

The Relationship Between Physical Activity and Falls Among the Elderly of West Marin

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Abstract

Background

Fall injury is a leading cause of death and disability among older adults (Alamgir, 2012). Fall injury may result in fractures, infection and fear of movement. By reinforcing engagement in muscles used during balance and walking, seniors may avoid unnecessary falls within their homes and the community.

Setting/Target Population

West Marin is the largest rural area of Marin County, California and includes seven unincorporated communities. A large percentage of the elderly population who reside in West Marin live alone--thus suffering from isolation. Within the rural, isolated communities of West Marin, the rate of falls among the elderly are increasing.

Improvement Project

At the Community Center in Point Reyes, a seated Zumba class is offered to seniors. This class is offered only once per week, yet there is great value in encouraging seniors to utilize their muscles, develop core strength, and improve balance while having fun and being engaged. Twelve Dominican Nursing Students propose to make a video of the seated Zumba class and distribute the DVDs to the patrons of the Senior Luncheons in Point Reyes and San Geronimo Valley (approximately 150 people). Prior to the DVD distribution, the Nursing Students will perform a health presentation to the seniors on the benefits of exercise to encourage their desire to participate.

Objectives

1) increase the number of days per week that West Marin seniors perform the seated Zumba exercises from one day per week to most days of the week; 2) increase strength, mobility, and balance among West Marin seniors who participate in the seated Zumba project; 3) reduce risk of falls among West Marin seniors participating in the seated Zumba project; 4) increase exercise-related endorphins and reduce depression among West Marin seniors participating in the seated Zumba project.

Background

The purpose of this paper is to emphasize the importance of exercise among the elderly in order to help prevent falls and other complications. The target population is the elderly community living in West Marin County, California. For this project, twelve Dominican Senior-level Nursing Students partnered with West Marin Senior Services particularly in San Geronimo and Point Reyes, to perform home visits and assess a problem within the community. West Marin is approximately 325 square miles of rural area, and twenty-five percent of the population of Marin County are over sixty years old. West Marin Senior Services provides supportive services to seniors, which allows them to attain independence and remain in their homes for as long as possible. The client-base of West Marin Senior Services are: 22% between the ages of 60-69 years old, 31% between 70-79 years old and 47% are 80 years or older. Forty-four percent of the seniors of West Marin live alone, and half suffer from malnutrition, which greatly increases their risk for falls.

In the United States, falls are the leading cause of fatal and non fatal injuries among individuals over the age of 65. In 2014, approximately 27,000 older adults died due to injuries

associated with a falls and 2.8 million were treated in emergency departments for fall-related injuries. In the same year, approximately 800,000 of these patients were readmitted to the hospital for reasons associated with their fall (CDC). According to the Center for Disease Control, “In 2014, 28.7% of older adults reported falling; the estimated 29 million falls resulted in 7 million injuries”. In 2013 there were 1,733 fatal falls reported, and in 2014, approximately 208,564 non-fatal falls for the State of California. In Marin County alone, there were 35 fatal falls in 2013 and 2,482 non-fatal falls in 2014 (CDPH, 2017). The statistical information could not be broken into districts within a county. Although the number of falls in Marin County is slightly lower among other Californian elderly populations, it is still a priority to reduce the risk of falls among the elderly West Marin population.

The majority of the seniors in West Marin are living in widely spread out, rural, isolated locations, so it is important to implement an exercise regime program where they are able to remain independent. A seated zumba video was made in order to aid in the beginning of this process, hopefully encouraging the elderly of West Marin to start exercising within the comfort of their own homes and to build their strength to prevent falls.

Literature Review

This paper concentrates on how a lack of physical activity is positively correlated with increased falls among elderly populations. The databases used in this literature review include Iceberg, and Google Scholar. Keywords searched in these databases include: Benefits of Physical Activity; Risk for Falls; Elderly and exercise.

Beyond Strength

Physical activity has many benefits for older adults including increased strength, balance, and a decreased risk of falls. Physical activity not only has physical benefits, but also psychological benefits as well. *Beyond Strength: Participant Perspectives on the Benefits of an Older Adult Exercise Program* written by C. Miyawaki is a study that examines the expected and experienced benefits among participants in Enhance Fitness. Funding for this study was provided by the Prevention Research Centers Program of the Centers for Disease Control and Prevention through a grant given to the University of Washington Health Promotion Research Center. The study is well organized with an introduction, background, sampling methods, tables illustrating results, themes, results and conclusion with a qualitative phenomenological having been utilized. The purpose of this study was to evaluate effectiveness of an exercise program on health and happiness in an elderly population (over the age of 65). What was found was that those involved in the study had improved moods and felt healthier after involvement in the program. This study aimed to fill in the void that existed among elderly exercise programs that looked into the health benefits of programs but lacked participant emotions about the program. This study overviewed interviews conducted with participants to evaluate their emotions connected to the program as well as effectiveness as perceived by the participant. The study included participants between January 2005 and June 2012 and included twenty participants with a 8.9% response rate. Interviews were analyzed and averaged forty minutes in length. The results of the study concluded that participants felt they had increased stamina and strength, functional improvement in everyday life, improved perceived fitness level, increased motivation and inspiration, improved balance, felt more confident in everyday activities such as gardening, improved social connections and improved overall quality of life. Implications for nursing

include the possibility for program creation and improved programs related to fitness in the older community.

