

ABSTRACT

Title: Physical activities and depression.

Keywords: Physical activity, aerobic exercise, depression, adults and treatment

Introduction: There are more than 264 million people of all ages estimated to be suffering from depression. This is according to the World Health Organization (WHO). They go further and say that depression is the leading cause of disabilities worldwide and a major contributor to the overall global burden of disease. There is an interrelationship between depression and physical health. There is a higher number of women suffering from depression compared to men. A good example is that whereby a cardiovascular disease can lead to depression and vice versa. There are effective treatment methods when it comes to treatment of depression from moderate to severe depression. Whilst there is the use of anti depressants other methods have been considered and they seem to give positive results one of such alternative treatment methods is physical activity or exercises.

Purpose: Through this study I am going to investigate the effect of aerobic exercises which is being used as a form of treatment to adults suffering with depression. Focus will be on adults in general.

Method: Have used a literature based study method whereby there is a systematic search when it comes to literature. The search shall be both structured and unstructured giving 5 articles from a research which are not more than 10 years and will be included in this study. These articles are also chosen scientifically.

Results: The articles chosen give significant factors and discoveries which suggest that exercise has a visible effect on people with depression. The study resulted in a few findings and some of the main ones were:-

- a) Exercise is effective and can be used as alternative to medical treatment.

- b) How individuals interact socially can and does play apart on how they exercise and the routine of it.
- c) Individuals who are less or not exercising would require guidance on how to exercise
- d) The intensity and importance of increasing or use of exercise varies from one research but they all are in agreement that exercise is important and helps.

Conclusion: Exercising does bring people together and in this case creating a social network that people who are suffering with depression can be a part of. They can meet and interact. Exercises can be used either as a substitute or a medicine supplement or used as both. This series more with the level of depression. Guidance and instructions are necessary for those who have never been doing any exercise or have been least active. This helps them to gain interest and indulge themselves more in the exercises. However, there are different opinions on what degree or level of intensity is most effective.

SAMMENDRAG

Tittel: Fysisk aktiviteter og depresjon

Nøkkelord: Fysisk aktivitet, aerobic trening, depresjon, voksne og behandling

Introduksjon: Det er mer enn 264 millioner mennesker i alle aldre som anslås å lide av depresjon. Dette er ifølge Verdens helseorganisasjon (WHO). De går lenger og sier at depresjon er den viktigste årsaken til funksjonshemninger over hele verden og en viktig bidragsyter til den samlede globale sykdomsbyrden. Det er et innbyrdes forhold mellom depresjon og fysisk helse. Det er et høyere antall kvinner som lider av depresjon sammenlignet med menn. Et godt eksempel er at en hjerte- og karsykdom kan føre til depresjon og omvendt. Det finnes effektive behandlingsmetoder når det gjelder behandling av depresjon fra moderat til alvorlig depresjon. Mens det er bruk av antidepressiva, har andre metoder blitt vurdert, og de ser ut til å gi positive resultater. En av slike alternative behandlingsmetoder er fysisk aktivitet eller øvelser.

Hensikt: Gjennom denne studien skal jeg undersøke effekten av aerobe øvelser som brukes som en behandlingsform for voksne som lider av depresjon. Fokus vil være på voksne generelt.

Metode: Har brukt en litteraturbasert studiemetode der det er en systematisk slik når det gjelder litteratur. Søket skal være både strukturert og ustrukturert og gir 5 artikler fra en forskning som ikke er mer enn 10 år, og vil bli inkludert i denne studien. Disse artiklene er også valgt vitenskapelig.

Resultater: De valgte artiklene gir viktige faktorer og funn som antyder at trening har en synlig effekt på mennesker med depresjon. Studien resulterte i noen funn, og noen av de viktigste var: -

a) Trening er effektiv og kan brukes som alternativ til medisinsk behandling.

b) Hvordan enkeltpersoner samhandler sosialt kan og spiller hverandre om hvordan de trener og rutinen for det.

c) Personer som er mindre eller ikke trener, vil kreve veiledning om hvordan de skal trene. Intensiteten og viktigheten av å øke eller bruke trening varierer fra en forskning, men de er alle enige om at trening er viktig og hjelper.

Konklusjon: Trening bringer folk sammen, og i dette tilfellet kan det opprettes et sosialt nettverk som mennesker som lider av depresjon kan være en del av. De kan møtes og samhandle. Øvelser kan brukes enten som erstatning eller medisintilskudd eller brukes som begge. Denne serien mer med depresjonsnivået. Veiledning og instruksjoner er nødvendig for de som aldri har trent eller har vært minst aktive. Dette hjelper dem til å få interesse og hengi seg mer til øvelsene. Imidlertid er det forskjellige meninger om hvilken grad eller intensitetsnivå som er mest effektiv.

Content

1. Introduction.....	1
1.1 Presentation and explanation of the theme and issue chosen.....	1
1.2 Delimitation and clarification of the issue/problem chosen.....	2
1.3 Purpose of the studie work.....	2
1.4 How is it relevant to social-worker study.....	2
2. Theory.....	3
2.1 Depression.....	3
2.2 Physical activity and level of intensity.....	4
2.3 Sosial life as a helping and supporting factor.....	5
2.4 Antidepressive medicine.....	6
3. Method.....	7
3.1 choosing the method.....	7
3.2 Searching process.....	7
3.2.1 Tabell -structural search.....	8
3.3 Source critic and analysis.....	11
4. Results.....	12
4.1 Results from articles.....	12
4.2 Summary of results.....	17
4.2.1 Group or individual training and as a social aspect.....	17
4.2.2 Physical activity as an alternative to medication.....	18
4.2.3 Endurance/duration and intensity of training.....	19
5. Discussion.....	20
5.1 Group or individual training and as a social aspect.....	21
5.2 Physical activity as an alternative to medication.....	22
5.3 Endurance/duration and intensity of training.....	23
6. Conclusion.....	24
7. Literature.....	25

1. Introduction

1.1 Presentation and explanation of the theme and issue chosen

The World Health Organisation (WHO) estimates that there are more than 264 million people of all ages suffering from depression and the number is increasing on a daily bases. This making it the highest reason of a disability disorder (WHO,2020).

