REDVET - Revista electrónica de Veterinaria - ISSN 1695-7504
Vol 25, No.2 (2024)
http://www.veterinaria.org
Article Received: Revised: Accepted:

In The Context Of Cognitive Brain Change, The Study Of Suicide In Adolescents Is Taken Into Consideration

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Abstract
Not only is it a significant issue for the public health in China, but it is also one of the primary causes of death among young people in the United States. There have been significant shifts in the suicide rate among adolescents, particularly among young women, as a result of the recent increase in the suicide rate in the United States. Because of this, it is of the utmost importance for them to have a complete understanding of the many reasons why young people would attempt to take their own lives. If there was a connection between the psychological and clinical risk factors for suicidal behaviour and the underlying neurologic and cognitive issues that are associated with suicidal conduct, then these variables might potentially assist medical professionals in determining the appropriate therapies to provide. According to their hypothesis of a potential explanation, changes in suicidal behaviour may be significant on several levels, including the developmental, biological (genomics, proteomics, epigenetics, and immunology) levels, as well as the psychological and clinical ones. As a result, their model provides a cohesive theory that can be used to better understand this complicated discovery. This is accomplished by merging data from several fields of suicidality and attempting to explain the relationship between clinical observations, genetic research, and neuroscience in the field of suicide research. It is essential to have a comprehensive understanding of the ways in which psychological, biological, sociobiological, and clinical risk factors interact with one another in order to develop effective strategies for preventing suicidal thoughts and suicide actions.

Keywords: *Suicide, Adolescents, Cognitive Brain, Adolescents Person.*

Introduction

The challenges of suicide and attempts at suicide are among the most pressing concerns in the realms of mental and public health. It is generally acknowledged that suicide is the second greatest cause of mortality for young people in the industrialised world, which includes the United States of America. According to the most recent data brief published by the Centers for Disease Control and Prevention (CDC) and the National Centre for Health Statistics (NCHS) for 2019, suicide is the main cause of death among those between the ages of 15 and 24. The only other significant cause of death is motor vehicle accidents. From the year 2000 to 2016, the suicide rate in the United States as a whole increased by thirty per cent, as shown by the most recent figures from the Centers for Disease Control and Prevention (CDC). This increase was seen across all age categories. When seen from the perspectives of both public health and mental health, teenage suicidality is one of the most pressing problems that contemporary suicide prevention campaigns need to address. It is possible for a number of circumstances to contribute to the development of suicidal thoughts and actions. Some of these factors include interpersonal stress, substance misuse, addiction, mental illness, and physical isolation. Because of this, it is very important to have a solid understanding of the potential risk factors that lead to suicidal tendencies in adolescents. Drawing from the existing body of scientific literature, the authors have made an effort to compile a list of the most significant positive and negative risk factors in the fields of biology, neurological chemistry, neurobiology, and neurological imaging. In addition to doing research on clinical trials pertaining to suicidality, they endeavored to develop an explanatory and complete model associated with suicidality, with a particular focus on suicide assessment, prevention, and treatment alternatives. According to the World Health Organisation, the number of suicides committed by adolescents has been steadily increasing over the last half-century, rising to the position of the second leading cause of death globally, behind only accidents. These unsettling numbers highlight the important need to identify and treat the variables that significantly increase the risk of suicide, especially among adolescents. In teenagers, a significantly greater prevalence of suicidal thoughts and attempts is connected with the combination of depression and social isolation. On the other hand, there are not a lot of unique signals that may accurately predict whether or not someone would have thoughts of suicide or make an effort to commit suicide. Research on the neurodevelopmental pathways that influence suicidal thoughts and attempts at suicide, which are not well understood, may be valuable for the prognosis and treatment of suicide (Jones,2019).

