The Influence of Psychosocial Factors on Suicide Ideation across the Ageing Population

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ABSTRACT

Suicide refers to an act whereby the person ends their own life willingly, mainly to escape problematic family or social environments. Preceding this is suicide ideation, which is having plans and wishes to commit suicide, but not making any explicit attempt. Previous research has suggested that approximately 1 million people commit suicide each year, with around 5,000 of these in the United Kingdom alone. Causes were examined in terms of Psychosocial factors, and research explicated many possible factors. Existing literature has espoused a clear dichotomy concerning which age and gender are most at risk of suicidal thought.

Responses from eighty participants (N=80) were measured on four questionnaires, measuring suicide ideation, hope, self-esteem and social support, with age, gender, employment and relationship status as mediating factors. Multiple linear regression analysis showed that only social support satisfaction and hope (agency) formed a significant model of prediction for suicide ideation, while independent t-tests showed significant correlations between suicidal thought and the four mediating factors. Social support satisfaction and hope (agency) are therefore part of a potentially significant model of prediction.

Future research needs to include a more comprehensive model, greater sample and compare geographical location.

KEY WORDS: SUICIDE IDEATIONAGE SOCIAL SUPPORT HOPE SELF-ESTEEM
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Background and Literature Review

What is Suicide?

Suicide refers to an act whereby the person ends their own life willingly, mainly to escape an unbearable problem within familial, educational or social environments (Moore, 2000). Usually preceding this is suicide ideation, which according to Beck et al. (1972) is having plans and wishes to commit suicide, but not making any overt attempt. Parasuicide refers to an incomplete suicide attempt, whereby a person is purposefully self-injurious but with no fatal outcome. Rutter (1995) suggests varying degrees of this behaviour, ranging from minor suicidal acts to serious suicidal gestures.

Suicidality in the United States of America

In the USA alone, there are more than 30,000 suicides each year, with approximately 12% being adolescents (Ancel, 2005). His research suggests this alarming statistic was due to a significant increase in suicide/parasuicide in the age group 15 to 24 years since 1983. Sadock & Sadock (2003) suggested that the United Nations endorsed this figure as an average reflection of industrialised countries.

![Suicide Rates by Age Group, 1960-97](chart)

Fig.1. A chart to show the increased rate of suicide in 15-24 year olds.

Hu et al. (2008) found a differential increase in suicidality in biographical variants such as race, method and indeed age, with their research highlighting the middle-aged as the societal group most at risk of suicide. They found that people aged 40-64 years of age were more likely to commit suicide, a rise of approximately 2.7% annually for men and 3.9% for women from 1999-2005.
Suicidality in the United Kingdom

Beeston (2006) suggests that around 1 million people commit suicide globally each year, with 5,000 of them occurring in the UK. The mean age of these victims is over 65 years, thereby contradicting the American research entirely and proposing a further change in suicide epidemiology across the ageing society.

The Office for National Statistics (ONS) (2011) for the UK suggests that from 2000-2009, suicide rates were highest among males aged 15-44, with the rate being 18 completed suicides per 100,000 people, while the elderly (>75 years) were least at risk, with only 13.6. For women, the most at risk were those aged 45-74, with a rate of 5.8 per 100,000, while the least potential for risk came to those aged >75 years, with an incidence rate of just 4.7.

![Image: A chart showing annual suicide rates in the United Kingdom.]

Joiner’s (2005) interpersonal-psychological theory suggests a gender differential between ‘completers’ (males) and ‘attempters’ (females), which reinforces statistics shown both cross-nationally and for the UK, on the number of completed suicides and parasuicides between sexes. Joiner posits that in order to complete suicide, one must feel a sense of burdensomeness (negatively affecting others) and thwarted belongingness (skewed beliefs about being loved) coupled with an acquired ability for self-harm.

Cross-cultural comparison

The below Fig.1, is an example of suicide in other selected countries, showing that it is a major prevalence globally. However, societal views surrounding suicide causality do not unequivocally focus on psychological or social aspects, but include a multitude of co-morbid influences, from lack of reporting, religion, economy, social composition and cultural variation.
(Lester, 2008) suggest a large number of African and Middle-Eastern countries simply do not report their suicide rates to the World Health Organisation, which accounts for the lack of figures on the graph below. Lester (1985) found that geographical variance shows that suicide rates generally tend to increase towards the west, with Douglas (1967) suggesting that reporting and counting of suicide varies greatly in accuracy across the world.

![Graph showing suicide rates per 100,000 pop.](image)

**Fig.3. A diagrammatic representation of some of the global variance of suicide rates.**

One of the earliest ideas of suicide causality came from Masaryk (1881), who suggested a decrease in religiosity deregulated the social organism and caused social disorganisation. This, in turn, made psychological life incoherent and thus was the cause of suicide. This is a far cry from modern Western attitudes towards suicide and mental illness, and offsets psychological instability as a primary factor.

Lester (1996) identified that economic development; more specifically low population growth and high gross domestic product per capita was the main factor influencing suicide in over 72 countries. This coincides with Moksony (1990), who noted that national populations differ in those most at risk of suicide. He suggested that more industrialised nations have greater suicide rates in elderly males, thus a nation with a higher proportion of elderly males will have a higher suicide rate.

Entrenched cultural attitudes towards suicide also contribute. Counts (1988) found that female suicide in Papua New-Guinea is a cultural and socio-political means of
imposing social sanctions, especially to enemies, for empowerment. Early (1992) found that cultural attitudes towards suicide among those from African decent were that murder was a more favourable death than suicide, as one does not participate in their own demise. Due to these co-morbidity causes, this study will solely focus on a British population.

