

Cognitive distortions and suicide risk in a community sample of New Zealand young adults

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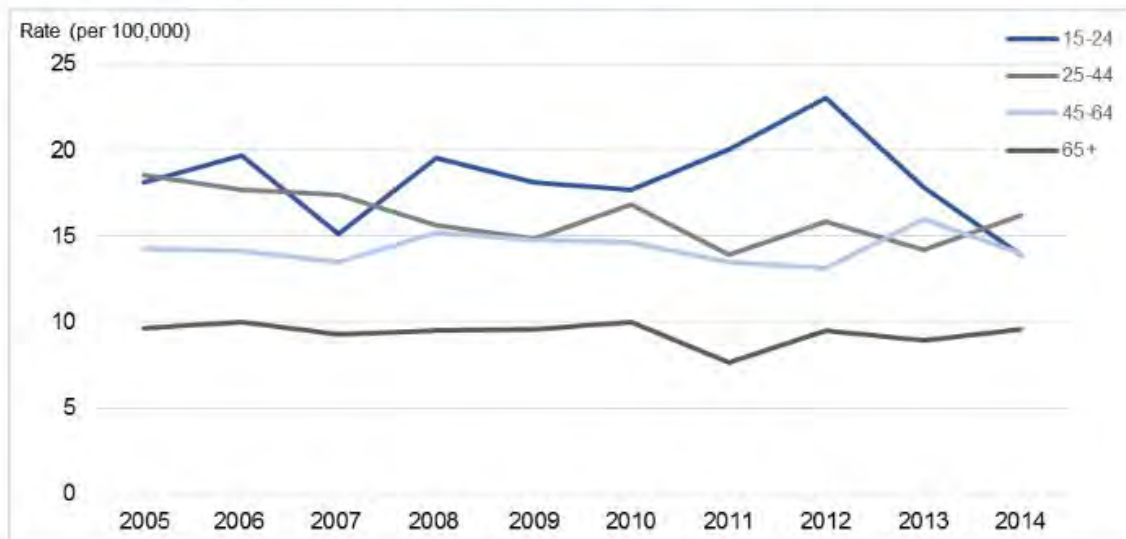
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Suicide

- Second leading cause of death for young people accounting for an estimated 8.5% of all youth deaths (WHO, 2014)
- New Zealand has the highest rate of completed youth suicides in the developed world for those aged 15-19 years (OECD, 2012)

Figure 3. Age-standardised suicide rates, by life-stage age group (years), 2005–2014



Cognitive vulnerabilities & Suicidal behaviour

Cognitive distortions and dysfunctional attitudes have emerged as possible mechanisms underlying the development and maintenance of suicidal behaviour

Ellis & Ratcliff, 1986; Fazakas-DeHooget al., 2017; Jager-Hyman et al., 2014; Jekkel & Tringer, 2004

Cognitive distortions: systematic errors in processing through which perceptions and interpretations of experience are distorted, in response to ambiguous or negative life events

Dysfunctional attitudes: maladaptive and rigid beliefs individuals hold about oneself, the future and the world that predispose people towards negative interpretations of life events

What has been done so far

- Ellis & Ratliff (1986)
 - suicidal psychiatric inpatients demonstrated significantly more dysfunctional attitudes compared to nonsuicidal inpatients.
- Jekkel & Tringer (2004)
 - significant differences on 9 items of the DAS between suicidal and nonsuicidal patients.
- Jager-Hyman et al. (2014)
 - individuals who had recently attempted suicide were more likely to engage in thinking characterized by cognitive distortions than their psychiatric controls.
- Fazakas-DeHoog et al. (2017)
 - cognitive distortions had a direct effect on suicidal ideation in a large sample of undergraduate students.

Current study

Examine the associations between cognitive distortions, dysfunctional attitudes and suicide risk in young adults

using **a different methodological approach**

Cluster analysis

- **Hierarchical Cluster Analysis (HCA)** (Chadjipadelis, 2015)
 - Classify subjects on the basis of a set of measured variables into a number of different groups so that the subjects with a similar profile of scores are placed in the same group.
- **Multiple Correspondence Analysis (MCA)** (Greenacre, 2007)
 - All variables jointly analysed via MCA on the so-called Burt table, which cross-tabulates all variables against each other.
 - The main MCA output: a set of orthogonal axes that summarize the associations between variable categories into a space of lower dimensionality, with the least possible loss of the original information contained in the Burt table.