Background of the Study

Suicide is a difficult process that is influenced by a wide variety of circumstances, both internal and external to the individual. Because there is a greater risk of suicide in families where substance use disorder is prevalent, it is of utmost importance to identify the variables that may play a role in the transmission of substance use disorder from one generation to the next. One of the areas that is receiving an increasing amount of attention in this day and age is neurocognitive ability. It is possible that a person's risk of suicide might be determined by their neurocognitive issues. In addition to this, other study has shown a connection between SB and brain difficulties, namely issues with memory. According to research conducted on the capacity to concentrate on a single task at a time, there is a correlation between the inability to exercise control over one's attention and an increased number of suicidal thoughts. When it comes to absorbing information from their environment, adults and adolescents who have this condition become less focused and more psychologically sensitive, according to the findings of researchers. It is more probable that individuals who have memory issues will take their own lives if they are unable to retrieve the information they have encoded or if they do not arrange their information properly when they initially encode it. It is possible that individuals who have issues with the functioning of their brains are more likely to be impacted by SB. Among these concerns include difficulties in managing emotions, providing solutions to problems, and exercising control over actions. There are disparities in brain control and decision-making abilities between those who have thoughts of suicide and those who actually attempt to take their own life, according to a recent research. It's possible that SB may go from thinking to doing in a variety of different ways. Taking everything into consideration, these findings demonstrate that there is a relationship between thinking and SB, and they highlight how essential it is to identify alterations in the cognitive processes that are associated with SI. In the Adolescent Brain Development Research ABCD Study, children aged 9 and 10 are followed from the beginning of their adolescence until they reach the age of 13. This study is a big, multi-site, and ongoing research project. As part of its mission, the ABCD project intends to investigate the ways in which genes and parenting styles influence health and achievement in the future. Therefore, the ABCD research provides us with information that we can utilise to investigate the factors that increase the likelihood that preteens and teenagers may have thoughts of suicide and act on those ideas. For the purpose of this research, the baseline data from the ABCD project were used in order to investigate the connection between SI and cognitive abilities. Given that there is only one study that has been conducted on the connection between SI and neurocognition in children, the researchers decided to use an exploratory analytical strategy and see how the individuals performed on a number of cognitive tasks. This was done since they do not have sufficient knowledge about this connection in children. The results that are presented here are derived on previous research that involved both adolescents and adults. Particularly, they believed that children who had SI would have superior mental performance compared to children who did not have SI when it came to assessments of brain function, memory, and attention abilities (Bartsch, 2018).

Purpose of the Study

This study is to investigate the ways in which certain cognitive processes or brain functions may have an impact on suicidal tendencies among adolescents. The purpose of this investigation is to get a better understanding of the connection between cognitive neurological abnormalities and suicide among adolescents.

Literature Review

Adolescents who suffer from severe depressive illness are more prone to entertain thoughts of suicide and to act on such thoughts. In light of this, it is imperative that they be immediately aware of all the factors that increase the likelihood that young people may have thoughts of suicide and act on those ideas. As part of their study, they compiled information on the psychological and physiological factors that play a role in adolescent suicide and provided an in-depth analysis of the existing literature on the subject. In addition to that, they have provided several recommendations for more study. As the primary focus of their research, they have developed an explanatory model for suicidal conduct. This model establishes a connection between clinical and emotional risk factors and the basic neurological and cognitive issues that are associated with suicidal behaviour. Their primary objective is to build this model, which has the potential to assist individuals in selecting the most appropriate therapies for their conditions. They have a hypothesis that suggests that changes in suicidal thoughts and actions might be triggered by a variety of variables interacting with each other. Biochemical, psychological/clinical, developmental, and environmental variables are some of the components that contribute to this phenomenon. As a result, the objective of the model is to demonstrate the interconnectedness of a significant amount of clinical, genetic, and neurological data in the field of suicide research. In addition, their model incorporates information on suicide from a variety of perspectives, which enables it to provide a more comprehensive explanation for this perplexing occurrence. In order to devise successful strategies for putting an end to suicide thoughts and behaviours, it is essential to have a comprehensive understanding of the ways in which psychological, biological, sociobiological, and clinical risk factors interact with one another. In addition, the study that they do investigates the parallels and differences that exist between the neurological issues that are seen in adults and those that are found in adolescents who attempt to carry out suicide. Researchers that are interested in the neuroscience of suicide should concentrate their efforts on either the brain or the brain after death, despite the fact that the latter has a great deal of issues. The primary objective of any investigations that are carried out in the future should be to get an understanding of the precise elements that contribute to suicidal

thoughts and behaviours in adolescents and young adults. Using this information, mental health professionals will be able to identify suicidal adolescents at an earlier stage and treat them in a manner that takes into account their distinctive characteristics. These characteristics include their impulsivity, aggressive behaviour, low positive affect, isolation from others, high negative thoughts, low tolerance for stress, and how they interact with their families. As a result of this new insight, they will be able to devise more effective methods of assisting adolescents who are exhibiting signs of depression (Whalen, 2020).

