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Patient perceived barriers to physical activity: personal, social, and environmental

## **Abstract**

**Introduction:** Chronic illness is extremely prevalent especially in San Antonio, Texas. Only 48% of people report meeting the CDC guidelines of 2.5 hours of moderate intensity physical activity per week. To increase physical activity in the patient population it is important to understand their barriers to physical activity which vary depending on the specific population.

**Methods:** A questionnaire was given to patients at Communicare, San Antonio, Texas which reported their age, weight, height, BMI, if they met the CDC physical activity guidelines, and if they wished to be more physically active. The questionnaire also included 10 statements regarding barriers to physical activity.

**Results:** 26 participants were surveyed with chronic diseases. Patients responded with an average of 2.57 barriers, those that met the guidelines responded with 2.38 barriers and those that did not responded with 2.8 barriers. Pain, lack of motivation, and lack of skill were the three most prevalent barriers.

**Discussion:** Chronic pain needs to be addressed by HCPs, especially for obese patients. Motivation is a difficult barrier to overcome, but research shows group based education and exercise classes and self monitoring have more success. Although patients feel they have the appropriate information, they need more on how to exercise without enduring excessive pain.

**Conclusion:** HCPs need to set goals for their patients and follow up with their progress. There needs to be more emphasis on chronic pain in patients. Group based education and exercise intervention programs need to be instituted. HCPs should focus on one aspect of their life at a time, as well as focus on their quality of life rather than just weight loss and chronic disease progression.

**Introduction:** It is well known that chronic diseases (including diabetes, hypertension, dyslipidemia, and obesity) can be partially attributed to the lack of physical activity in the population. According to the CDC, only 48% of all adults meet the physical activity guidelines of 2.5 hours of moderate physical activity (e.g. brisk walking) per week. Physical activity is proven to decrease the risk for cardiovascular

disease, stroke, diabetes, among many other diseases.<sup>1,2</sup> Furthermore, physical activity participation has been shown to improve glycemic control in diabetics, increase the physical function in arthritis, and augment the quality of life for patients with various chronic illnesses.<sup>3</sup>

In 2005, almost 50% of adults had at least one chronic disease and ¼ of people with chronic conditions have daily activity limitations according to the CDC.<sup>1</sup> Physical activity improves the lives and health of those with chronic diseases, unfortunately the education delivery and resources may not be optimal to promote physical activity. It has been assumed that people that live in unsafe neighborhoods will exercise less frequently due to fear of their safety, but recent research has found mixed results, including no correlation at all.<sup>4</sup> Although patients admit to being informed about physical activity, they do not feel it is possible to include in their lifestyle.<sup>4</sup> It has been found that these perceived barriers to including physical activity in their lives are strong predictors of behavior changes.<sup>5</sup> To increase physical activity, their actual behavior cannot be looked at exclusively, but the social and personal aspects must be analyzed.<sup>2</sup>

It is essential that health care providers encourage physical activity for all of their patients, but to do so the health care provider should develop an understanding of their patients' perceived barriers.

Depending on the location and community these barriers may vary. Although many studies have looked at perceived barriers to physical activity, these barriers change depending on the population studied.

For example, a Brazilian study found that money and tiredness were the most prevalent barriers, while in Japan lack of time was the biggest issue.<sup>5-7</sup> The CDC reports that people in the south, those with less education, those in poverty, and Hispanics tend to be less physically active.<sup>1</sup> Communitaria Health Centers in San Antonio, Texas have patients with all of the above characteristics so it is important to distinguish and understand the different perceived barriers for their specific patient population.

The object of this study is to determine the most significant perceived barriers, including personal, environmental, and social, for the patient population at Communicare Health Centers in San Antonio, Texas for those patients with chronic illnesses. We expect that the findings of this study will provide an evidence-based strategy of health education for health care providers.

## **Methods:**

### *Participants*

A total of 26 patients being treated for chronic illnesses at Communicare Health Centers in San Antonio, Texas were selected to complete a brief survey regarding perceived barriers and physical activity. Inclusion criteria were as follows: age 18-75, males and females, being seen at Communicare for nonobstetric, nonmalignant, chronic illnesses.

### *Procedure*

Researchers developed a questionnaire that was distributed after the patient was seen by his/her health care provider for management of their chronic illness. The questionnaire was based on both research literature by Fox et al. and Adajani-Sutjahjo et al.<sup>4,8</sup> The amount and topic of barriers were altered to accommodate the time constraint on this particular study, as well as the goal of the research. Patient's weight and height were taken at each office visit and that information was used for analysis as well.

