

The Relationship Between Intersectionality and Suicide on Five Different Social Identity Levels

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Abstract

This paper addresses the question of what the relationship between intersectionality and suicide is on five different social identity levels. The five different social identity levels are gender, race, age, marital status, and education level. As the current studies on intersectionality and suicide are anarchic and unorganized, this paper aims to make a foundation for future intersectionality suicide research. The dataset retrieved for this paper is from the paper Daly, Wilson, and Johnson (2013) which looks into the suicide rate from the year 1990 in the United States of America. The variables from this dataset are first transformed into intersections and are afterwards used in a logistic regression. The results from this are that white males are the most at risk along with having only some high school education across all social identities. For males suicide odds peaked around 45 – 54 and for females at 45 – 54. Between the races black people had the highest odds around the age 25 – 34, while white people had the highest odds at age 35 – 44. For the ages 20 – 44 the highest suicide odds were for widows, while for age the age 45 – 54 it was single people and for the age 55 – 64 it was divorced people. The suicide odds were the highest for widowed males and for divorced females. Future research into different intersections is recommended as to broaden the current research.

Keywords: Intersectionality, Suicide, United States, Social Identity

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Introduction

Worldwide more than 700 000 people commit suicide and for each committed suicide there are more than 20 attempts at suicide. Suicide is also the 4th leading cause of death for youth between the age of 15 and 19 years old (World Health Organization, 2021). In the United States of America suicide was in 2019 the 9th leading cause of deaths, responsible for 47,500 deaths (Centers for Disease Control and Prevention, 2021). In 2019 1.4 million people from the United States of America attempted to commit suicide (Centers for Disease Control and Prevention, 2021). In 1994 it was the third leading cause of death for people between 15 – 24 (Stoff & Mann, 1997; Torpy, 2005), In 2019 it was the second leading cause of death for those between the ages 10 – 34 (Centers for Disease Control and Prevention, 2021).

This paper addresses the important concept of intersectionality and suicide. As one can see suicide is a serious problem, which in the case of the United States of America has been increasing (Turecki et al, 2019).

Intersectionality is a framework in which multiple social identities, such as age and gender, intersect with each other at the level of an individual person (Bowleg, 2012). The term actually originates from the black feminism movement, that wanted to differentiate themselves from the racism and feminism movements and the term is fairly new as it was coined in 1989 (Brahm, 2019). The importance of intersectionality lies in the fact that social identities play an important part in people their behavior and their entire self-concept. This also makes the topic more relevant when suicide comes into consideration as there is an increased suicide risk for young people due to their marginalized identities (Standley & Foster-Fishman, 2021). There is in fact a large gap in knowledge when intersectionality and suicide are considered. While different social identities play a large part in a person their mental wellbeing, the research connected to it is chaotic, not coined with the term intersectionality and contradicting (Standley, 2020). That is why this paper aims to clarify the relation between suicide and intersectionality. The research question is accordingly: “What is the relationship between intersectionality and suicide on five different social identity levels?” The applied five social identities are gender, race, age, marital status, and education level. These five social identities were chosen because gender race and age are said to be the main dimensions to categorize someone, marital status and education level were chosen as they represent how a person is currently living (Stolier & Freeman, 2016).

The paper will be structured in the following order. First there will be a literature review, which will expand upon the introduction. It is divided into three sections. In the first section, the term intersectionality will be further determined, and it will explain what the current arguments against and for intersectionality are. Then there will be the topic of suicide, which addresses the current statistics for suicide, briefly the prevention methods and what the ethical issues are regarding suicide research. Lastly the topic of intersectionality and suicide is addressed in which the current statistics for intersectionality and suicide are presented. It will also look further into the gap of knowledge between intersectionality and suicide. The next part will be the methodology, in which first the data retrieval is addressed and the corresponding data analysis. This is followed by the results, in which the produced table is explained thoroughly. The last part is the discussion and conclusion in which the results are addressed with their corresponding literature, the research question is addressed, and the limitations of this research and the implications are presented.

Literature review

Intersectionality

According to Bowleg (2012) intersectionality is a theoretical framework that when multiple social categories, such as race, gender, and educational level, intersect at the micro level of individual experience to reflect multiple interlocking systems of privilege and oppression at the macro, social-structural level, such as sexism and racism (Bowleg, 2012, p.1267).

Intersectionality came slowly into existence over time. The term was first introduced by Kimberlé Crenshaw in 1989 for black feminism as to differentiate themselves from the feminism groups and the antiracism groups as they mostly focused on either white women or black men (Bowleg, 2012; Brahm, 2019; Cooper, 2015; Harris & Leonardo, 2018; Phoenix & Pattynama, 2006; Rodó-de-Zárate & Baylina, 2018; Skjeie & Langvasbråten, 2009). However, intersectionality is not as new as one might think as there are several instances before the term was named, that already talked about intersectionality. One of these instances was in 1851 during the Women's Convention in Ohio, as Sojourner Truth asked if she was not a woman too, referring to the fact that she was both female and black (Bowleg, 2012; Brahm, 2019). It also appeared in the 1970s as the anthology "The Black Woman" (Harris & Leonardo, 2018). Only recently did intersectionality become mainstream and showed up in discussions for humanities and cultural studies (Brahm, 2019). It was even said to be one of the principles for the Black Lives Matter Movement (Harris & Leonardo, 2018).

