

Comorbidity between Depression and the Results of Mortality

Wendy Thomson*

Department of Experimental Psychology, Bristol University, UK

Abstract

Introduction: The present study examined the relationship between personality profiles and self-defeating ideation and behaviour. The present study examines depression as a psychological condition that is related to self-defeating patterns of thought and behaviour.

Method: The present study utilized data from 159 participants. A substantial portion of the sample received psychiatric care for depression: 34.2% of the sample received treatment for depression, while the 65.8% of the sample did not receive psychiatric treatment for depression

Results: Higher levels of Neuroticism were associated with heightened levels of self-defeating ideation, particularly if high Neuroticism was combined with Introversion.

Conclusions: The findings suggest that the study of temperament, and its relationship with self-defeating behaviour, may increase our understanding of the association between clinically severe depression and premature death from natural causes.

Keywords: Personality; Depression; Self-defeating ideation; Premature death; Comorbidity

Introduction

Murray and Lopez report that the Global Burden of Disease [GBD] study based on the collaboration of over 100 scientists from more than 20 countries predicts major depression to become the second leading cause of disability and premature mortality worldwide by 2020. The results following a 24 year prospective study, Thomson [1] showed that a diagnosis depression is related to a higher risk of premature mortality in some patients from both natural and unnatural death. Table 1 shows the observed and expected death by year after discharge

The patients diagnosed with reactive/neurotic depression showed only a small association with premature death due to unnatural causes, during the 24 years. A factor that identifies this group from the endogenous depressives apart from severity is premorbid personality. The neurotics are generally thought to act out their lives externalizing conflict and to experience difficulties in inter-personal relationships. It might be possible that neurotic behaviour actually protects them from the pernicious effects caused by internalization of stress and the consequent physical deterioration and premature death. The patients diagnosed with endogenous depression were shown to be at a greater risk of dying prematurely, particularly in the early years after referral from both natural and unnatural causes (Table 2).

While these findings suggest a link between depression and premature death, it is more difficult to establish the direction of causal associations. There is a large body of opinion linking malignant disease

with depression and premature mortality [2]. Cardiovascular disease was in excess in a study conducted by Norton and Whalley and Lewis. However, further meticulous studies, such as Tsuang and Woolson, found no evidence of premature mortality when suicide and accidental deaths were excluded. Other studies that have excluded suicide and accidental death have also failed to find evidence of premature mortality. Patten found various chronic medical conditions were associated with increased prevalence of major depression in a sample of 17,626 Canadians. However, comorbidity of major depression with chronic medical conditions was not associated with increased health care service use. Further studies by Covinsky et al., Hermann – Lingen et al., Schoevers et al. all reported the mortality risk associated with depression.

Prospective investigations provide some evidence suggesting that clinically severe depression can increase the risk of subsequent illness. In these investigations, causal inferences can be made with somewhat greater confidence, since depression precedes physical illness. Illustratively, findings from the Baltimore Catchment Area Study suggest that individuals who have suffered from clinical depression are at heightened risk for cancer [3], Type II Diabetes [4-6], disabling physical conditions [7], hypertension [6], myocardial infarction [8], and stroke [9].

Prior studies suggest that self-defeating ideation can be thought of as a stable, pervasive, and enduring feature of personality that predisposes individuals to heightened risk-taking and health-compromising behaviours [10]. For depressed individuals, efforts to attain self-validation in the face of threats to self-worth may have deleterious effects on self-control, health maintenance habits, and

Year of Death	Observed Deaths	Expected Deaths	Chi Square	Significance Level
1960	15	4.0	30.24	0.001
1961	31	8.3	62.46	0.001
1962	10	9.1	0.08	NS
1963	17	9.0	7.23	0.01
1964	15	8.4	5.14	0.02
1965	17	9.0	9.96	0.01
1966	15	7.8	6.53	0.02
1967	14	7.6	5.49	0.02

Table 1: Observed and expected deaths for cohort of depressed patients.