Research Questions

a.What is the leading cause of suicide in adolescents?
b.What are the causes of cognitive dissonance associated with suicidal thought?
c.How the level of effect of cognitive disorders on adolescents suicides?
d.What about the mental illness those are associated with the highest risk of suicide among adolescents?

Research Methodology

Researchers conducted a comprehensive investigation that was cross-sectional. A single point in time was required for the collection of data for the cross-sectional plan to be successful. This was simple, fast, and inexpensive to do. They decided to adopt a qualitative approach since the research project did not have a lot of time or money to devote to it. In order to make the prediction that the sample size will be 1177, Rao-soft software was used. There were a total of 1350 questionnaires sent, 1280 of which were returned, and 80 of which were discarded because they were incomplete. One thousand two hundred individuals were involved in the research project. Random calls were made to each one of the individuals who participated in the survey. The researcher informed those individuals who volunteered to take part in the study about it. In addition, the researcher was accessible to answer any questions that the participants may have had while they waited for the study to be completed. If a respondent was unable to read or write, or if they were confined to a wheelchair, the researcher would read the survey questions and answer groups to them. After that, the respondent followed the instructions that were given to them and recorded their responses on the survey form. In some locations, individuals were sent with questionnaires that they were required to fill out and then submit back all at once.

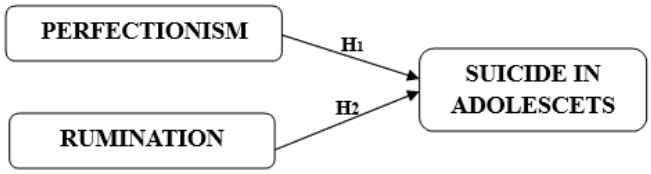
Research Design

An extensive amount of cross-sectional data was analysed in this research, which was carried out over the course of a period of five months. It would be possible to collect all of the information required for the cross-sectional design in a single session, which would make the procedure simple and cost-effective. A qualitative approach was chosen for the research project, despite the fact that the researcher had limited resources in terms of both time and materials. A total of one thousand and two hundred individuals participated in the survey. They were employed in the commercial sector, the public sector, the government, and the educational system. They used a technique known as a "random sample," which included conducting interviews with individuals in each of the locations listed below. The individuals who took part in the research were asked to reflect on a school accomplishment while they were travelling to or from their place of employment as part of their participation to the study. Those individuals who expressed interest in taking part in the research were informed about it and then provided with a questionnaire to fill out in their own time. It was then handed over to the researcher who was waiting in the waiting room by those who were interested. The purpose of the researcher's presence in this area was to provide answers to any queries that the participants in the study could have had about the research. There were a few more locations where they distributed questionnaires that asked individuals to respond immediately.

Data Analysis

Here, the study's conceptual framework is laid out in a handy infographic. The dependent variable in the framework is suicide in adolescents. Independent variables in the framework include cognitive brain change. These variables have interrelations and direct and indirect relations in the path model, according to the conceptual framework.

Conceptual Framework



REDVET - Revista electrónica de Veterinaria - ISSN 1695-7504
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Independent Variable:

- **Cognitive Brain Change:**

As you become older, the most visible change that occurs in your brain is a decline in your ability to do activities that demand to swiftly analyse or adjust your information to make a choice. The rationale for this is that these responsibilities include some kind of decision-making in some way. As an example, this condition may slow down the rate at which one thinks, increase the difficulty of working memory, and make it more difficult to make judgements(Agostino,2019).

Dependent Variable:

- **Perfectionism:**

One of the most common causes of death among adolescents is the act of suicide. It is well knowledge that persons who suffer from attention-deficit/hyperactivity disorder and perfectionist conduct are more prone to take their own lives. There has been no investigation of the connection between perfectionism and suicidal thoughts in individuals who have attention-deficit/hyperactivity disorder (ADHD)(Compton,2019).