Current public health systems and social justice systems are focusing their attention on the current and historically oppressed populations. However, in spite of all of the research into these oppressed populations and how to help them, these studies rarely reflect on intersectionality (Bowleg, 2012). Most of the studies reflect on each of the populations separately and not together. Studies and policies focus on minorities separately and do not take into account that a person can be lesbian and have a disability (Bowleg, 2012). When looked at narrowly this could lead to several problems. One of these problems for example could be that in 2009 13% of the female USA population had HIV and most of the HIV prevention messages were tuned to middle-class white women. This was done despite black women making up 66% of the female population with HIV (Bowleg, 2012). The second examples would be that there is a ban on the headscarf, which is treated as religious discrimination, however it can also be looked at with an intersectional perspective. This is regarding the fact that headscarf is worn mostly by women, and it could also infringe on gender equality rights (Skjeie & Langvasbråten, 2009). Another example is that in 2008 homicide was for black males between 15 to 44 years in the United States of America the leading cause of death, despite that for males in general it does not appear in the top 10 of leading causes of death (Bowleg, 2012).

There are of course arguments against intersectionality. One of them being the fact that it is impossible to understand and handle all the complexities of intersectionality, due to the fact that there is an infinite number of differences between all kinds of people (Phoenix & Pattynama, 2006). For example, someone could be young disabled, pansexual, female with asthma, a study would need to be large to cover all of the intersectional ties. One of the other arguments against intersectionality is that it originates from feminism and is a feministic idea,

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thus it is also propagated by feministic scholars. Meaning that the focus lies mostly on feministic topics, while it could be used more diversely. It also could become a tool to act upon intersectionality or be denounced as racist or another term (Brahm, 2019). For jurisdiction there could also be problems regarding intersectionality as it is not entirely clear when a discrimination charge is either multiple discrimination or intersectional discrimination (Skjeie & Langvasbråten, 2009). Lastly it was noted that intersectionality implies a two-dimensional space and not a multi-dimensional model, which could be confusing when talking about multiple intersectional ties (Harris & Leonardo, 2018).

Reasons to look closer into intersectionality is the fact that it looks at multiple identities that crossover with each other and reminds people to consider multiple inequalities that are sometimes invisible (Rodó-de-Zárate & Baylina, 2018). This could lead to a broader perspective in providing solutions and make sure that more people are accounted for in preventions. It also calls for more attention to the social identities that are usually marginalized or used as a part for the larger categories (Harris & Leonardo, 2018), take for example Native Americans who are not described by their individual origins or simply described as the leftover race between the comparison of white and black people. Intersectionality also looks closer at the gap that is left between the categorizations and the complexity of identity (Harris & Leonardo, 2018). So, intersectionality can provide a more accurate framework for policies and make them more analytically sound when compared to policies that do not look at intersectionality (Phoenix & Pattynama, 2006).

Suicide

Suicide in itself is a large problem and in 2008 there were 782 thousand deaths worldwide according to the WHO estimates. This is about 15% of injury mortality and from the total mortality it is 1.4%. For the whole world the suicide rate in 2008 was estimated to be at 11.6 people per 100,000 (Värnik, 2012). There are of course a lot of different suicides rates for different countries and a lot of different measurement methods.

For example, the male to female ratio for suicide was projected to be the highest in region of Europe, while the lowest in the Eastern Mediterranean region. Also, amongst males the highest suicide rate for age groups lied in 45 – 59 years in Europe, but in the Western Pacific region it was above 60 and in the South-East Asian region it was in the age group 15 – 29 years. For females, the suicide rate is high in South-East Asia in the ages 15 – 29. For the Western Pacific region, it is from the age 45 (Värnik, 2012).

However, in recent years there were large decreases seen in the world regarding the suicide rate. This did sadly not happen everywhere. In some countries there was actually an increasing rate of suicide, this included the United States of America (Turecki et al, 2019). As in 2019 in the United States, 47,500 people committed suicide, which was about 1 death for every 11 minutes (Centers for Disease Control and Prevention, 2021).

More relevant for this paper, in the Unites States in 1994, suicide was actually the 9th leading cause of death among the general population and for people between 15 to 24 years it was the third leading cause of death (Stoff & Mann, 1997; Torpy, 2005). In the United States it could even be said that the number of suicides outweighs the number of homicides in 2000 (Holmes & Holmes, 2006). Before the age of 65 it was also the 6th leading cause of death. This was and still is of course a major public health problem and effort has been put into the prevention

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of suicide (Stoff & Mann, 1997). Among the youth suicide does play a rather large part. In 2003, 16.9% of the student population at high school age had reported to consider suicide and 8.5% had confessed to attempting suicide. There had also been reports around 2003, that suicide was increasing among the youth with 8% (Bossarte & Caine, 2008). In 2000 it could also have been said that the suicide rate increases with age, the exception being the ages 35 to 54. And for the elderly the suicide rates also rose. Another dangerous statistic is that for every suicide, 25 suicide attempts are made (Holmes & Holmes, 2006).

For marital status there is also a clear connection with suicide. Single people commit more suicide than married people. Widowed people are placed right in between the categories as they commit suicide more often than married people, however less often than single people. For gender, white males are 17 times more likely to commit suicide and black men were 9 times more likely (Holmes & Holmes, 2006). According to Daly, Wilson, and Johnson (2013) males have higher suicide rates than for females and the suicide rate is higher for white people compared to the other races. Those who are married also have a lower suicide rate on average and the rates generally fall with educational achievement.

Of course, there are also prevention techniques regarding suicide. Interventions are seen as key to reduce the number of deaths caused by suicide and are also the key challenges for public policies and health services (Turecki et al, 2019). It is also known that suicide risk factors come from multiple domains, such as social, psychological, demographic, and biological (Stoff & Mann, 1997). For elderly suicide prevention the importance was laid upon the social integration of the elderly, if they had good living conditions and access to community activities and health care. Other factors that protected elderly from suicide were engagement in valuable activities, high level of education, high socioeconomic status, and religious involvement. It is actually suggested that suicide prevention for elderly needs to broaden its focus (Mendonça Lima et al, 2021). It was further remarked that only a few suicide prevention programs target university students, and that internet intervention was favored among suicide prevention (Han et al, 2018). Furthermore, it was suggested that the best prevention strategies are combined interventions that function on more than one level (Goldsmith & Institute of Medicine (U.S.), 2001). Also there needs to be more attention on the screening of at-risk individuals and it they should screen the general population or the at-risk populations (Mann et al, 2005).

