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CAN PHYSICAL ACTIVITY BENEFIT MENTAL HEALTH? A SYNTHESIS OF LITERATURE

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by

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Title of Synthesis Project: How Effective Are School-Based Obesity Prevention Programs in the United States? A Synthesis of the Research Literature.

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Abstract

The purpose of this synthesis is to examine the benefits of physical activity, as opposed to prescription medication, on mental health, specifically the diagnosis of depression and anxiety. Within this synthesis there is research done showing data of overprescribing and a lack of healthy treatment options from this generation's medical professionals. The studies reviewed within the critical mass highlight many factors bringing positive data to using physical activity as a treatment for depression and anxiety in many different types of ways. Studies were reviewed through the length of intervention, type of intervention, based on participant's symptoms and medication levels. The participants were looked at through the course of using physical activity through their knowledge/interest of activity, ideas for activity, guidance for activity etc. in the hopes that physical activity will become a lifelong treatment option for their diagnosis as opposed to prescription medication. It is the hope that future research continues to gather data to support this topic and spread awareness of it for a healthier future for both the mind and the body.

Keywords: [physical activity, mental health, depression/anxiety, medication, overprescribing, symptoms, positive]

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Chapter 1

Introduction

Mental health is at an all-time high in modern day America. The two most common mental health diagnosis is what this critical mass is going to primarily focus on thus, depression and anxiety. At least 10% of America's growing population have been diagnosed with some form of depression in the last five years which is equivalent to about 9.3 million Americans in our everyday lives (Lahti et al., 2013). Ten percent of Americans with a diagnosis of depression admit to being on a prescription medication when dealing with their day to day symptoms (Lahti et al., 2013). Thirty-six percent of the American population is diagnosed and receives treatment for anxiety, this is equivalent to 40 million people (Anxiety and Depression Association of America, 2016). These depression and anxiety numbers both consist of patients of all ages, stating that this a large problem among many people at all different stages of life (Anxiety and Depression Association of America, 2016). These numbers are concerning and continuing to grow every day and with younger and younger patients.

According to the Center for Disease Control (hereafter, CDC), as of 2013, 84% of Americans were taking at least one to three different types of prescription medication for some form of mental health (CDC, 2014). This is equivalent to more than three-fourths of the American population. This cohort admit to having at least three different mental health medications that they have been prescribed for their diagnosis. Therefore, patients with a mental health diagnosis are able to get three different prescriptions which results in the larger problem of overprescribing. As well as, the medication is being received in a feasible manor. These individuals prescribed and seeking medical help for mental health are not of one age range, but

across the board as children, young adults, and adults (Anxiety and Depression Association of America, 2016). Severe mental health is a worldwide problem that continues to grow (Anxiety and Depression Association of America, 2016). In 2020, there are more and more options to treat this with prescription drugs as opposed to more healthy and natural ways.

The use of prescription medication is at an all-time high and other treatment options are not being explored as solutions to the symptoms of these diagnosis (Anxiety and Depression Association of America, 2016). Medication and the ways it can treat things can be a blessing among the many types of injuries or sicknesses that the human body can come into contact with. This being said, there are also negative effects to medications can have on the body. Mental health is a diagnosis that can be treated by prescription medication like many things, but it is overprescribed in that there are many more natural and healthy options to be explored as a solution when dealing with the troubling symptoms of disorders such as depression and anxiety. Medication has shown to be damaging on organs in the human body such as the liver, kidneys, or even the heart. Due to mental health diagnosis often being associated with the mind and the body, the medication used to treat these symptoms can often effect the brain as well (CDC.gov, 2014).

According to a survey done by the Anxiety and Depression Association of American in 2016, at least 50% of these people who have been diagnosed with some form of mental health (including depression or anxiety) admit to not having regular physical activity in their everyday life, but have used prescription medication to help deal with their diagnosis (Ibanez, 2018.) Physical activity has known to be good for keeping both the mind and the body healthy if done correctly and frequently (Lahti et al., 2013). When dealing with mental health diagnoses such as anxiety and depression, there are many different symptoms that come along with these illnesses. The

articles used in the critical mass discuss the common symptoms and how they affect their interest in physical activity. Depression can often result in a lack of motivation and will to live (Mendes et al., 2019). This causes patients to struggle with tasks in everyday life and not be interested in self-care or many types of activities, socially or independently. When searching for participants in many of the studies used in this critical mass, it was evident that it was difficult to find willing participants to engage in physical activity with these types of symptoms. Many of the patients feel no motivation, tired, mentally frustrated and uninterested in any type of exertion activity (Mendes et al., 2019).

Every one patient is different when it comes to what they feel and experience with this, but there are many commonalities among the main symptoms. Many patients with anxiety have been known to experience extreme fear, nausea, panic attacks, paranoia, and constant worry (Ibanez et al., 2018). They are all common symptoms that many people experience and similar to the depression patients it can affect their willingness to participate in studies or get involved in physical activity on a regular basis. Many forms of physical activity can be done in groups and social settings such as, but limited to: yoga, Zumba, cycling classes, etc. These are all highly recommended lifetime activities, but the fear of social interaction and judgement can be extreme with patients with anxiety. These types of symptoms and struggles make it very difficult to get participants in the studies used in this critical mass, but also to get them interested in physical activity for themselves in their own lives.

Physical activity can be offered as a more healthy and natural solution when dealing with symptoms of disorders such as depression and anxiety. Not only does moderate to vigorous physical activity impact the heart and lungs for health, but it also can target the mind and have very positive effects on mental health.

