

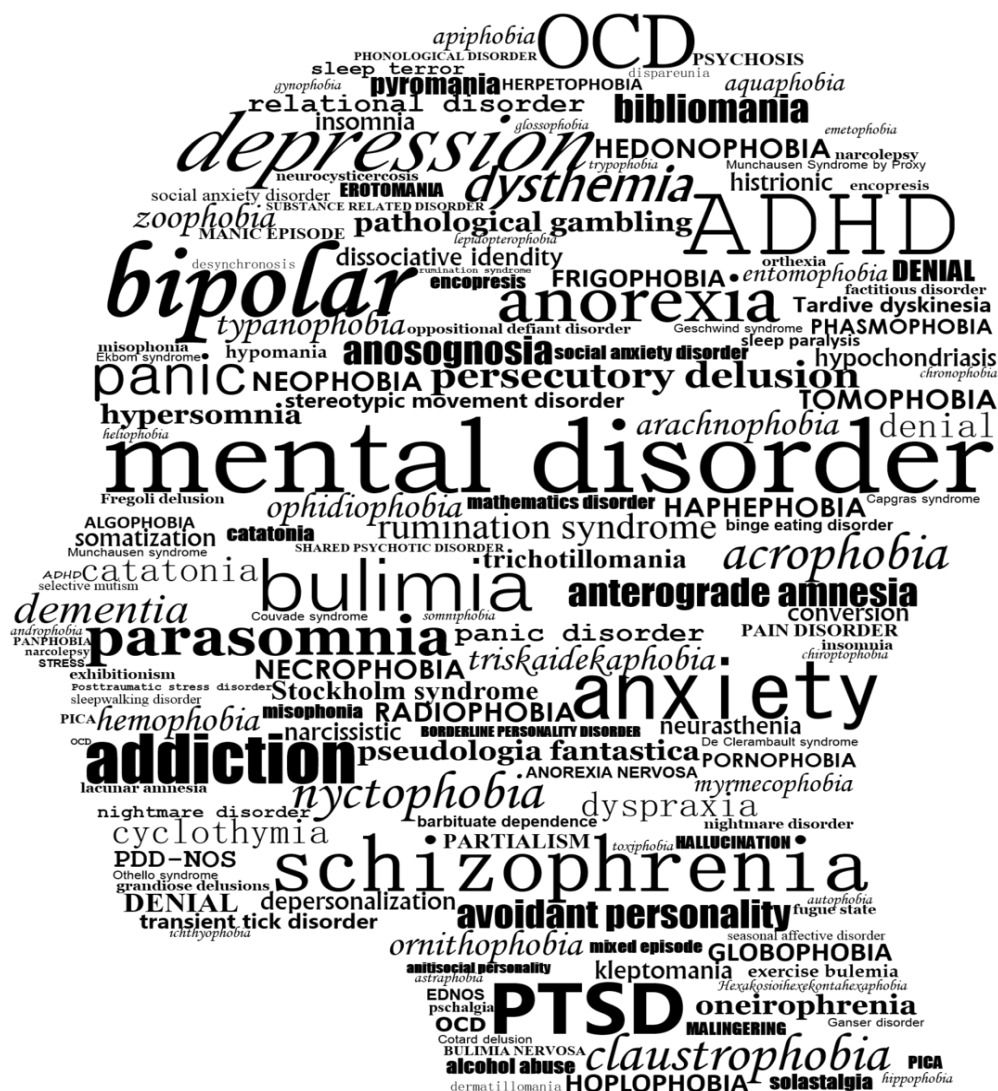
BSC Health and Social care.

Introduction to research BMHP5005

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A systematic Literature Review on the effects of genetics and Identity on Mental Health Disorders.



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Abstract

Mental health is such a complex issue in today's society with the rate in which it is spreading is at a level similar to a pandemic with over 100 million people being diagnosed every year and UK statistics estimating 1 in 4 individuals experiencing episodes every year. Many studies have been conducted including twin and adoptive studies which highlight the strong genetic heritability especially with the more severe forms of mental diseases like Schizophrenia and Bipolar disorder.