Through my internship and daily life I have had the opportunity to come in contact with people suffering from depression. This helped me acquire knowledge on depression, its diagnostic factors and different ways of treatment that are available for treatment. The most commonly methods that were in use were usage og anti depressants and therapy sessions in the presence of a therapist or psychologist. These methods worked for some of the patient but not all of them. I also got to talk to a specialist who was involved in the practice of using exercises as an alternative method of treatment and this seemed to give positive results.

The exercise part did get the patients out and made them to meet other people thus increasing their social network through the essence of them realising they are not alone and they are together with others who have or are going through the same as them, at the sometime they challenge each other by supporting each other through the team training.

So as to understand the factors that are crucial for people that are depressed, use of experimental knowledge can help by lighting out their opinions. Physical activity has indeed show positive effect on depression were the well being of the person increases and reducing stress. To reduce or prevent mental disorder such as depression. Physical activity does create good relationships and gives you a deeper knowledge of the challenges an individual has and how they need help. By use of physical training individuals can use physical training as a starting point. Physical activity can and or should be with set rules, fixed times or when needed according to what's agreed with the individual and have follow up.

As a social worker I have been in contact with people suffering from depression and managed to see how it changed their day to day daily life. I managed to learn on how depression can cause lots of trouble and negative changes in a person. I managed to see the usage og antidepressants such as

tablets and physical activity too. Physical activity can be used either with or without another antidepressant.

This thus led to choosing of my issue/problem and try to figure out:

What effect does physical activity have when used as a treatment method to a person with depression.

1.2 Delimitation and clarification of the issue/problem chosen

There are many and different types of exercises which are also of different level. The different exercises can be divided into two main groups which are aerobic and non-aerobic exercises. With this it has been noted that the different exercises have different effect to person(s) with depression. With study study I will be looking more in the use of aerobic exercises this will be connected to the psychological aspect which a social-worker will be working with.

The study is researched on people of the age of 18 -and above with the social worker think on how to use appropriate exercise specifically to the relevant and fitting depression patient. As a social worker it will be needed to understand both the psychological and physical factors and how to combine them when it comes to the use exercises as a method of treatment

1.3 Purpose of the studie work.

The purpose of the studie will give social-workers the knowledge which will be effective in their line of work whilst helping people suffering from depression. This literature study will identify relevant themes that can and will be of necessary help to the social worker on how to use exercise as a treatment tool to persons suffering from depression

1.4 How is it relevant to social-worker study

It is important for a social worker to get more knowledge om mental health problems and mostly depression. As mentioned early, there is a very high number of people suffering from depression.

This shows that a social worker has a high chance of meeting a person if not people suffering from depression. Thus making it important for social getting more knowledge on the diagnoses and how to treat it even with the use of physical activity. Whilst doing this it is wise to get oneself acquainted with the other treatment methods too. Depression treatment is both time and energy consuming and this must the social worker has to be patient.

With the social-worker study give competence has abroad perspective and deals with social studies, law, psychology, health sciences, pedagogy and environmental work based on peoples daily lives. In this study as I am taking a focus in depression then I will be getting more into the psychological part of it mostly. This is more of an all rounder studie as it does in one way or another touch the other parts of the study. This is as to the common tasks the social worker has and they are contributing to daily care, providing social support and guidance to facilitate self- mastery, education and training how to maintain skills and establishing of new ones. Providing advice and guidance both to colleagues and partners in administration and management. They are also involved in professional development and research (utdanning.no). As mentioned by WHO that depression is one of the leading cause of disabilities in today's society which means a social worker has a high chance of encountering people and patients suffering from depression in their work. This means that it is of importance that the social worker acquires relevant knowledge whilst being updated to treatment surrounding depression. This is a measure that a social-worker can implement and help with. Once they have it in progress they do not need to be there every time but can create a follower up program which is well planned based on the patient and in a way they understand the contents which is the training, what's required of them and how to go about it.

2. Theory

2.1 Depression

Depression is the the most frequent cause of emotional suffering in life and it decreases the quality of life in adults significantly (Blazer, D.G.). Depression is classified in the categories which are mild, moderate and major depression.

According to (NHI.NO) depression is a condition that's characterised by decreased mood, lack of interest and loss of energy or increased fatigue. (NHI.NO) også goes further and says that an individual must have had conditions lasting for two weeks and its not always that it must have a direct result of physical illness or substance use. It also says that so as to be diagnosed with depression an individual must have at least two of the following symptoms; lack of interest and joy or happiness, depressive mood swings, energy loss or being highly fatigued. There are other other symptoms such as loss or reduced concentration and attention, reduction on self esteem and self-confidence where one feels guilty all or most of the time, inferiority complexity can be observed or noticed, Sad most of the time and very pessimistic about their future plans and how they are planning to execute them, Signs of self harm, suicide attempt or thoughts, sleep disorders and also a decreased or altered appetite/ sleeping and eating disorder.

a) Mild depression

An individual has two main symptoms and at least two other symptoms. None of the symptoms are or need to be severe. The individual manages to function with a slight or some difficulty socially or at work.

b) Moderate depression

With moderate depression an individual has two main symptoms and at least four other symptoms. Several symptoms will be severe on this one and thus makes the individually not to be able to function socially or at work.

c) Major depression

An individual will have all three main symptoms and at least six of the other symptoms. Most of the symptoms will be severe if not all. Here an individually will not be able to function socially or at work and will often have problems with accomplishing their daily personal chores.