According to a research survey distributed by researchers in 2017, out of the over 100 medical and mental health clinics that were surveyed, 25% of the employed medical professionals admit to not recommending physical activity as natural healthy solution to the anxiety and depression patients (Carroll et al., 2017). This is a startling statistic in that there is little medical professional offering alternative health treatments such as physical activity to their patients as opposed to prescription medication. With having so many different possibilities that reduce the symptoms of mental health disorders such as depression and anxiety, medication is seen as a simple and easy solution. The access rate to get these medications is simpler than ever and this is leading to the overuse and overprescribing of these medications.

Statement of Problem

Due to the rising problem of negative mental health in today's society, the number of patients on medication continues to grow. According to research, overprescribing is becoming a large problem among mental health patients and their health care providers (Anxiety and Depression Association of America, 2016). By investigating and spreading awareness of the use of physical activity as a treatment option for mental health, these numbers could go down. Noting that physical activity can be beneficial to the mind and body of depression and anxiety patients, these numbers people can start making healthier natural choices for their minds and bodies for a better future. The purpose of this synthesis is to examine the benefits of physical activity as opposed to prescription medication on mental health.

Assumptions

There are many assumptions that have to be met to be able to support the research question that physical activity benefits mental health as opposed to prescription medications. The

assumptions for this study are common to most studies of this nature. There is the assumption that there is enough literature done already on this topic to create a synthesis with evidence to support the research question. Another key assumption that is common when completing synthesis is the hope that the studies that have been chosen on this topic have been completed with a good amount of rigor. These are common assumptions among authors who conduct synthesis projects, and with this chosen topic they are important to gaining positive evidence in support of the question. Lastly, there is the assumption that the participants in these studies and the authors were being truthful and honest in how they presented their data.

Limitations

The limitations of this study are also common to other synthesis projects conducted. A limitation with this study is that of the many possible mental health diagnosis only anxiety and depression are being focused on which makes finding articles very specific and more limited.

Delimitations

As it was mentioned with this synthesis project mental health patients diagnosed with only depression and anxiety are being studied, this limits the boundaries and population of the research greatly. This study often refers to the American population, but research done for this critical mass was not limited to only studies done within America. Mental health is being researched throughout a worldwide population.

Operational Definitions:

Physical Activity: Refers to any type of activity, both intense and leisurely, where the body is being pushed and requires a person to expire energy (Carroll et al., 2017).

Depression: A condition that effects a person's personality or mood in everyday life (samhsa.gov).

Anxiety: A condition experiencing fear or worry that has the ability to effect a person's daily life and action (samhsa.gov).

Overprescribe: To prescribe excessive or unnecessary medication to patients (Merriam-Webster, 2016).

Chapter 2

Methods

Search Procedures

To find articles on this chosen topic, I used databases that I have access to through The College at Brockport online library. The different data bases that were used were SPORTdiscus, Academic Search Complete, and PubMed Central. I found it simpler to narrow down my search by trying different combinations of key works related to my chosen research topic. Examples of these key words were "mental health", "Depression/Anxiety", "Physical Activity", "and Prescription Drugs". I used multiple different search words because I wanted to find as many different recourses as I could related to this research topic. Using the combination of these three key words, I came up with 70 research articles having to do with some aspect of this topic. Next, I narrowed the search down to only peer reviewed articles to be used for my critical mass that

support this topic. For this critical mass peer reviewed articles were used, once only peer reviewed articles were selected I was down to 22 articles, of these articles I searched for criteria specific to my research question for the critical mass.

Criteria for Inclusion

Once I was able to find articles all related to my chosen research topic, I had to narrow the search to find what I was specifically looking for. All twelve peer reviewed articles that were chosen for my critical mass contained information and evidence about physical activity as a treatment for mental health as opposed to prescription medication. More specifically, I narrowed my search down to articles that contained any information on mental health patients using physical activity as treatment. I also found articles containing information of mental health patients using physical activity as treatment along with lowering or coming off of their prescription medication. Searching for articles on just mental health with no specific diagnosis was difficult because it is too broad. I chose to focus primarily on depression and anxiety because these are the two most common diagnosed and prescribed mental illnesses in America as of 2013 (samhas.gov). By the end of the narrowing process, I ended up with only 11 peer reviewed articles that helped provide more evidence to support the research question.

Due to limited research on this topic the participants of each study were of all ages. There was more articles proving evidence for the research topic studying people of all ages as long as they had a mental health diagnosis. I made this decision based on the limited research on specific age populations, but also to show the readers of this synthesis that mental health occurs and can be treated at all ages. After the narrowing I ended up with 11 peer reviewed research articles (see Figure 1).

Data Analysis

After I found all of these articles, I organized them into an article grid alphabetically (see Appendix A). I wanted to have all the articles organized summarizing the main point for convenience when needing to refer back to them throughout this synthesis. Along with the organizing process there was a thematic coding chart that was created (Appendix B) in the attempt to organize the commonalities among the different articles used in the critical mass to prove and gain some positivity in answering the research question for the readers knowledge and prospective in the hopes of spreading awareness on this topic.