Exercise Training on Elderly patients

To further explore how increasing physical activity can benefit the health of elderly, thus reducing the risk of falls, the writer of this paper will discuss *Exercise training effects on elderly and middle-age patients with chronic heart failure after acute decompensation: A randomized, controlled trial* written by Domencio Acanfora. This literature was published in 2016 in the International Journal of Cardiology. The purpose of this study was to assess whether physical training could improve the physical capacity of exercise in the elderly and thus decrease the risk of heart failure. The sample size was composed of 72 individuals who participated in cardiopulmonary exercise tests (bicycle ergometry) to assess several parameters associated with health. Expiratory respiratory gases, peak oxygen consumption, peak carbon dioxide output, minute ventilation, ventilatory threshold, resting heart rate, peak heart rate, resting blood pressure, and peak blood pressure were all collected. The results disclosed that exercise training improved peak oxygen consumption and ventilatory threshold both in elderly and middle-age patients. Peak carbon dioxide output, minute ventilation, peak heart rate and peak blood pressure increased only in middle-age patients after 4 weeks exercise training.

This study is significant for this project because after just four weeks of exercise training, elderly patients were able to participate in activity without having respiratory exhaustion, and improved the amount of oxygen consumption received. Strategies for primary prevention of Chronic Heart Failure is to manage blood sugars and blood pressure, decrease level of stress, smoking cessation. Secondary prevention strategies are screening patients for blood tests to

monitor triglyceride levels, promote exercise, and make dietary modifications (such as the DASH diet). Tertiary prevention strategies include taking medications, insertion of a stent or a left ventricular assistive device.

Quality of Life

Neslihan, Sefa and Muammer (2017), examines how physical activity may have positive effects on decreasing anxiety, stress and depression, maintaining mental health, and ensuring psychological vitality. In the article *The effect of physical activity on depressive symptoms and quality of life among elderly nursing home residents*, researchers conducted a randomized controlled trial of 80 individuals age 65 years and older, which includes 40 in the intervention group and 40 control group. They used standardized procedures such as Beck Depression Scale, SF 36 Quality of Life Questionnaire to gather information related to demographic data, depressive symptoms, and quality of life parameters. Information was collected before and after a ten week “Physical Activity Program”, consisting of 10 minute warm-up activities, 20 minutes rhythmic exercises, 10 minute cool-down exercises, and a 30 minutes free walking period on four days of the week. According to the results of the research, it concluded that the exercise program had positive effects on the depressive symptoms and quality of life of the participants of the study. After the ten-week “Physical Activity Program,” it was observed that the depressive symptoms of the participants decreased and their quality of life improved. This study recommends that in order to prevent chronic diseases and enable the aging population to maintain a higher quality of life, nurses and other healthcare professionals working with this population need to establish routine physical activity programs like the one done in this

study that are tailored in accordance with the needs and physiological properties of the senior population.

Health Promotion

In the research article, *What Motivates Older Adults to Improve Diet and Exercise Pattern?*, Shoshana, et al. explore different perspectives on older adults' motivation to bring change in their diet and exercise. The study used a qualitative research approach by interviewing 104 seniors over the age of 65 using a "constant comparative approach" (Bardach, et al., 2016). During the comprehensive physical assessment, 64.7% of the participants reported that they included no moderate or strenuous physical activity in their daily life and only 58% of the participants consumed fruit and vegetables daily. The study found that perception of older adults, personal motivation, and confidence influenced the participants to change their diet and exercise patterns. In term of perception of older adults, the participants claimed that society had stereotypical perception of older adults and low expectations from them. They have also accepted their health symptoms as part of their aging. In terms of their personal motivation, the participants reported that they were motivated to modify their diet and exercise patterns only when they had new diagnosis, abnormal lab values, such as high blood sugar, high blood pressure, etc. Some of the participants were motivated to make changes when there would be special upcoming events such as meeting with their grandchildren. In terms of confidence, successful past experiences prompted the participants to continue incorporating positive changes in their lives. The limitation of this study is not being able to include a generalized population of older adults as all the participants were white and had access to health care. This study can guide

the health care provider on how to approach with older adults to make change in lifestyle since the study gives perspective of older adults on their lifestyle changes.