There are of course a lot of issues regarding the research on suicide. These issues are both legal and ethical. One of the potential risks is in clinical practice with the inquiry about suicide from the patient, which asks for sensitivity and could lead to a breach in patient confidentiality when the caretaker was informed. In suicide research it is also important to remember to not reactivate grief in family members, however there is no evidence so far that this could lead to suicide. Furthermore, there was the idea that exploring suicidal ideas may be contagious to others, however this could be a myth in individuals, but at community level it could be a response to political atrocities (Shrivastava, Kimbrell, and Lester, 2012). However, at media coverage of suicide has shown to increase the rate of suicide. Especially when the news about suicide was on the first page and simultaneously dealt with important issues. Similarity between the individuals also caused the media coverage to have a greater impact on individuals (Goldsmith & Institute of Medicine (U.S.), 2001). One example from the influence of media is the Werther effect. The writer Goethe wrote the book called *The Sorrows of the Young Werther*, in which the main character committed suicide. This led to

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several people across Europe copying the method of Werther's death. While the correlation was not conclusively seen, the book was still banned from several areas (Phillips, 1974).

Intersectionality and suicide

Intersectionality in suicide research is not common, or better said the term intersectionality in suicide research is not common. There is a lot of research about intersecting identities, such as the paper from Smith, Mercy and Conn (1988) who look at 3 different intersection identities at the same time, but the research is not called intersectional. Some of the statistics mentioned earlier could also fall under intersectionality. Most of the research that is called intersectional is about sexual preferences or very specific topics (Ferlatte et al, 2018; Gattamorta, Salerno, & Castro, 2019). The paper from Ferlatte et al. (2017) for example looked into the suicide attempts across multiple social identities among gay and bisexual men.

One of the more useful papers for this topic is the paper from Gattamorta, Salerno and Castro (2019) who describe the impact of social identities such as sexual orientation, race, and gender on health-risk behaviors. In this paper it was made clear that being from a minority identity was significantly correlated to feeling hopeless, suicide plan, suicide consideration and suicide attempts. In this research girls were said to feel more hopeless and consider a suicide attempt more than boys.

In the article from Bush (1979) it was said that the suicide rate for black youths was almost equal to that of white youths and that the suicide rate for black women became equal to that of black men. Another study from Lalli and Turner (1968) explained that for white males the suicide rates were the highest among the unskilled people and that the suicide rate decreased with further occupation level, however these differences were small. Another theory from Lalli and Turner (1968) was that the suicide rate increases, when the status of the population decreases. Lester (2014) also notes that the suicide rate for males is higher than that of females and the difference from black to white. He also noted that a college degree increased the suicide risk for African Americans in the age 25 – 44 but decreased the suicide risk between age 55 – 64. In the article of Maris (1995) it was also remarked that for white males the highest suicide rate was for those in midlife with an increase for advancing in age. For white females, the highest suicide rate was between 45 – 54. And it was noted that for black people the highest suicide rate was amongst the youth.

According to Heisel and Duberstein (2005) those with an increasing age have the highest rate of suicide. For 65 years and older men had a higher suicide rate compared to women and white adults had a higher suicide rate compared to the other races (Conwell & Duberstein, 2001; Heisel & Duberstein, 2005). Not being married or not having any significant social contact also increased the odds for suicide.

The paper from Lalli and Turner (1968) did state that suicide for both black and white people being widowed had the highest suicide odds. It was also suggested that with the least occupation the status has the higher the suicide rates. The paper from Rico-Velasco and Mynko (1973) remarked that for both black and whites single people committed less suicide compared against married, among whites and blacks it was remarked that divorced actually had the highest suicide odds. For the difference in ages the paper remarked that the suicide rate increased with age for each category of marital status. In the paper of Rico-Velasco and

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Mynko (1973) it was also found that for males and females the highest suicide rate was amongst widows. Kposowa (2000) however found entirely different results. According to him divorced people had the highest risk in suicide and being single or widowed had no significant effect. It was also remarked that for females there was no significantly different risk by marital status. The results from Kreitman (1988) however agrees that widows also play an important role in suicide and the paper from Elwert and Christakis (2006) also found that among whites the widowhood effect was stronger than for black people. The study from Smith, Mercy and Conn also agreed that for the married status the suicide rate was the lowest.

For educational achievement, the paper from Pompili et al. (2013) had remarked that suicide increases with educational achievement unless the person was aged above 65 – 74. This was also remarked to held true over different marital statuses and age. It was however remarked in Pompili et al. (2013) that with a lower IQ that there was an increase in mortality.

The paper from Standley (2020) argues in the favor of a more intersectional approach to suicide. Social identities play an important part in people their behavior, their feelings, and their self-concept. In fact, when being an adolescent there is more importance on their gender, race, and sexual identity, which can even lead to people being more conflicted about their identity. This can eventually lead to suicidal ideation. Males are said to have a greater risk at dying from suicide, but females are more likely to consider suicide and attempt it. Despite there being a lot of knowledge about multiple social identities having a suicide risk there is still little known about intersectionality. There has been overall little research about suicide risk. Even though research implies that the youth for example are at risk due to their marginalized identities (Standley & Foster-Fishman, 2021). Sadly, as one can see above most of the findings about intersectionality are inconsistent and sometimes proclaim the opposite. There is clearly a gap in the knowledge of how suicide and intersectionality actually react with each other. That is why this paper aims to clarify the relation of suicide and intersectionality for the social identities of gender, race, age, marital status, and education level.