**Psychosocial factors and adolescent suicide**

There has been plenty of research into psychosocial factors influencing suicide ideation within adolescents. A widely reported incidence was the Bridgend suicides in Wales, whereby media sensationalised a ‘cult’ of adolescents wanting to commit suicide in groups. A prevalent underlying psychosocial factor in this was that of Assortative Relating, or contagion of shared life stress, as found by Joiner Jr. (2003). His research highlighted the building of relationships based on shared stressors, significantly affecting suicidality in students who shared a dorm room for instance.

Joiner’s theory also coincided with results from Gunnell et al (2004), whose research emphasised an ideation incidence rate of 2.3%, with the highest frequency among women aged 16-24 years. Psychosocial factors behind this included not being in a stable relationship, lack of social support and unemployment. The above evidence offers a marked understanding of the epidemiology of suicidality in the younger generation, largely due to lack of social stability, poor employment status, and convenience of modern means of interpersonal connectivity (i.e. the internet and social media) to form reciprocal relationships surrounding mutually detrimental stressors.

**Psychosocial factors for young adults and suicide**

There has not been as much research done in the area of young adults and suicide, as opposed to adolescent and elderly. However, the Centre for Disease Control found that in 1997, 13% of deaths were attributable to suicide in young adults aged 20-24. These findings have escalated the number of young adult suicides by 300% since 1950.

The American Academy of Paediatrics (2000) found that psychosocial problems such as breakup of a relationship, education failure, legal troubles and social isolation were highly reported precipitating factors in young adult suicidality.

Bollen & Philips (1982) also highlighted the risk of youth naivety and impressionability in suicidal tendencies in relation to media, suggesting that young adults are more exposed to media influence and this can lead to impersonation of suicidal behaviour, resulting in cluster suicides. This aspect shows the potentially
sinister repercussions that media avenues can have on the younger generation psychologically and socially, and highlights a potential chain-reaction that sensationalising events such as the Welsh case cited above could have on a wider audience.

The literature suggests that greater risk of adolescent suicidality coincides with personal deficits, such as employment, education and interpersonal difficulty, with a great emphasis on social standing. The younger generation's naivety is also exploited by their reliance on technology and media outlets, all of which are apparent throughout young adulthood.

**Psychosocial factors for middle-aged suicide**

As with young adulthood and suicide ideation, there is little specificity when it comes to psychosocial factors and middle-aged suicide, supported by De Leo et al (2001) meta-analysis of studies. They found little empirical support for potential risk factors in suicidological literature, but found some key factors that appeared to play a role.

Living alone in middle-adulthood was found to present a higher risk for females only (Charlton, 1995), while having a stable relationship and children showed protective qualities for both genders (Smith et al, 1988).

Stillion et al (1989) hypothesised that interpersonal losses would be of greater potential risk to suicide than general ones (job loss, relationship loss). This was supported by Charlton (1995) who found men with interpersonal losses were much greater in suicidal ideation.

One other major factor was that of age-progressive coping mechanism. Heikkinen et al (1995) found that there was an excess of severe somatic illness in ageing men than women, suggesting a gender differential in coping with age-normative stressors.

**Psychosocial factors and elderly suicide**

Considering the multitude of investigation into adolescent suicide, there has been some corroborating evidence for the chronology of incidence rates found for the more mature demographics, such as the work done by Kelly & Bunting (1998). Their epidemiological research found figures for elderly suicide were substantially lower than for adolescents in the late part of the 20th century and early 21st century. Cattell (2000) found a number of antecedent psychosocial factors contributing to elderly suicidality, such as social isolation and loneliness, along
with previous suicide attempts and existing psychiatric disorders; the latter reported by Beeston (2006) in the West Midlands as the cause of approximately 700 elderly suicides in the past decade. Cattell found that bereavement was a significant stressor, especially for males, who were 3 times more at risk than married elderly men. Guohua (1995) found that widowhood was also a contributing factor for women, especially in the first year after death. The ONS (2012) have reported that in 2010, there was a shift in demographic for suicides, with people aged 45-74 years at 17.7 per 100,000 for males and 6.0 for females.

![Age-standardised rate per 100,000 population](image)

**Fig. 4:** Age-standardised suicide rates by sex for 45-74 years: 2006-2010.

It would seem loneliness appears to be pernicious in suicidality for the elderly as well, although social separation through bereavement, coupled with existing psychiatric illness that supplements this.

The above literature would suggest that there are similar factors involved in both middle-aged and elderly suicide ideation, but are delineated better in elderly people. This is most likely because the advanced life-stage is indicative of both increasing psychological deficits, and the natural loss of friends and loved ones.

**Moos & Schaefer’s Integrated Stress and Coping Model**

Moos & Schaefer (1993) devised the Integrated Stress and Coping model, which conceptualised the psychosocial factors affecting suicide ideation. The underlying premise of the model is that personal and environmental stressors, combined with life crises and individual transitions, affect cognitive appraisal and coping mechanisms that ultimately underpin physical health/wellbeing. Although this model does not set up a direct comparison of the age groups mentioned above, it
will serve as a diagrammatic aid to understanding the links between suicide ideation and psychosocial factors.

Fig. 5: Integrated Stress and Coping Model (Moos & Schaefer, 1993).

As evidenced, the interconnected system suggests reciprocal influence between the panels. For example, a person’s coping mechanisms are significantly affected by their sociodemographic characteristics, as well as current life stressors and social resources.