*Corresponding author: Wendy Thomson, Department of Experimental Psychology, Bristol University, UK, Tel: 44-117-928-9000; E-mail: wendythomson@btinternet.com

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Age group	Neoplasms	Hypertensive disease	Ischid	Cerebro vas. dis.	Respir disease	Accidents	Suic. & Undeter deaths	Other causes	All causes
60-66									
67-71							1084.3*		
72-76									
77-81	82-84								
80-84						569.6*			

* P, 5% level; **P, 1% level.

a) Reactive depression

Age group	Neoplasms	Hypertensive disease	Ischid	Cerebro vas. dis.	Respir. disease	Accidents	Suic. & Undeter deaths	Other causes	All causes
60-66				216**	287.2**	913.88	1047.3*	241.1**	218.7**
67-71									
72-76		505.4*							
77-81									
82-84									
60-84					165.2**	662.3**	379.3**	192.1**	144.5**

* P, 5% level; **P, 1% level.

b) Endogenous depression

Table 2: Causes of death for reactive and endogenous depressives.

physical health [11]. Prior research by the author Thomson [1] utilized the discrepancy between ideal and perceived behaviour as an indicator of self-defeating ideation. Consistent with the view that depression increases self-defeating ideation, individuals with higher levels of neuroticism exhibited higher scores on multiple indicators of self-defeating ideation. Individuals who were clinically depressed showed greater discrepancies between ideal and perceived levels of emotional health. The present study will build on the findings of Thomson [1] by looking at the association between personality profiles associated with depression and self-defeating behaviour. Eysenck [12] initially proposed that depression was associated with a temperamental disposition toward higher levels of Neuroticism and Introversion (as distinct from other neurotic disorders, such as hysteria, that were more characteristic of Extraverts). The present study will consider whether heightened levels of self-defeating ideation are associated specifically with traits that predispose individuals to depression, or whether self-defeating ideation is linked more broadly to a wider range of neuroses.

Methods

Sample

The present study utilized data from 159 participants. A substantial portion of the sample received psychiatric care for depression: 34.2% of the sample received treatment for depression, while the 65.8% of the sample did not receive psychiatric treatment for depression. Females comprised 64% of the sample, while 36% were male. The median age of the study participants was 39 years old. With respect to employment status, 40.9% of the sample was employed full-time, 30.8% were employed part-time, and 1.9% was self-employed. A further 6.3% were full-time students without employment, 10.1% were unemployed, 5.0% were disabled, 2.5% were retired, and 2.5% were homemakers. Pre-existing medical conditions were present in 35.1% of the sample.

Procedures

The test group consisted of patients referred to a psychiatrist and diagnosed as depressed in an outpatient department. The questionnaires were enclosed in a stamped addressed envelope and accompanied by an information sheet that explained the purposes of the study. Potential participants were informed that their involvement in the study was

voluntary, that they could withdraw from the study at any time after they started, and that responses to the survey would be anonymous. Every patient who was referred as possibly depressed by their General Practitioner was invited to complete a questionnaire while they awaited the consultation with the psychiatrist. Control subjects were not being treated for mental illness

Instruments

Eysenck personality questionnaire: The Eysenck Personality Questionnaire (EPQ; Eysenck and Eysenck) [13] consists of 90 yes-no items that are designed to measure three dimensions of personality: Neuroticism, Extraversion, and Psychoticism. The measure also includes a Dissimulation scale to screen out respondents who give distorted answers to appear socially desirable. The EPQ scales have shown high levels of reliability, both in terms of internal consistency and test-retest reliability coefficients [13]. Alpha coefficients and test-retest correlations for the EPQ scales are higher than .8 across demographic sub-samples. The dimensional structure of the EPQ has proved to be robust in numerous factor-analytic studies. Illustratively, a simple structure factor rotation yields three dimensions that are comprised, respectively, by the Neuroticism, Extraversion, and Psychoticism items [14]. Further, these three dimensions appear to underlie the factor structure of many other widely-used personality inventories [15]. Considerable evidence for the external validity of the EPQ dimensions has been provided by numerous studies relating differential performance on experimental tasks, as well as behavioural patterns in real-world settings, to levels of Neuroticism, Extraversion, and Psychoticism [12].