Methodology

Data retrieval

The data retrieval was split into two parts, the literature research, and the dataset retrieval. The literature retrieval was being done through a search on the websites, Google Scholar and SmartCat. For each section of the literature research different key words were used. For the section intersectionality the used key words were: “intersectionality”, “intersectionality explained”, “intersectionality relevance”, and “intersectionality problems”. For the section of suicide, the key words next key words were used: “suicide”, “suicide USA”, “suicide rate USA”, “suicide prevention in the us”, “suicide research ethical” and “suicide prevention strategies a systematic review”. For the section intersectionality and suicide these key words were used: “intersectionality suicide”, “suicide race”, “suicide race age”, “suicide race marital”, “suicide race education”, “suicide educational achievement gender” and “suicide education”. From the presented articles only the most relevant to the corresponding topic were picked and when they had new information on the topic.

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The dataset retrieval was different as the dataset was retrieved from the article “Relative Status and Well-Being: Evidence from U.S. Suicide Deaths” by Daly, Wilson, and Johnson (2013). The dataset itself is the MCD-PUMS dataset, which is a combination from the Multiple Cause of Death Files (MCD) of the years 1989 – 1992 and the 5% Public Use Micro Sample (PUMS) of the year 1990. From the MCD files, the records were extracted where suicide was the cause of death and they were combined with the individual records from the PUMS 5% of the 1990 decennial census, which were then treated as non-suicide observations.

Data analysis

From the dataset only a few variables were used. For better understanding of the variables, they were named either base variables or intersection variables. Intersection variables are the variables suicide frequency, gender, race, age, education, marital status, family income and lastly state fixed effects. State fixed effect was used to prevent that the intersection variable family income was simply a proxy for the cost of living in each state, the variable state fixed effect is however not shown in table 1. The last variable used was Hispanic. This variable was used to filter out any Hispanic people in the regressions, the reason for this was that the status of Hispanic changes over time and that a nontrivial number of Hispanics left the US before their deaths could be measured (Daly, Wilson, & Johnson, 2013). As remarked earlier the five social identities were chosen because they are the main dimensions that people are recognized in. Marital status and education level were chosen to represent more how a person is currently living (Stolier & Freeman, 2016). Family income was also chosen for this reason, but it is only used for an extra comparison.

The first part of the data analysis corresponds to the data analysis from the paper by Daly, Wilson, and Johnson (2013) and the analysis was done on the platform STATA (StataCorp, 2021). The family income was divided in 5 categories of below \$10K, \$10K - \$20K, \$20K - \$40K, \$40K - \$60K and more than \$60K. Lastly the omitted categories were generated by retrieving the left over datapoints when all the other points in a variable were accounted for. For a closer look at these steps the paper of Daly, Wilson, and Johnson (2013) should be consulted. After generating these variables, a test for multicollinearity was done using the Spearman test. From this test the results were that the collinearity between the variables was either weak or very weak. Meaning that all the variables could be used in the logistic regression.

The further data analysis was made for this paper. First new variables for intersectionality were generated by picking a base variable from the groups gender, race, age, and marital status, and combining this with an intersection variable, while excluding the other variables from the same group. Meaning that for the group gender with the base variable female, all of the male datapoints were excluded. This was done for each base variable per group. Education level was not chosen as a base variable, because it could be covered by the other four variables. The next step was the separation of each variable. A copy from the variable was made, which had separated the variable for each individual category inside the variable. This led to the variables becoming binary. The copy variables were then used in a logistic regression.

As now each variable that was used were binary categorical variables, a logistic regression for grouped data was used. The dependent variable of suicide frequency was a binary

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categorical variable, there was no strong collinearity, and the sample size of the database was large. This meant that a logistic regression could be used. As the dependent variable was binary it was reasonable for the logistic regression to predict the odds for the event of suicide happening again. Moreover, it tells how relevant a variable is and what the relation is between the dependent variable and the other variables, whether the relationship is positive or negative. Logistic models were also used in the original paper of Daly, Wilson, and Johnson (2013) with the reason being that both logistic models and the Cox proportional hazards use the exponential functional forms. The logistic regression was used for each separate base variable over all of the intersection variables. A linear regression would not have worked correctly due to suicide frequency and the other main variables not being continuous. Furthermore, there were also no observations made about time and that category could not have been included as well.

The results from the logistic regression are displayed in table 1. The base variables can be found in the first row and the corresponding intersection variables are in the first column. The coefficients display what the log-odds are, which are after being exponentially transformed the probability of suicide happening again, when all the other variables used in the logistic regression are kept constant. Meaning that the intersection variable is compared against the only omitted intersection variable in the same group. The coefficient also displays whether or not this relationship is positive or negative, or in other words if there is a decrease in suicide odds or an increase when compared to the omitted variable.

Results

Intersection variables	Base variable Female	Base variable Male	Base variable White	Base variable Other	Base variable Black	Base variable Age 20 - 24	Base variable Age 25 - 34	Base variable Age 35 - 44	Base variable Age 45 - 54	Base variable Age 55 - 64	Base variable Married	Base variable Divorced	Base variable Widowed	Base variable Single
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
White (omitted)														
Other	-.5919732*** (.0933637)	-.9056215** (.0459033)				.4144662** (.0775618)	.6714976** (.0679344)	1.076077** (.0448187)	1.069199** (.0853159)	.8490767** (.062531)	.7792514** (.0483487)	1.135697** (.0942134)	1.093451** (.2474559)	-.7303108** (.0729299)
Black	-.8913667*** (.0963599)	-.5752513** (.0763181)				.2295084** (.0672285)	.4429985** (.091584)	.7344729** (.0805102)	1.003851** (.0935112)	1.183252** (.0921318)	.1844187* (.0957107)	1.393336** (.0810003)	1.146009** (.0909957)	-.5563609** (.0890572)
Female (omitted)														
Male			1.341399** (.0275516)	.9086902** (.0830066)	1.666715** (.0718772)	1.733079** (.0538339)	1.353069** (.0324583)	1.274964** (.0297038)	1.195754** (.0394943)	1.366376** (.0589355)	1.322356** (.0385654)	1.322667** (.0281283)	1.746378** (.0647703)	1.399889** (.0353039)