The Environment

According to Moos & Schaefer’s model, their environmental system (panel I) consists of on-going life stressors affecting coping strategies and influencing cumulative behavioural outcome. Such dispositions are self-esteem and hope.

Harter et al. (1992) saw self-esteem as evaluations made about the self, with Sullivan (1953) positing this as a result of self-appraisal based on their thoughts of others’ perceptions of them; thus environmental feedback quality seriously determines a person’s functioning, with negative feedback being damaging to self-esteem. Wilburn & Smith (2005) concluded that self-esteem was therefore an important factor in battling suicide ideation.

Hope and hopelessness have been considered and evidenced as key factors in suicidality for many years (Beck et al., 1990; Kazdin et al., 1983; O’Connor & Sheehy, 2000; 2001). Hopelessness is described as attitudes of pessimism for the
future (O'Connor et al, 2008) and has been heavily related to completed suicides (Beck et al., 1989). It was not until the 20th century that MacLeod et al. (1993) discovered that impaired generation of hope was the most pernicious factor for suicide risk. McDevitt & Ormond (2004) considered Neuroticism as a less efficient personality type, as it makes people naturally anxious and less able to deal with negative life experiences.

**Demographics**

Panel ii describes demographic factors associated with suicide ideation. Variants such as age, gender, employment status and relationship status have been widely researched and their influence evidenced in the above literature. Some other potential factors explored are temporal and geographic differences in availability of suicide methods (Gunnell, 2005), such as car-exhaust gas (Amos et al, 2001) and Paracetamol (Gunnell et al., 1997). However, with limited evidence, these are somewhat crude approaches as they overlook the related psychological trauma in suicide, and as a result, they will not be investigated in this study.

**Social Support**

Social support has been substantially linked to suicide, but is a factor that is internalised differently by each age group. Pillay & Wassenaar (1997) found that a conflicting parent-child relationship precipitated a high incidence of self-destructive behaviour: a discovery supported by Larson, Wilson & Mortimer (2002), who maintained that positive parenting styles act as a protective barrier by enhancing wellbeing, suggesting that adolescents see good social support as a strong parental bond rather than copious amounts of friends.

Berk (2002) found that romantic relationships contributed towards suicidal behaviours, with Engelbrecht & Van Vuuren (2000) finding 17% of their subjects stating relationship issues as a determinant for suicide ideation. This suggests that subsets (the problems) of an otherwise positive interpersonal factor (romantic relationships) can be detrimental to psychological health by amplifying negative cognition.

Fassberg et al. (2012) meta-analysis of elderly suicide revealed a necessity for social support combined with the individual’s characteristics, to gain a better understanding of their ideation by increasing social connections to society. The results reveal a number of existing studies that have shown this to be a promising strategy in reducing the number of suicides (Oyama et al., 2008; de Leo et al., 2002; Lapierre et al., 2011). The meta-analysis highlights a strong correlation between increasing general social connectedness and reduction in suicide ideation.
The above literature suggests social stability as a positive stimulus in battling suicidal behaviours across the age gap, but requires an understanding of individuals’ internalisation of what they consider good social standing.

This research used a compilation of questionnaires designed to measure the influence of hope, self-esteem and social support on the incidence rate of suicidal ideation, and how this affects both an age and gender differential. This research will also look at the mediation of the demographic factors of age, gender, employment and relationship status.

Method
Research Design
This Independent Measures study will employ a correlational design, consisting of four different age groups, based on the demographic factor of age. Suicidal ideation will be the criterion variable, and the factors of hope, self-esteem and social support will be predictor variables. Gender, age, employment status and relationship status will become moderating factors (Huysamen, 1994; Ancel, 2005).

Sample
A stratified random sample will be used, as a means of ensuring equal representation of both age and gender within the sample. Eighty participants from the Leek (Staffordshire) area will be recruited for this experiment, via direct distribution of a questionnaire by the researcher. The primary reason for this is the researcher would have first-hand knowledge that questionnaires have reached respondents, as well as minimising mail service costs. The use of 80 participants ensures a fair sample of the population, and equal stratification of age and gender. The sample will be subsequently divided into the following age categories;

18-36  56-74
37-55  75+

Data Collection
The measuring instruments to be used in this study consist of the following.

1. Biographical Questionnaire (appendix 3). This self-compiled introductory section will contain simple questions to identify demographic characteristics that have proven useful moderating variables in prior investigation. These involve age and gender (Ancel, 2005), marital/relationship status (Engelbrecht & Van Vuuren, 2000; Berk, 2002), and employment status (Gunnell et al, 2004).
2. The Rosenberg self-esteem scale (1965) (appendix 4) is a questionnaire that is administered to participants to gauge their feelings of self-worth and self-acceptance. It contains 10 items, 5 of which are negatively worded, to prevent acquiescence in participant responses (Cronbach, 1950): that is, to stop respondents from generally agreeing with questions.

The items are answered in accordance with a four-point rating scale, ranging from strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD); a response system known as a Likert scale (Coolican, 2009). A high score indicates higher self-esteem and a low score reflects low self-esteem. The Rosenberg self-esteem scale previously yielded a Cronbach’s Alpha coefficient range of 0.77 to 0.88 (Rosenberg, 1965), with a value of above 0.7 representing a reliable measure (Coolican, 2009). The internal reliability was reinforced upon further evaluation in 1989, where the exact same range was found again (Rosenberg, 1989). There has been cross-cultural support, such as those by Mohd Jamil (2006) whose Malaysian study found a Cronbach's Alpha of 0.8 for the scale.

