Then the sum of scores was computed by creating another “new variable.” Data analysis also revealed that this scale was reliable with a Chronbach’s Alpha=0.209.
Table 3 Neighborhood Scale Score

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sidewalks/shoulders on streets that</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>allow for safe walking/jogging/biking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agree</td>
<td>318</td>
<td>35.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat agree</td>
<td>261</td>
<td>29.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lean toward agree</td>
<td>8</td>
<td>0.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lean toward disagree</td>
<td>4</td>
<td>0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree somewhat</td>
<td>121</td>
<td>13.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>185</td>
<td>20.2</td>
<td>2.89</td>
<td>2.025</td>
</tr>
<tr>
<td><strong>Dependence upon one another</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agree</td>
<td>372</td>
<td>41.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat agree</td>
<td>294</td>
<td>32.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lean toward agree</td>
<td>15</td>
<td>1.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lean toward disagree</td>
<td>6</td>
<td>0.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree somewhat</td>
<td>120</td>
<td>13.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>86</td>
<td>9.6</td>
<td>2.40</td>
<td>1.747</td>
</tr>
<tr>
<td><strong>Secure feeling within community</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agree</td>
<td>473</td>
<td>52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat agree</td>
<td>239</td>
<td>26.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lean toward agree</td>
<td>7</td>
<td>0.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lean toward disagree</td>
<td>5</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree somewhat</td>
<td>98</td>
<td>10.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>88</td>
<td>9.7</td>
<td>2.21</td>
<td>1.739</td>
</tr>
<tr>
<td><strong>Help when in trouble</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agree</td>
<td>396</td>
<td>44.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat agree</td>
<td>304</td>
<td>34.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lean toward agree</td>
<td>21</td>
<td>2.4</td>
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<td></td>
</tr>
<tr>
<td>Lean toward disagree</td>
<td>7</td>
<td>0.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree somewhat</td>
<td>71</td>
<td>8.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>82</td>
<td>9.3</td>
<td>2.20</td>
<td>1.637</td>
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</table>
Table 4 Mental Health Scale

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression Diagnosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>279</td>
<td>30.5</td>
<td></td>
<td>1.70</td>
</tr>
<tr>
<td>No</td>
<td>636</td>
<td>69.5</td>
<td></td>
<td>0.461</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling Downhearted &amp; Blue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All of the time</td>
<td>20</td>
<td>2.2</td>
<td></td>
<td>4.79</td>
</tr>
<tr>
<td>Most of the time</td>
<td>51</td>
<td>5.6</td>
<td></td>
<td>1.267</td>
</tr>
<tr>
<td>A good bit of the time</td>
<td>52</td>
<td>5.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some of the time</td>
<td>190</td>
<td>20.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little of the time</td>
<td>270</td>
<td>29.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None of the time</td>
<td>333</td>
<td>36.4</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felt Calm &amp; Peaceful</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All of the time</td>
<td>111</td>
<td>12.1</td>
<td></td>
<td>2.92</td>
</tr>
<tr>
<td>Most of the time</td>
<td>368</td>
<td>40.1</td>
<td></td>
<td>1.395</td>
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<tr>
<td>A good bit of the time</td>
<td>104</td>
<td>11.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some of the time</td>
<td>192</td>
<td>20.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little of the time</td>
<td>99</td>
<td>10.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None of the time</td>
<td>43</td>
<td>4.7</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have a lot of energy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All of the time</td>
<td>38</td>
<td>4.1</td>
<td></td>
<td>3.72</td>
</tr>
<tr>
<td>Most of the time</td>
<td>182</td>
<td>19.9</td>
<td></td>
<td>1.365</td>
</tr>
<tr>
<td>A good bit of the time</td>
<td>150</td>
<td>16.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some of the time</td>
<td>265</td>
<td>28.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little of the time</td>
<td>189</td>
<td>20.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None of the time</td>
<td>92</td>
<td>10</td>
<td></td>
<td></td>
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</table>
Inferential Analysis

Among the diabetic population surveyed, further analysis of study data revealed a relationship between the number of mentally unhealthy days a person experienced and whether or not they had a designated “medical home” that they frequented when sick or needing advice about their health. An ANOVA (significance of p=0.001) was run which revealed that survey participants who had one particular clinic/health center/doctor’s office that they visited when ill or seeking council about their health resulted in fewer mentally unhealthy days than folks who did not have a “medical home” and vice versa.