Figure 1

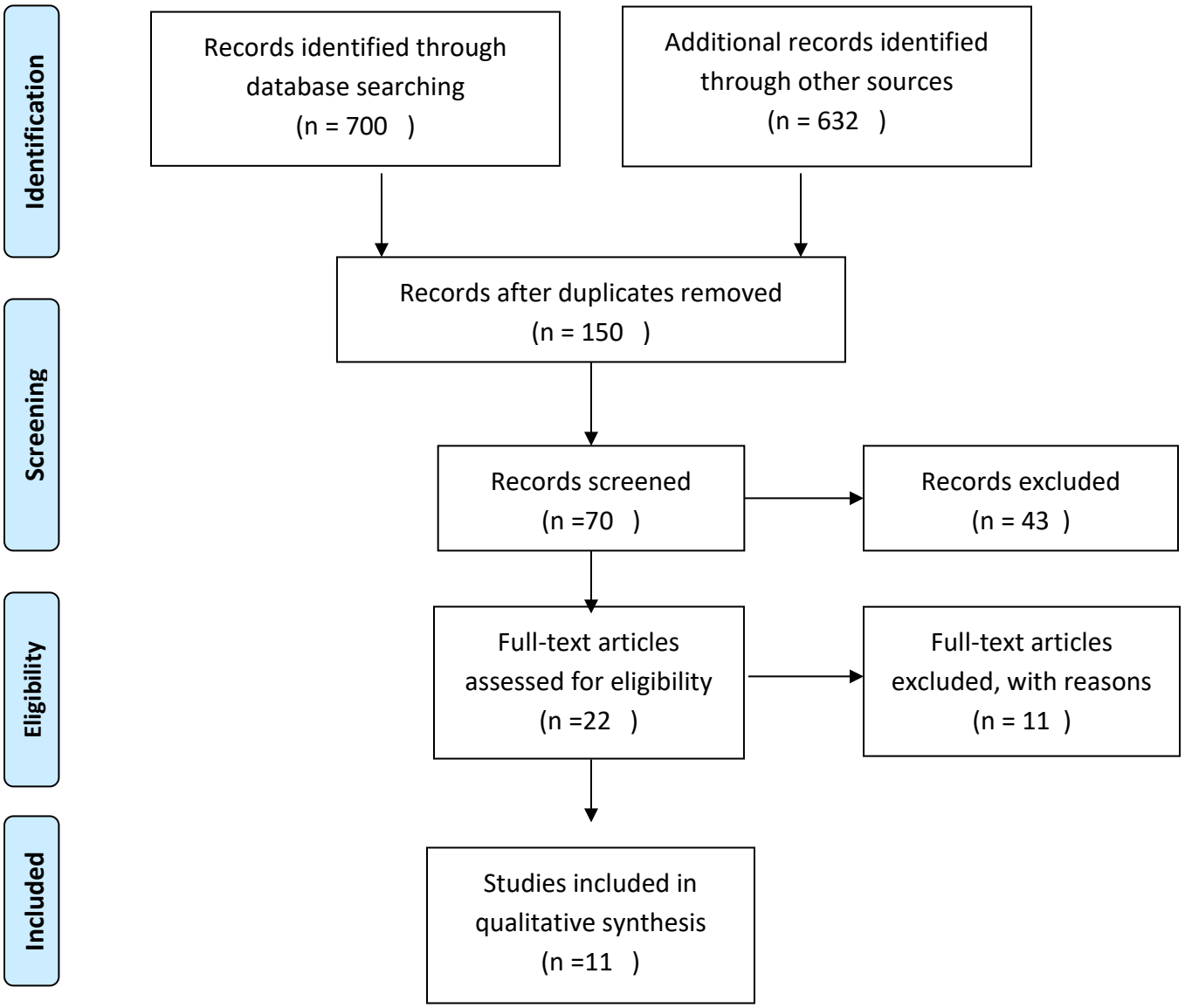

Figure 1 shows a flow chart breaking down the steps in process of how the research study was narrowed down into the articles that were used for my critical mass.

Chapter 3

Results

This section of the synthesis will take a deeper dive into information and findings from the different articles I used for my critical mass. The 10 articles used in this critical mass are broken down into this section providing evidence of physical activity benefitting mental health diagnosis such as depression and anxiety. The remaining articles used throughout this synthesis were more focused on medical professionals and their ability to overprescribe or recommend physical activity as treatment, thus not used in the critical mass. Among the articles, there are many trial studies that were completed with participants diagnosed with mental health related issues such as depression and anxiety. The studies did not just have the participants all stopping medication all together, but some just willingly taking smaller doses or a break from the medication.

Reduction in Symptoms

Throughout the sources of the studies within this synthesis, one of the major overall goals was to see a reduction in the symptoms of the diagnosed participants involved. In a 2016 study, there were 25 people who finished the study and at least 50% of these diagnosed participants admit to feeling better in their symptoms after the 6 month prescribed exercise program (Bakhshalipour et al., 2016). The reduction in their symptoms include feeling more free and clear, as well as they state to feel more motivation and interest in completing their day. This was great evidence to gain from the studies because the symptoms of the participants were often lack of interest and motivation to get through their day. Many of the participants also stated that medication makes them groggy or disoriented and the use of physical activity has given them a clearer mind set. Another study published in 2017 had similar results in that of the 62

participants given physical fitness of their choice over a three week span, 50% of them gave great feedback when it comes to dealing with the daily symptoms of their diagnosis. This positive feedback consisted of the participants feeling better and more motivated with their diagnoses and felt freer and clearer with the use of activity (Cruzado et al., 2017). Another similar study conducted in 2015 consisted of 78 diagnosed adults who were given instructions to instructions to increase their physical activity over a 16 week trial period. Submitting a log each week, then come back for an interview three months after the study concluded. 65% percent responded feeling better in their symptoms and less reliant on medication levels, this percentage group also concluded that physical activity has become habitual in their lives. However, 25% concluded that they felt good with physical activity, but have failed to keep it routine in their lives (Schmutte et al, 2015).