3. The Hope Scale (Snyder et al, 1991) is a 12-item questionnaire designed to measure the two aspects of hope: agency (an idea of successful determination in completing goals in the past, present and future) and pathways (confidence in one’s own ability to create plans in order to meet said goals).

The questionnaire is completed in relation to an 8-point rating system, from ‘definitely false’ to ‘definitely true’ (see appendix 5 for full range). A high score on either of the subset measures would indicate a high degree of the subject relating to that scale (agency or pathways). Pattengale (2009) explains that only 8 of the 12 questions are actually measured, while 4 ‘distractor’ questions are omitted from scoring.

Analyses of Cronbach’s Alpha coefficients were shown as 0.74 and 0.88 for the total measurement of this scale (Ancel, 2005) and 0.80 when tested for the 1996 version (Fernandez-Ballesteros, 2003). Potgieter's (2004) South African study revealed Alpha coefficients at 0.818 for the agency subscale, and 0.754 for pathways, providing strong support for the measure’s internal reliability.

4. The Modified scale for Suicidal Ideation (Miller et al, 1986). This measure, called the Beck’s Scale for Suicide Ideation (BSS) was originally devised by Beck et al. (1979), to measure immediate attitudes and plans for suicide-related behaviours. It consists of 21 items rated on a 3-point scale (0 to 2) measuring suicidal intensity. Five screening items are presented to assess the necessity of using the full scale; questions measure duration and frequency of ideation. Two items examine previous exposure to such behaviours. Psychometrically, the BSS reports high internal reliability with Cronbach’s Alpha scores of 0.84 to 0.89 (Perlman et al, 2011).
However, the researcher is not permitted to use this original measure, as it requires specific qualification and training before being applied. It is for this reason that the Modified Scale for Suicidal Ideation (SSI-M) has been chosen (see appendix 6).

The modified scale was designed to assess at-risk patients in clinical settings, but by non-clinicians (Pettit et al, 2009). It constitutes 18 questions scored from 0 to 3, but full scores range from 0 to 54. As with the original, there are four screening items in order to warrant the use of the entire measure. Perlman et al. (2011) report Cronbach’s Alpha scores of 0.87 to 0.94 for the SSI-M; findings that have been strengthened by empirical support as well (Miller et al, 1986; Clum & Yang, 1995; Ruud & Rajab, 1995).

5. The Social Support Questionnaire (Sarason et al, 1983). Originally, this measure consisted of 27 items to examine what Sarason and colleagues described as two important factors concerning social support: network size and perceived social support. Questions ask respondents to first list supportive individuals in a number of given situations, known as the ‘N’ score. Secondly, they are asked to rate their level of satisfaction with the available support, termed the ‘S’ score. Sarason found a Cronbach’s Alpha score of 0.97, and item-total scores ranging from 0.51 to 0.79; low, but still significant.

Siegert et al., 1987 suggest this questionnaire is simply too long, as well as highly impractical to ask participants to complete in conjunction with other measures. It was to this end that Sarason et al. (1987) revised the questionnaire down to a 6-item one (see appendix 7) to combat repetition and time constraint issues. They found an overall Cronbach’s Alpha coefficient ranging from 0.90 to 0.93 for the number of items, and 0.90 for the satisfaction items, showing strong internal reliability for the short-form version.

Data Analysis

Descriptive statistics (means and standard deviations) will be calculated for all scales and subsets. A multiple linear regression analysis is required to examine the relationship between the multiple predictor variables and the criterion variable of suicide ideation. In order to do this, some demographic factors will have to be coded nominally. These include: gender, coded 1 for male, 2 for female; relationship status, coded 1-6 (possible answers will be single, in relationship, married, separated, divorced, widowed); and employment status, coded 1 for employed and 2 for unemployed.

R² is used to determine the percentage of variance, and finally, effect sizes of each individual variable are calculated to highlight practical significance of the relationship between variables.
Ethical Considerations

In accordance with Manchester Metropolitan University departmental requirements, an Ethics Approval Form (AEAF) and an Ethics Check Form (ECF) will be completed (see appendices 8 & 9). The British Psychological Society (BPS) also issue ethical guidelines that any researcher must adhere to. Below is an outline of these guidelines (The British Psychological Society, 2010) along with the justification for using them in the context of this study.

Risk

The use of a methodology where the researcher is not working in close proximity with respondents minimises risk of working alone.

Informed Consent

An information sheet and consent form will be attached to the front of the questionnaires (see appendices 1 & 2). This information allows participants to understand the fine details of the study and what their involvement consists of, along with data usage and points of contact (both for researcher/research supervisor, and also for Samaritans, should any participant become distressed by the subject of study). Their right to withdraw is clarified, informing them that once their anonymous data is collected, it is difficult for the researcher to pinpoint individual data sets and remove them.

Confidentiality

All respondents will be made aware through the information sheets that there cannot be total confidentiality, as the research supervisor will also need to view the data, but no other persons shall come into contact with it.

Debriefing

As the researcher is not a trained counsellor or psychologist, it is not possible to debrief participants that become distressed by the nature of the subject, and to this end, there is a point of contact for a certified counselling service (Samaritans) should they require it.

Hypotheses

\[ H_1 \]

The combination of psychosocial factors used as predictor variables, will significantly predict suicide ideation for the participants.
**H2**

There will be a wide range in suicidal responses for the different age groups, on a questionnaire measuring suicide ideation.

**H3**

There will be significantly higher suicidal responses in males than females, on a suicide ideation questionnaire.