### *Measures (Document 1.)*

Amount of physical activity – patients were asked if they completed the CDC recommended amount of moderate aerobic physical activity per week (2.5 hours/week). They were also asked if they wish they were physically active more often.

Perceived barriers to physical activity – The participants were then asked to answer yes or no as to whether the following 10 factors were perceived barriers to completing more physical activity.

1. I do not have the motivation to exercise.
2. I do not enjoy being physically active.
3. I do not have the skills to be physically active.
4. I do not have the support of a partner or spouse to be physically active.
5. I do not have the support of my family/friends to be physically active.
6. I do not have the time to be physically active.
7. I do not have access to places to be physically active.
8. I cannot be physically active due to pain.
9. I do not feel safe in my environment doing physically activity.
10. I do not have enough information on how to be physically active.

Questions 1-3, 6, and 8 assessed personal barriers, 4-5 assessed social barriers, and 7, 9-10 assessed environmental barriers.

### *Calculations*

Results were then analyzed and most common barriers among the patient population were determined, as well as stratifying the patient population between those that completed the suggested amount of physical activity per week (2.5hrs/week) and those that did not. The results were further stratified by age, gender, and BMI.

### **Results**

26 (17 females) patients participated in this survey with an average age of 57.3 yo and average BMI of 32.8. This included patients with a variety of chronic illnesses including diabetes, hypertension, and dyslipidemia.

#### *Perceived barriers to physical activity*

16 out of 26 replied that they are physically active (PA) at least 2.5 hours/week. A total of 21 replied they wish they were more physically active and of those 10 met the physical activity goal. Leaving 11 people that met the guidelines and had no desire to be more active.

On average, the patients responded with 2.57 barriers. Those that did not meet the physical activity goal had an average of 2.8 barriers as opposed to those that did meet the goal who had an average of 2.38 barriers (Figure 1). The most common barrier was pain which was a barrier for 13 or 50% of the patients. The least common barrier was their enjoyment, only 3 people replied that they do not enjoy being physically active. Motivation and skill level was a factor for 11 and 10 of the participants respectively. Even after being stratified by gender and age the barrier prevalence remains the same with motivation, skill, and pain having the highest responses (Figure 2-5).

10 females replied that they meet the physical activity guidelines and on average females replied with 2.71 barriers, as opposed to males that had 6 of the 9 meet the guidelines and an overall average of 2.33 barriers. They were further stratified into whether or not they met the guidelines (Figure 6). When stratified based on age, those over age 45 responded with an average of 2.64 barriers and those younger than 45 responded with an average of 2.25 barriers. Those younger than 45 that did meet the guidelines responded with more barriers (3.5) compared to those that did not meet the guidelines (1). Whereas those older than 45 that did meet the barriers responded with less barriers (2.29) compared to those that did not meet the guidelines (3.25) (Figure 7).

When stratified by BMI, less than 30 and greater or equal to 30, although the most prevalent barriers were the same, 62.5% responded that pain was a barrier for those with a BMI over 30, whereas only 27.3% nonobese participants responded that pain was a barrier. Those that are obese responded with an average of 2.93 barriers, 2.86 and 2.88 for those who did and did not meet the PA guidelines, respectively. Those that were nonobese, BMI less than 30, responded with an average of 2.09, 2 and 2.5 for those who did and did not meet the PA guidelines, respectively (Figure 8).

## **Discussion**

This study demonstrates that patients' most common perceived barriers are pain, lack of motivation, and lack of skills to complete physical activity. To overcome the pain barrier, it is necessary to increase the patient's education on different types of physical activity that could avoid the pain. Although 21 patients replied that they had enough information on physical activity, this could be an aspect that they are unaware they are missing. There are many different ways to be physically active and different manners to exercise certain muscle groups according to needs. It is reassuring to know that most of the patients do enjoy being physically active because that is one less barrier HCPs need to deal with. On the other hand many patients reported not having the motivation. It is important to emphasize the benefits of physical activity and what they are at increased risk for without physical activity. It may be necessary to have a survey to physically and visually prove what their health risks are. Interestingly, females that did meet the exercise guidelines reported more barriers to increasing their physical activity, while males who met the goal reported fewer barriers. This would be an aspect that should be further investigated with more patient participation.