Self destruction questionnaire: The SDQ consists of 33 statements describing elements of the respondents' behaviour and feelings, and is administered in two parallel forms: one describing the extent to which the statement describes the actual behaviour or feelings of the respondent (the Now form), and the other indicating the ideal level of each item (the Ideal form). Illustratively, the Control item asks participants to indicate how much control they have over "things that made them feel optimistic and content." Participants responded to this item by indicating whether they had Total Control or No Control (Appendix A shows the full set of SDQ Now and Ideal items). Subjects were asked to mark their response to each item on a scale that ranged

from 0 to 100. At the one extreme, the preferential state or behaviour was represented by a score of 0, while a negative response was indicated by a score of 100 scale. The SDQ Now Total is scored by computing the average SDQ Now rating items. The SDQ Ideal Total score is computed as the average Ideal rating of the items. The SDQ Total Discrepancy score is computed by subtracting the Ideal score from the Now score. Higher discrepancy scores indicate a greater difference between ideal and perceived behaviours and feelings, and are interpreted as an indicator of increased risk for self-harm.

The scoring of the SDQ is based on factor analysis of the item ratings, as described by Thomson [1]. Six factorially-based scores are computed for the SDQ-Now, and six parallel scales are computed for the SDQ-Ideal. The Emotional Well-Being scale is computed as the average rating of items dealing with control, initiative, contentment, stress, problems, temper, and jealousy control. The Community Affairs scale was computed as the average rating for items dealing with elections, neighbours, country, and community. The Personal Habits scale was computed as the average of items related to diet, exercise, and debt. The Developmental Contexts scale was computed as the average rating of items pertaining to early education, adult learning, colleagues, childhood, work, family, family time, law, and altruism. The Substance Use scale was computed as the average of items dealing with drugs, alcohol, and smoking. The Social Control scale was computed as the average of items related to honesty, caring, law, temper, aggression, conservation, destruction, and vandalism. A Self-Defeating ideation score for each of the SDQ scales is computed by subtracting the SDQ Ideal rating from the SDQ Now rating. Higher discrepancy scores indicate that the SDQ Now rating reflects a more negative evaluation of present circumstances compared with the SDQ Ideal rating.

Results

The main analyses of the present study then proceeded in two stages. The first stage of the analyses sought to identify clusters of individuals who shared similar profiles of personality traits. The second stage of the analyses examined the association between personality profiles and dimensions of self-defeating ideation.

Personality profiles

To identify clusters of individuals with similar personality profiles, k-means cluster analysis was utilized [16]. The k-means analysis was employed to create clusters with high levels of homogeneity within-cluster on the EPQ dimensions of Extraversion, Neuroticism, and Psychoticism. The k-means algorithm is non-hierarchical, in the sense that it finds the best solution for k clusters, regardless of how cases were categorized when k-1 clusters were formed. The k-means analysis for five clusters presented a grouping that was theoretically interpretable in terms of the EPQ framework [13], as shown in Table 3. The first cluster (Neurotic Extraverts) had elevated scores on Neuroticism, and high scores on Extraversion. The second cluster (Stable Extraverts) had low scores on Neuroticism and high scores on Extraversion. The third cluster (Neurotic Introverts) had high scores on Neuroticism and low scores on Extraversion. The fourth cluster (Stable Introverts) had relatively low scores on Neuroticism and low scores on Extraversion.

Cluster	N	Psychoticism	Extraversion	Neuroticism
1 Neurotic Extravert	53	3.77	14.36	15.85
2 Stable Extravert	23	1.83	13.87	6.57
3 Neurotic Intravert	31	3.55	6.32	19.16
4. Stable Intravert	18	2.67	6.44	10.33

Table 3: Mean EPQ scores in four-cluster K-means solution.