**H4**

There will be significantly higher suicidal responses in males in the 75+ age group, on a questionnaire measuring suicide ideation.

**H5**

The study will show significant protective factors against suicide ideation.

**Results**

**Descriptive statistics**

Descriptive statistics (means and standard deviations) were calculated, with regards to the criterion and predictor variables as well as age, gender, employment and relationship status for the participant group as a whole.

**Table 1**

Descriptive statistics for criterion and predictor variables, including mediator variables; age, gender, employment & relationship status (N=80).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Participants (N)</th>
<th>Mean (M)</th>
<th>Standard Deviation (SD)</th>
</tr>
</thead>
<tbody>
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<td><strong>Criterion Variable:</strong></td>
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<td>7.59</td>
<td>9.84</td>
</tr>
<tr>
<td>Suicide Ideation</td>
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</table>
The participants obtained a mean of 7.59 and a standard deviation of 9.84 for the criterion variable of suicide ideation. This shows that the participants generally reported a low degree of suicidal ideation (a score between 0-8). However, the standard deviation suggests that there is quite a substantial variance in response. These findings support the hypothesis (H2); that there will be a wide range in suicide ideation responses.

In terms of the predictor variables, participants scored a mean of 19.16 and a standard deviation of 6.47 for Self-Esteem. This shows that a typical score (15+) of self-esteem was generally reported. Again, the deviation score, 6.47 represents a wide range in responses.

For the Hope (Pathways) subscale, a mean was reported of 21.08, indicating a general above-average score for participants’ ideas on problem-solving. However, the standard deviation of 6.62 shows that this varies across the sample. The Hope (Agency) subscale shows slightly less motivation to achieve goals, with a mean of 20.56, but an even greater deviation across the participant group, with a score of 7.31.
Finally, for Social Support, participants stated a mean of 2.64 for the number of people in their support network, with a very small variance of 1.80. Within this network, a mean of 1.73 family members and 0.89 non-family members were listed, with little deviation: 1.51 and 0.93 respectively. From this, responders showed they were generally satisfied with these numbers, as suggested by the mean of 2.56 (2 being fairly satisfied on the rating scale), with a variance of 1.87.

Fig.6. A bar chart to show the mean scores by participants on each of the variable scales.

Inferential statistics

Correlations

A correlation matrix was computed to show the correlations between all of the study’s variables.
Table 2
An Inter-correlational matrix of all the variables associated with the study

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<td>.292**</td>
<td>-.120</td>
<td>.215</td>
<td>.215</td>
<td>.048</td>
</tr>
<tr>
<td>Employ</td>
<td>.509**</td>
<td>-.609**</td>
<td>-.584**</td>
<td>-.563**</td>
<td>-.586**</td>
<td>-.419**</td>
<td>.494**</td>
<td>-.323**</td>
<td>-.270*</td>
<td>.461**</td>
</tr>
<tr>
<td>Rship</td>
<td>.475**</td>
<td>-.410**</td>
<td>-.386</td>
<td>-.409**</td>
<td>-.405**</td>
<td>-.369**</td>
<td>.499**</td>
<td>-.330**</td>
<td>-.166</td>
<td>.619**</td>
</tr>
</tbody>
</table>

Table 2
Inter-correlational matrix continued.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Gen</th>
<th>Employ</th>
<th>Rship</th>
</tr>
</thead>
<tbody>
<tr>
<td>SID</td>
<td>-.139</td>
<td>.509**</td>
<td>.475**</td>
</tr>
<tr>
<td>SE</td>
<td>.142</td>
<td>-.609**</td>
<td>-.410**</td>
</tr>
<tr>
<td>HP</td>
<td>.167</td>
<td>-.584**</td>
<td>-.366**</td>
</tr>
<tr>
<td>HA</td>
<td>.098</td>
<td>-.563**</td>
<td>-.409**</td>
</tr>
<tr>
<td>HT</td>
<td>.136</td>
<td>-.586**</td>
<td>-.405**</td>
</tr>
<tr>
<td>SSNS</td>
<td>.292**</td>
<td>-.419**</td>
<td>-.369**</td>
</tr>
<tr>
<td>SSS</td>
<td>-.120</td>
<td>.494**</td>
<td>.499**</td>
</tr>
<tr>
<td>SSFS</td>
<td>.215</td>
<td>-.323**</td>
<td>-.330**</td>
</tr>
<tr>
<td>SSNFS</td>
<td>.215</td>
<td>-.270*</td>
<td>-.166</td>
</tr>
<tr>
<td>Age</td>
<td>.048</td>
<td>.461**</td>
<td>.619**</td>
</tr>
<tr>
<td>Gen</td>
<td>1</td>
<td>-.025</td>
<td>.070</td>
</tr>
<tr>
<td>Employ</td>
<td>-.025</td>
<td>1</td>
<td>.251*</td>
</tr>
<tr>
<td>Rship</td>
<td>.070</td>
<td>.251*</td>
<td>1</td>
</tr>
</tbody>
</table>

** ≤0.01
* ≤0.05

Key
1) Suicide Ideation (SID) 7) Social Support Satisfaction Score (SSS)
2) Self-Esteem (SE)  8) Social Support Family Score (SSFS)
3) Hope (Pathways) (HP)  9) Social Support Non-family Score (SSNFS)
4) Hope (Agency) (HA)  10) Gender (Gen)
5) Hope (Total Score) (HT)  11) Employment (Employ)
6) Social Support Number Score (SSNS)  12) Relationship status (Rship)

The correlation matrix shows a number of significant correlations between the criterion and predictor variables. At the 1% level, there are significant negative correlations between Suicide Ideation (SID) and; Self-Esteem (SE), the Pathways (HP) and Agency (HA) subscales of Hope, Social Support Number Score (SSNS) and Family score (SSFS). These findings show that as a participant’s self-esteem, ideas for problem-solving and goal-oriented motivation decrease, along with a diminished familial and overall support network, the greater their degree of suicidal thoughts.