There have been studies done in the past in other parts of the United States and world that have focused on determining the perceived barriers of specific patient populations, but not for Communicare Health Centers. Fox, et al. focused on males and females in East Harlem, New York to determine if

perceived environmental safety and community-identified barriers have a correlation with the amount of physical activity the population participated in. The researchers assessed perceived barriers through five items and safety was evaluated through a 7-item scale. The most common barrier was lack of energy or being tired, followed by too little time and pain with exertion. They concluded that perceived neighborhood safety was not associated with physical activity, but those with more individual perceived barriers correlated with less physical activity.<sup>4</sup> Andajani-Sutjahjo, et al. focused on Australian women between the ages of 18 and 32 and what their perceived social, personal, and environmental barriers were to physical activity, as well as healthy eating. They used a self report survey that questioned the individuals on 11 barriers to physical activity and healthy eating. These included questions related to motivation, energy level, skill, available time, pain with exertion, support, among several other topics. They concluded that young women's most common perceived barriers were related to motivation, time, and cost. They further found that women with children reported a lack of support as a barrier as well. Rye et al. found that lack of will power and support were the two most common perceived barriers in women aged 40-64 in West Virginia.<sup>9</sup> Although support was not as prevalent of an issue in the current study, there was no data that looked into their marital status or whether they had children or not. These studies further support our results, as well as acknowledge the fact that each patient population need different emphasis on barriers to overcome. It also further recognizes the need to decrease pain with physical activity and increase patient's motivation.

This data demonstrates that the patient population at Communicare is difficult due to the fact they have the information, education, time, and access to places to exercise, which would be easier for HCPs to address. Overcoming these personal barriers of motivation, skill, and pain level will be the most difficult because it needs the enthusiasm and desire of the patient. Unfortunately, this needs more than just a few extra minutes at each appointment, but by setting goals for the patient and challenging them, physical activity could be increased. Communicare had a full time physical trainer up until recently, but

he was not utilized to his full capacity. It would have been necessary to get him involved with the patient visits more often since he had the time to discuss their lifestyles and could have individualize an exercise regimen. Since that resource is no longer available, it is important to find other organizations or programs to connect with so there are resources to provide the patients. It has been found that with a community based 8 week program that educates the patients on nutrition and physical activity, including weekly meetings with a nutritionist, weekly physical activity, and tests to examine their knowledge, the patients increased their education and improved their lifestyle.<sup>10</sup> Although this is an intensive program that Communicare does not have the resources for, it could be beneficial to take aspects of the intervention program to help the patient population. A physical trainer or professional with extensive exercise knowledge and administration could look into having group based exercise classes, which would give patients motivation to exercise with others and socialize.

To best utilize this data it is essential to understand the best ways to promote exercise and use this data to more effectively increase exercise in the patient population. It has been found that targeting physical activity exclusively, using behavioral strategies, and promoting self monitoring have all proven to be successful in increasing physical activity. To elaborate, instead of attempting to change your patient's diet, medication, and physical activity, it is most beneficial to solely focus on one aspect, like their activity level. Behavioral approaches at increasing physical activity have proven more successful than cognitive approaches. Behavioral approaches include consequences and rewards, patient contracts, and goal setting. Lastly, self monitoring promotion was proven successful. This included diaries and recordings of their daily and weekly physical activity which allowed them to self motivate.<sup>3</sup> Segar, et al. whom looked at middle aged women found that the ultimate goal for each individual affected the amount of exercise they participated in. Those that had a goal of losing weight and benefitting their health exercised less than those that were trying to improve their overall quality of life.<sup>11</sup> This could be

another way in which HCPs could motivate their patients, specifically women. Instead of focusing on their weight and disease status, focus more on the potential to improve their quality of life.

Limitations of this study include the small study size, the lack of details on the type of physical activity the participants complete, the lack of a broad range of ages, and the abundance of females compared to males. Strengths include having the participants directly from Communicare, surveying both English and Spanish speakers, and surveying participants with various chronic illnesses. For future studies, it is necessary to have a larger sample size from all sites of Communicare. It would also be beneficial to add an open ended question regarding the type of physical activity completed to ensure that those that replied they met the goal, do indeed complete appropriate exercises at the suggested intensity. Due to the inclusion criteria of chronic illness, older patients were more readily available, but a greater effort into seeking younger patients with chronic illnesses could give more information on common barriers among different age groups. Along with that, it would be important to focus more on chronic pain diseases including arthritis and fibromyalgia.