The more quantitative data was effective in documenting data on a much larger scale of participants. Three different studies used one to five rating scales on 200 participants who were admitting to adapt to a more physically active lifestyle during the three week trial period of the study. The study conducted in 2013 out of the 200 questionnaires given out of a one to five rating scale there was approximately 45% of individuals who reported positive for their symptoms and diagnosis when physical activity was more a part of their daily routine (Lahti et al., 2013). Another study similar done in 2018 again consisted of over 200 participants were given one to five rating scales, but there were a before and after questionnaire with similar questions to see possible improvement with physical activity over a three week span. Again over 50% of participants reported positive results in their symptoms with increased activity (Ibanez et al., 2018). Lastly, a study conducted in 2019 100 patients were studied, this time within the senior age range of 65. These participants again were given a questionnaire rated one to five

stating their experiences with their diagnosis and how activity can be used as positive treatment. These participants were also given a before and after a three week span, again 50% of population reported positive improvements in symptoms and also motivation with increased activity (Mendes et al., 2019). These are great results of large percentages reporting back that physical activity helped the patients' daily symptoms. Overall feedback from the studies reviewed were positive in the reduction of symptoms over a period of having increased physical activity in their daily lives.

Medication Substitutes

In the 10 different articles used in this critical mass, there are many studies done using participants that have been diagnosed with mental illness and have the interest of lowering their prescription medication by increasing the use of physical activity in the hopes to improve their daily symptoms. One study in 2015, reaches the result of a sixteen-week study on adults eat, sleep, and physical activity level (Carroll et al., 2017). The 78 participants used are all adults diagnosed with a serious mental illness including depression and anxiety. The participants either come off their medication completely or they take a smaller dose along with logging moderate to vigorous activity at least three times a week for sixteen weeks (Shmutte et al., 2015, p.89). The results of this study were in support of the research question in that more than half (50%) of these participants were experiencing more comfort and support in their common symptoms of their mental illness. However, there was an unspecified portion that states physical activity was helpful, but some symptoms require medical attention that can only be treated through prescription such as schizophrenia (Shmutte er al., 2015).

Ibanez (2018) did a similar type of study, but this time the researcher sent out two different questionnaires to over 200 people all diagnosed and on medication for mental illness. There was a questionnaire for more sedentary people with mental illness and more active people. They indicated their status of this when they signed up for the study. All of the participants had to indicate through the questionnaire there symptoms and medication level of their diagnosed mental illness. The questionnaires were then cross referenced between the two groups of people. The more active participants proved to have less overall symptoms and more positivity and "clear headedness" when handling their mental illness. The active group also proved to be on less medication overall as opposed to the sedentary individuals (Ibanez et al., 2018).

A study conducted on highly medicated individuals on self-efficacy and depression in 2017 calculated the ability of the depression patients to make healthy decision about their own well-being and dealing with their diagnosis (Eslami et al., 2017). The researcher attempted to prove a theory of individuals self-efficacy and if they are motivated to make more healthy choices with their diagnosis as opposed to falling back on increased amount of prescription medication (Shahrbanoo et al., 2017). The patients were given permission to decrease medication and follow a guided physical activity routine instead. According to findings, out of the 483 patients that were given this option, only approximately 25% of patients chose this option (Eslami et al., 2017). This statistic on the outcomes of this study is saddening to see that there are many people not willing to let go of medication and have motivation to make better decisions for themselves and their bodies. However, this does not set us back in proving the research question, it just shows that there is a lack of motivation to adopt a more physically active lifestyle.

Prescribed a Program vs. Participation Study

Out of the 10 reviewed articles that were researched for this critical mass, there was a difference in the way that data was collected. Some studies that were based on a prescribed program, this meaning that the participants were given a time period and an activity or their choice or program activity to complete with guidance at least three times a week. Other studies were participation programs meaning there was data collected using methods such as interviews and questionnaires. These studies lasted anywhere between 3 weeks to 6 months and completing and engaging in physical activity was worked into the participant's days.

A prescribed program study in 2016 had 25 participants from a local community health center who came to the center to complete their walking every day at the outdoor facility (Bakhshalipour et al., 2016). The participants kept a journal and it was logged their feelings every day with their symptoms and how the walk made them feel. The participants were interviewed weekly or biweekly by the authors and the journals were looked at to monitor progress (Bakhshalipour et al., 2016). The results of the study stated at least 50% in the results that patients were feeling better about their diagnosis and the reduction of their medication level by the end of this study (Bakhshalipour et al., 2016).

Another great study that was reviewed for this synthesis using a prescribed program was slightly different in that the participants were given a choice in the level and type of physical activity they engaged in (Eslami et al., 2017). There were 62 participants in this study concluding in more accountability. This study was only three weeks long and took place at a similar mental health clinic center where there were recreational classes involved for the purpose of this study. The participants were to choose a class and engage in it for three weeks at a minimum of three

time a week. The classes consisted of yoga, Zumba, hiking, running, or palates. The results were based on a survey that was taken before and after the three week study asking about their symptoms and feeling after being engaged in physical activity. The two surveys were cross referenced by the authors to see the overall percentage of positive feedback in using physical activity as treatment. Over 50% of the participant's surveys came back positive for using physical activity with their diagnosis.

Information gathered and reviewed for this synthesis were more prescribed program over participation study. Though both types of studies still proved effective, the evidence could be more skewed due to the understanding and honesty of the participants involved with a participation study. These participation studies consisted of a high volume of participants and they were sent surveys using a one to five rating scale, or interviews were conducted about their diagnosis and experience with physical activity. In 2018, there were two questionnaires sent out to 200 mental health patients who volunteered to participate (Ibanez et al., 2018). The preparatory survey stated their current activity level and their mental health diagnosis. This survey consisted of a one to five rating scale and some short response questions specific to their diagnosis. The three weeks in between stages was meant for the participants to attempt adapting physical activity into their daily life more. At the end of the three weeks, a similar follow-up survey was sent out asking participants questions again to see if their answers had changed in favor of activity for treatment. The two surveys were cross referenced and take in as quantitative data to see the percentage and standard deviation resulting in the positive impact of physical activity as treatment on their symptoms. The results concluded that again over 50% of the participant's added physical activity into their days proved greater success in their symptoms and medication reduction when dealing with their diagnosis (Ibanez et al., 2018).