The matrix also shows some significant positive correlations at the 1% level. For Suicide Ideation and Social Support Satisfaction (SSS), for which the scale was from 1; being very satisfied, to 6; being very dissatisfied, the findings show that the higher the rating on the SSS scale, meaning the higher the dissatisfaction with the support network, the higher the degree of suicide ideation. SID also correlated positively with employment, showing that unemployment increases the risk of higher suicidal responses. In addition to unemployment as a risk factor, the positive correlation between SID and relationship status, was indicative of a greater risk of higher suicide ideation if a person was not in a stable relationship.

In addition to correlations between criterion and predictor variables, there are also some statistically significant positive correlations between the predictor variables. At the 1% level, Self-Esteem correlated highly with both subscales of Hope. It can be interpreted, therefore, that the more positive a person is with regard to achieving their future goals (Pathways), and motivation for devising plans to accomplish them (Agency), the more positive their level of self-appraisal will be. Self-Esteem also correlated highly with the Social Support Number Score, indicating that the higher the overall number of people in a person’s support network, the higher the degree of self-appraisal. There was a negative correlation between Self-Esteem and Social Support Satisfaction, suggesting the higher the personal level of dissatisfaction with a supportive network, the lower the level of self-image. Also negatively correlated with Self-Esteem were employment; suggesting unemployment lowers one’s self-image, and relationship status; implying lack of a stable relationship increases negative self-appraisal.
A significant positive correlation was found at the 5% level between Self-Esteem and Social Support Family Score, showing that a higher degree of self-appraisal is more likely to come from having a greater number of supportive family members.

Significant negative correlations were found at the 1% level between both Hope Pathways and Agency subscales and Social Support Satisfaction, evidencing that a higher degree of unhappiness with one’s social support network, produces a lower idea of problem-solving and self-motivation to achieve goals. Another significant negative correlation was between Social Support Satisfaction and Family Score. This is indicative of a lower number of family members in a person’s support group increasing dissatisfaction with that support group overall.

**Multiple Linear Regression Analyses**

Below are the results of the multiple regression analyses, which determine the significance of the predictor variables as a collective model on the criterion variable of suicide ideation.

**Table 3**

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>β</th>
<th>t</th>
<th>Sig.(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant (Intercept)</td>
<td>15.90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>-.11</td>
<td>-.07</td>
<td>-.94</td>
<td>.350</td>
</tr>
<tr>
<td>Hope (Pathways)</td>
<td>-.14</td>
<td>-.09</td>
<td>-.94</td>
<td>.350</td>
</tr>
<tr>
<td>Hope (Agency)</td>
<td>-.47</td>
<td>-.35</td>
<td>-3.32</td>
<td>.001</td>
</tr>
<tr>
<td>Social Support Number Score</td>
<td>-2.32</td>
<td>-.43</td>
<td>-.86</td>
<td>.396</td>
</tr>
<tr>
<td>Social Support Satisfaction</td>
<td>2.53</td>
<td>.48</td>
<td>6.33</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Social Support Family Score</td>
<td>2.30</td>
<td>.35</td>
<td>.86</td>
<td>.393</td>
</tr>
<tr>
<td>Social Support Non-family Score</td>
<td>2.24</td>
<td>.21</td>
<td>.82</td>
<td>.415</td>
</tr>
</tbody>
</table>

Note: \( R^2 = .90 \).

The regression model (forced entry method) for the prediction of suicide ideation is given above in **Table 3**. The Hope (Agency) subscale \((t= -3.32, p < .01)\) and Social Support Satisfaction scale \((t= 6.33, p < .001)\) were significant predictors of suicide ideation. Self-Esteem \((t= -.94, p > .05)\), Hope (Pathways) \((t= -.94, p > .05)\), Social
Support Number Score \( (t = -0.86, p > 0.05) \), Social Support Family Score \( (t = 0.86, p > 0.05) \), and Non-family Score \( (t = 0.82, p > 0.05) \) were not significant predictors of suicide ideation. The regression model explained 90% of the variance in suicide ideation, and this overall model was statistically significant, \( F(7, 72) = 95.49, p < 0.001 \). While these findings support \( H_2 \), by showing a wide range of response for suicide ideation, they also support \( H_{01} \), in that the combination of psychosocial predictor variables does not significantly predict suicide ideation.

The second multiple regression analysis was done on just two of the variables; Hope (Agency) and Social Support Satisfaction Score, which were highly significant for the first regression. The results are shown in Table 4.

**Table 4**

**Summary of Multiple Regression analysis for Hope (Agency) and Social Support Satisfaction variables on Suicide Ideation (N=80).**

<table>
<thead>
<tr>
<th>Variable</th>
<th>( B )</th>
<th>( \beta )</th>
<th>( T )</th>
<th>( Sig.(p) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant (Intercept)</td>
<td>13.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hope (Agency)</td>
<td>-0.63</td>
<td>-0.47</td>
<td>-6.56</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Social Support</td>
<td>2.70</td>
<td>0.51</td>
<td>7.18</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: \( R^2 = 0.90 \).