2.2 Physical activity and level of intensity

The different studies show that physical activity is as important as antidepressant medicine. Traditionally exercise was viewed predominantly from a biological and physical perspective.

Recently it has been used in treating or preventing a variety of mental disorders such as depression. Further literature reviews have concluded that physical activity is related to decrease in depression (Lieth, L. M, 2010). The physiological benefits of participating in regular physical activity has given good feedback and evidence that lack of exercise has shown to be a factor to increase in depression and or other diseases such as heart related ones.

According to (CDC) a way of understanding and measuring the intensity of aerobic activity is understanding intensity and how physical activity affects heart rate and breathing. This intensity has to be over a period of time where heavy breathing and muscles needing more oxygen in them is experienced.

When an individual participates in an aerobic activity for 15 minutes or longer. 15 minutes can be used as warm up then followed by 30-45 minutes training 3-5 days a week. With this the body is put into a stress condition. This leads to a chain reaction of physiological changes in the body such as an increase in catecholamines which exert their effect on the sympathetic nervous system. This results in increased blood pressure, heart rate, metabolism and other physical reactions that prepare the body for action. With increase in both endorphin and menadamin levels during physical training help with increasing stress level tolerance of an individual (Leith. L.M)

2.3 Sosial life as a helping and supporting factor

Depressed individuals tend to keep to themselves and are full of negative thoughts about them and this is shown from the symptoms mentioned earlier. The never are interested or can't fulfil activities and chores. Depressed people need motivation this can be either inner or external kind of motivation.

So as to understand motivation and its pathologies on how an individual's body constitutes ones point of view on the world and the intentions that the body connects to the surrounding (Merleau-Ponty, 2002). According to Merleau-Ponty the bodily nature and its subjectivity is reflected in features of our environment. He goes further says that our subjectivity is partly constitutive of the world. Ones body does not simply occupy some spatial location or position which means that the bodily spatiality is one of situation where one is situated in the relevant sense which is shaped by

ones past, present and future for the human settings, the physical, ideological and the moral situations (Merleau-Ponty, 2002). This goes on how one relates with others and how other individuals. An individual goes from being in a world of themselves and get motivated and inspired by being around other individuals. Being with others gives them a feeling of belonging and being in a group that appreciates and supports them. Group motivation helps lift up the moral of a depressed individual. This also gives them a sense of belonging thus motivating them to taking up physical activity together with the others, leading to reduction if not eradication of depression (Stokkenes et al., 2001)

The public health, 2011, §1 states that public health work should and shall be able to promote the population's health and well being, facilitate good social and environmental conditions, in addition it shall help to prevent mental and somatic illness, injury or disorder.

2.4 Antidepressive medicine

Antidepressants are drugs that are used and work against depression. They work by being able to adjust the chemical imbalance found in an individual struggling with depression (NHI, 2016). NHI goes ahead and says that sometimes there are small amounts of chemical messengers, neurotransmitters, in some parts of the human brain. It is these substances that ensure that nerve impulses are transmitted from one nerve cell to the other. In the absence of the transmitters, the impulses between the nerve cells get disturbed. The two substances that are important in this context are serotonin and norepinephrine and these are known to affect the human mood.

Antidepressants counteract the chemical imbalance found in a depressed person. There are several medications that fall into the category of anti depressants and some of them have been in use for so many years. At the same time a lot of research has and is still being done and new medicines are constantly appearing (NHI, 2016).

Some of the old antidepressants such tricyclic antidepressants were known to have unpleasant side effects while the newer ones such as SSRIs and SNRIs have the same if not better effect on

depression as the old drugs but they have fewer or less side effect compared to the old ones (NHI, 2016)

3. Method

3.1 choosing the method

The use of a systematic method to gather information and knowledge to shed light on a problem. This way one gets to find out agreements and disagreements that researchers have. At the same time it shows the results they get. The purpose of this is to be able to create a more up-to-date knowledge and understanding. This knowledge will be demanded and needed by the issue/problem I have chosen. This helps further to understand how the knowledge has been produced (Thidemann, 2015, p76).

In this thesis I will be collecting literature that is relevant. Thereafter in a critical way will I use it to give me good data that shall be able to illuminate my question whilst doing it in a professional way.

3.2 Searching process

The searching process in this thesis includes a phase that focuses on a both inclusion and exclusion criteria. This makes and helps to make the literature search more precise and limiting on the literature. This reduces over researching or having irrelevant literature (Thidemann, 2015)

Inclusive criteria	Exclusive criteria
Peer- reviewed	Not peer reviewed
Qualitative method	Articles that are above 10 year
Quantitative method	Under 18 years old
Mild depression	
Moderate depression	
Severe depresjon	
Language: English and Norwegian	

Inclusive criteria	Exclusive criteria
Endurance/ aerobic training	
Age: 18 and above	
Articles that are 10 years old or less	
IMRad structure	

A structure by the name IMRad and which stands for Introduction, Method, Results and discussion is the best to use review all the articles. This helps to pick out relevant articles since there are many researches and not all that give articles that are scientifically relevant. It is important to limit the articles to only those that directly illuminate the issue or problem chosen. This way will it help to use the knowledge to identify alternative points of view that are used.

There are databases that can be used to help with the systematic search. In this thesis some of these databases used run searches are Pubmed, Oria, PsycInfo and Google scholar.

So as to have the results more presis was PICO used. PICO is a helping aid which helps to identify the different components of the issue/problem. It breaks down the issue/problem in a more simplified points (Thidemann, 2015).