A study of similar style conducted in 2018 was only different in the aspect that it focused on school age children (Bailey, et al., 2019). This study was a participation study consisting of 100 school age students from two schools (one elementary, one secondary) using interviews and questionnaires with a one to five rating scale about their mental health and physical activity routines (Bailey, et al., 2019). These students concluded that 75% of both schools responded that physical activity makes them more happy, motivated, and interested in being in school (Bailey, et al., 2019).

Length of Intervention

As it was discussed in previous sections, there were studies that have different lengths of intervention for how long the participant engaged in the physical activity or altered their medication level. Though most of the studies had similar and positive results in support of the research question, there was more detailed data to be reported from the two studies that were six months long as opposed to a short three weeks. Examples of the specific data given throughout these studies are continued lowering of medication over time, the reduction of symptoms as physical activity becomes more regular in the daily routine. When comparing the two the longer studies over a six month period provided more evidence and data that can be used in support of the research question. These participants reported to be using less medication or none at all by the end of the study, this is due to having more time to get used to lowering prescriptions. The participants of the longer studies were also reported more likely to continue using physical activity as a treatment beyond the study due to the fact that it is now part of their routine after six months of activity (Bakhshalipour et al., 2016). The shorter studies, such as the three week study, was a similar study but shorter and offered less data on the lowering of medication and symptoms (Ibanez et al., 2018). The shorter studies just gave data on physical activity as a

positive treatment, there was not as much evidence to gather in that period of time that was as useful and specific as opposed to the longer studies. With the shorter studies there is also the concern that using physical activity as a treatment beyond the study, because that length of time does not allow for it to become as routine.

Reasons for Lack of Physical Activity

Throughout the studies that were reviewed for this synthesis, there was a common theme of hesitant study participants or patients surveyed who were uninterested in using physical activity as a solution when experiencing the symptoms of their diagnosis. The common reasons for these hesitant participants or patients was because there was a lack of knowledge or interest in adapting to a physically active lifestyle. According to a study, 25% of patients on medication for their mental illness state that they are using the prescription as a solution because it is more "simple" (Cruzado et al., 2017). Getting involved in physical activity to the level where it has a consistent positive effect on one's mental health requires knowledge of the subject and motivation for it to be completed on a regular basis. Getting people to shift away from their prescription medication to a more strenuous and time consuming solution was difficult in a lot of the studies that were reviewed.

Summary

It has been made clear thus far, through studies, that physical activity can have a positive impact on one's mental health, specifically depression and anxiety. There have been studies conducted using individuals diagnosed with mental illnesses adapting a more physically active lifestyle and having positive results in their symptoms. These studies have all differed giving this synthesis a more rounded collection of data from all angles. The results section sought out details

on how the longer studies that were conducted provided more detailed data of the participants and how they were feeling by the end. Within the results section there is also data collected through studies on the different types of studies conducted. The prescription program study gave more positive data due to having more supervision and guidance with physical activity. This is opposed to the studies based on the participants answering questionnaires and conducting activity on their own. Within this results section it is also discussed that the lack of knowledge and interest, medication substitutes, and the use of medical professionals' recommendations are challenges and limitations that this synthesis yields to when attempting to support the research question. The next section will outline and discuss how the obstacles can be overcome in hopes to give the mental health patients a more positive outlet as opposed to prescription medication.

Chapter 4

Discussion

This synthesis examined the benefits of physical activity for individuals with mental illness. Based on the findings of the results section discussed above, there is strong evidence that patients who adopted a more physically active lifestyle either lowered or completely came off of their medication, as well as felt more "free and clear" of their common symptoms or from the "cloud" that their prescribed medication often put them in. This was stated in several of the sources used in the critical mass thus far and continued research in this topic will hope to keep promoting physical activity as beneficial to more than just physical health. More and more people are diagnosed with mental health illnesses every day or are experiencing bits and pieces of the symptoms such as stress, being overwhelmed, and sadness. There is strong evidence based on the research used in the critical mass of this synthesis that physical activity can benefit mental health. This discussion section is broken up into subheadings discussing what can be done

moving forward to support the research question. These categories discuss ways that patients, peers/family of patients, and medical professionals can continue to make using physical activity an effective treatment for mental health.

Spread Awareness

It has been found in the research presented that there is a lack of awareness of the many benefits to physical activity in the area of mental health. It is often presumed by the people who have little knowledge of physical activity that it is for "athletic people" or that it is just meant to keep you strong and skinny. This is not at all true, the research presented in this synthesis has proven very positive for mental health as well in feeling more free clear and positive about life (Bakhshalipour et al., 2016). If awareness on this topic could be spread, then it will be more likely that not only patients of mental illness, but people in everyday life will benefit.

Studies have shown that the primary way people with mental illness gather information and interest in getting involved in prescription medication is through the media and other people (Perez-Crusado et al., 2017). With advertisements on television and social media of different types of medication that can be used patients are spreading and gathering information on medication and treatments through these options. There is a lack of hesitation when using the media to gather information, there needs to be more professional advice given out on the positive and negatives of the different treatments offered when treating physical activity. The unfortunate truth is not everything that can be read or heard about through the media is true or based on facts, this can be a problem and will encourage these people down an unhealthy path to treatment (Wakida et al., 2017). This common problem can be fixed through using the media for good by spreading awareness of positive treatments such as physical activity as treatment. This can be

done through research of this synthesis or the studies reviewed within it. This type of behavior also needs to be given through medical professionals using their trust from clients to recommend a more healthy treatment route. In the year 2020, there are many things that have been established and created to make our lives easier and more convenient which is a large advantage. We, as people of convenience, have become reliant on this type of life and are quick to take the first thing presented to us that will be a solution to our problem. According to research done in 2017, 12% of the American population are prescribed anti-depressions and 8% are prescribed anxiety medication (Mental Health.gov, 2017). The numbers continue to grow by the year and this is due to the patients recommending it to one another and the vast majority of medical professionals prescribing it too fast.