The second regression model (forced entry method) for the prediction of suicide ideation is given above. The Hope (Agency) subscale \( (t = -6.56, p < 0.001) \), and Social Support Satisfaction \( (t = 7.18, p < 0.001) \) were significant predictors of suicide ideation. The regression model explained 90% of the variance in suicide ideation, and this overall model was statistically significant, \( F(2, 77) = 337.02, p < 0.001 \). These findings, should the two predictor variables have been the sole basis of the research, would be indicative of a highly significant model of suicide ideation prediction, and would subsequently support \( H_1 \).

**Age & Suicide Ideation**

As shown by the correlation matrix (Table 2), age did not significantly correlate with suicide ideation. There was however, a slight indication that suicide ideation increased with age. This is represented visually in the scatterplot below.
Fig 7. A scatterplot to show the correlation between Age and Suicide Ideation.

While these findings suggest a slight positive correlation between age and suicide ideation, it is not significant enough to support H₄, and therefore H₀₄ must be accepted.

Gender & Suicide Ideation

An independent t-test was conducted to explore the relationship between gender and suicide ideation.

The t-test indicated that there was no significant difference between males and females in the context of suicide ideation scores: \( t(75) = 1.24, p > .05 \). This result supports H₀₃.

However, looking at the means of the two groups, the following results were obtained:
Table 5
Means and standard deviations for suicide ideation between males and females (N=80).

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (M)</td>
<td>8.95</td>
<td>6.23</td>
</tr>
<tr>
<td>Standard Deviation (SD)</td>
<td>10.66</td>
<td>8.87</td>
</tr>
</tbody>
</table>

These results indicate that whilst there was no significant difference between the mean scores for suicide ideation for males and females, the mean was higher for males ($M = 8.95$). Therefore, this is some reflection of existing literature, showing that males exhibit a higher degree of suicidal thought. The lack of a greater population sample may account for insignificance. The standard deviations for both males ($SD = 10.66$) and females ($SD = 8.87$) shows a wide variety of responses across the sample, and thus supports $H_1$.

![Bar chart showing means of males and females on Suicide Ideation questionnaire](image)

Fig.8. A bar chart to show the means of males and females on the Suicide Ideation questionnaire.

**Employment & Suicide Ideation**

An independent t-test was conducted to explore the relationship between employment and suicide ideation.
The t-test indicated that there was a significant difference between the employed and unemployed and suicide ideation scores: $t(65) = -5.68, p < .001$.

**Table 6**
**Means and standard deviations for suicide ideation between the employed and unemployed (N=80).**

<table>
<thead>
<tr>
<th></th>
<th>Employed (N=35)</th>
<th>Unemployed (N=45)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (M)</td>
<td>1.94</td>
<td>11.98</td>
</tr>
<tr>
<td>Standard Deviation (SD)</td>
<td>4.84</td>
<td>10.51</td>
</tr>
</tbody>
</table>

These results show that people who are employed exhibit a far smaller degree of suicidal thought, suggesting that employment could be a protective factor against suicide ideation, and thus supports $H_5$.

**Fig.9.** A bar chart to show the means of employed and unemployed on the Suicide Ideation questionnaire.

**Relationship status & Suicide Ideation**

Below are the means and standard deviations for the six categories of relationship status and suicide ideation scores.
Table 7
Means and standard deviations for suicide ideation between the different categories of relationship status (N=80).

<table>
<thead>
<tr>
<th>Relationship Status</th>
<th>Number of Participants (N)</th>
<th>Mean (M)</th>
<th>Standard Deviation (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>11</td>
<td>14.27</td>
<td>8.91</td>
</tr>
<tr>
<td>In relationship</td>
<td>14</td>
<td>1.43</td>
<td>2.59</td>
</tr>
<tr>
<td>Married</td>
<td>31</td>
<td>.19</td>
<td>.54</td>
</tr>
<tr>
<td>Separated</td>
<td>3</td>
<td>11.33</td>
<td>10.07</td>
</tr>
<tr>
<td>Divorced</td>
<td>7</td>
<td>13.71</td>
<td>9.91</td>
</tr>
<tr>
<td>Widowed</td>
<td>14</td>
<td>21.00</td>
<td>5.68</td>
</tr>
</tbody>
</table>

These results show that people in a stable relationship exhibit a far less degree of suicidal thought, suggesting that relationship status could be a protective factor against suicide ideation. The results also support H5.
Fig. 10. A graph to show the means of relationship statuses of respondents on the Suicide Ideation questionnaire.

Discussion

Findings

The results show that generally, there was a low degree of suicidal ideation reported, evidenced by a mean of 7.59, yet there was a large variance in participants' responses, signified by a standard deviation of 9.84. For the predictor variables, typical scores were reported, also with considerable variance, except for Social Support factors.

The study showed significant negative correlations between the criterion variable and the predictor variables. Suicide ideation correlated highly with Self-Esteem, Hope (Agency) and (Pathways). The Hope (Agency) subscale showed that those with a successful sense of motivation for their goals were less inclined towards suicide ideation, while Hope (Pathways) evidenced that one's ability to devise plans to meet goals also had a diminishing effect on ideation.

It is clear from the results that a greater feeling of social support satisfaction is linked to a higher number of family members within that support network, which in turn reduces the severity of suicidal thought.

Interesting findings between Suicide ideation and the mediating factors have also been unearthed. Although the results do show a slight positive correlation between age and suicide ideation, it is not significant enough for the researcher to accept H₄. The discrepancy between genders was not a significant one, and thus does
not support $H_3$, although males had a slightly higher mean for suicide ideation than females. Finally, there was a significant correlation between suicide ideation and both unemployment and relationship status.