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Age 20 – 24 (omitted)														
Age 25 – 34	.5606 291** * (.053 6069)	.2405 852** * (.026 3902)	.3289 583** * (.027 0141)	.0972 521 (.065 9392)	.1242 537** * (.047 3846)						- .0712 311 (.056 1107)	.5041 509** * (.098 2938)	.1458 965 (.314 6818)	.3643 484** * (.020 9053)
Age 35 – 44	.8455 972 *** (.052 5937)	.4366 691** * (.047 0286)	.5854 745** * (.046 1155)	- .1216 069 (.075 0664)	- .0048 123 (.077 6596)						.0030 346 (.076 4779)	.8155 754** * (.102 9198)	.5471 598* (.290 0126)	.6767 583** * (.040 9923)
Age 45 – 54	.8938 797** * (.057 6452)	.3663 337** * (.064 2939)	.5615 706** * (.061 6375)	- .0971 667 (.123 5732)	- .4396 061** * (.097 4552)						.0419 882 (.095 2351)	.7883 437** * (.117 4763)	.0498 004 (.277 7745)	.6334 472** * (.063 452)
Age 55 – 64	.7408 79*** (.078 5858)	.3044 315** * (.071 9268)	.4763 801** * (.068 8088)	.0327 199 (.091 6294)	- .7356 856** * (.090 1032)						- .0868 138 (.097 4615)	.7953 365** * (.146 3275)	- .0942 203 (.292 5109)	.3893 738** * (.071 3662)
Educ ation: < 9 th grade	- .0291 828 (.043 3905)	- .2306 126** * (.033 4086)	- .2362 217** * (.028 6299)	- .0570 16 (.151 4029)	- .0054 789 (.062 6064)	- .6447 009** * (.057 3919)	- .4228 834** * (.036 0998)	- .2357 571** * (.035 801)	.0668 754 (.055 6748)	.2218 974** * (.069 5093)	- .1999 024** * (.029 4312)	- .0885 78** * (.039 722)	.5261 967** * (.087 669)	- .3936 282** * (.045 1321)
Educ ation: some HS (omitted)														
Educ ation: 12 th grade or GED	- .3010 748** * (.070 2851)	- .5087 436** * (.054 3468)	- .4509 136** * (.058 9717)	- .4636 426** * (.187 9032)	- .4261 951** * (.092 1848)	- .4688 435** * (.137 7636)	- .4754 835** * (.106 1056)	- .5726 663** * (.090 4632)	- .1741 725** * (.081 5418)	- .0467 686 (.072 4661)	- .3052 214** * (.063 2033)	- .3863 981** * (.060 1628)	.0214 223 (.114 8825)	- .8466 344** * (.081 5396)
Educ ation: some colleg e	- .4946 506** * (.057 825)	- .1258 568** * (.055 0071)	- .1157 247** * (.047 8236)	- .1012 524** * (.226 7559)	- .7053 568** * (.081 8713)	- .1907 477** * (.083 208)	- .1776 378** * (.064 1096)	- .1129 838** * (.074 3125)	- .2930 617** * (.083 3247)	- .0636 971 (.063 7359)	- .1241 129** * (.067 9826)	- .6781 902** * (.046 5623)	.0861 002 (.121 7657)	- 1.463 652** * (.052 0232)
Educ ation: colleg e degre e	- .5986 829** * (.062 7838)	- 1.128 592** * (.046 7585)	- 1.082 678** * (.045 2573)	- .7618 267** * (.201 2073)	- .7174 564** * (.061 9423)	- 1.588 635** * (.072 5799)	- 1.366 448** * (.070 5232)	- 1.062 314** * (.049 9282)	- .5679 391** * (.082 5192)	- .3183 066** * (.068 8062)	- 1.051 983** * (.046 6804)	- .9230 195** * (.054 4316)	- .2106 068 (.147 3046)	- 1.232 953** * (.054 4823)
Educ ation: M.A. profes sional, degre e, or PhD	- .2583 166** * (.039 9513)	- 1.026 613** * (.051 1999)	- .9365 146** * (.043 0735)	- .6154 815** * (.166 4108)	- .7317 684** * (.143 036)	- .6158 535** * (.132 2652)	- 1.305 908** * (.074 1652)	- 1.034 461** * (.070 4354)	- .3311 65*** * (.047 7309)	- .0137 372 (.100 3472)	- 1.101 786** * (.062 0595)	- .6004 039** * (.071 2411)	- .0681 244 (.205 5279)	- 1.040 27*** * (.053 7859)
Marri ed														
Divor ced	.9851 094** * (.053 0832)	1.024 686** * (.028 3967)	1.127 881** * (.039 0472)	.7566 427** * (.112 1221)	- .1101 618 (.071 1643)	.2452 547** * (.107 1421)	.8332 887** * (.052 3275)	1.072 991** * (.058 5595)	1.121 198** * (.043 6625)	1.168 189** * (.049 4582)				
Wido wed	.8443 407** * (.053 0832)	1.297 964** * (.028 3967)	1.123 862** * (.039 0472)	.6427 963** * (.112 1221)	.6162 399** * (.071 1643)	1.009 171** * (.107 1421)	1.261 758** * (.052 3275)	1.596 42*** * (.058 5595)	1.121 497** * (.043 6625)	1.036 303** * (.049 4582)				

