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Research report

Validity, reliability and prevalence of four 'clinical content' subtypes of depression

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HIGHLIGHTS

- Global Depression may be subdivided into clinical content subtypes.
- Validity of those subtypes is based upon symptomatology.
- Reliability is demonstrated for each subtype via data drawn from three populations.
- Prevalence indicates individual differences in subtype profiles.
- Individualised treatment planning requires consideration of these subtypes.

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ABSTRACT

Although depression is often diagnosed via reference to a list of nine criteria which may be used to form a unitary diagnosis, there is significant variation in the content of those nine criteria to justify consideration of four 'clinical content' subtypes of depression based upon differences in symptomatology. Each of those four subtypes has previously been described for their different causes, underlying neurobiological pathways, and treatment requirements. This paper reports on the validity, reliability and prevalence of those four subtypes of depression across three samples of participants. Validity is demonstrated and satisfactory reliability values are reported for each subtype, plus significant correlations between items used to measure each subtype, arguing for the individual homogeneity of each of these four subtypes. Prevalence data indicated that there were significant subtype differences at the sample and individual level, challenging the usage of a single global depression score. These results argue for further consideration of these subtypes when researching depression and in planning individualised treatment regimes.

1. Introduction

Clinical and subsyndromal depression adversely affect physical health, relationships and cognitive performance [1–3], and produce the greatest decrement in personal health [4] and the highest cost of care [5]. As a result, depression has been described as the major contributor to the total disease burden [6] and continues to be the second most common contributor to years lived with disability [7]. Some data suggest that depression poses a similar risk as does smoking for mortality from all causes, even when related health factors such as blood pressure, alcohol intake, cholesterol and social status are taken into account [8].

Treatment of depression assumes accurate identification of depressed persons, the severity of their depression, and the ways in which the depression they experience influences their physical and mental health. The 'gold standards' in assessment of depressive symptomatology are the ICD and DSM classification systems for *Major Depressive Disorder* (MDD), which provide diagnostic criteria that include cognitive, emotional and physiological symptoms and which may be used within structured interviews or applied by self-report scales to assess the presence and severity of depression. The diagnostic criteria for MDD are shown in column 1 of Table 1.

1.1. Different types of depression

Despite the most common outcome of assessment for MDD being a unitary diagnosis (i.e., either MDD is present or not), that process ignores the fact that there may be different varieties or "subtypes" of depression. For example, Halbreich [9] suggested that clinical assessments for depression might allow for the presence of multiple symptom groups of the diagnostic criteria for MDD, and Baumeister and Parker [10] found 15 such depression subtypes that

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Table 1
Diagnostic criteria, extensions, and associated features for major depressive disorder from DSM-V, plus identification of major clinical content subtype association. At least five of the following symptoms (including at least diagnostic criteria 1 or 2) must have been present during the last 2 weeks, and these must represent a change from previous functioning.

Diagnostic criteria[1]	Extensions to diagnostic criteria	Clinical content subtype
1. Depressed mood most of the day, nearly every day, from subjective report (e.g., feels sad or empty) or observations made by others (e.g., appears tearful)	Irritability (especially in children or adolescents), persistent anger, angry outbursts, blaming others, exaggerated frustration over minor events. Sad, hopeless, discouraged, "down in the dumps", feeling "blah" or having no feelings, feeling anxious. Sadness may be replaced by somatic complaints (bodily aches and pains)	Depressed mood
2. Markedly diminished interested or pleasure in all, or almost all, activities most of the day, nearly every day	Less interested in hobbies, sports or previously-enjoyed activities. Social and/or sexual loss of interest or desire	Anhedonia
3. Significant weight loss when not dieting or weight gain, or decrease or increase in appetite nearly every day	May feel as if they have to force themselves to eat. May crave sweets or other specific foods	Somatic
4. Insomnia or hypersomnia nearly every day	Initial insomnia less common than middle insomnia (waking during the night) or terminal insomnia (unable to return to sleep). Hypersomnia may be oversleeping at night or during the day	Somatic
5. Psychomotor agitation or retardation nearly every day observable by others	Agitation: Inability to sit still, pacing, handwringing, pulling or rubbing the skin, clothing or other objects. Retardation: slowed speech, slowed thinking, slow body movements; pauses before answering; soft speech, lack of inflection in speech; reduced speaking frequency and amount, reduced content variation	Somatic
6. Fatigue or loss of energy nearly every day	Tiredness, often without physical exertion; small tasks (such as dressing) require major effort; efficiency of completing tasks is reduced	Somatic
7. Feelings of worthlessness or excessive or inappropriate guilt nearly every day	Unrealistic guilt or feelings of worthlessness over minor failures; misinterpretation of neutral or trivial daily events as evidence of major personal defects; may take responsibility for untoward events; delusional sense of responsibility for unfortunate world events; self-blame for illness	Depressed mood
8. Diminished ability to think or concentrate, or indecisiveness, nearly every day	Easily distracted; complain of memory difficulties sometimes mistaken for dementia; inability to complete previously-manageable complex intellectual tasks; major drop in grades if studying	Cognitive
9. Recurrent thoughts of death, recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide	Thoughts that others would be better off if the depressed person were dead; suicidal thoughts and plans can vary in frequency, intensity and lethality; a desire to give up in the face of perceived insurmountable obstacles, or an intense wish to end a very painful emotional state	Depressed mood