Procedure

- Anonymous online survey
- Duration \approx 30 minutes
- Voluntary and anonymous participation
- Possibility for participation to cause distress due to the nature of certain questions
- Approval - Massey University Human Ethics Committee

Participants

$N = 92$ young adults
(78 women)

Age range: 18 to 35
years (Mean age = 26;
 $SD = 5.43$)

55% students

- **Ethnicity:**
 - New Zealand European (79%);
 - Maori (5.5%);
 - Asian (5.5%); and
 - 10% were of other ethnic backgrounds
- **Sexual orientation:**
 - Heterosexual (82%);
 - Bisexual (11%);
 - Gay/Lesbian (5.5%); and
 - Questioning (1.5%);

Cognitive Distortions Scale (CDS)

(Covin et al., 2011)

1. MINDREADING

People will sometimes assume that others are thinking negatively about them. This might occur even though the other person has not said anything negative. This is sometimes called *mindreading*. To illustrate this, please read the following passages:

A. Sonya is having coffee with her boyfriend Jim. Jim is quiet, and Sonya asks if anything is wrong. Jim replies that he is 'Okay.' Sonya does not believe Jim. She starts to think that he is unhappy with her.

B. Bob has been working on a project for weeks. He finally gives the final product to his boss, and is curious about his boss' opinion of his work. After a few days pass, Bob starts to worry that his boss thinks he is incompetent.

Please estimate how often you engage in Mindreading when in social situations (like when you're with friends, partners or family).

1	2	3	4	5	6	7
Never		Sometimes				All The Time

Dysfunctional Attitude Scale, Form A (DAS)

(Weissman & Beck, 1978)



ATTITUDES	TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE
REMEMBER, ANSWER EACH STATEMENT ACCORDING TO THE WAY YOU THINK <u>MOST OF THE TIME</u> .							
1. It is difficult to be happy unless one is good looking, intelligent, rich and creative.							
2. Happiness is more a matter of my attitude towards myself than the way other people feel about me.							
3. People will probably think less of me if I make a mistake.							
4. If I do not do well all the time, people will not respect me.							

An Ultra-Brief Screening Scale for Anxiety and Depression: the PHQ-4 (Kroenke et al., 2009)

Over the past 2 weeks have you been bothered by these problems?	Not at all	Several days	More days than not	Nearly every day
Feeling nervous, anxious, or on edge	0	1	2	3
Not being able to stop or control worrying	0	1	2	3
Feeling down, depressed, or hopeless	0	1	2	3
Little interest or pleasure in doing things	0	1	2	3

Rosenberg's Self-esteem Scale (RSES)

(Rosenberg, 1965)

	Strongly agree	Agree	Disagree	Strongly disagree
1 On the whole, I am satisfied with myself.	3	2	1	0
2 At times, I think I am no good at all.	3	2	1	0
3 I feel that I have a number of good qualities.	3	2	1	0
4 I am able to do things as well as most other people.	3	2	1	0
5 I feel I do not have much to be proud of.	3	2	1	0
6 I certainly feel useless at times.	3	2	1	0
7 I feel that I'm a person of worth, at least on an equal plane with others.	3	2	1	0
8 I wish I could have more respect for myself.	3	2	1	0
9 All in all, I am inclined to think that I am a failure.	3	2	1	0
10 I take a positive attitude toward myself.	3	2	1	0

asQ – Ask Suicide-Screening Questions

(Horowitz et al., 2012)