## **Conclusion**

Motivation, pain, and skill level are the three most prevalent perceived barriers among all patients. To best address this issue an interprofessional approach on education and intervention programs must be instituted, including utilizing physical trainers, outside exercise based programs, nutritionist, and case managers to their full capacity and initiate one-on-one and group based education and exercise classes. It is also extremely important to address the issue of chronic pain, in all individuals, and especially those that are obese to help them overcome that barrier and exercise more.

## Works Cited

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**Document 1.**

Age\_\_\_\_\_

Gender\_\_\_\_\_

Height\_\_\_\_\_

Weight\_\_\_\_\_

Zip code\_\_\_\_\_

This is a brief questionnaire to determine your physical activity level and barriers to increasing your physical activity.

- 11. Do you engage in more than 2.5 hours of moderate intensity aerobic activity (brisk walking) per week? This is about 20 minutes per day.
  - a. Yes\_\_\_\_\_
  - b. No\_\_\_\_\_
- 12. Do you wish you were physically active more often?
  - a. Yes\_\_\_\_\_
  - b. No\_\_\_\_\_

Reasons you are not more physically active: (please check yes or no if it applies to you)

	YES	NO
13. I do not have the motivation to exercise.		
14. I do not enjoy being physically active.		
15. I do not have the skills to be physically active.		
16. I do not have the support of a partner or spouse to be physically active.		
17. I do not have the support of my family/friends to be physically active.		
18. I do not have the time to be physically active.		
19. I do not have access to places to be physically active.		
20. I cannot be physically active due to pain.		
21. I do not feel safe in my environment doing physically activity.		
22. I do not have enough information on how to be physically active.		

- 23. Was this survey easy to complete?
  - a. Yes\_\_\_\_\_
  - b. No\_\_\_\_\_
- 24. Would you complete another survey for us in the future?
  - a. Yes\_\_\_\_\_
  - b. No\_\_\_\_\_

*Please return survey to Cristina Fini, PA-student, GE-PCLP scholar*

Figure 1.

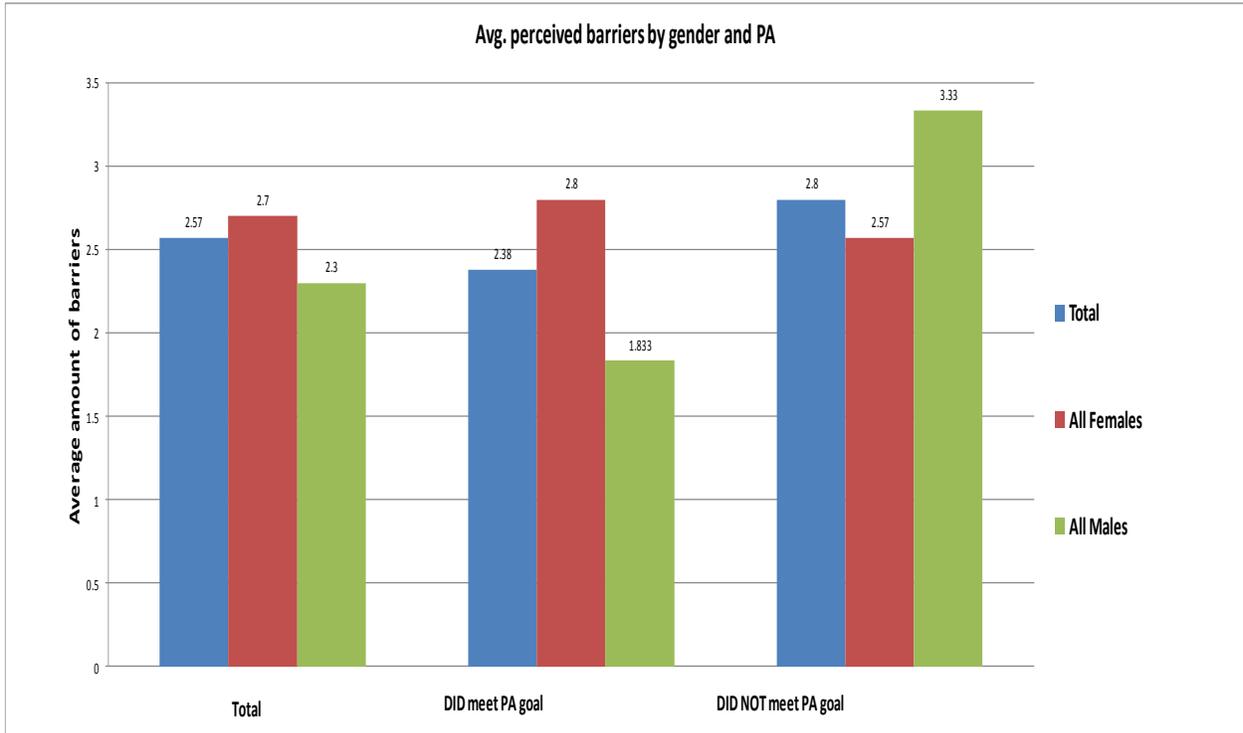


Figure 2.