[1]The symptoms must cause clinically significant distress or impairment in social, occupational, or other areas of functioning, must not be due to the direct physiological effects of a substance or a general medical condition.

were based upon MDD symptoms, etiology, time of onset, gender, and treatment resistance that were collected from 754 reviews of depression. The heterogeneity of MDD has been identified in other reviews e.g., [11–13], thus opening the way for further considerations of how depression might be most effectively diagnosed as a series of subtypes of depression rather than a simple 'MDD present/absent' categorization system.

That argument for considering multiple subtypes of depression receives support from Ostergaard et al. [14], who calculated that there are 1497 possible combinations of the diagnostic criteria that meet the DSM-V requirements for a diagnosis of MDD, thus giving numerical value to comments that depression is "heterogeneous" Consequently, it has been suggested that the field might benefit from further consideration of different subtypes of depression based upon different clusters of the MDD diagnostic criteria [15–17]. As well as being relevant to assessment and diagnosis for depression, the provision of focused treatment options requires an individualized approach that is tailored to the unique symptom footprint of the presenting individual [18] because the presence of different characteristics of depression in patients requires different treatment approaches [19,20].

In a recent paper [21] we described four such subtypes of MDD, based upon different symptoms, antecedents, neurobiological pathways, and treatment requirements. Those four varieties of MDD were called "clinical content" subtypes, and were identified as *Depressed mood*, *Anhedonic depression*, *Somatic depression* and *Cognitive depression* on the basis of the DSM-V MDD diagnostic criteria and associated features (Table 1, column 2) within each subtype (Table 1, column 3). This paper extends that initial description of those clinical content subtypes by presenting data on their validity and reliability across three samples drawn from different populations.

1.2. Clinical content subtypes of depression

The methodology used to identify the four clinical content subtypes is described in our earlier paper, and is based upon identification of subtypes that: (i) are relevant to everyday clinical practice as well as research, (ii) represent significant aspects of the DSM and ICD systems' symptomatology for this MDD, (iii) have basic symptomatology that overlaps only marginally if at all, and (iv) have been shown to require different treatment approaches. This process differs from factor analysis (which has been used in some studies to group MDD symptoms) by being *a priori* (i.e., the symptoms are grouped before data are collected) whereas factor analysis requires data to be already collected and is therefore *a posteriori* in its definitions of MDD subtypes. Additionally, studies which have followed the factor analytic approach have not always produced congruent subtypes [22,23], which is not uncommon since factor structures may vary across samples with different socioeconomic and other demographic characteristics, and even on the same sample at different times [24]. Therefore, clustering of the nine diagnostic criteria for MDD that are set out in Table 1 on the basis of the extended descriptions of the behaviours that underlie those symptoms (see column 2) can provide a method of classifying the nine MDD criteria according to clinical content, as shown in column 3 of Table 1.

1.3. Assessing depression subtypes

Although the most accepted criteria for identifying depression are those set out in the ICD and DSM systems which have given rise to the Structured Clinical Interview for Depression (SCID), the SCID takes about 20 min and requires that the interviewer is appropriately trained, and that the presence or absence of particular