This is illustrated as on the table below:

Who/Which (Patient)	What (Intervention)	Alternative (Comparison)	Results (Outcomes)
Adult with depression	Endurance training	Other form of treatment	After treatment

The PICO table above shows that the issue/problem used can be divided into the different elements and thus PICO can be used as a framework around the issue/problem. This leads to the next level which is the searching proress. Free text was used to help with the searching proress (Thidemann, 2015) an d also including using actual synonyms as searching words so as to discover other finds. From this thesis endurance training, endurance exercise, aerobic training and aerobic exercises are some of the synonyms that are relevant. Thidemann, 2015) goes further and says that one can use “AND” to combine searching words. This helps with minimising the number of articles found

3.2.1 Tabell -structural search

1) Assessment of bidirectional relationships between physical activity and depression among (2019)

Date of search	Database	Search words and combinations	Delimitation	Number of finds	Number of abstracts read	Number of articles selected
16.08.20	Pubmed	Physical activity	Last 10 years	563,308		
		“physical activity”		119,306		
		Physical activity AND depression		26,301	5	
		“physical activity” AND depression		6,862	2	
		Physical activity AND depression AND Treatment		15,543	5	
		“Physical activity” AND depression AND Treatment		3,362	3	
		Physical activity AND depression AND alternative Treatment		594	6	1
		Physical activity AND depression AND “alternative Treatment”		40	2	

2) Physical activity and common mental disorders (2010).

Date of search	Database	Search words and combinations	Delimitation	Number of finds	Number of abstracts read	Number of articles selected
17.08.20	NTNU Oria	Physical activity	Last 10 years	18,157,930	6	
		“Physical activity”		783,378	5	
		Physical activity AND depression		588,311	7	2
		“Physical activity” AND depression		132,743	3	
		Physical activity AND depression AND treatment		389,019	8	
		Physical activity AND depression AND Alternative treatment		140,748	10	
		Physical activity AND depression AND “Alternative treatment”		7513	5	
		“Physical activity” AND depression AND “Alternative treatment”		1,822	7	1

3) Physical activity and depression: Towards understanding the anti depressants mechanism of physical activity (2019).

Date of search	Database	Search words and combinations	Delimitations	Number of finds	Number of abstracts read	Number of articles selected
17.08.20	NTNU Oria	Physical activity	Last 10 years	18,157,930	6	
		“physical activity”		783,378	5	
		Physical activity AND depression		588,311	7	2
		“Physical activity” AND depression		132,743	3	

4) Efficacy of exercise as an adjunct treatment for clinically depressed inpatients during initial stages of antidepressant pharmacotherapy: An open randomised controlled trial (2016).

Date of search	Database	Search words and combinations	Delimitations	Number of finds	Number of abstracts	Number of articles selected
18.08.20	NTNU Oria	Physical activity	Last 10 years	18,157,930	6	
		Efficiency of physical activity		1,556,412		
		Efficiency of physical activity AND depression		67,439	3	
		Efficacy of physical activity		962,297	3	
		Efficacy of physical activity AND depression		156,625	4	1

5) Benefits of exercise for the clinically depressed (2014).

Date of search	Database	Search words and combination	Delimitations	Number of finds	Number of abstracts	Number of articles selected
19.08.20	Pubmed	Physical activity	Last 10 years	563308		
		Benefits of physical activity				
		Benefits of physical activity AND depression		1877	3	
		“Benefits of physical activity” AND depression		4		
		Benefits of physical activity AND “depression”		2,065	8	1

3.3 Source critic and analysis

Literature matrix was the tool that was used and it proved to be both good and useful. It helped with systematising the articles. It helped to figure out what was to be either included or excluded when it came to the study topic. The articles that were excluded was because they touched on other topics that were not relevant at this point

Articles used followed the purpose, method, sample/ population, results and quality consideration as recommended by (Thidemann, 2015). The source of the articles was assessed and characterised and making sure that they cohered with the issue/problem.

For the articles to be read, known and understood, they were read at least 3 times. This helped to find out if the results found were relevant and coherent to the issue/problem. Critical reading was necessary and was used and it helped to identify and uncover the similarities, differences, the weaknesses and strengths of the articles (Thidemann, 2015).

Thidemann, 2015) goes even further and recommends that one uses highlighters to identify key results on the article. Rather than highlighting I chose to write them down and coded them by using different colours thus differentiating them from other words that had other meaning or contrasting that which was relevant. All checklists that were used are from helsebiblioteket (2016). Articles that did not meet the quality assessment of the checklist were omitted.

4. Results

I was able to find articles that I have used in the results section. This was by using article matrices. Thereafter I merged the articles together so as to find a connection in them and thus giving the result a collective literature study needed.

4.1 Results from articles

1) Assessment of bidirectional relationships between physical activity and depression among adults

Method	Sample mendelian randomisation MR Continuous physical activity phenotypes Self reported moderate to vigorous P.A. Objective accelerometer based activity which was to be worn on the wrist for at least 72 hours
Chosen population	Biobank study participants Previous data/ articles on activity and depression
Intervention time	May 10th- July 31 2018
Results	.Protective relationship between accelerometer-based activity and MDD .Protective casual relationship between accelerometer based activity and MDD. No significant relationship between self reported activity and MDD .Self reported measures of activity might be affected by mood states and cognitive biases that also affect mental health- making it difficult to know how true they are. .There was an 8 milligravity increase .Physical proactivity showed casual relationship with depression but not vice versa but not depression directly affecting physical activity