It was also determined that the number of mentally unhealthy days a person experienced was predicted by the neighborhood safety and support scale. A regression analysis and ANOVA were run indicating a significance of p<0.000 proving that people who felt more positive about their community from a safety and support standpoint reported experiencing fewer mentally unhealthy days within a 30 day period and vice versa.
In addition, it was also concluded that a diagnosis of depression was predicted by the neighborhood safety and support scale as well. Again, a regression analysis and ANOVA were run indicating a significance of p<0.000 verifying that people who were less positive about their community’s safety and support factors were more likely to have a diagnosis of depression and vice versa.

Other correlations found through inferential analysis included higher neighborhood safety and support scores as a result of having higher socio-economic status, in terms of poverty and education, with a significance of p<0.000. In addition, neighborhood safety and support scores were found to be predictive of having a medical home. A correlation of neighborhood safety and support scores by medical home resulted in a significance of p=0.003 indicating that higher dissatisfaction in neighborhood safety and support scores increased the likelihood of not having a medical home and vice versa.

Linear regression analysis was also conducted to assess if neighborhood safety and support scores and/or having a medical home were predictive of the number of mentally unhealthy days experienced by the diabetic population surveyed. The regression analysis concluded that neighborhood safety and support scores and medical home predicted nearly 9% total variance (R=0.293; R²=0.086; F=18.481; significance=p<0.000) with neighborhood safety and support scores predicting 7% variance (R=0.262; R²=0.068; F=29.143; significance=p<0.000) and medical home predicting an additional 2% variance on mentally unhealthy days.
Table 5 Correlations

<table>
<thead>
<tr>
<th></th>
<th>Sex</th>
<th>General Health Rating</th>
<th>Mentally Unhealthy Days</th>
<th>Neighborhood Scale Score</th>
<th>SF12 Mental Health Scale Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>0.014</td>
<td>-0.001</td>
<td>0.025</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.318</td>
<td>0.975</td>
<td>0.096</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>4929</td>
<td>4923</td>
<td>2128</td>
<td>4534</td>
</tr>
<tr>
<td>General Health Rating</td>
<td>Pearson Correlation</td>
<td>0.014</td>
<td>1</td>
<td>.355**</td>
<td>.220**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.318</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>4923</td>
<td>4923</td>
<td>2125</td>
<td>4529</td>
</tr>
<tr>
<td>Mentally Unhealthy Days</td>
<td>Pearson Correlation</td>
<td>-0.001</td>
<td>.355**</td>
<td>1</td>
<td>.191**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.975</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>2128</td>
<td>2125</td>
<td>2128</td>
<td>1992</td>
</tr>
<tr>
<td>Neighborhood Scale Score</td>
<td>Pearson Correlation</td>
<td>0.025</td>
<td>.220**</td>
<td>.191**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.096</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>4534</td>
<td>4529</td>
<td>1992</td>
<td>4534</td>
</tr>
<tr>
<td>SF12 Mental Health Scale Score</td>
<td>Pearson Correlation</td>
<td>.052**</td>
<td>.490**</td>
<td>.460**</td>
<td>.232**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>4915</td>
<td>4909</td>
<td>2124</td>
<td>4526</td>
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</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
Given these results, the research question of “Do positive neighborhood safety factors and support factors help predict depressive symptoms among adults with diabetes?” was answered in a positive way.
CONCLUSION