Physical Activity Program

The purpose of the article called “*Effects of an adapted physical activity program on the physical condition of elderly women: an analysis of efficiency*” is to identify the benefits of physical activity in the elderly women. This study occurred at the Adult Revitalization Program in Brazil and was approved by the Human Research Ethics Committee of Universidade Federal de Sao Carlos, Brazil. The method is based upon a year long physical activity program for women who were 60 years and up. There were 64 elderly women who participated in this 123 session study that took 52 weeks. The participants took a medical evaluation of their physical characteristics and health history and problems. One of the tests that was evaluated was the grip strength test by using a Sammons Preston Swedley-Type hand dynamometer. This test was the highest and reliable method to do. The second was the sit and reach test to examine the lower back and lower limb flexibility. The third test was the dynamic balance to evaluate the maximum gait velocity which included a walk along a straight line as fast as the participant could. Also the participants were assessed with their height, weight, body mass index, heart rate, and systolic and diastolic pressures. The session consisted of: 8-10 minutes of stretching; 9 minutes of aerobic exercise; 7-10 minutes of adapted strength, power and endurance training; 14-16 minutes of coordination, agility and flexibility exercises; and 5-7 minutes of respiratory and relaxation exercises (Albuquerque-Sendín, 2012, p. 330). The sessions was conducted three times per week. In result of this program, it was more effective in changing flexibility than any other physical ability and in dynamic and static balance, especially left limbs. A huge determinant of

efficiency in this study was the time spent on each exercise was to allow the elderly to take their time and complete the type of exercise. Overall, this study proved that physical activity adapted to elderly women in which had an effect on decreasing the decline of physical ability.

Wise, Old and Wonderful

The article entitled *Wise, Old and Wonderful; The Benefits of Day-Time Activities for Independently Living Frail Elderly People*, is written by Sylvia Kamphuis and Floris Kraan. The purpose of this study is to attain a deeper understanding on the relationship between daytime activities and the vulnerability of the elderly. The researchers distributed a questionnaire to 96 older adults participating in daytime activities of the Trivium Meulendbelt Zorg organization, and each one filled it out. The questionnaire was known as the Tilburg Frailty Indicator, which measures the frailty of the elderly in the physical, social, and psychosocial domains. Eight of the 96 individuals that completed the questionnaire were indicated as frail and were recruited for an in-depth interview to determine if there was a relationship between day-care activities and vulnerability. The results of the study showed that old age, females, singles and groups with a low socioeconomic status are the most common characteristics of elderly individuals who are vulnerable. 86% of the participating elderly individuals in the daytime activities are vulnerable, 86% are physically vulnerable, 70% are socially vulnerable, and 57% are psychologically vulnerable. The current national average of these areas of vulnerability are 70% (physically), 60% (socially), and 60% (psychologically), which shows that the research group in this study does not deviate national findings. Day-care activities are an essential intervention to ensure that elderly individuals who are considered vulnerable can continue living independently at home from longer periods of time, concluding that if day-care activities were not offered as much or

not at all, frail elderly and their partners will become even more vulnerable, which could potentially lead to more disabilities, acute admissions, and deaths.

Needs-based Assessment

The role of exercise in the aging population is essential. There are a multitude of resources that focus on physical well-being among the West Marin Communities. Both Point Reyes and San Geronimo Valley provide an array of physical exercise programs to help the aging population improve balance, flexibility, stamina, core strength, mindfulness, and to decrease stress and anxiety. These exercise programs can be used as prevention strategies to many accidental injuries and chronic conditions. These prevention measures include primary, secondary, and tertiary preventions. All three levels of prevention are seen within the existing resources and programs offered within the West Marin communities. Whether it's using exercise as a primary prevention to prevent or slow the onset of disease, secondary to treat or manage the disease progression, or tertiary to stop the progression of the disease and/or adverse outcomes of accidental injuries. The West Marin communities offer physical exercise programs for all ages from baby gyms to the senior seated zumba. This can be seen as a primary prevention because exercise has been effective in protecting young and middle-age adults from cognitive decline in their later years (Laurin, 2001). Exercise programs offered in the community not only act as a primary prevention, but also to help treat and manage disease processes, and physical activity as a tertiary intervention can be a useful strategy in therapeutic management.

Point Reyes has many existing resources in the community to not only increase strength and balance, but to help maintain independence and reduce the risk for accidental injuries such as falls. There are many classes and workshops offered at the Dance Palace Community and

Cultural Center in Point Reyes that focus on increasing fitness and well-being of the community. There are many different options for the seniors; the resources that are offered include Aikido, Floating Island Sangha, pilates, ping pong, tai chi, and zumba. In addition to the Seated Zumba, classes offered specifically for seniors, other programs include gentle pilates and a class called Exercise for Life, designed to improve balance, breathing, and well-being of the aging population. There are also a wide variety of yoga classes offered throughout the week from flow yoga, gentle yoga and to moderately paced.

Existing resources available in San Geronimo Community Center are that they offer a variety of interesting and healthy programs events and activities especially for people 60 years of age and over. They offer different programs at the community center to keep their senior residents' life active and healthy. A number of other programs of interest to seniors are that they are performing arts programs, monthly visual arts shows and receptions in their galleries. There are also a variety of reasonably priced classes in Tai Chi, QiGong and Yoga offered by local private teachers and practitioners. Ping Pong is a free program in Community Gym which is offered at 1:00 PM on Thursdays after Senior Lunch.