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	*	*	*	(.286	*	*	*	(.076	*	*				
	(.077	(.039	(.046	5007)	(.123	(.316	(.141	9782)	(.072	(.085				
	2592)	8687)	0815)		0892)	7815)	4507)		2364)	5537)				
Single	.9727	.9997	1.082	.8078	.2235	.4203	.9457	1.134	1.150	.9156				
	272**	407**	172**	546**	266**	954**	876**	086**	353**	237**				
	*	*	*	*	*	*	*	*	*	*				
	(.045	(.025	(.028	(.096	(.048	(.045	(.033	(.048	(.054	(.089				
	8048)	833)	4511)	6725)	1596)	7464)	8731)	0988)	338)	2409)				
Own family income: <\$10K	-.1681	.4285	.3085	.1136	.4953	.8053	.3680	.2219	.3060	.0782	-.2036	-.0912	-.1487	-.5799
	377	024**	069**	992	419**	95***	476**	065	435*	229	71	958	947	904**
	(.155	*	*	(.223	*	(.183	*	(.142	(.163	(.132	(.342	(.118	(.186	*
	0759)	(.115	(.109	4596)	(.173	3951)	(.130	3966)	4053)	0735)	4611)	2176)	5475)	(.123
	8048)	833)	4511)	6725)	1596)	7464)	8731)	0988)	338)	2409)				6714)
Own family income: \$10K - \$20K	-.1191	.2938	.2912	.2252	.2206	.5344	.1524	.1306	.2740	.1356	-.1076	-.1343	-.0564	-.4604
	834	638**	833**	672	584**	144**	197	029	502**	233	054	469*	442	347**
	(.096	*	*	(.143	(.104	*	(.109	(.102	(.111	(.118	(.164	(.070	(.179	*
	1794)	(.045	(.054	3366)	215)	(.097	5492)	1029)	9806)	2827)	3542)	2792)	1559)	(.054
	834)	7835)	3804)			9728)								0065)
Own family income: \$20K - \$40K	.0745	-.0391	-.0459	-.2547	-.1451	-.2634	.1299	.1666	-.0186	.0544	-.2146	-.0172	-.0232	-.1026
	824	668**	278	462**	398	249**	61	354**	461	7	044**	145	461	952*
	(.055	*	(.050	(.103	(.110	*	(.103	(.066	(.061	(.085	(.088	(.049	(.167	(.055
	0187)	(.046	5344)	6777)	9)	5479)	5137)	5471)	8898)	6378)	2291)	5233)	0408)	7539)
	0187)	5803)												
Own family income: \$40K - \$60K	-.0191	.1177	.1104	.1700	.1416	.1867	.0503	.1397	-.0121	.0197	-.2355	-.0330	-.0098	-.1142
	906	291**	65***	101*	767	***	891	965**	983	964	089**	787	912	284**
	(.042	*	(.027	(.101	(.087	(.066	(.094	(.048	(.050	(.039	*	(.043	(.155	*
	0771)	(.026	8074)	74)	2578)	5838)	2259)	7524)	7875)	7679)	(.057	7092)	9558)	(.036
	0771)	2634)									0754)			609)
Own Family income: >\$60K (omitted)														
Number of observations	2,250,331	2,136,235	3,657,815	210,666	522,112	520,609	1,269,093	1,555,531	784,826	663,179	2,725,378	562,584	102,249	1,005,850

The significance was clarified with *p*-values: *** *p* < .01, ** *p* < .05, * *p* < .10.

The results of the logistic analysis can be found in table 1. The first row displayed the base variables which had been used for the intersections. The corresponding intersection variable for the intersection can be found in the first column. The displayed coefficient for the logistic regression was the log-odds. Which were the odds for an increase of suicide rate.

Intersection race

In the intersection of race, all of the coefficients were negative, meaning that the odds for suicide were decreasing when compared to white people. The odds for suicide for the other races were more negative than the odds for black when compared to white, which means that in most cases people from the other races committed the least suicide, except in the cases for females, age 55 – 64, divorced and widowed. Meaning that for example females the odds of suicide decreased at a rate of $\exp(-.5919732)$, or after calculations 0.55, so there was a 45%

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decrease in the odds for suicide when the female was of the other races and for black there was a 59% decrease of odds. For the other races, the base variable for divorced had the sharpest decrease of odds at 68% and the smallest decrease was with the base variable age 20 – 24 at 34%. Meaning for the other races that were divorced the odds for suicide were the least similar to the suicide rate for white people across all categories and that at age 20 – 24 the suicide odds were the most similar. For the odds at suicide with black people the sharpest decrease laid once again with divorced at 75%, which shows the large difference between black and white widowers. The smallest decrease was again with age 20 – 24 with 21%, which meant that at the age 20 – 24, the difference between races was minimal. With the increase of age, the odds at suicide decreased for the other races and for black people, meaning that the gap between them and white people became larger with an increase in age. The exception was at age 55 – 64 for other races which made them closer to white people. The highest decrease in odds for suicide were for age 45 – 54, widowed and divorced. Meaning that at those categories the gap between the other races and black people was the highest compared to white people. The lowest decrease in suicide odds was with age 20 – 24, age 25 – 34 and single, meaning that there the distance between the races was the smallest.

Intersection gender

For gender, the coefficients were positive, meaning that there was an increase in the odds for suicide when males were compared to females. For this intersectionality most of the odds stayed substantially high, however there was a difference between the highest and lowest change in odds. The base variable for the other races had the lowest odds at 148%, meaning that the difference between males and females was the lowest for other races. The highest base variable however had been widows at 473%, meaning that male widows had larger odds for committing suicide. The race black had almost as high odds at the age 20 – 24, meaning that for black males the difference between males and females is larger. The suicide odds for white people are in between the odds for other races and black people. There was also a decrease in distance of suicide odds between males and females when age increased, which began with age 20 – 24 at 466%, the exception was age 55 – 64, where the gap grew larger.