Quality validation	<p>8 milligravity increase with 15 minutes of vigorous training and this increases with more time spent training</p> <p>.Physical activity casually reduces body mass index and then body mass index casually affects MDD thus interfering with the SNP and affecting MR</p> <p>.MR was robust and gave a cross sensitivity. Being able to ignore negligible bias from evidence of source of pleiotropy.</p> <p>. Physical activity in younger people may be influenced by other variants.</p> <p>. If physical activity works and truly does</p>
Approval by	<p>Pubmed NTNU Oria American Medical Association. All rights reserved. helsebiblioteket.no</p>

2)Physical activity and common mental disorders

Method	<p>.Questionnaires</p> <p>. Completing conceptual hierarchical framework was constructed to demonstrate how each of these factors may interact with both levels of activity and risk of depression</p> <p>.Information of participants age, gender and marital status was obtained.</p> <p>.Use of international Erikson Goldthorpe -Portocarero classification to find social class.</p> <p>.Hunt 2 Study</p>
Chosen population	<p>40,401 residents of Norway Age 20-89 66,140 participated in someway</p>
Intervention time	<p>Aug 1995- June 1997</p>
Results	<p>Inverse relationship the amount of leisure time physical activity and case not dependant to the level of leisure time activity</p> <p>. High level of social support and social engagement wear important</p> <p>.Participation lowest amongst men, young adults and the elderly</p> <p>.Those who answered on intense activity tended to be more active than those who answered both questions. Similar level of mental disorder on both.</p>

Quality validation	<p>HADS used to avoid the false-positive cases</p> <ul style="list-style-type: none"> . Focused on the psychological and cognitive symptoms relevant to depression . Large size community based sample and detailed info available on both biological and social factor are key strengths . Inclusion of light leisure activities and work based physically activity. . Rural/small area limit the generalisation of the findings . Level of activity in the population remains constant both in winter and summer as Norwegians are active at both times of the year.
Approved by	<p>Pubmed NTNU Oria The British Journal of psychiatry helsebibliteket.no</p>

3) Physical activity and depression: Towards understanding the anti depressant mechanism of physical activity

Method	<p>Articles taken and reviewed from approved bases</p> <ul style="list-style-type: none"> .Examining relationship between physical activity and depression over at least 2 time interval -Conducted by two reviewers -Use of longitudinal studies -Self reporting measures -Direct measures ascertained eg from physical diagnoses -Peer review literature search study -Inclusion and exclusion method
Chosen population	6363 citations 90 potential studies and 30 studies included for analyses
Intervention time	<p>July 20212 - February 2013 (Data analysed) Journals from January 1976- December 2012</p>

Results	<ul style="list-style-type: none"> -30 studies included for analyses, 25 showing negatively associated with a risk of subsequent depression -Any level of physical activity may can be prevent future depression -Relationship between physical activity and depression -Physical activity exposing depression -Depression being defined through threshold cutoff scores on self reports scales -Dropped those not specific on depression or included depressed individuals at baseline -Reduction of physical activity increased depression
Quality validation	Physical activity measured per minute by use of binomial analyses < 150 minutes per week and >150 min per week associated with a 8-63% and 19-27% decrease in depression
Approved by	<ul style="list-style-type: none"> Pubmed. Medline PsycInfo Sports discuss and Cochrane helsebiblioteket.no

4) Efficacy of exercise as an adjunct treatment for clinically depressed inpatients during initial stages of anti depressant pharmacotherapy: An open randomised controlled trial

Method	<ul style="list-style-type: none"> Patients included were having drug therapy for less than 10 days -a placebo activity program exercise was used -35 participants whereby aerobic exercises, placebo exercises, placebo exercises or no interventions/no control was used. -Patients brought in had had received anti-depressants medication but scored 29 or more on the BDI-2 -12 participants per group -Aerobic vs stretching and stretching vs control -Outdoor exercises lasting at least 30 mins with a typical session going for at least 45 min -Individuals used must have ability to run or walk fast.
Chosen population	Group of inpatients depending on depressive symptoms
Intervention time	<ul style="list-style-type: none"> Efficacy of 10 days long aerobic exercises program -Between July 2011-July 2015 124 inpatients admitted for treatment 48 legible and 35 participated

Results	<p>Significant change and improvement in BDI-2 for both aerobic and stretching groups</p> <ul style="list-style-type: none"> -More effect from the aerobic exercises -No significant change in depressive symptoms on the controlled group according to BDI-2 -Some refused to attend, one from the 14 people group and 2 from the group of 11 - One of the non intervention completed the final assessment of depression 3 days later than planned - - Decrease in depression score of 36% and 68% in exercising patients
Quality validation	<p>Endurance training can be used in the first stages of antidepressant pharmacotherapy</p> <ul style="list-style-type: none"> -No pre existing conditions psychotic signs -Even with an individual missing training, missing data was imputed using average change in depression
Approved by	<p>NTNU Ora Pubmed helsebibliteket.no Elsevier B.V.</p>

5) Benefits of exercise for the clinically depressed

Method	<p>Intervention groups, social support groups, wait-list control group</p> <ul style="list-style-type: none"> -Intervention group walking 20-40mins 3 times a week for 6 weeks -Therapy group meeting a therapist for 60min once a week -Combination group got 10 individual sessions with a therapist and also ran 3 times per week -Medication group getting both medication and physical activity
Chosen population	<p>30 Community dwelling adults</p> <ul style="list-style-type: none"> -90 depressed in patients -Different articles and different number of individuals as from the articles
Intervention time	<p>Different according to the different articles used</p>
Results	<p>Not much difference between aerobic and non aerobic activities with both giving positive results</p> <ul style="list-style-type: none"> - Physical therapy had the same result as psychotherapy - Physical activity had the same at times more effect than medication after 16 weeks
Quality validation	<p>Recommended physical activity as an adjunct therapy</p> <ul style="list-style-type: none"> - Individual suffering from depression should be allowed to choose physical activity of their liking.