The health and wellness resources offered in the communities of San Geronimo Valley and Point Reyes measures up quite well to what has been suggested by the literature. The previously discussed literature suggests that, in general, physical fitness activities exclusively designed for elderly populations have positive effects on total well-being, resulting in more elderly people living longer, healthier, happier, and less dependent upon others. Because there are a wide variety of physical activity programs for the elderly community members to choose from, it is suggested that these programs are tailored down to fit specific physiologic properties,

which is exactly what is recommended in the article entitled “*Quality of Life*” by Neslihan Lok, Sefa Lok, and Muammer Canbaz (2017). Through the physical fitness programs offered such as Seated Zumba, Tai Chi, QiGong, and yoga, the elderly community members in San Geronimo Valley and Point Reyes are experiencing first-hand, the benefits suggested by previous scientific studies.

Community-Level Diagnosis

Prevention Interventions

In participating in seated Zumba, West Marin seniors will obtain the benefits of exercise such as increased strength and balance, which has been suggested to reduce the risk of falls. A primary prevention to reduce the risk of falls is educating this particular population about the many benefits that can be attained when exercise is introduced into their daily lifestyle. Risk for falls does not necessarily pertain to the entire population, but can be beneficial to those who may not have an exercise regime or are in the mindset that exercise will not decrease the chances of falls because this is something that is likely to occur with age. A secondary prevention strategy would be to screen those in the population who are at highest risks for falls. These may be seniors who are losing muscle mass or those who are beginning to notice a decrease in their strength and balance. A tertiary prevention is targeting those in the population who have already had a fall and are immobile and are at the highest risk for a repeat fall. Seated Zumba is a program that is done while seated and will not only help to increase and strengthen muscle mass, it can provide those that are already immobile with an option to improve their health at their level.

Nursing Plan

Risk for falls among seniors living in West Marin related to decreased mobility, loss of muscle mass, and decreased balance as evidenced by increased use of assistive devices when ambulating, unsteady gait, and history of falls within the community. 1) increase the number of days per week that West Marin seniors perform the seated Zumba exercises from one day per week to most days of the week; 2) increase strength, mobility, and balance among West Marin seniors who participate in the seated Zumba project; 3) reduce risk of falls among West Marin seniors participating in the seated Zumba project; 4) increase exercise-related endorphins and reduce depression among West Marin seniors participating in the seated Zumba project.

Measurable Outcomes

West Marin Seniors will participate in seated Zumba one day per week in class at the Dance Palace. They will also participate at home with the provided 30 minute DVD an additional two days per week for a total of 90 minutes of physical activity per week. West Marin Seniors who participate in seated Zumba a minimum of three days per week will have improved balance and reduce risk of falls within 3 months of using the exercise program.

Project Funding

The Dominican University of California Nursing Students Community Assessment Project was aimed to provide rural West Marin communities an effective way to benefit their health by offering a safe and convenient way to increase physical activity. The project undertaking was in producing a DVD of a Seated Zumba class provided by Cathy Davis, a certified personal trainer and owner of West Marin Fitness in Point Reyes. The biggest challenges were getting a project of this magnitude done in a very short amount of time with

very limited financial resources. There were many avenues explored to make this project a reality, but in the end it was made possible by a combination of generous donations in time and/or financial support.

Notably, Cathy Davis and clinical faculty Dr. Ellen Christiansen donated both time and generous funds towards the completion of this project. The project manager was nursing student Nancy Hunt, who donated funds and a considerable amount of time to see that the project was completed. The following nursing students also contributed time and finances: Fasha Ruys-Solorzano, Shay Mozzetti, Chelsey White, Crystal Hunter, Sadaf Sardar, Dolma Tso, Nima Tso, Kayla Kinsman, Tony Guevara, Halina Truong, and Nicholas Ward.

West Marin Senior Services regretted that they could not help financially, but were very excited about the project. They offered ideas of resources within the community, such as we approach West Marin Community Service Center to discuss the possibility of writing a grant proposal. Unfortunately, this was not feasible due to time constraints. It was also suggested we discuss videography with Burrill Crohn who ended up being the director/producer of the DVD. Burrill Crohn is also a member at CMCM (Community Media Center of Marin) which made the production of the DVD possible. They allowed us the use of their filming studio in exchange for allowing them to broadcast the DVD on the local TV channel. Overall, we are grateful to all who contributed and made this project possible.

Evaluation

A questionnaire was formatted for West Marin seniors to evaluate the effectiveness of the seated Zumba, see section in Appendices. In order to anticipate the results, we plan to leave the questionnaires to the next semester's students of spring 2017 to perform the evaluation.