Intersection age

For age, the coefficients were mixed, but were mostly positive, meaning that there was an increase of odds for suicide at all ages when compared to age 20 – 24. For the base variables, female and male, the odds for suicide for females were double compared to the odds for males. Meaning that for females the increase of odds was higher than that for males, or that at the age 20 – 24 females committed significantly less suicide. The highest increase for the gender were also found at different ages. For males, the highest increase was at age 35 – 44 with a 55% increase, yet for female the highest increase was at age 45 – 54 with a 144% increase. Meaning that males and females have the most risk at suicide for different ages. For white people there was also an increase in odds that grew higher with, with the exception being age 55 – 64. For black people however the ages 45 – 54 and 55 – 64 were negative, meaning that there was a decrease of odds for suicide when compared to the age 20 – 24. Meaning that for black people the odds of suicide decrease with age, the highest decrease was at age 55 – 64 with 52%. In marital status a considerable number of odds were not significant. The divorced status however did have high odds suicide. Its peak was at age 35 – 44, the lowest increase was at age 25 – 34. Meaning that for widowed people the least chance

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was at the ages 20 – 34. This could be compared to the status single, as their lowest and highest increase were similar if at lower numbers. Meaning that there was likely less difference between the ages. The only exception was the age 55 – 64 which had low odds for suicide.

Intersection education

For this intersection, the odds for suicide were almost all negative, meaning that there was a decrease in odds for suicide when compared to people who have had some high school. In this category the decrease in odds was higher for males when compared to females. For female, the decrease in odds for suicide grew larger with each higher step for education, while the exception was M.A. professional, degree, or PhD, which only had a decrease of 23%. Meaning that for females a higher education decreased their odds for suicide, but the numbers were low, so the odds did not decrease with a lot. The decrease for males was a lot sharper and the highest decrease of odds was some college with 68%. Meaning that education had a positive effect on decrease of suicide odds. For the races, white people showed the strongest decreases in odds and again the highest decrease was some college. For black people, the strongest decrease actually laid with M.A. professional, degree or PhD. Meaning that for both white and black people education decreased their suicide odds. For both age 20 – 24, 25 – 34 and 35 – 44 the strongest decreases were with some college. The ages 45 – 54 and 55 – 46 had lower decreases in odds and the highest decrease was found in college degree. For age 20 – 24, less than 9th grade had a 48% decrease in odds. For both being married and single the highest decrease in suicide odds were found with some college. For divorced the highest decreases was found in college degree. The only positive odds, an increase in suicide odds, were found in age 55 – 64 and widowed at less than 9th grade, meaning that for them having less than 9th grade education increased their odds for suicide. In the ages for below 9th grade education the suicide risk is similar to that of some high school risk except for age 20 – 24 which is lower and for age 55 – 64 which is higher. For 12th grade or GED most are a bit lower with the exception being age 45 – 54 which has a close to the same rate as some high school. In general age 45 – 54 has suicide rates in education close to high school with the exception being college degree. Age 55 – 64 is also has a high suicide rate.

Intersection marital status

For marital status all of the odds were positive when compared to being married. Meaning that there was an increase in suicide odds if the person was not married. Between the results for male and female the increase in suicide odds were not considerably different, with the exception of widows in which the male suicide odds were higher at an increase of 266% compared to being married. For females, the highest increase laid with divorced, but the difference compared to the other marital statuses was small. For race, white people had the highest increase in suicide odds, with the highest increase in between widowed and divorced. For other races, the highest increase was with single people and for black people with widows. For black, single people had the lowest increase in odds with 25%. For the different ages, the increase in suicide odds rose in divorced with the different ages. The lowest with a large gap between the next age was age 20 – 24. For age 20 – 24, 25 – 34 and 35 – 44, the highest increase was with widows, while for age 45 – 54 it was single and age 55 – 64 it was divorced. Another part for marital status is that the suicide rate for white people is the

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highest, but in married black is close to the same number. Only other has a sharp decrease. For divorced and single, black actually has the lowest suicide rate, but for single, other has the lowest suicide rate. For the different ages, age 35 – 44 has actually the highest increase for widowed status. The increase also stays this high for the older ages. For single people, the suicide rate is also the highest for 35 – 44, but for the age 55 – 64 it is about as low as for age 25 – 34.

Intersection family income

For the intersection family income most of the found log-odds were not significant. Meaning that no significant results could be drawn from it. The comparison was against a family income higher than \$60K. Most of the found odds were negative, meaning that there was a decrease in suicide odds. The highest decrease was found in an income less than \$10K. The decrease in suicide odds became lower with the more family income earned, with the exception of age 35 – 44. Age 35 – 44 had the only positive log-odds, meaning that there was an increase in suicide odds, the highest increase was found for a family income of \$20K - \$40K. The highest decrease in suicide odds was found for the age 20 – 24 at the family income less than \$10K.

Discussion

The research question which this paper addresses was: “What is the relationship between intersectionality and suicide on five different social identity levels?”

The most important finding from the logistic regression were that white males were indeed the category that was the most at risk, followed up by black people and then the other races. Like in the paper of Daly, Wilson, and Johnson (2013). For females however the category that had the most risk was still white, however it was followed up by other races and then black females. The high odds for males could be explained with the theory from Rico-Velasco and Mynko (1973), which is that males are put under greater stress, as they determine the socioeconomic status of the family.

Further for males the suicide odds for age peaked around 35 – 44 and for females it peaked later at 45 – 54. For males, the difference for suicide odds was the largest at the age 20 – 24 when compared to females. White people had the highest odds at age 35 – 44, while for black people it was at 25 – 34. This partly coincides with the article of Maris (1995), which had remarked that for white males the highest suicide rate was for those in in their midlife while for white females the highest suicide rate was between 45 – 54. In this article it was also noted that for black people the highest suicide rate was amongst the youth. Furthermore, in this article’s results the suicide rate also in general increases with age. According to Heisel and Duberstein (2005) older adults have the highest rate of suicide. For 65 years and older men had a higher suicide rate compared to women and white adults had a higher suicide rate compared to the other races. It was also found that mental disorders are highly prevalent among the elderly that committed suicide and 90% of those that committed suicide in the United State of over 50 years were mentally ill. Negative life events also increase the risk for suicide amongst elderly, events such as perceived physical illness, financial difficulties, change in employment and family discord and separation were associated with suicide for

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people over 50 years old (Conwell & Duberstein, 2001; Heisel & Duberstein, 2005). Not being married or not having any significant social contact also increased the odds for suicide.