When considering the more common of the disorders it is evident that environmental factors are contributors as the environment in which you are surrounded by during infancy can make you more vulnerable especially if you have a low socio-economic background, are not in employment or if you have experienced a trauma like a loss or abuse. Even gender is a factor as women are more prevalent to mental disorders which is estimated around twice more likely compared to men. This is especially around menstruation cycle which is mainly to do with hormonal imbalances.

The importance of finding ways in which preventative measures can be put into practise especially at a population level is vital as once an individual is diagnosed the only treatment available is to manage the disorder/symptoms rather than curing them.

The cost to the economy is huge and cost to the individuals who are diagnosed and suffering is even greater as their quality of life is significantly impacted by all the effects that follow from mental health disorders especially the prejudice from stigma.

Introduction

The research question I have selected is:

What are the effects of genetics and identity on mental health?

This topic is something that I feel is very relevant at this moment in time in order to try and understand the complexities of mental health issues as it is becoming more and more prevalent in today's society and not really recognised for the impact it has on the individual suffering or the people that are affected by the individual diagnosed with mental health issues.

Mental health is extremely broad and can encompass many different disorders including depression/bipolar disorder (mood disorders), Psychotic disorders, post-traumatic stress disorders, Schizophrenia (Psychotic disorders), even eating disorders (Australian Government Health Department).

Depression is now the most common of psychiatric disorders and has been linked to pathology even from the Egyptian times (Reus, 2000).

According to Newman,. (2020) Mental Health is the cognitive, Behavioural and emotional well-being of an individual. Mental Health can affect daily life, relationships and physical well-being. It also works the other way around meaning that factor's in a person's life could also contribute to Mental Health issues.

Every year it is estimated that over 100 million people will be diagnosed with clinical depression (Bjornlund, 2010). In a lifetime between 8-20% of the population will encounter mental health issues (Kessler et al., 1994)

Current U.K statistics state that around 1 in 4 people will experience mental health issues every year and around 1 in 6 people will report a Mental health problem every week including anxiety, depression and other symptoms (McManus et al., 2016).

Mental health is seen as the fourth most significant medical disease which is expected to rise (Thomson, 2007). It is also reoccurring to the individual and is a cost to society and the person themselves (Stefanis & Stefanis, 2002)

In 2019/19 £12.2 billion was spent on mental health which equivalent to roughly £1 to every £10 being spent by the department of health and social care (Mental health spending in the English NHS 2019). With such figures its evident that the diagnosis and treatment of mental health is crucial in improving quality of life for those affected and is necessary in reducing health care costs.

Literature Review

This section will highlight the key areas of literature and studies that have been conducted in the field of mental health disorders.

There are many forms of mental health disorder's including Schizophrenia which is a severe and chronic condition which affects the way the person views reality and affects the way they act and the way they express emotions, although schizophrenia is not the most common it can be the most severe and Most studies have been carried out on bipolar disorder and schizophrenia.

According to the National Institute of Mental Health (NIMH) genetic family history increases the chances of mental health issues, as certain genes increase the risks of developing mental health disorders. (Newman., T. 2020) concluded that other factors also are determinant to this.

Heritability of Bipolar disorder was estimated at 85% according to McGuffin et al (2003). This is based on evidence collected from the twin study of Sixty-seven twin pairs, 30 monozygotic and 37 dizygotic.

Egeland et al (1987) identified a possible link between genetics and bio-chemical factors. A study was conducted on 81 individuals of an Amish community and four families (14 people) were identified in having bipolar disorder and they all had abnormalities in the chromosome 11 gene. Ogilvie et al (1996) also confirmed the same findings of abnormalities in specific genes.

There are strong links in terms of biology and genetics specifically genes which twin and adoptive studies have found genetic links between individuals with a pre-disposition due to heritability (Kalat, 2001). Wender., et al (1986) carried out adoption studies which found that adopted children who had mental health disorders their biological parents were eight times more susceptible compared to the adoptive parents. Monozygotic twins which are identical twins share 100% of genes and dizygotic twins which are un-identical twins only share 50% of genes studies

conducted found that Monozygotic twins if one was diagnosed the other would also have the condition. This highlights the evidence for genetic heritability.