On basis of the above discussion, the researcher formulated the following hypothesis, which was analysed the relationship between impulsivity and suicide in adolescents.

H_{01}: "There is no significant relationship between Perfectionism and suicide in adolescents."

H_1: "There is a significant relationship between Perfectionism and suicide in adolescents."

On basis of the above discussion, the researcher formulated the following hypothesis, which was analysed the relationship between negative thinking patterns and suicide in adolescents.

H_{02}: "There is no significant relationship between Rumination and suicide in adolescents."

H_2: "There is a significant relationship between Rumination and suicide in adolescents."

Rumination:

There is a correlation between ruminating, particularly gloomy rumination, and the risk of committing suicide, as well as the possibility of having suicidal thoughts and attempts. The findings, on the other hand, are not quite clear on the connection between thoughtful pondering and suicide. The findings of a recent research imply that engaging in reflective pondering may be associated with an increased risk of suicide, particularly in those who are already more prone to take their own life. Both brooding and an increased risk of suicide have been shown to be associated with insufficient sleep. On the other hand, to the best of their knowledge, no research has been conducted to investigate the relationship between introspective thought and poor sleep quality and the risk of suicide. Following this, the purpose of this research was to determine whether or not the quality of sleep affects the connection between (a) ruminative groups and (b) suicide risk in general and (c) suicidal thoughts and a history of suicide attempts in particular(Huber,2020).

Result

This section of the report is referred to as "Results," and it provides a listing of the findings of a research as well as the procedures that were used to get those findings. The author does not exhibit any prejudice or viewpoint in the presentation of these findings; rather, they are presented in a manner that is both clear and rational. After that, they are used as a foundation for the following portion that is devoted to review and debate. The primary objective of the section devoted to the findings is to provide the facts in a manner that makes it crystal obvious how they are connected to the research topic that was investigated by the study (or studies).

In the results part, there should only be the study's data. These are what were found Data shown in the form of graphs, tables, charts, and other visuals Every piece of literature that is related to the main study topic (s). An review of the data's context that shows what it means in simple terms.

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If the device is tested several times, it must be able to provide the same reading each and every time, regardless of the number of times it is checked. In the event that this is not the case, there is no way to acquire absolute certainty that the apparatus is accurate. A pilot study was conducted with ten to twenty individuals from different countries all around the globe so that the researchers could determine which questions were difficult to comprehend. Those questions that have the potential to generate a very big number of responses are either rephrased or removed entirely from the poll. Following the completion of the questionnaire by a set of consumers who had previously tested the survey, the average amount of time that it took respondents to complete the survey was twenty minutes. Based on the information that was presented earlier, it was stated that the data from the test poll would not be used in the primary research. Both the requirements of the measure scale and the questions that led to its construction were investigated while the project was being carried out for the purpose of determining its parameters. This was done in order to have a better understanding of the origins of the scale. Another element that was investigated was the links that existed between the items on the scale in order to determine the degree of consistency that existed within the scale's internal structure. One of the most significant aspects of demonstrating an instrument is determining how trustworthy it is in terms of providing correct findings and reporting those outcomes.

Correlations

		Sum	H1_Mean
Pearson Correlation	Sum	1.000	.995
	H1_Mean	.995	1.000
Sig. (1-tailed)	Sum	.	.000
	H1_Mean	.000	.
N	Sum	100	100
	H1_Mean	100	100

It is possible that they may notice a large number of additional tables in the output area if they utilise SPSS Statistics to do a multivariate regression study. Taking into account the fact that all of the assumptions were correct, this section simply discusses the three tables that are considered to be the most significant for comprehending the outcomes of the multiple regression technique that was used to examine their data. This approach was used in order to get information for their organisation. First things first, you need to give the table that summarises the model a careful look. They are able to determine the quality of a regression model by using this table, which provides them with the R, R2, modified R2, and standard error of the estimate.