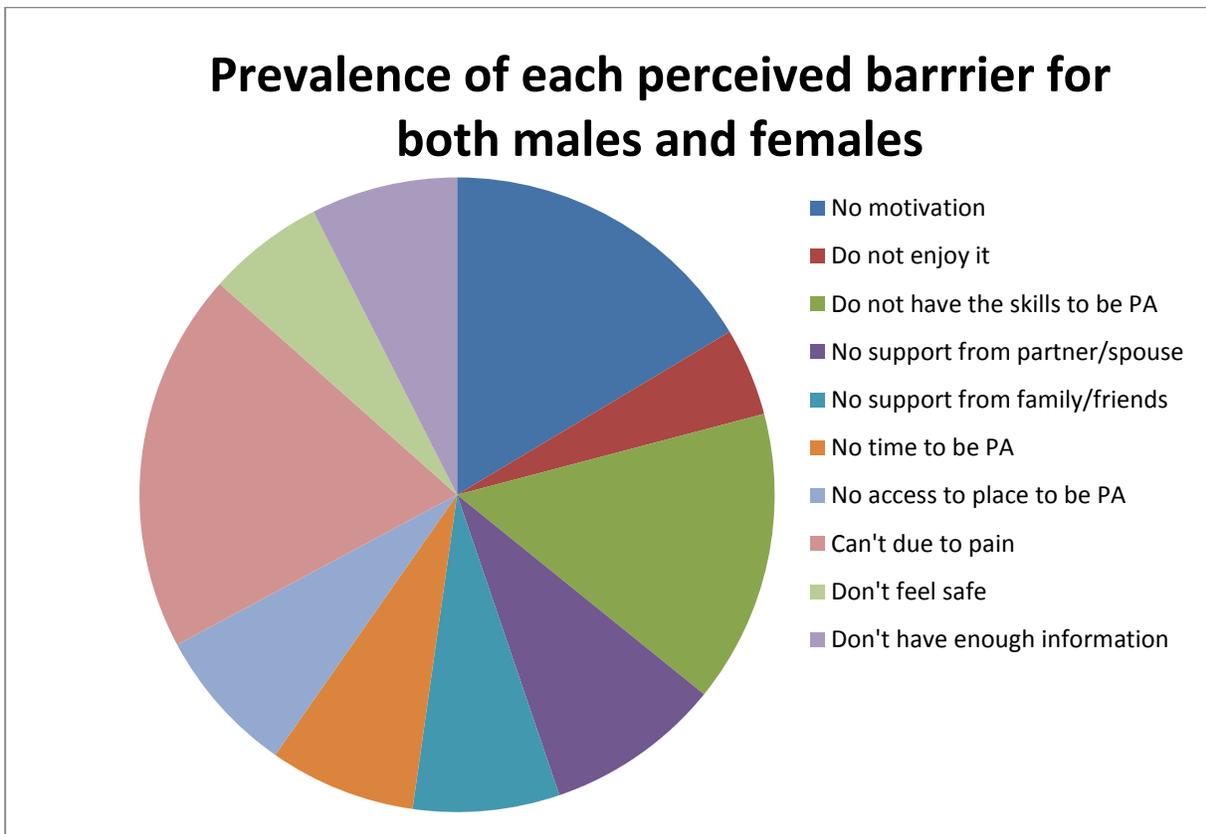


Figure 3.