Awareness can be spread through a variety of people, places, and forms of communication. Patients diagnosed with mental health need encouraging people in their lives including their psychiatrists, doctors, and their trusted family and peers. Having encouraging and motivating people in life is a great way to make sure that the patients stay on course with lowering their medication and using physical activity as treatment even after the study ends. The goal for this would be that physical activity keeps being used as a treatment for mental health throughout the patients' lifetimes as opposed to continuing medication treatment.

As a group, it is the hope that people will continue to spread awareness on this subject and that the readers of this synthesis are among the population. With medical professionals, recommending it more in their practice and this continues group of support from participants and patients willing to try and better themselves in a healthier way that these number of diagnosed and prescription patients can be cut down.

Medical Professionals

Going along with the idea of spreading awareness medical professionals is a very large part of that. People will talk to one another and gather information through friends and family members but people trust their medical professionals with major decisions involving their health. It is a responsibility of health care providers and medical professionals need to encourage a happier and healthier solution for their patients. Continuing to spread awareness of the effectiveness of physical activity on mental health can only improve society in a healthy way. The knowledge and opinions of medical professionals is respected by everyday people. Medical professionals however need to be made aware of physical activity as treatment through platforms that they can gather information and use with their patients. This will come from higher education levels such as schools, or professional development seminars. Continuing research on this topic can spread awareness and will spread to groups of people with the ability to influence medical professionals. The professionals advocating for physical activity as a healthy solution will continue to improve over time using knowledge and experiences learned through these platforms.

This is a current problem at hand though, with 20% of the American population on prescription medication for depression and anxiety our medical professionals are failing to meet this goal in health (Anxiety and Depression Association of America, 2016). With 2020 advancements in medications, people are becoming more likely to be prescribed medications due to the reported effectiveness. In a study conducted in 2017, it was surveyed over a hundred health care facilities that treat some form of mental health (Perez-Crusado et al., 2017). The professionals were given a questionnaire to rate their likeness to recommend physical activity to their patients as a solution, or if that is a practice they are already partaking in. The results of this

study concluded that 25% of the medical professionals do not recommend physical activity as a solution nearly as much as they should (Perez-Crusado et al., 2017). This is assuming that all of the participants were being truthful and honest. Advocating for physical activity needs to start with medical professionals recommending this alternative lifestyle to their patients. Many people have the lack of knowledge of physical activity and need someone to guide them to know that this is a choice that has proven to have a positive impact on symptoms that they may be experiencing.

Giving Guidance

As mentioned prior, it is important that the patients struggling with their mental illness know that there is a better way to make them feel better about their diagnosis. This comes with guidance, if people are being pushed in this direction they need help getting where they need to be. Giving guidance could mean giving recommendations about possible ways to be active; whether it means a class that they can join or places that they can go. The world of physical activity is large and there is something for everyone who wants to participate, they just have to know what to do and where to go. This could fall back on the medical professionals talking to their patients or family and friends encouraging this person to be active. There was a study published in 2016 about a 6 month program done at an actual mental health care facility. These participants came to this facility almost treated as a community center and they were given many activity options. These options included walking, running, riding bike, yoga class etc. The authors of this study used interns to help these patients and teach them about their chosen activity and over 50% of the 25 participants felt better and wish to continue this lifestyle after this study (Bakhshalipour et al., 2016). The participants were also taken off their medication in this six months or it was severely lowered by the end (Bakhshalipour et al., 2016). This is the type of

guidance that needs to be given in order to continue and support this research question and it can be done by people gaining awareness on the subject.

Limitations

Like all studies, this critical mass on this topic has some limitations that hinder the complete success of proving the research question to be true. Though there has been a lot of research done on this topic, it was difficult to find studies as specific as the research question was. There were many studies on physical activity benefitting mental health, but less research done on having the participants completely off of their medications. Another limitation was limited studies, which limits the cause and effect evidence of physical activity programs to improve mental illness. Length of intervention can also be seen as a limitation in this study being that there was no specific recommendation for the length of intervention needed to gain success in the results of these studies.

Recommendations for Future Research

Now that the limitations have been outlined it is evident what we need to look towards for future research. In the future there needs to be more studies conducted where the participants are completely off of their medication. This will give the authors a better indication of just how effective physical activity can be in replacement of their prescription. Another limitation that was mentioned above was there were limited studies. This critical mass focused on just depression and anxiety and it was difficult to find a large amount of research of just those, in the future there needs to be more specific studies done on the physical activity of a mental illness diagnosis. This will benefit patients and medical health professionals in knowing that physical activity has strong evidence promoting in the assistance of their specific diagnosis. Lastly, in future research there

needs to be more clear instructions and results of just how long of an intervention is needed to get the most successful results of using physical activity as a mental health treatment.

Conclusion

Research and studies have shown strong evidence in proving the research question and showing the benefits of physical activity on people with a mental health diagnosis. Studies reviewed throughout this synthesis give strong and positive data on real diagnosed patients using physical activity as a treatment for mental health. Participants of all these studies stated to be feeling more "free and clear" when using physical activity as treatment, but also have a lower or no dosage of medication. This synthesis also discusses how prescribed program studies were more effective when gathering detailed data on how participants were feeling with physical activity and different prescription levels. There was positive feedback through participants of studies that there will be a continued use of physical activity as a treatment as it became more routine and helped with their symptoms in a positive way. Recommendations for the viewers of this study moving forward would be to advocate for more people getting involved in physical activity in their lives. Whether a person has a mental health diagnosis or not physical activity is beneficial for one's mental health and wellbeing and will continue to be throughout a lifetime. Though this critical mass only discusses a small part of a much larger issue, it is evident that there needs to continue to be research on this topic in the hopes that someday the percentage of people taking prescription medication goes down.