As already indicated, the results of this study showed a positive correlation between neighborhood safety and support factors and their ability to predict depression among diabetic patients. Previous literature demonstrates that a relationship does exist between diabetes and depression. According to the Journal of Family and Community Medicine, “Patients who have diabetes and a co-morbid psychiatric disorder (such as depression and anxiety) are more at risk of poor treatment outcomes than those without a psychiatric disorder” (Al Hayek, Robert, Al Dawish, et al., 2013). The findings of this study revealed that, within the diabetic population surveyed, 30.5% of participants had a corresponding diagnosis of depression; this percentage is 10% higher than that of the general population who participated in the survey. However, the study wanted to take this correlation a step further by evaluating the presence of neighborhood safety factors and their ability to predict depression within diabetic patients. A regression analysis conducted among the diabetic population surveyed proved to be significant that a diagnosis of depression was predicted by neighborhood safety and support factors. In addition, a second regression analysis evaluating if the number of mentally unhealthy days experienced by a diabetic patient in a 30-day period were predicted by neighborhood safety and support factors was also found to be significant.

These neighborhood safety and support factors were combined to form a neighborhood safety and support scale. This scale looked specifically at the following questions: whether or not participants viewed their neighborhood as a healthy place to live, how participants evaluated the availability of recreation facilities such as parks, playgrounds, pools, soccer fields, bike trails, and recreation centers within their neighborhood, if participants felt that sidewalks or shoulders on streets within their neighborhood were safe for walking, jogging, or biking, whether

35
participants can depend on each other in their community, whether living within their community gives participants a secure feeling, and if participants know where they can get help from their community if they are in trouble. Overall, the results of this scale indicated that survey participants with diabetes felt positively about the safety and support factors within their community. Data analysis also revealed that the scale was reliable with a Chronbach’s Alpha= .677. Previously published literature also supports these results. According to Billimek and Sorkin, regardless of socio-economic status and even with adequate access to medical care, neighborhood safety is a strong indicator of the health of its residents.

A great deal of literature already exists examining the effect that support networks can have on quality of life in diabetic patients. In addition, self-management has also been found to have a positive impact on treatment outcomes and disease management for diabetic patients, therefore alleviating some of the anxiety and depression that a patient may feel with regard to their disease. A patient’s self-efficacy is enhanced when they are competent and confident in their knowledge of and ability to control their diabetes resulting in greater treatment outcomes of the disease (Wu, Liang, Wang, et al., 2011). Due to their unique qualifications, it is imperative for health educators to remember the importance of treating the “whole” person when providing instruction to diabetic patients. Because more health educators are also becoming certified diabetic educators, it is even more crucial to understand the importance of looking at patients from all aspects. Diabetic education is highly individualized in nature because the disease process and medication management can be so different for each patient. Therefore, it is necessary that demographic and personal factors, as well as environmental influences (such as neighborhood safety and support factors), be addressed in order to maximize the educational benefit for each patient. It would be unrealistic to try to change a certain health behavior of a
diabetic patient by setting goals with them that are unattainable because factors within their neighborhood, that are out of their control, prevent them from achieving these goals. Therefore, open and honest communication, using techniques such as motivational interviewing, must first take place between diabetic patients and health educators so that assessment of not only the patient’s medical background, but also their physical, psychological, and spiritual backgrounds and beliefs can take place in order to create the most effective and well-rounded plan for improving health behaviors and outcomes among these patients.

There were a few limitations that occurred within this study. One such limitation was the fact that twice as many females than males participated in the survey used for this study. This difference was found in both the general and diabetic survey populations resulting in an over-representation of women in the sample. This limitation begs the question of, based on the data, whether or not more women tend to answer phone surveys than men. Another limitation noted was that a larger number of elderly adults (approximately 65 years of age and older) participated in the survey used for the study than any other age group. Again, this type of limitation lends itself to the belief that a larger percentage of older adults tend to be at home to answer a phone survey than their younger counterparts. Future studies of this type should try to maintain a broader population base consisting of a more equal amount of male and female adult participants from all age groups.