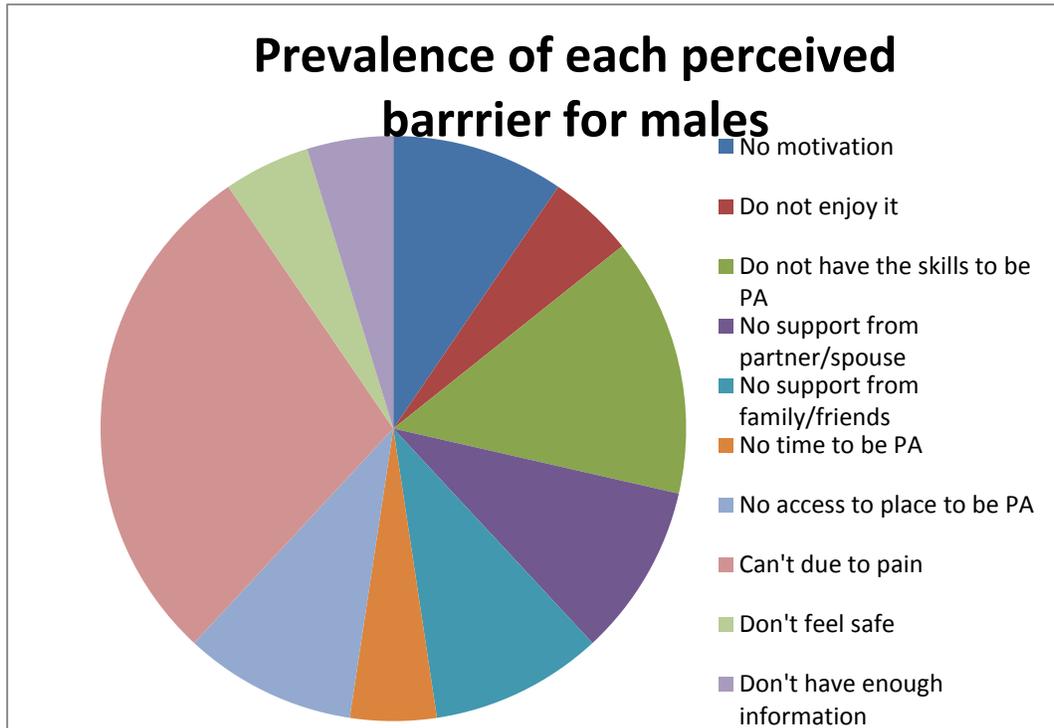


Figure 4.

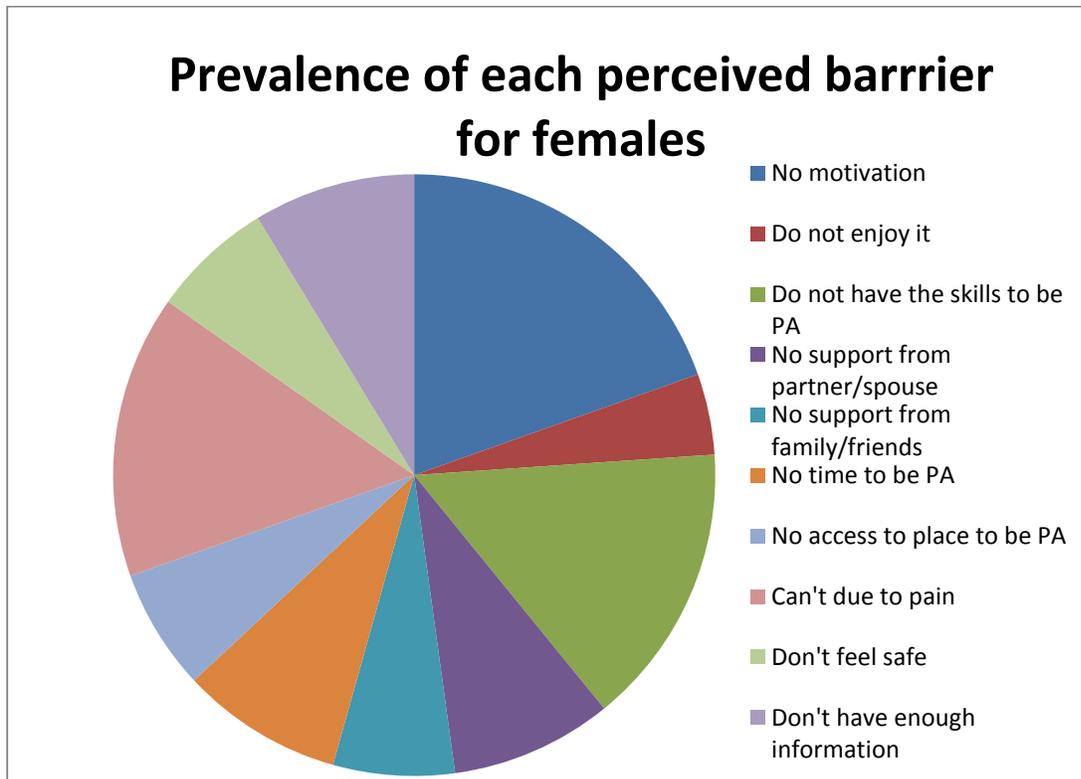


Figure 5.