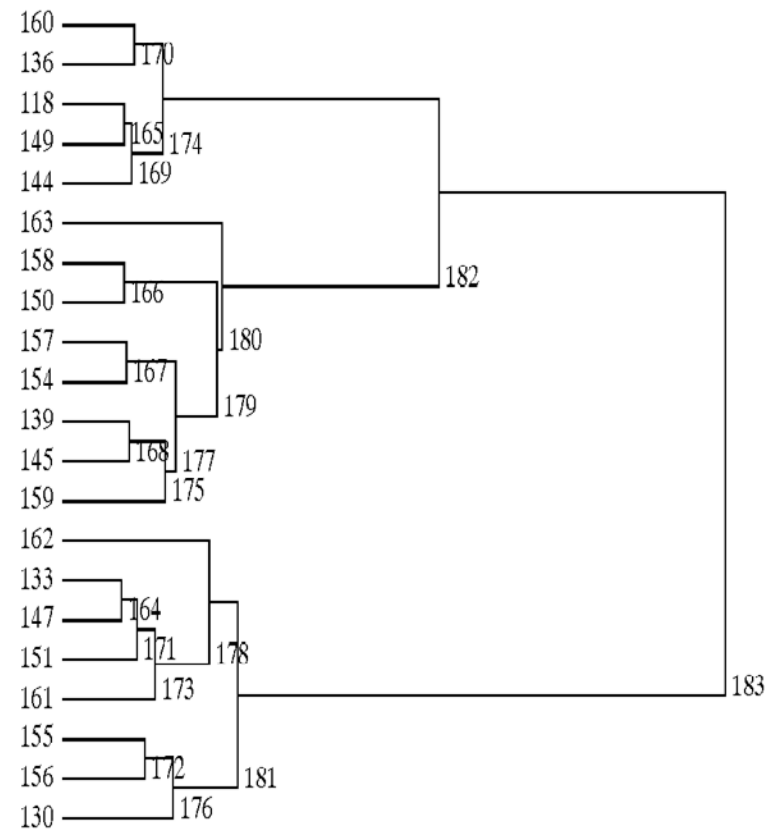
Ask **Suicide-Screening** Questions

Ask the patient:

- | | | |
|---|-----|----|
| 1. In the past few weeks, have you wished you were dead? | Yes | No |
| 2. In the past few weeks, have you felt that you or your family would be better off if you were dead? | Yes | No |
| 3. In the past week, have you been having thoughts about killing yourself? | Yes | No |
| 4. Have you ever tried to kill yourself? | Yes | No |

HCA for the CDS and related dendrogram

	174	180	181
N	28	36	28
cda1		3	1
cda2		3	1
cda3		{2,3}	1
cda4	2	3	1
cda5	2	3	1
cda6	2	3	1
cda7	2	3	1
cda8	2	3	1
cda9	2	3	1
cda10	2	3	1
cdb1	2	3	1
cdb2	2	3	1
cdb3	2	3	1
cdb4	2	3	1
cdb5	2	3	1
cdb6	2	3	1
cdb7	2	3	1
cdb8	2	3	1
cdb9		3	1
cdb10	2	3	1



HCA for all study variables

Group 179,
N=17 (19%) -
the High
Vulnerability
group

- High numbers of cognitive distortions, dysfunctional attitudes, very low self-esteem, moderate to high scores on depression and anxiety and a positive screen for suicide risk.

Group 180,
N=38 (41%) -
the Low
Vulnerability
group

- Relatively no cognitive distortions, adaptive functional attitudes, normal self-esteem, normal scores on depression and anxiety and screened negatively for suicide risk.

Group 181,
N=37 (40%) -
the Ambivalent
Vulnerability
group

- Moderate numbers of cognitive distortions, had mostly 'neutral' and/or 'agree' responses on dysfunctional attitudes, low self-esteem, and mild scores on depression and anxiety.