Evidence suggests that vulnerability to mental health issues is increased by genetic factors with mainstream estimates of 40% heritable (Joyce, 2020). This is especially so for more progressive forms of mental health issues such as schizophrenia. With other less impactful forms of depression environment and upbringing are more of a factor than genetics or heritability (Souery et al., 1997).

A study conducted by British scientists found that up to 40% diagnosed individuals had genetic links within the family especially with a parent's diagnosis the heritability is three times more likely (Health line, 2006)

McLeod (2014) makes links with mental disorders and the brain highlighting neurotransmitters, serotonin and dopamine the way that imbalances of these can trigger and be the cause of depression. These imbalances especially serotonin regulates important functions in the body including sleep, mood, aggression. Which suggests that a decrease in serotonin can cause depressive disorders. Another research highlighted that norepinephrine was the root cause for depressions in the 1960's with autopsy studies backing this theory as it showed that individual's that were diagnosed with depression had lower levels of norepinephrine compared to individuals with no history of depression (Mental help net, 2007). More current studies link serotonin with norepinephrine suggesting that they react with each other to trigger mental health issues (Harvard medical school,2009). This chemical imbalance theory has been studied for more that 40 years and even still there isn't a single supporting evidence of its accuracy (Psychology Today, 2017).

Families with Individuals diagnosed with bipolar disorder have a tendency to show case other more complex disorders like schizophrenia (Weissman et al. 1984; Winokur et al. 1995). The causes are unknown but do show a high risk of heritability/predisposition (Nurnberger and Gershon 1992).

Environmental factors are always going to be relevant as a negative environment for an individual that has a pre-disposition to mental disorders will affect them more negatively compared to an individual without the pre-disposition in the same environment (Kendler et al 1995).

It is believed by some clinicians that life events are the primary cause of mental disorders backed with data that losing a parent or a spouse has significant effects on the mental state and the onset of an episode. Even the loss of employment is an environmental stressor which makes the Individual three times more likely to suffer a mental disorder (Sadock and Sadock, 2007)

Weaver et al (2004) found that the quality of the maternal care in the first weeks of life produced changes in DNA, which remained throughout development and affected the responses from stress in adulthood. This finding highlights the association between quantity and quality of care and how they are important in neuronal development and the impact it can have as a result. Experiencing moderate amounts of stress in early childhood can build resilience however, when being exposed to long term high impact stress this can make you more vulnerable to mental disorders. Also, the standard and quality of environmental factors are vital as there is a period in life where the influences experienced in a specific environment can change social responses later in life (Cairns, 2003).

Mental health is so complex Researchers have found that it's not just biological factors that are determinants Michael Dulaney (2018), 'Mental illness and poverty' did a case study on a student whom was struggling financially which was the main cause of him developing mental illness from a mental breakdown. It was the loss of control which impacted the student's physical and mental well-being. Also, the stigma attached to people who suffer mental disorder's as they are seen to be dangerous and unpredictable makes them more vulnerable in society (Thoits, 2011).

Age is irrelevant for Mental Health issues as issues such as depression can appear in childhood or in adulthood with the most common age for onset is seen as the 30's (Dunner,2008).

Hormones have been linked to mental health disorders as the bio chemicals involved make vulnerability to mental disorders significantly higher especially in women. Halbreich., et al (1983) recognised 43% of women during their menstrual cycle reported depressive issues. And 41% of women that were admitted to hospital for mental health issues had done so on the day of menstruation or the day before (Abramowitz et al 1982). It is estimated that it is twice as likely that women suffer from mental compared to men regardless of culture or where they live. Mainly

because of Hormonal differences and childbirth is a huge stressor for women (Sadock and Sadock, 2007).

The traumatic experiences faced in childhood is a risk factor for major depression later in life such as sexual abuse or even the loss of a parent (Joyce, 2003 and Tennant, 1988).