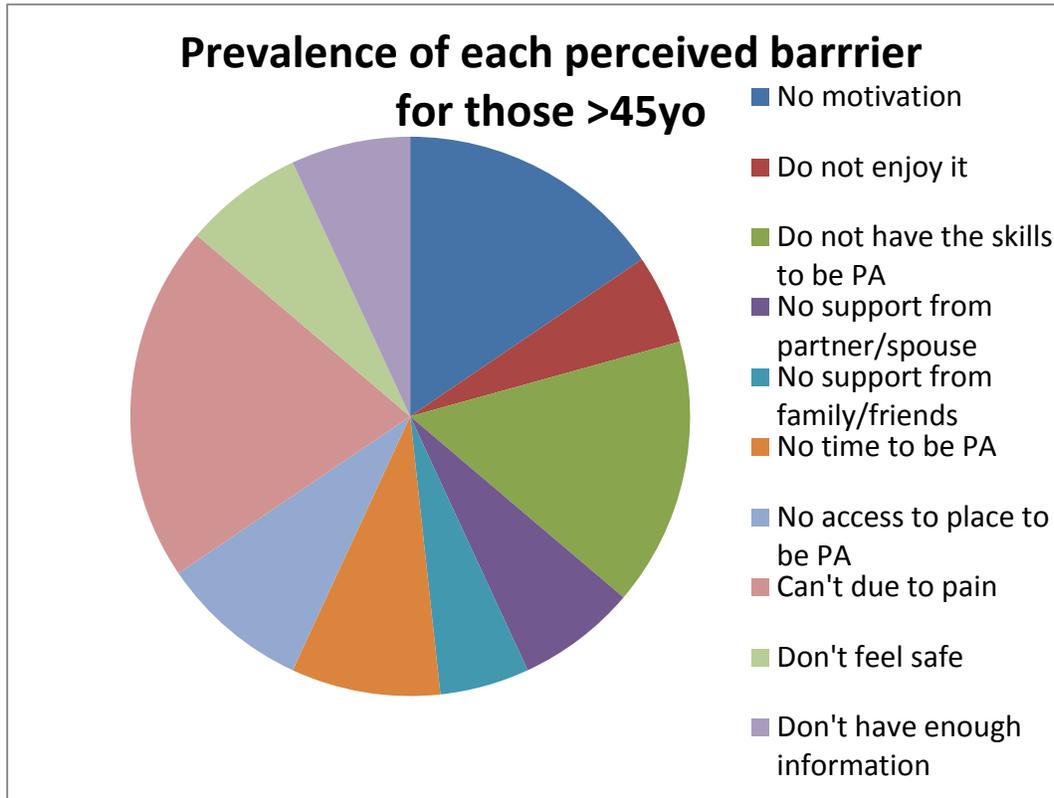


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