In conclusion, diabetes is quickly becoming one of the most prevalent conditions within the United States, affecting people of all ages, races, and socio-economic backgrounds. Not surprisingly, mental health disorders, such as depression, tend to coincide with a life-changing diagnosis such as that of diabetes. Little documentation exists that evaluates how neighborhood safety can play a role in one’s health, especially someone with diabetes, and how these safety
factors can predict feelings of depression among the diabetic patient. Therefore, the current study evaluated positive neighborhood safety factors and their relationship to depressive symptoms in adults with diabetes. A secondary data analysis of a subset of data from the 2013 annual Community Health Status Survey conducted by Interact for Health, a local health foundation in Cincinnati, OH, was used for the current study. This data was analyzed through a regression analysis to assess the relationship between positive community support, safety factors, and depressive symptoms among adults with diabetes. The results of the regression analysis concluded that there is significance between: 1.) mentally unhealthy days and having a medical home, 2.) neighborhood safety and support factors and mentally unhealthy days, 3.) depression diagnosis and neighborhood safety and support factors; therefore, the research question “Do positive neighborhood safety factors and support factors help predict depressive symptoms among adults with diabetes?” was answered in a positive way. Due to their unique qualifications, it is imperative for health educators to remember the importance of treating the “whole” person when providing instruction to diabetic patients. Diabetic education is highly individualized in nature because the disease process and medication management can be so different for each patient. Therefore, it is necessary that demographic and personal factors, as well as environmental influences (such as neighborhood safety and support factors), be addressed in order to maximize the educational benefit for each patient. Open and honest communication, using techniques such as motivational interviewing, must first take place between diabetic patients and health educators so that assessment of not only the patient’s medical background, but also their physical, psychological, and spiritual backgrounds and beliefs can take place in order to create the most effective and well-rounded plan for improving health behaviors and outcomes among these patients.
REFERENCES


DATA USE AGREEMENT
for the Greater Cincinnati Community Health Status Survey
from Interact for Health

No identification of Persons—Any effort to determine the identity of any person contained in Greater Cincinnati Community Health Status Survey (GCCHSS) databases, or to use the information for any purpose other than for research, analysis, and aggregate statistical reporting, would violate the conditions of this Agreement. Recipients of the data set are prohibited under the terms of this Agreement from releasing, disclosing, publishing, or presenting any individually identifying information obtained under this Agreement. It may be possible in limited situations, through deliberate technical analysis, and with outside information, to ascertain from the Restricted Use data sets the identity of particular persons. Considerable harm could ensue if this were to occur. Therefore, any attempts to identify individuals are prohibited and information that could identify individuals directly or by inference must not be released or published. In addition, users of the data must not attempt to contact individuals for any purpose, including verifying information supplied in the data set. Any questions about the data must be referred exclusively to Interact for Health.

The undersigned gives the following assurances with respect to the Greater Cincinnati Community Health Status Survey Restricted Use data set:

- I will not use and will prohibit others from using or disclosing the data set (or any part), except for research, analysis, and aggregate statistical reporting, and only as permitted by this Agreement.
- I will ensure that the data are kept in a secured environment and that only authorized users will have access to the data.
- I will not release or disclose, and will prohibit others from releasing or disclosing, any data that are individually identifiable under the HIPAA Privacy Rule, or any information that identifies persons, directly or indirectly, except as permitted under this Agreement.
- I will not release or disclose, and will prohibit others from releasing or disclosing, the data set (or any part) to any person who is not a member, agent, or contractor of the organization (specified below), except with the approval of Interact for Health.
- I will not attempt to link, and will prohibit others from attempting to link, the persons in the data set with individually identifiable records from any other source.
- I will not attempt to use and will prohibit others from using the data set to learn the identity of any person included in the data set or to contact any such person for any purpose.
- I will make no statement and will prohibit others from making statements indicating or suggesting that interpretations drawn are those of the data sources or Interact for Health.
- I will acknowledge in all reports based on these data that the source of the data is the "Greater Cincinnati Community Health Status Survey."
- This data agreement is only for the dissertation project of (INSERT NAME) and publications that are directly connected to that project. If you wish to use the data for other projects a separate agreement would be required from Interact for Health.
Safeguards. I agree to use appropriate safeguards to prevent use or disclosure of the data set other than as permitted by this Agreement.