Personality traits can affect the risk factors as well as individuals with dependency issues and anxious personalities tend to have low tolerance level's especially individuals with high standards and obsessional traits as they find it harder to adapt to situations out of their control which makes them more susceptible to mental health issues (Gill, 2007).

Even marital status has an effect as married women with young children tend to be more at risk of developing mental health issues compared to single women (Gill, 2007). And if you are in an unhappy marriage the risk of getting depression is extremely higher (Weissman, 1987).

Socio-economic status can also be a factor as Individuals that are out of work face certain hardships as they are unable to provide for their families also being out of work for long periods can affect confidence levels and employability skills (Standh, 2001). Individuals with low social-economic status are compelled to higher risks of developing mental disorders (Semple et al., 2005).

Individuals who suffer from chronic illnesses have a higher disposition to mental disorders purely because of their weakened state makes them more vulnerable to mental health disorders (Joyce, 2003).

There are many factors of mental health disorders that affect the identity of the individual either through stigmatisation or the behavioural/personality traits that follow or even substance abuse (Kalat, 2001). The morbidity/mortality rates in individuals suffering is significantly high with suicide being the second most reason of suicide with 50% of the statistics having mental health disorders (Semple et al., 2005).

Methodology

In order to answer my question, I have used secondary research techniques which include researching online journals, articles, online library resources and websites.

I have used Google Scholar and the university library and have looked through scholarly articles and journals which are relevant to my question by entering different search questions that I need results for, for example:

Genetics and Identity of mental health which came up with 18,500 results I then took off citations and came up with 17,000 and finally limited the date to come up with 6,800. I also changed the search topic to Mental health and identity, Effects of mental health and Effects of genetics on mental health.

I have also been on Science direct and have used their database to look for journals using the question Genetics and mental health which came up with 42,880 then the filtered setting got it down to 5445 results.

By filtering the question by the year of publication and most cited has enabled me to get a variation of results on journals and articles that I can look through and sift through the relevant articles and eliminate the ones that don't apply, which has helped in reducing the hours of researching which gives me more time in doing the actual literature review. I have on occasion found some web sites which I felt helped me draw up a conclusion even though they are not meant to be used for this assignment.

By Doing this it has allowed me to analyse mental health and evaluate the findings without a biased perspective.

Based on systematic lit reviews the research will focus on 3 key areas which are:

1. The effects of genetics and mental health.
2. The effects of genetics and identity.
3. The effects of mental health and society.

While carrying out this literature review every effort will be made to ensure the validity and reliability of all sources used and that all ethical and legal obligations are adhered to throughout.

The information that has been researched in this literature review will enable the reader to ascertain the significance of mental health and its connection to genetics and the identity of the individual.

Findings and Discussion

It is evident that depression is the most common or most familiar of all mental health disorders with estimated around 300 million people suffering from the condition worldwide (WHO, 2017).

My findings from the literature is that the main factors that cause mental disorders are as follows:

1) Genetic links

It is suggested by Mind (2017) that schizophrenia is linked with genetic and environmental factors. Although it is not the main cause genes do reflect on the level of risk involved as 10% of people with a parent or siblings with schizophrenia will be diagnosed the condition Schoenstadt (2017).

There have been extensive twin studies to help identify the genes responsible for the symptoms. The University of Copenhagen gathered information through their Danish twin registry and the Danish Psychiatric Central Research Register, using a huge sample the findings were that 31,524 twins born between 1951-2000 had required psychiatric support. The result's found that monozygotic (identical) twins inherited the gene compared to dizygotic (not identical). However more research needs to be done to compare the findings (Craddock and Jones., 1999; Kalat, 2001; Wender et al., 1986).

With mental health disorders the exact cause is unknown (Dunner, 2008). According to Loosen and Shelton (2011) there are many causes including genetic, socio-environmental, bio-chemical which all contribute when they are combined to cause major disorders.

2) Environmental links

The environment an individual grows up in is a very important factor as there is a period in a person's life where experiences and influences of the environment will affect how the individual reacts to situations later in life which can act like triggers for mental disorders (Cairns, 2003; Kendler et al 1995).