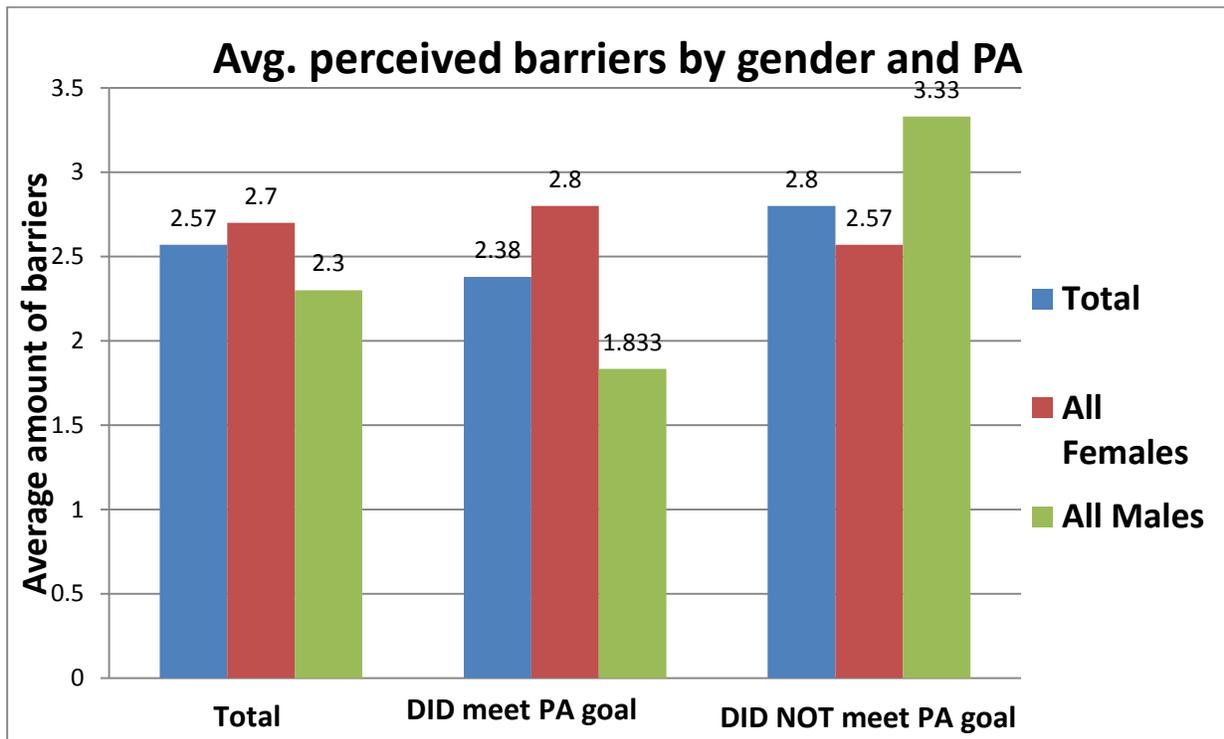


Figure 7.

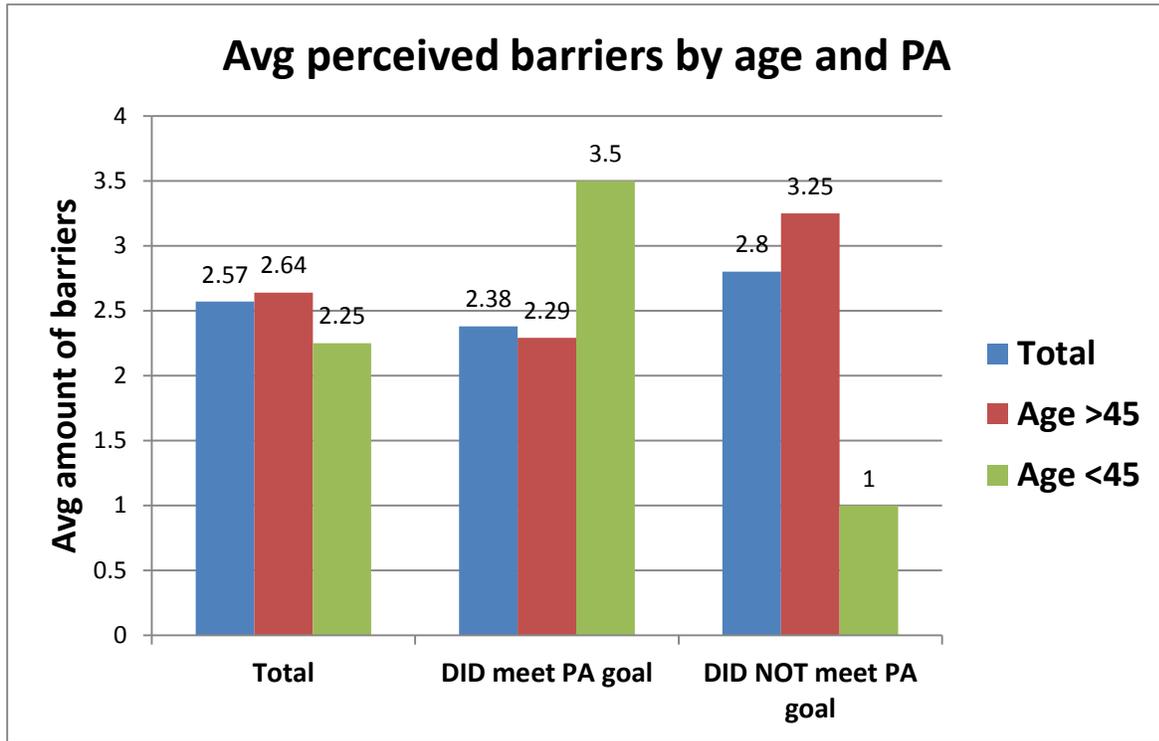


Figure 8.