Appendices

Questionnaires for benefit of seated- zumba in West Marin seniors:

West Marin Location:

- San Geronimo Valley
- Point Reyes Station

1) Age:

- 65-75
- 76-85
- 86-95
- 96 or older

2) Pertinent illness:

- Arthritis
- Coronary artery disease
- Hypertension
- Diabetes
- Osteoporosis
- Other: _____

3) How often have you attended the seated zumba class

- Never
- One-time Only
- Once a Month
- Twice a Month

Three times each Month

Every Week

4) What time of the day would you most likely participate in the seated zumba video?

In the Morning

In the Afternoon

In the Evening

5) How many minutes do you perform seated Zumba for a session?

10 minutes

15 minutes

30 minutes

60 minutes

6) How effective seated zumba motivate you to do the exercise at home?

Strongly agree

Agree

Neutral

Disagree

Strongly Disagree.

7) Have you found that the seated Zumba DVD has increased your strength, mobility, and balance?

Very helpful

Helpful

Neutral

Not helpful

Not helpful at all

8) Have you found that the seated Zumba DVD has affected your mood?

No

Yes; how so: _____

9) How likely are you to recommend this exercise to your (family and friends)

Highly recommend

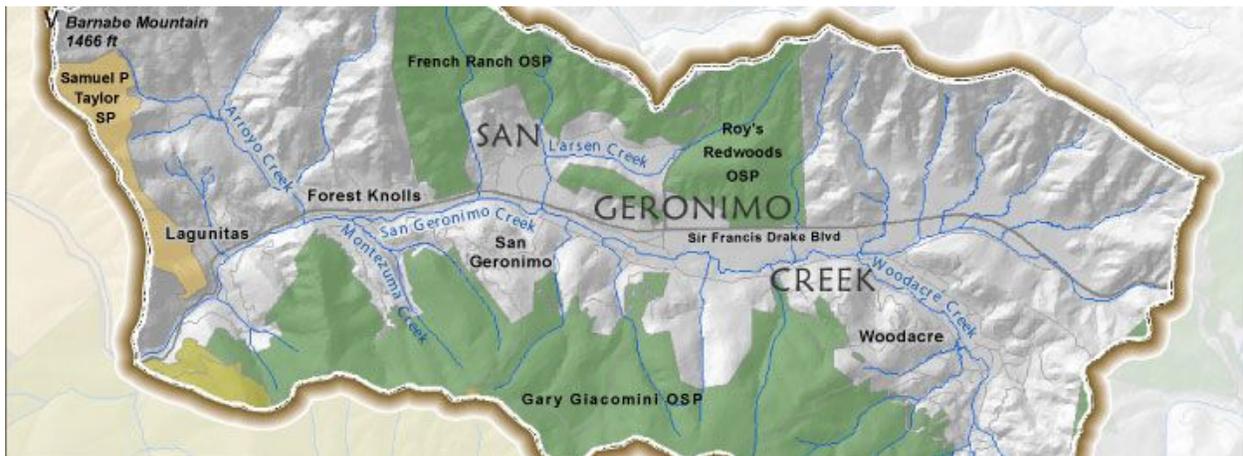
May be

Not at all

Windshield Survey (San Geronimo)

1. Community Core

A. Boundaries: Identify the geographic boundaries of the community, e.g. the natural limits such as a body of water; structural limits, such as a highway or railroad track. For some communities boundaries may also be defined by time (e.g. temporal boundaries...a group of parents of children with cystic fibrosis). Include a map of the area you are surveying.



B. History: What is the historical background of your community? Is it old, new, established, built on the site of a previous community?

Before San Geronimo was San Geronimo, this beautiful valley was home to many sloths, mastodons, bison, camelids, bears, wolves, elk, grizzlies, salmon and cougars. The first humans arrived nearly 10,000 years ago. Before the Europeans came in the late 1700's, Coast Miwok are an ingenious people that inhabit of what we now call Marin and southern Sonoma counties for thousands of years. They lived in harmony with nature as every oaktree had a story and a name. Life was spent with storytelling, rituals, gambling games, playing with their children, and rhyming under the sun. The history of San Geronimo began with a military officer named Rafael Cacho who had the first title to San Geronimo Valley. In 1844, he was granted 8,800 ache of

Rancho Cañada de San Geronimo by the Mexican government for his loyal service as a Mexican Citizen. When he ran into financial problems, he was forced to sell the land to Lieutenant Joseph Revere for \$1,000. While hunting elk, he discovered the Valley and wanted to make it his own. After four years it was sold again. The title was transferred to many people over the decades. A lot of history from then till now, but during that time the development of San Geronimo was set forth with the development of roads, railroads, post offices, and schools. The community grew and grew, and became a very close knit town.

Source: "Valley History." *San Geronimo Valley Community Center*.

C. Demographics: Describe the nature of the population. What kinds of people do you see? Young? Old? Homeless? Alone? Families? What ethnic groups and races do you see?

The Demographics of San Geronimo Valley are quite diverse, however we tend to interact with more elderly people in our clinical rotation than any other group. However, the community center is adjacent to a school, so we briefly see the children in passing, which appear to be majority Caucasian. Therefore suggesting that there are many families in San Geronimo Valley, in addition to the elder population. Many of the elders appear to either live alone or with their significant other. As far as ethnic groups, caucasian and hispanic seem to be among the highest in number, there are some homeless people in the community as well.