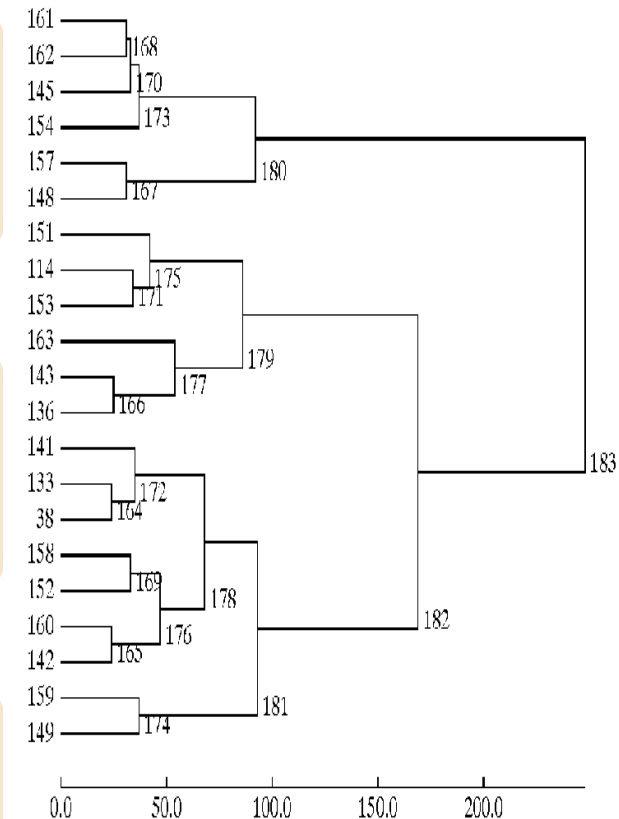


Table 1. Multiple Correspondence Analysis output on the Burt table - a symmetric indicator matrix – of all two-way cross-tabulations between the categorical variables.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variables	Labels	HighV N=17	LowV N=38	AmbiV N=37	Clusters of Variables	Suicide risk	No risk	N %
Gender	Male		X		38	35.71%	64.29%	15.22%
	Female				37	42.31%	57.69%	84.78%
ETHNIC1	New Zealand				37	40.85%	59.15%	77.17%
ETHNIC2	Other				40	42.86%	57.14%	22.83%
SEXOR1	Heterosexual		X		38	29.33%	70.67%	81.52%
SEXOR2	Other	X		X	40	94.12%	5.88%	18.48%
ASQ1	Suicide risk	X			40	100.00%		41.31%
ASQ2	No risk		X		38		100.00%	58.69%
CDS-A	Never		X		38	17.86%	82.14%	30.43%
CDS-B	Sometimes			X	37	39.29%	60.71%	30.43%
CDS-C	All the time	X			40	61.11%	38.89%	39.13%
DAS-A	Disagree		X		38	21.43%	78.57%	30.43%
DAS-B	Neutral			X	37	41.94%	58.06%	33.70%
DAS-C	Agree/Neutral			X	40	48.00%	52.00%	27.17%
DAS-D	Agree	X			32	87.50%	12.50%	8.70%
RSES-A	0-3	X			32	86.67%	13.33%	16.30%
RSES-B	4-6			X	40	56.52%	43.48%	25.00%
RSES-C	7-10		X		38	22.22%	77.78%	58.70%
PHQ4-A	Normal		X		38	27.91%	72.09%	46.74%
PHQ4-B	Mild			X	37	41.67%	58.33%	26.09%
PHQ4-C	Moderate	X			40	68.75%	31.25%	17.39%
PHQ4-D	High	X			32	55.56%	44.44%	9.78%

Note. Chi-square statistically significantly associations between variables are represented graphically with an X to ease the interpretation of the structures in the data.

For each group, the corresponding levels for each level of the variables are noted. By writing the value X in a cell we noted that there was a significant contribution of the variable (row) to the formation of the group (column). For example in cell (SEXOR1, LowV) X means that the percentage of respondents that belong to group LowV and belonging to group 1 for SEXOR is statistically significant different than the percentage of the respondents not belonging to group LowV and belonging to group 1 for this variable.

Findings

Group 179, $N=17$ (19%)
- the High
Vulnerability group

Group 180, $N=38$
(41%) - the Low
Vulnerability group

Group 181, $N=37$
(40%) - the Ambivalent
Vulnerability group

- 60% of young adults were in the groups with High or Low Vulnerability and demonstrated the expected congruent combination of dysfunctional cognitive processing and suicide risk.
- As predicted, cognitive distortions and dysfunctional attitudes were associated with suicide risk.
 - 61% of the young adults with high levels of cognitive errors in their thinking, and 87.5% with high levels of dysfunctional attitudes screened positive for suicide risk.

Strengths & Limitations

Strengths

- A more holistic analysis of the concepts under study
- Examination of associations between all the variables at the same time

Limitations

- Cross-sectional design
- Community sample
- Use of self-report measures

Conclusions

Our findings underscore the importance of targeting cognitive distortions and dysfunctional attitudes when

- working with and/or
- developing intervention and prevention programmes

for individuals with identified risk of suicide in an effort to reduce suicidal behaviours

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