4.2 Summary of results

The searching and analysing process from the articles does give a summary of the results found from the articles. This helps to define the topics in a better understandable way. It also helps to omit the irrelevant information. Since the articles used different methods to test and show how the effects and correlation of physical activity and depression. This gave 3 main points identified after the analysis are:-

- a) Group or individual training and as a social aspect
- b) Physical activity as an alternative medication
- c) Endurance and intensity of training

4.2.1 Group or individual training and as a social aspect

It has shown from individuals suffering from depression take on a secluded life of being alone. Being placed in a psychiatric institution or hospital doesn't help as they become even lonely there at times. This leads and becomes stressful for them. If one is to help them out of this boredom and being inactive, it's best having them around family or friends that would positively activate them and also avoiding the company of ill people (those worse than them) (Maccallum and Robertson, 1999).

Lawlor D. A., Hopker S.W., 2001) suggests that the benefits of exercise do not press beyond the end of intervention but individuals should keep on with physical activities. This emphasising in finding groups or individuals with the same goals and motivation. The physical activity level can be the same or higher but should always be motivating.

All five articles have shown the effect of supervised physical activity and were these were done in groups. Given that individuals were two or more highlighted the importance and effect of being in a group rather than an individual trying out physical activity by themselves and without any guidance or friends. There was more effect in group based physical activities.

Once an individual was out from the most difficult part of depression, they found it more easier to take part or continue with physical activity. The reason as to why this happened is given by most of the individuals as because of the support and help they got from the group also because they did it with someone else and not just themselves.

Articles 1, 4 and 5 have a more insight on individuals before, during and after gave a good overview where individuals got better with physical activity and being around other people who were where they are when it comes to depression. Having to opportunity to interact and doing it helps one to get from that depressive point. Doing this on a daily bases leads to one getting better and better and slowly reducing their level of depression

While one is depressed there is little or noe socialising at all, has low confidence and no motivation at all but through group physical training an individual is able to change all that. As the articles chosen show, the change is not drastic but gentle and requires time.

4.2.2 Physical activity as an alternative to medication

As earlier mentioned and highlighted in the articles they have shown that if physical activity was reduced over time then the level of developing depression would increase whilst increasing the level of physical activity over time or having it at a constant, reduced the level or increase in depression and this shown in articles 3,4 and 5. All articles highlight the fact that an individual should sustain their level of activity over time. Despite the individual being inactive before, once they take up physical activity they increase the chances and levels of reducing if nor eradicating depression

Article 1 and 2 express the fact that clinical depression can be made better and accommodative to patients by the addition of physical activity as a treatment alternative as it has shown drastic improvement to individuals with depression and who took up physical activities. Individuals who took physical activity programs displayed improvement from depression. The articles go ahead and say that if physical activity is combined with antidepressants the improvement is greater and faster. Article 5 says that the only critic wit the use of physical activity the sufficient adherence to the intervention is not possible but physical training was accepted as a treatment for depression. This was also suggested in article 4 suggesting that a dose- dependent of interaction between exercise

and antidepressant drugs through direct and indirect mechanisms helps improve the health of the depressed individual while high dosage of antidepressants deteriorates the health status of a depressed individual. The article goes further and says that the sudden interruption of the exercise program can result to a rebound effect leading to increase in depression symptoms. Lawlor D. A., Hopker S.W., 2001) suggests that the the benefits of exercise do not press beyond the end of intervention but individuals should keep on with physical activities.

There is also some individuals that find it easier to take a tablet than go through all the motivation or challenge oneself into training that demands more of them (all articles). Challenging themselves with physical activities that had to be done at a given time was something they were not ready for and thus pulled out of the studies. These happens sometimes because and individual might feel that the physical activity clashes with other plans at that curtain time and thus making it easy wit just taking a tablet (Searle et al., 2011).

4.2.3 Endurance/duration and intensity of training

Endurance training has shown attenuating negative effect by increasing positive effect on individuals with depression. Results shown article 3, 4 and 5 indicate that the two were not significantly different and that both were sufficient or good enough to reducing the level of depression on an individual.

All articles mention how physical activity changes hormone levels from endorphins levels, thermogenic and monoamine levels. With an increase in these hormones and the body temperature reduces the level of depression. Article 5 describes Endorphine increase as the hormones related to positive mood and an overall enhanced sense of well being while thermogenic which is increase in body temperature mostly in som specific places such as the brain stem can lead to a feeling of relaxation and reduction of tension that may lead to depression. Lastly it mentions monoamine which leads to an increase in availability of neurotransmitters such as serotonin, dopamine and neropinephrine which tend to be reduced if not diminished by depression.

Article 1 to 4 are more focused on endurance where they recommend on taking physical activity from 15 mins to almost an hour and take the physical activities 3 to five days in week. This is said to be helpful and there is less focus on intensity while article 5 takes a look at both endurance and intensity and shows that they both have ab effect on depression. The article also

takes it from an individual's perspective in regards to what kind of exercise the individual likes and that they should go for that rather than being asked to take up just a random activity and maybe they don't have a liking on it.

The positive mood effects when it comes to physical activity is independent of fitness gain and is suggested to be frequent and after the behaviour of an individual has changed and is well established then duration and intensity of physical activity can be included and focused on with a start on endurance and gradually increasing the intensity (article 1,4 and 5). For a good comparison the efficacy of running and that of weight lifting were compared according to article 5 and the results showed a significant effect from the running training while there was some change from weightlifting though at a lower level than that of running.

5. Discussion

This section the literature and results will be discussed step by step and summarised where they will shed light on the issue/problem that's chosen and which is:

What effect does physical activity have when used as a treatment method to a person with depression.