Permitted Access to Limited Data Set. I shall limit the use or receipt of the data set to the individuals who require access in order to perform activities permitted by this Agreement.

Re-disclosure. I will not re-disclose (i.e., share) the data set (or any part), unless the individual who will receive the data has agreed in writing to be bound by the same restrictions and conditions that apply to me under this Agreement.

Reporting Violations of this Agreement. I agree to report any violations to Interact for Health within twenty-four (24) hours of becoming aware of any use or disclosure of the limited data set in violation of this Agreement or applicable law.

Term, Breach, and Termination of this Agreement. This Agreement shall continue in full effect until the data recipient has returned all copies of the data set to Interact for Health. Any noncompliance by the data recipient with the terms of this Agreement will be grounds for immediate termination of the Agreement if, at the sole determination of Interact for Health, the data recipient knew or should have known of such noncompliance and failed to immediately take reasonable steps to remedy the noncompliance.

Signed: Megan Baird Date: 12/8/14

Print or Type Name of Data Recipient: Megan Baird

Title: Graduate Student

Organization: University of Cincinnati

Address: 5100 Froglan Ct.

City: Cincinnati State: OH ZIP Code: 

Phone Number: 513-347-0594

Fax: N/A

E-mail: megan110le.baird@gmail.com
DATA USE AGREEMENT
for the Greater Cincinnati Community Health Status Survey
from Interact for Health

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Signed: [Signature] Date: 12/8/14

Print or Type Name of Data Recipient: Lilianna Guiley

Title: Associate Professor

Organization: UC HEPE Program

Address: PO Box 210068

City: Cincinnati State: OH ZIP Code: 45221

Phone Number: 513 556 0973

Fax: 513 556 3898

E-mail: lilianna.guiley@uc.edu
Institutional Review Board - Federalwide Assurance #00003152
University of Cincinnati

Date: 12/16/2014

From: UC IRB

To: Principal Investigator: Liliana Rojas Guyler
   CECH Human Services

Re: Study ID: 2014-8221
   Study Title: Neighborhood Characteristics as Predictors of Depressive Symptoms among People with a Self-Reported Diagnosis of Diabetes in a Midwestern Tri-State Area

The Institutional Review Board (IRB) acknowledges receipt of the above referenced proposal. It was determined that this proposal does not meet the regulatory criteria for research involving human subjects (see below): No human subjects – analysis of data from a publicly available de-identified dataset. Ongoing IRB oversight is not required.

Please note the following requirements:
Statement regarding International conference on Harmonization and Good clinical Practices.

The Institutional Review Board is duly constituted (fulfilling FDA requirements for diversity), has written procedures for initial and continuing review of clinical trials: prepares written minutes of convened meetings and retains records pertaining to the review and approval process; all in compliance with requirements defined in 21 CFR Parts 50, 56 and 312 Code of Federal Regulations. This institution is in compliance with the ICH GCP as adopted by FDA/DHHS.

Thank you for your cooperation during the review process.

45 CRF § 46.102(d): Research means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge.

45 CRF § 46.102(f): Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains:
   1. data through intervention or interaction with the individual, or
   2. identifiable private information.

Intervention includes both physical procedures by which data are gathered (for example, venipuncture) and manipulations of the subject or the subject's environment that are performed for research purposes.

https://epas.research.cchmc.org/ePAS_PRD/Doc/0/3PH3GTQEU5TKT...
1 of 2 3/17/2015 2:27 PM
**Interaction** includes communication or interpersonal contact between investigator and subject.