**Evaluations and Implications**

The descriptive statistics imply a co-existence of varying suicide ideation profiles, as well as little discrepancy in overall support satisfaction rates, thus supporting $H_2$. Moos & Moos (1994) suggest that higher incidences of suicidal ideation may be due to a number of stressors, and that negative life experiences are significant contributors to thoughts of suicide.

The correlation between SID and SE is analogous with Brown & Dutton (1995), who found low self-esteem lead to negative perceptions of oneself and environment, which ultimately increased the incidence of suicide ideation. More modern research has broken down SE further, looking at both implicit and explicit self-esteem (Creemers et al., 2011); finding that damaged self-esteem (high implicit SE and low explicit SE, as measured by Rosenberg's 1989 scale) was correlated strongly with suicidal ideation. Self-esteem is therefore shown as a protective factor against suicidal ideation (Mashego et al., 2003).

For SID and Hope factors, findings are in accordance with Sebate (1999), who found the same strong negative correlation between the two. This implies that both subsets of Hope show validated practical predictive significance towards suicide ideation, as supported further by Goldston et al. (2001), where hope was found to be a strong indicator of later suicidal behaviour.

The inter-correlation between SSS and SSFS is supported by Larson et al. (2002), who suggest the family has a pivotal supportive role in providing a safe and health-enhancing environment. Further support comes from Paulson & Everall (2001), who conclude family stability significantly reduces the occurrence of suicidal behaviour, especially in adolescents. This implies that the nature of the support network is imperative in the reduction of suicidal thought, as opposed to the amount of supporters.

There is a multitude of literature suggesting severe risk of suicide ideation for both ends of the age spectrum. Although there is no definitive conclusion as to which age demographic is the most vulnerable, the researcher previously suggested that suicidality in younger people is affected by immediate personal deficits (education, legal trouble) and in relation to others (social standing, familial/romantic relationships), compounded by a contemporary world built on social media and television exposure. This is compared with facets of suicidal thought in the elderly population, which appear to be concerned with age-normative stressors (the loss of loved ones, declining physical/mental health). This would suggest that it is not
as simple to translate ideation causality across the ageing population and further research should continue to investigate it as separate areas.

As with SID and age, no single gender that has been outlined as more at risk of ideation, with research supporting the demarcation of just one. Pillay (1995) and Sadock & Sadock (2003) suggest females have a higher suicidal prevalence rate than males, as opposed to Madu & Matla (2003), and Mendez-Bustos et al. (2013) who suggest males complete more suicides but females attempt more.

There has been evidence for the singular influence of relationships and employment on suicidal thought, with Englebrecht & Van Vuuren (2000) showing that interpersonally troubled individuals show an increased risk for suicidal thought. Wilson et al (1995) suggested that poor problem-solving abilities in adolescents results in catastrophising problems to the extent of considering suicide. Larson et al (2002) discovered a stratification between the economically advantaged and disadvantaged, which predisposed people to negative life outcomes.

Both factors have researched as an amelioration of causality for suicide ideation. Vilhjalmsson et al (1998) meta-analysis of studies highlighted a correlation between unemployment, non-married status and increased suicide ideation. This has been supported in recent literature by both Gunnell et al. (2004) and Meltzer et al (2011). The literature shows that both variables are significant predictive correlates of suicidal thought, and subsequently supports H5.

**Limitations and future research**

It was stated that Moos & Schaefer’s (1993) Integrated Stress and Coping Model was incorporated to provide diagrammatic representation of the links between the various facets of psychosocial factors and suicide ideation. However, as the study only considers a few aspects of it (demographics, self-appraisal and social support), with transitional stage (age) being a mediating factor, a more comprehensive approach could be taken for future study, whereby the health aspect is also included.

The 80 participants used in this study may have accounted for lack of significance for the age and gender variables, and future study would benefit from a greater sample. It would also be interesting to investigate suicide ideation in different geographical contexts, i.e. a small town and big city.

Although the multiple regression analysis yielded only two significant predictors of suicide ideation, this does not demean the predictive influence of the other factors,
as explored above, but merely suggests this specific model of predictor variables
did not accurately account for suicidal thought together (supporting H₁). The
second multiple regression highlights a dynamic relationship between Hope
(Agency) and Social Support satisfaction in terms of predictive performance; a
pairing which could be investigated in greater depth.

Conclusion

This research could serve as a step in the right direction towards implementing
quicker intervention methods. It could also provide empirical support for concurrent
research (Fuller-Thomson et al., 2013), who highlight the need for physician
screening of at-risk patients.

It is hoped that this research will contribute to the study of causal factors of suicide
ideation across the ageing population; thereby enlightening medical and
psychological professionals alike, and thus assisting in early recognition and
intervention via empowerment and strengthening of a person’s resilience to
suicidal ideation.

References


Ancel, G. (2005). The Influence of Psychosocial Factors and Resources on
Suicidal Ideation of Adolescents. South Africa: University of the Free State.

Relationship between hopelessness and ultimate suicide: A replication with
psychiatric patients. American Journal of Psychiatry 147, 190-195.

psychiatric inpatients by clinical ratings of hopelessness. Journal of Consulting and
Clinical Psychology, 57, 309-310.

E., Seiden, R. H., & Wittlin, B. J. Classification and nomenclature. In H. L. P.
Resnik & B. C. Hathorne (Eds.), Suicide prevention in the 70's. (DHEW Publication