5.1 Group or individual training and as a social aspect

The biggest known factor when it comes to individuals suffering from depression is that they have do isolate themselves a lot from other people and social activities and gatherings (Hummelvoll, 2012). These are some of the factors that will make an individual not willing to train most of the time. As mentioned earlier in the topic under summary of results, and individual has to have past this level so as to be able to challenge or be challenged through physical activity.

As we know and understand physical activity, most of them are done in groups or mostly teams and being in a teams gives an individual a sense of belonging thus encouraging them to continue. Being in a team leads to socialising and which leads to getting confident and opening up more. Motivation is indeed important when it comes to engaging in physical activity. This has been shown by the articles and the result given. Motivation can and has different sides of itself. Just to name a few

motivation can be seen from the depressed individuals side, the trainer or social worker's side and also the other individuals that will be training with the depressed individual. This motivation can also be decided into internal and external motivation. Internal motivation is when the individual motivates himself and wants to take up physical activity. External motivation is the one that the individual gets from the people around him/her and makes her take up physical activity (Rise K., Viken Å., 2009). At this point it is best if an individual is self motivated and at the same time feels motivated by the others around them. The social worker can then take up the mantle of being the training partner where they go for walks with the individual and also teach them on the social skill by having a conversation with them and being around them so as they can be able to talk and be around other people with ease.

5.2 Physical activity as an alternative to medication

According to the articles used they have shown that there is a drastic change for the positive when an individual takes up physical activity. The effect is felt literally almost immediately while as for the antidepressants one has to wait for a period of time and days so as to start experiencing its effect. (Hummelvoll J., K., 2012) also emphasises on the same as from the article that, a depressed individual lacks self esteem and motivation. It is important to build up on this so as to be able to get them on physical activity if possible get the individual before they drop low on self esteem and lacking motivation.

There are people who believe in medication more than they will believe in alternative treatment methods and especially physical training. This is a challenge both to them and health personnel. A social worker will be facing this challenge but should be able to counter it as they are equipped with enough knowledge on how to deal with depressed people and other mental disorders. They would be spending an ample good time together thus giving them an opportunity to know the individual well and motivate them in the right way and towards the activity that the depressed individual has a liking in.

(Rise K., Viken Å., 2009) wrote that motivation comes through and from reward and that reward and motivation are connected. There is a connection to this and physical activity as once one takes up physical activity the reward starts showing on the body both physically and mentally. There are physical changes and as mentioned earlier from the articles, more hormones are discharged which

bring around the positive side of the depressed individual. Through reward the social worker will be able to know how set up and motivate the depressed individual into taking and using physical activity.

When comparing physical activity with anti depressant. One thing goes without saying is that anti depressants or depression medicine do have side effects that can be fatal unlike physical activity that doesn't have such side effects. Physical activity gives a feeling of achievement after one is done with the activity and maybe a positive kind of tiredness. An individual is more likely to give it another try once they see the positive changes unlike when they only on medication.

5.3 Endurance/duration and intensity of training

The biggest challenge and which has been mentioned a couple of times in the articles chosen is that an individual that is depressed has really low level av self esteem and lacks motivation. This leads to them being very little interested in engaging in stuff such as physical activity. There is the need of getting their motivation high and indulging them in physical activity of their liking. This means that as a social worker one should indulge the depressed individual in finding out which physical activities they have been involved in and like.

As the articles further insinuated one can start low and increase gradually. Perna F., M., Craft L.,L.) Say that there is not much difference between high and low of both endurance and intensity training. It is important that the individual starts low and builds up gradually with endurance more in focus than the intensity. For example, The endurance can be starting with a quick walk for 15 minutes and increase the minutes with time. Later so can the individual go from walking to running up to 45 minutes or an hour.

From the used articles, it shows that use of both endurance and intensity training it does not only help with reducing or preventing depression but it helps prevent other diseases that may lead to depression. These are such as cardiovascular diseases of the heart and blood vessels. Depressed individuals might at times lack the knowledge on physical activity. It's important and necessary that they get the guidance they need when it comes to starting up with the physical activity. The social worker helps them set up a training program according to their level with focus to endurance and

intensity and a physical activity of their liking. This may help avoid injuries during training which may lead to more depression or lack taking up any physical activity at all.

6. Conclusion

The evidence from this research shows that there is enough sufficient evidence that physical activity may and can prevent depression. The evidence that has been showed by the picked studies adds a lot when it comes to reviewing the relationship between physical activity and depression. They give a more promising evidence and over view that any level of physical activity from as low as taking a walk with pace can prevent future depression.

The study picked 3 topics which were tangled in the involvement og physical activity and its effects on depression. They also took into account how physical activity can be used as an alternative form of treatment or together with medication (anti depressives) to people with depression. Physical activity has shown to have a similar function as the medicine if not better on some people.

The studies show and suggest that so as to avoid depression in the future, individuals have to maintain or increase the level of physical activity that they are currently on. For those that are inactive should find a way to get physical activity initiated in their lives. Physical activity has also shown that it helps to reduce other diseases such as those connected to the vascular system.

Depression is connected to low esteem and alienation and this has seen to change and individuals becoming more social and energetic once they start on physical activities. Physical activity on a group level helps with the social life. Individuals manage to get new friends and a feeling of belonging.

There is still unclear and no concrete research showing what level of physical activity in terms of intensity that is needed or relevant. The articles used highlight it on the idea that moderate intensity training such as walking with pace will have an effect on depression. It is important to understand the level of depression at which an individual is at. Those who are moderate or major depressed need to be directed and guidance. The same goes to any individual who is depressed and has no idea on how to take on physical activity.