**Private information** includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects.

**FDA regulations** apply whenever an individual is or becomes a participant in research, either as a recipient of a FDA-regulated product or as a control, and as directed by a research protocol and not by medical practice. FDA-regulated activities involve individuals, specimens, or data, as patients or healthy controls, in any of the following:

a. any use of a drug or biologic, other than the use of an approved drug or biologic in the course of medical practice

b. any use of a device (medical or other devices, approved or investigational) to test the safety or effectiveness of the device

c. any use of dietary supplements to cure, treat, or prevent a disease or bear a nutrient content claim or other health claim

d. the collection of data or other results from individuals that will be submitted to, or held for inspection by, the FDA as part of an application for a research or marketing permit (including foods, infant formulas, food and color additives, drugs for human use, medical devices for human use, biological products for human use, and electronic products.)

e. activities where specimens (of any type) from individuals, regardless of whether specimens are identifiable, are used to test the safety or effectiveness of any device (medical or other devices, approved or investigational) and the information is being submitted to, or held for inspection by, the FDA.

https://epas.research.cchmc.org/ePAS_PRD/Doc/0/3PH3GTQEU5TKT...
APPENDIX B-SURVEY QUESTIONS

Demographics

3.) Are you 18 years of age or older?
   1.) Yes
   2.) No/Don’t Know/Refused

24.) Record sex of respondent
   1.) Male
   2.) Female
   3.) INAP

47.) Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMO’s, or government plans such as Medicare or Medicaid?
   1.) Yes
   2.) No
   8.) Don’t Know
   9.) NA/Refused

67.) What is the highest grade or year of school you completed?
   1.) Never attended school or only attended kindergarten
   2.) Grades 1 through 8 (Elementary)
   3.) Grades 9 through 11 (Some high school)
   4.) Grade 12 or GED (High school graduate)
   5.) College 1 year to 3 years (Some college or technical school)
   6.) College 4 years or more (College graduate/Bachelor’s degree)
   7.) Post-college/Graduate degree (PhD; MD; JD; Doctorate; Masters)
   8.) Don’t Know
   9.) NA/Refused

69.) Which one of the following would you say best represents your race:
   1.) White
   2.) Black or African-American
   3.) Asian
   4.) Native Hawaiian or Other Pacific Islander
   5.) American Indian or Alaska Native
   6.) Some Other Race
   8.) Don’t Know
   9.) NA/Refused
72.) Last week…were you working full-time, part-time, going to school, keeping house, or what?
   1.) Working full-time
   2.) Working part-time
   3.) With a job but not at work because of temporary illness, vacation, strike
   4.) Unemployed, laid off, looking for work
   5.) Disabled, too ill to work (permanent)
   6.) Retired
   7.) In school
   8.) Keeping house
   9.) NA/Refused

73.) Was the total income you and your family received in 2012, not just from wages or salaries but from all sources…$42,850 or less…between $42,851 and $85,700…or more than $85,700?
   1.) $42,850 or less
   2.) Between $42,851 and $85,700
   3.) More than $85,700
   97.) Refused
   98.) Don’t know
   99.) NA

**Depression and Mental Health**

6.) How much of the time during the past 4 weeks…a.) Have you felt calm and peaceful?
   b.) Did you have a lot of energy? c.) Have you felt downhearted and blue?...
      All of the time
      Most of the time
      A good bit of the time
      Some of the time
      A little of the time,
      None of the time
      Don’t know
      NA/refused

8.) Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?
   ____________________________
   Exact number of days
   97.) None
   98.) Don’t know
   99.) NA/Refused
13.) Has a doctor or other health care provider ever told you that you had any of the following conditions? Has a doctor or other health care provider ever told you that you had depression?
   1.) Yes
   2.) No
   8.) Don’t Know
   9.) NA/Refused

Diabetes

13.) Has a doctor or other health care provider ever told you that you had any of the following conditions? Has a doctor or other health care provider ever told you that you had diabetes?
   1.) Yes
   2.) No
   8.) Don’t Know
   9.) NA/Refused

Healthcare Access

10.) About how long has it been since you personally last visited a health care professional for a routine checkup…was it…
   1.) In the past 1 year
   2.) In the past 2 years
   3.) In the past 3 years
   4.) In the past 5 years
   5.) More than 5 years ago
   6.) Never
   8.) Don’t know/not sure
   9.) NA/refused