Social stigma has a huge impact on the identity of the individual suffering from mental disorders as it can stop an individual from living their lives and limits the quality of their lives. Social status can be a trigger if you are on a low income and/or unemployed which gives you a higher risk factor of susceptibility (Semple et al., 2005).

3) Gender

It is alarming to discover that women are more prevalent to mental health issues because of biology and hormonal imbalances experienced through-out life (Sadock & Sadock, 2007). The vulnerability is significantly higher for women due to bio-chemicals and hormonal changes during menstruation (Halbreich et al 1983; Abramowitz et al 1982).

Hormones have been linked to mental health disorders as the bio chemicals involved make vulnerability to mental disorders significantly higher especially in women. Halbreich et al., (1983) recognised 43% of women during their menstrual cycle reported depressive issues. And 41% of women that were admitted to hospital for mental health issues had done so on the day of menstruation or the day before (Abramowitz et al 1982).

Diet can also be a huge factor in the difference between men and women, Diksic et al., (1997) identified that men produced 52% more serotonin compared to women which is seen to be the reason why women are prone to depression. Low calorie diet reduces the amount of essential amino acids produced by the body and Tryptophan is essential in the production of serotonin.

Conclusion

The research throughout this essay was gathered by a wide variety of reliable sources and used the most up-to-date information as possible.

Through extensive research in this subject of mental health and genetic identity a shared finding is apparent that the risk of developing an illness is greatly increased if a family member has been diagnosed already. Which gives credit to the notion that strong hereditary links are credible (Souery et al., 1997, Joyce, 2020, Craddock and Jones., 1999; Kendler & Karkowski, 1997). However, on the other hand some studies suggest that other factors are also relevant and act as contributors including suffering from a trauma, from a loss of a loved one or certain traumatic life events (Hirschfield & Weissman., 2002; Schiffer, 2008). And environmental factors depending on the surroundings and the quality of maternal care can affect susceptibility to mental health disorders (Cairns, 2003; Kendler et al 1995).

Many people who suffer from mental health issues also experience low self-esteem which social stigma is the main contributor. The correlation between the stigma attached to the mental illness deterioration of the quality of life experienced go hand in hand. Social stigma negatively affect's the individual and limits their social opportunities.

This literature review has identified mental health and the links to genetics the various studies used to summarise these findings have all been based around the genetic twin study and adoptive studies, the research was extensive however I found quite limiting as there are not many current studies been carried out which I think is what needs to be done more as the prevalence on mental illnesses in the current climate is showing signs of epidemic proportions.

This literature review recognises the findings that mental health is a complex issue and the cause is as such very difficult to single out. The findings also highlight the need for further evaluation so that mental health services can improve the lives of those affected and suffering from mental health disorders and especially chronic and severe mental illness.

Recommendation's

My main recommendation would be that there needs to be more preventative advancements made at a population level especially for the more familiar of mental disorders like anxiety and depression.

One the most significant barriers that needs overcoming in order to help those affected by mental illness is that there are limited treatments available once the onset of the disorder has already occurred so it's vital that there is more research in this field where we can distinguish symptoms earlier on (Millan et al., 2016).

Prevention is the key to helping those suffering and the key in reducing economic costs (Fusar-Poli et al., 2017).

There are new approaches being studied in particular 'selective primary prevention' which is aimed at individuals with apparent dispositions for mental disorders and 'universal primary prevention' aimed at population level (Berk et al., 2017; Radua et al., 2018).

Millan et al., (2016) recognises the need for more accessibility for researchers to grant funding and data sharing which I believe would be a start as the evidence shows that there are genetic factors that contribute to the vulnerability to mental disorders, therefor more needs to be done for families which have been diagnosed so that the children and siblings can be monitored and preventative measures need to be put in place.

In effect by having preventative measures in place the cost to the economy would be significantly lower and the quality of life for individuals suffering from these conditions will be vastly improved therefore more needs to be done earlier on rather than the treatment of individuals after diagnosis as treatments are limited and will not cure so creating prevention methods by helping those that are more vulnerable/susceptible to mental disorders have a better quality of life and not to forget will be of benefit to the economy as a whole.

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