Model Summary

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	1.000[a]	1.000	1.000	.000	.625
a. Predictors: (Constant), H1_Mean,					
b. Dependent Variable: Sum					

In the "R" column, you will find the value of the multiple correlation. R is a statistical tool that may be used to evaluate the accuracy of forecasting disruptive innovations, which are the dependent variable. It would be sufficient to have a prediction accuracy of 1.0 in this particular scenario. In the "R Square" column, the value of R2, which is sometimes referred to as the "coefficient of determination," is shown. Check out this graph to determine the extent to which the effects of the independent variables may be ascribed to the general fluctuation in the variable that is being studied (the dependent variable). Your ability to determine what caused what will be aided by this. Within the realm of statistics, this refers to the proportion of the total variance that can be accounted for by the regression model in addition to the mean model.

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ANOVA

ANOVA					
Sum					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	34268.620	620	5655.517	1015.213	.000
Within Groups	462.570	556	5.356		
Total	40001.190	1176			

In the "R" column, you will find the number that represents the coefficient of dependence (R) for each of the several relationships shown. It is possible to evaluate the accuracy of R's ability to make predictions by seeing how well it can forecast the dependent variable that we are interested in in this context, which is a revolutionary concept. In this particular case study, it is stated that an accuracy of prediction of 1.0 is sufficient. This value, which is referred to as "R Square," may be found in the "R Square" column of an analysis of variance table. It is an indication that the regression model as a whole is a good fit for the data if it is very large. The data shown in the table demonstrates that the independent variables have a significant predictive association with the variable that is being studied (F=1015.213). In light of this, it may be concluded that the regression model accurately depicts the data.

Discussion

In "The Study of Adolescent Suicide within the Framework of The Cognitive Brain Alteration," the main goal would be to bring together recent research, look into what it all means, and suggest areas for future research to focus on. Go over the results of studies that show changes in the thinking brain are linked to a higher chance of suicide among teens. We will talk about certain mental processes that may be very important in suicide behaviour. Looking into neural processes that might be responsible for cognitive brain changes linked to teen suicide, such as serotonin shifts or structural changes in important brain areas. Think about how developmental factors and changes in the way the brain develops during youth may work together to make someone more likely to commit suicide. studying how changes in the thinking part of the brain interact with social factors that are known to affect suicide thoughts and actions. Talking about how social factors can lessen or increase the effect of cognitive brain changes on the risk of suicide. We will talk about how new information about changes in the way our brains work can help guide focused programmers that aim to lower the risk of suicide among teens. suggesting ways to find and help people who are more likely to commit suicide early on by using brain signs or profiles that are linked to this.

Conclusion

Those adolescents who have gone through a traumatic experience are more likely to have mental health issues later in life and need assistance for those issues. In addition, they are more prone to have problems with their bodies, their friends, and their finances, to engage in activities that are risky or unlawful, and to get interested in other activities. For this reason, putting a halt to the development of would prevent you from developing a disease that is both costly and long-lasting. Both the use of drugs by adolescents and the neurocognitive processes that are being investigated in this review are relatively new fields of research. The research that has been conducted up to this point has often resulted in contradictory findings. It is imperative that we pay a greater amount of attention to these brain processes since they may exhibit early warning indications of suicidal thoughts developing in the future. People who are at a high risk for STBs but are not afflicted by them have impairments with essential cognitive control abilities and reward response that are similar to those observed in children who are already experiencing troubles. This has been shown by a number of studies. Additionally, as researchers learn more about the unique mental characteristics of adolescents who are at a high risk for, their results may have an influence on the development of novel therapies. In their most recent research, Peckham and Johnson discovered that individuals who are particularly impulsive while they are experiencing emotional states may benefit from participating in a cognitive control training course that consists of six sessions and guides them through the process of controlling their desires. The strategy was designed to assist these individuals in gaining control over their emotions. Through the use of brain processes that are founded on research, we have the potential to have a significant impact on the safety and health of adolescents by identifying children and pre-teens who are at a high risk and developing innovative and more efficient methods to treat them at an earlier stage. Utilising mathematical models, equations, and many other mathematical expressions are all part of the qualitative research methodology. A collection of beliefs serves as the foundation for these mathematical formulations. In some other circumstances, it is feasible that these presumptions do not hold true.

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