11.) Is there one particular clinic, health center, doctor’s office, or other place that you usually go to if you are sick or need advice about your health?
   1.) Yes
   2.) No
   8.) Don’t know/not sure
   9.) NA/refused
12.) When you are sick or need advice about your health, to which one of the following places do you usually go…would you say…
   1.) A private doctor’s office other than a public health clinic or community-based Health center
   2.) A community-based health center or public health clinic
   3.) A clinic at a retail store
   4.) A hospital outpatient department
   5.) A hospital emergency room
   6.) Urgent care center
   7.) Some other kind of place
   97.) No usual place
   98.) Don’t know
   99.) NA/refused
   0.) INAP

Neighborhood Characteristics

37.) How would you rate your neighborhood as a “healthy place to live”…would you say
   1.) Excellent
   2.) Very good
   3.) Good
   4.) Fair
   5.) Poor
   8.) Don’t know
   9.) NA/refused

40.) Would you say the availability of recreation facilities such as parks, playgrounds, pools, soccer fields, bike trails, and recreation centers in your neighborhood is…
   1.) Excellent
   2.) Very good
   3.) Good
   4.) Fair
   5.) Poor
   8.) Don’t know
   9.) NA/refused

42.) There are sidewalks or shoulders on streets in my community/neighborhood that allow for safe walking, jogging, or biking…do you agree or disagree?
   1.) Strongly agree
   2.) Somewhat agree
   3.) Lean toward agree
   4.) Lean toward disagree
   5.) Disagree somewhat
   6.) Strongly disagree
   8.) Don’t know
   9.) NA/refused
44.) People can depend on each other in my community.
   1.) Strongly agree
   2.) Somewhat agree
   3.) Lean toward agree
   4.) Lean toward disagree
   5.) Disagree somewhat
   6.) Strongly disagree
   8.) Don’t know
   9.) NA/refused

45.) Living in my community gives me a secure feeling.
   1.) Strongly agree
   2.) Somewhat agree
   3.) Lean toward agree
   4.) Lean toward disagree
   5.) Disagree somewhat
   6.) Strongly disagree
   8.) Don’t know
   9.) NA/refused

46.) People in my community know they can get help from the community if they are in trouble.
   1.) Strongly agree
   2.) Somewhat agree
   3.) Lean toward agree
   4.) Lean toward disagree
   5.) Disagree somewhat
   6.) Strongly disagree
   8.) Don’t know
   9.) NA/refused

**General Health Status**

5.) In general, would you say your health is…
   1.) Excellent
   2.) Very Good
   3.) Good
   4.) Fair
   5.) Poor
   8.) Don’t Know
   9.) NA/Refused
### APPENDIX C-SUPPLEMENTAL TABLE

Demographics Table-General Survey Population

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<thead>
<tr>
<th>Sex</th>
<th>Frequency</th>
<th>Percent</th>
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<tr>
<td>Male</td>
<td>1640</td>
<td>33.3</td>
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<tr>
<td>Female</td>
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<td>66.7</td>
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<th>Age</th>
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<tr>
<td>18-19</td>
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<td>1.3</td>
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<tr>
<td>20-24</td>
<td>128</td>
<td>2.6</td>
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<tr>
<td>25-34</td>
<td>320</td>
<td>6.6</td>
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<td>35-44</td>
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<td>10.3</td>
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<td>45-54</td>
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<td>75+</td>
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<td>Less than high school</td>
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<td>High school graduate</td>
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<td>Some college</td>
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<td>Other</td>
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<th>Employment</th>
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<td>Employed FT or PT</td>
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<td>43.4</td>
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<td>Unemployed, disabled, retired</td>
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<tr>
<td>Student, keeping house</td>
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<th>Poverty</th>
<th>Frequency</th>
<th>Percent</th>
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<tr>
<td>100% and below FPL</td>
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<td>Between 100% and 200% FPL</td>
<td>950</td>
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<td>Above 200% FPL</td>
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<td>55.9</td>
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<th>Insurance</th>
<th>Frequency</th>
<th>Percent</th>
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<td>Insured</td>
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<td>89.9</td>
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<td>Not Insured/Don’t Know</td>
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<td>10.1</td>
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