D. Ethnicity: Are different ethnic groups present? People? Restaurants? Churches? Schools? Festivals? What indicators of various cultural groups do you see?

There are different ethnic groups present in the community, many caucasian older couples and hispanic families. There doesn't seem to be many restaurants around although there is a small pizza place by a 711. As for churches, at the bottom of the hill near the 7-11 is the

Fairfax Community Church (non-denominational), whereas in San Geronimo Valley, there is an Episcopal Church very close to the community center. There are several schools along the way and one elementary school right in San Geronimo Valley, the Lagunitas School District, where we are specifically.

E. Values & Beliefs: Are there churches, temples, mosques, or cathedrals? Other religious institutions? Does the community appear homogeneous in its values? What are indicators of various values? Are lawns cared for? Are there flowers? Hanging baskets? Gardens? Graffiti? Other art? Historical markers? How do you feel in the community, welcome or ignored?

San Geronimo Valley is generally very welcoming. Not everyone strikes up a conversation when they see others around the community, but people usually give acknowledging smiles at the least. Most people in this community are of Christian/Catholic faith. Some people talk about praying “in Jesus’ name”, praying to God, or even have pictures hanging on walls in their houses of what is supposed to be Jesus. When driving through San Geronimo, Presbyterian, Catholic, and Jewish churches are seen. Although these three religions appear to be the predominant religious values in this community, it is a bit difficult to say that the community is homogenous in their religious values since there are other organizations that cater to individuals that practice Buddhism and spiritual practices based on the ancient ways of the Native American Indigenous people. Anyone who has been anywhere in San Geronimo Valley will confirm that the scenery is very green. There are acres and acres of land with mountains that are inhabited by cows, horses, sheep, etc. The houses in the residential areas always seem to have a front yard with well maintained grass/gardens. Some people decorate their front yards by

displaying sculptures, hanging ornaments, and growing flowers and small trees. Some people even use tree stumps and logs as a way to surround their front yard. The San Geronimo Valley Community Center is its own piece of history. The Community Center was founded 1969 and has served what is known as the four villages of San Geronimo Valley: Woodacre, San Geronimo, Forest Knolls, and Lagunitas.

2. Subsystems

A. Physical environment: How does the community look? What do you observe about the air quality, flora, housing (age of houses, architecture, quality of construction materials, condition), zoning (residential, commercial, mixed), space (lots, playgrounds, quality of open spaces, fields, wetlands), green areas, lawns, animals (strays), natural beauty?

The community looks a little old, most of the houses look worn and ready to fall apart, the architecture of most of them are typically smaller and unique. The quality of air seems really good, it's also very green and there is a lot of nature and space surrounding the area. There haven't been any stray animals, just cows and horses that go along with the farms around San Geronimo Valley which is very beautiful.

B. Health and Social Services: Evidence of acute or chronic conditions (e.g. accidents, alcoholism, drug addiction, mental illness)? Shelters? Are there clinics, hospitals, practitioners' offices, public health services, home health agencies, urgent care centers, nursing homes, social service facilities, mental health services? Are there resources outside the community but accessible to them?

A large part of community's responsibility is to promote health and wellness for all. At the Center they provide valuable resources that support people in need. This includes a weekly,

emergency food pantry, health days and an annual health fair, their First Five education program, and a variety of services for their seniors. Their goal is to empower neighbors who find themselves in difficult times through emergency assistance, referrals and educational opportunities.

As a nursing students, during lunch time, we always help the community to check their blood pressure and blood sugar test. We do our best to explain how to maintain their blood sugar and also let them know the range where their blood sugar should be before and after their meal.

The Valley Resource Center, located in the Community Center, is open Monday through Friday from 9:30 am to 5:00 pm. Community assist people with information, referrals, and direct assistance in accessing social and health services and programs that serve the San Geronimo and Nicasio valleys.

They do have health day in the month of October, where community people get health screenings and learn new ways to track and maintain their health. They will have a wide variety of wellness and medical practitioners from western, alternative, and holistic traditions. Free screenings, consults, treatments include healthy snacks, flu shots and homeopathic flu remedies, San Geronimo Valley Lions Club vision screening, T'ai Chi Demos, Breast exams with TAPS, HIV and HCV testing with Marin AIDS Project, Blood pressure and blood sugar screening, Natural poison oak remedy, Mercury education from Turtle Island Restoration Project, Accuquest hearing screening, help community people to signing up for Covered California, Medi-Cal and CalFresh and San Geronimo Valley Lions Club blood drive.

C. Economy: Is the community “thriving” or does it feel run-down, seedy? Is it changing, on its way up or down? How can you tell? Do you see trash, abandoned cars, real

estate signs, abandoned houses? Are the streets clean? Are there industries, stores, places for employment? Where do people shop?