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Appendix A

Synthesis Article Grid

Author	Title	Source	Purpose	Methods & Procedures	Analysis	Findings	Recommendations
Bakhshalipour, V., Azizi, B., & Sareshkeh, S. K. (2018).	THE EFFECT OF A 6-MONTHS MODERATE-INTENSITY WALKING EXERCISE PROGRAM ON MENTAL HEALTH, QUALITY OF LIFE, AND SLEEP SUBJECTIVE QUALITY IN NON-ACTIVE ELDERLY PEOPLE WITH TYPE 2 DIABETES.	Recreational Sports Journal (2016)	To attempt to get mental health patients to adapt to a more physically active life along with better sleeping, and eating habits to see an improvement on mental health.	25 participants This study targeted middle aged adults who are mostly inactive with mental health problems, but also type 2 diabetes.	The study was done mostly by observation and interviews of the participants. There were also some medical professionals on the study to monitor the progress.	The findings are that there is a great impact for help with mental health and sleeping. Diabetes was not as much affected but there was a positive change.	Get more medical professionals to assist with the study to ensure the most accurate results.
R.P Bailey	Physical activity and mental	International Journal of Physical	To see if physical activity	100 Students over two schools. (K-12)	Questionnaires were cross referenc	Students responded that they feel more	Actually measure these students levels and

K. Howells I. Gilbo	health of school aged children and adolcents.	Education 2018	at a young age has an effect on school aged students mental health and overall motivation.	were interviewed or given questionnaires on their interest and feelings in their mental health when there is activity in their school day.	ed to search for commonalities between the students and their thought and feelings on activity.	happy and interested to be in school when they have activity as a part of their day.	see if increased activity makes or even better results.
Carroll Dianna D. , Stevens Alissa C., Sloan, Michelle L. , Fulton Janet E. , Brown, David R.	Reccomending physical activity to adults with disabilities: Knowledge and practices of health professionals	Medicine & Science in Sport & Exercise. (2015)	This article is a debate to see if reccomending physical activity is a positive thing for adult with disabilitie.	Medical professionals all over were given a questionnaire about how often their recommendations to their patients are about physical activity as a health a health and	To see if these doctors who treat these disabled adults use physical activity as a recommended solution to improve health and mental health	The results show that only a little over half of these doctors are recommending this to these adults with disabilities in their visits. They admit	Medical health professionals need to use physical activity as an attempted solution as opposed to medical solutions.

				mental health improvement.	in their appointment visits.	that they do not use this often as a health recommendation.	
Katleen Gelade, Marleen Bink, Tieme W.P. Janssen, Rosa Van Mourik, Athanasios, Jaap Oosterlaan.	An RCT into the effects of neurofeedback neurocognitive functioning compared to stimulant medication and physical activity in children with ADHD.	EUR Child Adolesc Psychiatry (2017)	Though this article dos not look into mental illness specifically it does look into physical activity impact on the brain of children and discusses the effects of medication verses physical activity.	This test was done mostly measuring the neurological stimulus of these children when they were free of their medication for at least one month. These children were ages 7-13 and have an ADHD diagnosis, but also have received treatment for mental health issues	These children were taken of their medication and given a more active schedule while at the mental health clinic to see if there was a change in things such as behavior and intention span.	Though there was positive effects using physical activity as a solution these students were proven more consistent and effective neurologically and behaviorally when they were on their recommended stimulant.	Medical health professionals need to use physical activity as an attempted solution as opposed to medical solutions.

				from a clinic.			
Alcaraz-Ibanez, Manuel Sicilla, Alvaro Burgueno	Social Physique Anxiety, Mental Health and Exercise: Analyzing the Role of Basic Psychological Needs and Psychological Inflexibility.	Pub Med (2018)	This articles discusses how social anxieties are common among males in adult life. How physical activity and regular exercise can improve these anxieties throughout life.	200 people were ages 18-60 were given two different questionnaires and their answers were cross reference to see commonalities among their mental health status.	This study was done on both active and sedentary individuals to try and see if there is a beneficial impact with exercise and activity.	The findings of this study show that there is a positive correlation in physical activity and exercise improving social anxieties in adult aged men.	Get out and be active more to get through the daily struggles of communication and social interaction.
Lahti, Jouni, Lallukka, Tea, ; Lahelma, Eero; Rahkonen, Ossi	Leisure-Time physical activity and psychotropic medication: A prospec	Preventive Medicine (2013) Volume 57	This study looks into if physical activity could have a positive	A questionnaire was given to over 200 people with a mental health diagnosis	The questionnaires were sorted through between more sedentary	The questionnaires were calculated and over 50% of participants agree	Medical health professionals need to use physical activity as an attempted solution as

Preventive,	tive cohort study		impact on peoples mental health when its in their daily lives.	to see their current rate of physical activity and how it makes them feel with their diagnosis.	people and more active people. These are compared to see if physical activity and leisure activity can be helpful when dealing with a mental health diagnosis.	that having more physical activity in their day is beneficial as opposed to an increase in their prescribed medicine.	opposed to medical solutions.
R. Mendes, S. Martins, L. Fernandes.	Adherence to medication and physical activity in older people with diabetes: the association with depression.	European Neuropsychopharmacology (2019) Vol. 29	This study looks at older adults with diabetes, but also have been diagnosed with depression and anxiety	Patients at the age of 65 years and older with these diagnosis were given more physical activity as a routine in their day	The results were cross referenced to their old tests with to see if there was a positive correlation in these	This test was a lot about the patients “adherence” and their thoughts on physical activity as a solution verses the people	Medical health professionals need to use physical activity as an attempted solution as opposed to medical solutions.