For both males and female some high school still had the highest suicide odds, however for females it was closely followed by M.A. professional, degree, or PhD. This could not be explained with the current research of this paper. The only explanation would be that according to Pompili et al. (2013) that people with a lower IQ had increased suicide rates.

For race at the age 20 – 24 the difference between black and white were minimal. This was in agreement with the article from Bush (1979) where in it was said that the suicide rate for black youths was almost equal to that of white youths and that the suicide rate for black women became equal to that of black men. For black males, the suicide rate could partly be explained through being overburdened with racism in terms of poor parenting, poor education, poverty, and high unemployment. Another explanation is that due to the progression of black people to being more economically and socially equal to white people, that the progression also has increased the suicide rate (Bush, 1979). The last explanation could be that the increased suicide rate for males is caused by the fact that males were more likely to have used more lethal methods, such as firearms, in their attempts than females.

The second statement was according to my results incorrect. The fact that the suicide odds for black females could partly be explained by the fact that suicide attempts happened after a breakup with either their husband or boyfriend, along with the fact that black females more often lived with friends or family than white females (Bush, 1979).

For education, the highest odds were found if the people had only some high school or stayed below 9th grad or had 12th grad or a GED. Which could partly be explained through a study from Lalli and Turner (1968), which explained that for white males the suicide rates were the highest among the unskilled people and that the suicide rate decreased with further occupation level, however these differences were small. Following up in this theory was that the suicide rate increases where the status of the population decreases. Educational level is often correlated with occupation level later on. For educational achievement, the paper from Pompili et al. (2013) had remarked that suicide increases with educational achievement unless the person was aged above 65 – 74. This was also remarked to held true over different marital statuses and age. Which was the opposite from the results from this paper as in this paper the odds for suicide decreased with educational achievement. It was however remarked in Pompili et al. (2013) that with a lower IQ that there was an increase in mortality which could explain this papers results.

For female marital status stayed mostly the same, but peaked at divorced, while for males it peaked at widowed. For both black and white people, the odds for suicide where the highest for widowed people, while for other it was for single people. For marital status, the odds for suicide increased with the different ages. For the ages 20 – 24, 25 – 34, 35 – 44 the highest suicide odds were with widows, for the age 45 – 54 it was single people and lastly for the ages 55 – 64 it was divorced people. The paper from Rico-Velasco and Mynko (1973) remarked that for both black and whites single people committed less suicide compared against married, and that for whites and blacks it was remarked that the category divorced had the highest suicide odds. The difference may be due to the difference in years when the research was performed. For the difference in ages the paper remarked that the suicide rate increased with age for each category of marital status, which we had not found. It was also

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found that for males and females the highest suicide rate was amongst widows. Kposowa (2000) however found entirely different results. According to him divorced people had the highest risk in suicide and being single or widowed had no significant effect. It was also remarked that for females there was no significantly different risk by marital status, which is mostly true according to this paper, however the married status should be lower. The results from Kreitman (1988) however agrees that widows also play an important role in suicide and the paper from Elwert and Christakis (2006) also found that among whites the widowhood effect was stronger than for black people. Likely caused due to the effect that black people managed to extend their survival advantageous into being widows. The study from Smith, Mercy and Conn (1988) also agreed that for the married status the suicide rate was the lowest.

The limitations for this study were that the dataset is from 1990, which could cause the data to be less relevant in the current times. Society has after all changed a lot since 1990 and advancement in the prevention of discrimination have been made. Another limitation is that the dataset originates from the United States. This means that it cannot be generalized for all of the other countries due to the difference in culture and socioeconomic status. There are also limitations to the method used. One of the limitations to this method is that the logistic regression compares the intersection variables to the omitted variable. Which means that if the omitted variable in reality has a small suicide rate that then the increase or decrease of probability do not carry as much weight as normal. Another shortcoming would be that for some intersectional ties, the intersection has only a small number of observations due to the rareness of the fact, which can also skew the results due to the fact that only a small number of suicides need to happen to enlarge the suicide rate in that intersection. There is also a chance of bias in my results. The chosen variables could have been chosen from my own perspective as a non-inhabitant of the United States, along with being both white and female. This could have occluded my results due to my perspective not being appropriate for the situation.

In the end a lot of papers looked only into two specific intersections or have researched an intersection for three categories at the same time. The range for all of these categories was very broad and the results do not always match. However, there is not a consistent narrative about intersectionality and suicide. Due to the fact that the results differ too much, and research is being done sparsely on the subject or the subject is not advertised as intersectionality, which leads to research being lost. The results from this paper did show that there was a large difference when one looks upon the suicide statistics from a different intersectionality. However, in some parts the other research agreed with my results, making it clear that there could be some form of basis for the intersectionality and suicide research.

My suggestion is thus that there needs to be more research looking specifically into intersectionality and suicide. There needs to be a mention that it is about intersectionality or that a new term needs to be coined, as to ascertain that the research can be found more easily, and a better narrative can be established. The information gained from this research could be used for better interventions and ensure that more people can be reached who are in difficult situations. It could lead to powerful impacts on research, practice, and policies. Furthermore, it could lead to the current interventions becoming more powerful as then it could save more lives (Standley, 2020). Further research should look into different intersectional ties or give an overview of the current known intersectionality research. It would also be worth looking

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into how different cultures view suicide and how intersectionality interacts with the same variables across different cultures.

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