The San Geronimo Valley community is thriving. The area is very well kept and the streets are clean. There are recycle bins located throughout the communities. The members of the community are very eco-friendly in how everything is recycled and properly disposed of after it can no longer be used. The houses are well kept and including those in the high secluded areas. The people of this community pride themselves in the way they keep their lovely town. The San Geronimo Community Center seems to play a major role in the way people conduct themselves in their homes and communities. It is well managed and very clean. It is not runned down nor is it chaotic during its peak hours of traffic in the afternoon. The community really comes together to help each other out and making the place run. Majority of home are occupied and consist of elderly retired individuals with very little amount of people under the age of 40. This most likely contributes to the area being well maintained. Majority of the employment is about 20 minutes down the highway in San Rafael. It is where most do their shopping and place of employment and major medical services. There are also no fast food restaurants in San Geronimo which also contributes to the cleanliness of the roads and highway.

D. Transportation & Safety: How do people get around? What type of private and public transportation is available? Do you see people walking? Are there buses (how frequent), bicycles, taxis? Are there sidewalks, bike trails? Is there a major highway nearby? Is getting around possible for people with disabilities? What types of protective services are there (e.g. fire, police, sanitation)? Do you feel safe?

San Geronimo Valley is generally very safe. The community where we serve has a fire department in Woodacre, which serves Woodacre, Nicasio, Lucas Valley, Forest Knolls, Lagunitas, San Geronimo Valley, and also provides mutual aid to the community of Fairfax. Driving personal automobiles seems to be the primary method of transportation. The paved roads also accommodate those who wish to ride their bicycles, which is also another common form of transportation. Whenever people are seen walking, it's mainly in their own neighborhoods. Whistlestop is a form of public transportation that provides transportation to those with special needs through partnership with Marin Access. The public bus is called the West Marin Stagecoach, which has routes from San Rafael to Inverness. It accommodates those with wheelchairs, however, each bus accommodates for up to two wheelchairs. The West Marin Stagecoach arrives at each stop every one to two hours. The major nearby highway is Highway 1, which can take you to popular destinations such as: Bolinas, Sausalito, Point Reyes, Bodega Bay, etc.

E. Politics & Government: Are there signs of political activity (e.g. posters, meetings)?
Do you see evidence of a predominant party affiliation?

The majority of San Geronimo valley residents voted for Democratic Hillary Clinton that counted for 77 % according to the official Marin county website. According to Marin county, 77% of the residents are registered as democrats, whereas 20% of the residents are registered as republicans. The rest are registered under independent party. When having conversations with seniors in San Geronimo Valley community center, many of them expressed concern over the Trump administration.

F. Communication: Are there “common areas” where people gather to talk and be together (e.g. neighborhood hangouts, school yard, corner store, bar, restaurant, park)? What newspapers do you see in the stands? Are there public telephones? Do they work? Do people use cell phones?

The common area where most people seem to gather together and talk is the San Geronimo Community Center. This usually occurs around lunch time but there are some people that are there before and after lunch for most of the day. There doesn't seem to be any public telephones, and people there do use cell phones but no very often.

G. Education: Are there schools in the area? How do they look? What is the nearest elementary/middle school? Are there libraries? Who uses them?

There are schools in the area, the closest one being Lagunitas elementary school right by the San Geronimo Community Center. They look very nice and spaced out. There are libraries, everyone who is affiliated with the school uses them, including the children, and teachers.

H. Recreation: Where do children play? Do families play together? Where? What facilities for recreation do you see? Who do you see participating?

The children play indoors and outdoors at the school, there is a playground that hasn't been used since we've been there but that's because it's been raining. There hasn't been any evidence of families playing together so far but there is a gym class taught by a PE teacher to the middle school children.

3. Perceptions

A. Your perceptions: Make some general summary statements about this community's “health”. What are its strengths? What problems or potential problems can you identify?

The strengths of the San Geronimo community are that they are very close knit and work together really well. Typically everyone seems to get along really well and people there love to help each other. Some problems might include the lack of vaccinated persons within the community and lack of medication compliance, a lot of the people there either aren't on any medications or they stop taking them because they feel better, so this could be a potential problem if they are not educated properly.

Windshield Survey (Point Reyes)

1. Community Core

A. Boundaries: Identify the geographic boundaries of the community, e.g. the natural limits such as a body of water; structural limits, such as a highway or railroad track. For some communities boundaries may also be defined by time (e.g. temporal boundaries...a group of parents of children with cystic fibrosis). Include a map of the area you are surveying.

Geographical boundaries of the community include the natural limits of the Point Reyes National Seashore.

B. History: What is the historical background of your community? Is it old, new, established, built on the site of a previous community?

The historical background of the community is old, with many established buildings. Drakes bay and the surrounding area were once inhabited by natives until travelers, such as Sir Francis Drake, came in 1578.

C. Demographics: Describe the nature of the population. What kinds of people do you see? Young? Old? Homeless? Alone? Families? What ethnic groups and races do you see?