			using the hospital scale. Researchers wanted to see what would happen if these patients were given more physical activity.	to see if there was a positive correlation in the mental illnesses.	diagnosis with physical activity and less medication.	who just want medication. The patients who chose to use more physical activity proved to deal with less depression.	
David Perez-Cruzado, Antonio Cuesta-Vargas, Elisa Vera-Garcia, Fermin Mayoral, Cleries.	Medication and physical activity and physical fitness in severe mental illness	Psychiatry Research (2017)	This article is a study to see if there is more of a positive correlation between prescribed medication for mental health, or if	62 people between the age of 26 and 61 with diagnosed mental illness were tested. They were given a physical fitness test to see their level, then some	The researchers used standard deviation in order to see the difference in improvement of mental health between the physically active,	There was a significant difference between the two. Physical activity proved great among the patients not on medication. They were feeling	Medical health professionals need to use physical activity as an attempted solution as opposed to medical solutions.

			physical activity with no medication is better.	were put on medication and others just used physical activity. Patients were on doses of Risperidone and Olanzapine.	and the ones on medication.	more free and clear by the end of the study.	
Schmuttee, Timothy Davidson, Larry & O'Connell, Maria	Improved Sleep, Diet, and Exercise in Adults with Serious Mental Illness: Results from a Pilot Self-Management Intervention.	*Psychiatric Quarterly, 89*(1) 2015	This study was conducted to see the correlation between overall mental health and physical activity, but also looks into the effect that sleep and	78 adults with at least one chronic health concern volunteered for this study. There sleep, eating, and physical activity was monitored over a 16 week program. There was a three month	Observation of participants, and also the log sheets that were turned in by the individuals. There was an interview three months after to see the difference in lifestyle	In the interviews the authors found that the adults were more positive, sleeping better and their health problems had become more subtle.	Have the participants do more activities or healthy habits with the researchers present to make sure of authentic results.

			eating well has on mental health.	follow up interview in hopes that the individuals stuck to their routine and were able to improve overall health.	and health.		
Seyde Shahrbanoo Daniali, Firooze Mostafavi Darani, Ahmad Ali Eslami, Mohammad Mazarheri.	Relationship between Self-Efficacy and Physical Activity, Medication Adherence in Chronic Disease Patients.	Advanced Biomedical Research (2017)	This study looks into patients with chronic diseases and the patient's belief to use more physical activity as a solution as opposed to their medication. This studies	483 patients from all over different health clinics that have chronic diseases were tested and measured on both their self-efficacy and their physical activity level. These patients put more physical activity in their	These patients took part in practicing more self-efficacy and putting more physical activity in their day and other patients stayed the same where they were. These results in mental	Though medication is necessary to help with many of these chronic diseases physical activity can only do positive things. Most patients admitted that they neglect taking care of themselves physically with	Medical and health professionals need to use physical activity as an attempted solution as opposed to medical solutions.

			their self-efficacy to make decisions about their own medical diagnosis.	day and made decisions about their medications being decreased with doctor's approval.	health and health improvements were cross-referenced.	their diagnosis and agree it's important to focus more attention on.	
Davy Vancampfort, Michel Probst, Anne Daenen, Tine Van Damme, Marc De Hert, Simon Rosenbaum, David Bruynickx	Impact of Antipsychotic medication on physical activity and physical fitness: An exploratory study	Psychiatry Research (2016) Volume 242.	The use of antipsychotics is used in when dealing with mental health diagnosis in all ages. This study looks into people who have this prescribed and their levels of physica	Patients from several different health clinics were interviewed about their current activity level, and the medications they were on. These patients were given more activity into their daily schedules along	The people who were on lower medication levels and increased physical activity were cross referenced between the other group which got little physical activity and stay	Not only did the group that was more active feel better about their symptoms, but actually felt that they had more coordination and speed when being active with lower medication levels.	Medical and health professionals need to use physical activity as an attempted solution as opposed to medical solutions.

			l activity along with or instead of their medicat ion.	with their medicatio n.	on their full medicat ion dosage.		

Appendix B

Article	**Length of Intervention of Studies**	**Reduction of Symptoms**	**Medication Substitutes**	**Prescribed program vs. Participation Program**
Bakhshalipour, V., Azizi, B., & Sareshkeh, S. K. (2018).	X	X		X
R.P Bailey K. HowellsI. Gilbo	X			X
Carroll Dianna D. , Stevens Alissa C., Sloan, Michelle	X			X

L. , Fulton Janet E. , Brown, David R.				
Katleen Gelade, Marleen Bink, Tieme W.P. Janssen, Rosa Van Mourik, Athanasios, Jaap Oosterlaan		X	X	X
Alcaraz-Ibanez, Manuel Sicilla, Alvaro Burgueno	X	X	X	X
Lahti, Jouni, Lallukka, Tea, ; Lahelma, Eero; Rahkonen, Ossi Preventive,	X	X	X	
R. Mendes, S. Martins, L. Fernandes.			X	X
David Perez-Cruzado, Antonio Cuesta- Vargas, Elisa Vera-Garcia, Fermin Mayoral, Cleries.		X	X	X
Schmutte, Timothy Davidson, Larry &		X	X	X

O’Connell, Maria				
Seyde Shahrbanoo Daniali, Firooze Mostafavi Darani, Ahmad Ali Eslami, Mohammad Mazarheri.		X	X	
Davy Vancampfort, Michel Probst, Anne Daenen, Tine Van Damme, Marc De Hert, Simon Rosenbaum, David Bruynickx	X	X	X	