If indeed physical activity truly reduces the risk and level of depression, then it would be useful to have it promoted amongst the population worldwide. This would have a positive feedback on people and the health in general as the number of depressed individual/ pasients would be healthier thus a more productive population. This should be introduces in all levels of life as there is a level of physical activity that's accommodating for every age group.

References

- Blazer D. G., (2003) Depression in late life: A review and commentary, v58A, pp. 249-265 obtained on 19.08.20 from

<https://www.scopus.com/record/display.uri?eid=2-s2.0-0037341575&origin=inward&txGid=ae169fa5ad26330b0c89ef8355e3b217>

- Centre for Disease control and prevention (CDC) Physical activity, measuring physical activity intensity (2020) obtained 21.08.20 from

<https://www.cdc.gov/physicalactivity/basics/measuring/index.html>

- Choi K.W., Chen C.-Y., Stein B.M., Klimentidis Y.C., Wang M.-J., Koenen K.C., Smoller J.W., (2019) Assessment of Bidirectional Relationships Between Physical Activity and Depression Among Adults A 2-Sample Mendelian Randomization Study. V76(4): P 399-408 onbtained on 16.08.20 from

<https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2720689>

- Craft L.L., Perna F.M., (2013) The benefits of exercise for the clinically depressed v6(3):, p 104-111 obtained on 19.08.20 form

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC474733/>

- Harvey S.B., Hotopf M., Øverland M., Mykletun A., (2010) Physical activity and common mental disorders v197, p 357-364 obtained on 17.08.20 from

https://www.cambridge.org/core/services/aop-cambridge-core/content/view/267C0AD202EBE8170BA0A5AE4E7446A6/S0007125000253452a.pdf/physical_activity_and_common_mental_disorders.pdf

- Helsebiblioteket (2016). Kritisk vurdering/Sjekklister 20.08.20 from

<https://www.helsebiblioteket.no/kunnskapsbasert-praksis/kritisk-vurdering/sjekklister>

- Hummelvoll, J. K. (2012). Helt – Ikke stykkevis og delt (7.utg.). Oslo: Gyldendal Akademisk.

- I Stokkenes, G., Sudman, T. & Sæbøe, G. (red.), Fysioterapi på terskelen (s.157-172). Kristiansand: Høyskoleforlaget AS.

- Kandola A., Garcia A.-F., Hendrikse J., Sabiston C.M., Stubbs B., (2019) Physical activity and depression: Towards understanding the antidepressant mechanisms of physical activity. V107, p 525.539 obtained on 17.08.20 from

<https://www.sciencedirect.com/science/article/pii/S0149763419305640?via%3Dihub>

- Leith, L.M. (2010). Foundations of exercise and mental health (2nd edition). West Virginia university

- Maccallum E.J., Robertson A.E., (1999) The life of a new long-stay patient: a reflexive experience J. Psychiatrist. Mental. Health Nurse., 6 (1999), pp. 339-412.

- Neff E. M., Legrand F.D., (2016) Efficacy of exercise as an adjunct treatment for clinically depressed inpatients during the initial stages of antidepressant pharmacotherapy: An open randomized controlled trial. V191, p 139-144 obtained on 18.08.20 from

<https://www.sciencedirect.com/science/article/pii/S0165032715307783>

- Norge Helse Institute (NHI.NO) Antidepressiva er medikamenter som virker mot depresjon. De virker ved at de kan justere den kjemiske ubalansen som finnes hos personer som sliter med depresjon. (2016) obtained 20.08.20 from

<https://nhi.no/sykdommer/psykisk-helse/legemidler/antidepressiver/>

- Norge Helse Institute (NHI.NO) Diagnosen depresjon kan ikke stilles ved hjelp av blodprøver og tester, men ved at legen stiller deg spørsmål om følelsene dine og hvordan du takler livet. (2019) obtained 19.08.20 from

<https://nhi.no/sykdommer/psykisk-helse/depresjon/depresjon-diagnostikk/>

- Rise K., Viken Å., (2009) Fysisk aktivitet, kropp og bevegelse. Oslo: Universitetsforlaget.
- Samuel B.H., Øverland S., Hatch L.S., Wessely S., Mykletun A., Hotopf M., (2017) Exercise and the prevention of depression: Results of the HUNT Cohort study, vol 175(1), s28-36 obtained on 18.08.20 from

<https://ajp.psychiatryonline.org/doi/full/10.1176/appi.ajp.2017.16111223>

- Searle, A., Calnan, M., Lewis, G., Campbell, J., Taylor, A. & Turner, K. (2011). Patients' views of physical activity as treatment for depression: a qualitative study, *The British journal of general practice*, vol.61(585), p.149- 156.

<https://bjgp.org/content/61/585/e149>

- Taylor, C. (2005). Merleau-Ponty and the epistemological picture. In T. Carman & M. Hansen (Eds.), *The Cambridge companion to Merleau-Ponty* (pp. 26–49). Cambridge: Cambridge University Press.
- Teychenne, M., Ball, K., Salmon, J., Physical and likelihood of depression in adults (2008), vol 46, pp. 397-411 obtained on 19.08.20 from

<https://www.scopus.com/record/display.uri?eid=2-s2.0-42749097743&origin=inward&txGid=1a816d383a36f320da7bba172908d3ed>

- Thidemann, I.-J. (2015). Bacheloroppgaven for sykepleierstudenter. Oslo: Universitetsforlage
- utdanning.no (2020). Vernepleier. Obtained on 20.08.20 from

<https://utdanning.no/yrker/beskrivelse/vernepleier>

- World health organisation (2020). Depression. Obtained on 15.08.20 from

<https://www.who.int/news-room/fact-sheets/detail/depression>