In walking around in the community, everyone seems to know each other and are very friendly. There are a lot of mothers and their children that are out and about either shopping or walking along the paths. There is a wide range in age, from infants to the elderly.

D. Ethnicity: Are different ethnic groups present? People? Restaurants? Churches? Schools? Festivals? What indicators of various cultural groups do you see?

There is not a very diverse population in Pt. Reyes. Many of the people are either caucasian or hispanic in ethnicity.

E. Values & Beliefs: Are there churches, temples, mosques, or cathedrals? Other religious institutions? Does the community appear homogeneous in its values? What are indicators of various values? Are lawns cared for? Are there flowers? Hanging baskets? Gardens? Graffiti? Other art? Historical markers? How do you feel in the community, welcome or ignored?

There is a church downtown in Point Reyes where the community center is. There are so many beautiful flowers in the area. Point Reyes is a very welcoming place. There is no graffiti and there is no lawn in this area, it is mainly gravel, rocks, and cement or flowers or weeds.

2. Subsystems

A. Physical environment: How does the community look? What do you observe about the air quality, flora, housing (age of houses, architecture, quality of construction materials, condition), zoning (residential, commercial, mixed), space (lots, playgrounds, quality of open spaces, fields, wetlands), green areas, lawns, animals (strays), natural beauty?

The community appears old with some buildings rundown and uninhabitable. There are many homes that look old as though they have not been renovated in some time. There is renovation being done at this time in the senior living housing called Walnut Place. Most places within Pt. Reyes Station is within walking distance so there is a mixture of homes and businesses throughout.

B. Health and Social Services: Evidence of acute or chronic conditions (e.g. accidents, alcoholism, drug addiction, mental illness)? Shelters? Are there clinics, hospitals, practitioners' offices, public health services, home health agencies, urgent care centers, nursing homes, social

service facilities, mental health services? Are there resources outside the community but accessible to them?

Amongst the shops and restaurants is a community clinic that many people utilize. There is also a mobile dental clinic that is located across the street from the Dance Palace. A community center is also available that serves the community with many events.

C. Economy: Is the community “thriving” or does it feel run-down, seedy? Is it changing, on its way up or down? How can you tell? Do you see trash, abandoned cars, real estate signs, abandoned houses? Are the streets clean? Are there industries, stores, places for employment? Where do people shop?

There is a thriving tourist population that is seen on the weekends and holidays. The streets appear maintained with little trash surrounding the area. There are some houses and buildings that are run down throughout town, but the majority of the homes appear “lived in” and maintained.

D. Transportation & Safety: How do people get around? What type of private and public transportation is available? Do you see people walking? Are there buses (how frequent), bicycles, taxis? Are there sidewalks, bike trails? Is there a major highway nearby? Is getting around possible for people with disabilities? What types of protective services are there (e.g. fire, police, sanitation)? Do you feel safe?

People get around either by car or walking. There is no public transportation. there are lots of bicycles and motorcycles. There are sidewalks and bike trails. It is hard for people to get around who have disabilities because there are no taxis or buses in the area. There is a local fire station

down town as well as police roaming around all the time throughout the time. Point Reyes and Inverness feel like very safe places to be.

E. Politics & Government: Are there signs of political activity (e.g. posters, meetings)? Do you see evidence of a predominant party affiliation?

There is an old building that appears to be a place where posters and signs are put up and the majority of these signs are democratic and liberal in political orientation.

F. Communication: Are there “common areas” where people gather to talk and be together (e.g. neighborhood hangouts, school yard, corner store, bar, restaurant, park)? What newspapers do you see in the stands? Are there public telephones? There is one public telephone downtown. Do they work? Do people use cell phones? Common Areas?

The common areas are restaurants, bars, community center, and the big park. People do work and some are retired. The community center is where the majority of the community comes to have lunch and participate in events that are being held throughout the week. West Marin Elementary is a place where the children of the community come to play with their peers. There are local newspapers that talk about local community and art, as well as larger name newspapers. The public telephone does work and people do use cell phones, but people do not have them out or use them in the streets as much as other towns and cities.

G. Education: Are there schools in the area? How do they look? What is the nearest elementary/middle school? Are there libraries? Who uses them?

There is a West Marin elementary school in Point Reyes and Inverness Elementary school in Inverness. Both are small schools. There is a main library just down the street from downtown. The whole town uses the library but mainly the elderly.

H. Recreation: Where do children play? Do families play together? Where? What facilities for recreation do you see? Who do you see participating?

A lot of children play at the West Marin Elementary school play yard after school. The older kids go to Tomales High School to play and hang out.

3. Perceptions

A. Your perceptions: Make some general summary statements about this community's "health". What are its strengths? What problems or potential problems can you identify?

Overall, Point Reyes community is all about helping each other and making sure everyone has food and exercises. The strengths this community has is that everyone gets along and is nice to each other. For the most part everyone is very social and helps one another. On the other hand, a potential problem is the lack of transportation from getting out of town to somewhere else. This can impact the elderly's health if they no longer drive and cannot get to their doctor appointments.

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