SDQ Scale	Cluster			
	1 N-E	2 S-E	3 N-I	4 S-I
Emotional Well-being	32.37	7.99	43.17	17.60
Community Affairs	21.15	8.24	34.74	18.78
Personal Habits	28.42	11.85	35.29	12.68
Developmental Contexts	19.54	5.88	25.59	19.74
Substance Use	13.44	1.14	4.46	2.83
Social Control	15.38	8.84	15.54	4.91

Table 4: Mean SDQ discrepancy scores for clusters 1, 2, 3, and 4.

Self-defeating ideation and personality profiles

In order to examine differences in levels of self-defeating ideation between personality clusters, one-way analysis of variance was conducted (Table 4).

Clusters had significantly different levels of Emotional Well-Being ($F(3,121) = 21.945; p < .001$), Community Affairs ($F(3,121) = 9.809; p < .001$), Personal Habits ($F(3,121) = 12.242; p < .001$), Developmental Contexts ($F(3,121) = 8.410; p < .001$), Substance Use ($F(3,121) = 5.082; p < .01$), and Social Control ($F(3,121) = 3.436; p < .05$).

In order to interpret these significant differences, post-hoc tests of mean differences were conducted, using Bonferroni's correction to reduce the risk of falsely rejecting the null hypothesis. With regard to Emotional Well-Being, differences between each cluster and every adjacent cluster were statistically significant. Neurotic Introverts had higher discrepancy scores for Emotional Well-Being than any other group, followed by Neurotic Extraverts, Stable Introverts, and Stable Extraverts. On the Community Affairs and the Developmental Contexts dimensions, Neurotic Introverts again had significantly higher discrepancy scores than all other clusters, followed by Neurotic Extraverts and Stable Introverts. Stable Extraverts had significantly lower discrepancy scores on these dimensions than all other groups. With regard to Personal Habits, Neurotic Extraverts and Neurotic Introverts had higher discrepancy scores than Stable Extraverts and Stable Introverts. On the dimension of Substance Use, Neurotic Extraverts had higher discrepancy scores than all other groups. On Social Control, Neurotic Introverts and Neurotic Extraverts had higher discrepancy scores than Stable Introverts.

Discussion

The findings of the present study suggest that personality profiles are related with differential levels of self-defeating ideation. The personality profile of Neurotic Introversion is of particular interest for understanding the linkage between depression and premature mortality, as this profile has been linked with a temperamental disposition to depression and melancholia [12]. In the present study, Neurotic Introverts exhibited higher scores across five of the six indices of self-defeating ideation. In addition, Neurotic Extraverts displayed elevated levels of self-defeating behaviour with regard to Personal Habits and Substance Use. Conversely, Stable Extraverts displayed lower levels of self-defeating ideation on all six indices. These findings suggest that individuals with a neurotic temperament are more prone to self-defeating behaviour and thinking. However, to more fully understand the association between personality and self-defeating ideation, one might consider the individual's overall personality profile, as well as levels of a specific trait such as Neuroticism. While Neuroticism appears to be a primary factor associated with heightened self-defeating ideation, Intraversion seems to broaden and exacerbate the impact of Neuroticism on self-defeating ideation. Among Stable

individuals, Intraversion and self-defeating ideation are not linked. However, among Neurotics, Introverts report self-defeating behaviour and thinking across a wider range of domains, including Emotional Well-Being, Community Affairs, and Developmental Contexts.

Conclusion

Death from suicide has long been accepted as having a causal association with depression but premature death due to natural causes following a depressive illness has not been widely accepted. It is alarming to consider that this diagnosis was accompanied by such serious consequences, particularly when the patients had received treatment and when death for some occurred so soon after discharge.

Stress and the inability to cope with stress, have been shown to be related to cancer and to coronary heart disease, and endogenous depression may be particularly related to such stress [17]. Seligman [18] believed that a psychological state, particularly depression, can be lethal; he associated depression, loss of control and helplessness to susceptibility and to death. The truth is however that we do not know why there are these differences.

The seriousness of such results place all involved with the treatment of endogenous depression under an obligation to:

1. Assess the patient before discharge.
2. To consider the period after discharge as a crucial and vulnerable time for the patient.
3. To search for the causal links between endogenous depression and premature mortality.

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