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MEDICINE

Three potential emotional causes of depressive symptoms – negative emotionality, hyper-emotionality and hypo-emotionality: a preliminary study

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The broad diagnostic category of DSM Major Depressive Disorder (MDD) is heterogeneous, and we suggest that it can be subdivided into at least three groups: those with Negative-emotionality who experience strong negative emotionality such as misery, anxiety, guilt, fatigue etc; Hyper-emotionality who experience strong emotions in both negative and positive directions; and Hypo-emotionality who experience weak or blunted emotions. This model was tested using an internet survey of 251 subjects that measured strength of depressive symptoms; and strength and directionality of emotions. All three emotionality groups were significantly more depressed than controls. This indicates that depressive symptoms may be a consequence of at least three different emotional patterns. One implication may be that different emotionality sub-types could benefit from different treatments.

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The broad diagnostic category of DSM Major Depressive Disorder (MDD) was established in 1980 – in practice it seems that MDD can be interpreted as inclusive of patients with a wide range of dysphoric feelings including depression, anxiety, mood swings and emotional blunting/ unemotionality (Watson 1988a, Nutt 2007). In other words, depressive symptoms may be regarded as a consequence of more than one emotional state; rather as pain may be a consequence of many causes (Charlton 2009).

It has been argued that Major Depressive Disorder is therefore heterogeneous, and can be subdivided into at least three groups, each characterised by a distinctive emotional state.

Negative-emotionality (Negative-E) describes the most obviously depressive group, who mainly experience strong negative emotionality such as misery, anxiety, guilt, fatigue etc.

A second group would be Hyper-emotional (Hyper-E) who experience strong emotions in both negative and positive directions (e.g. they are emotionally unstable, hyper-responsive, subject to mood swings).

A third group would be Hypo-emotional (Hypo-E), with weak or blunted emotions in both negative and positive directions (e.g. they are 'flat', demotivated, unresponsive; Charlton, 2009).

These states may be characterized by each having a different*pattern* of 1. Emotional strength and 2. Emotional direction (i.e. positive/ negative, both or neither).

As a first test of this hypothesis we conducted an internet survey on 251 subjects recruited through advertisements posted on several depression-related online communities (www.reddit.com/r/depression; www.nomorepanic.co.uk; www.depressionforums.org; http://talk-depression.org). Strength of depressive symptoms was measured using the Beck Depression Inventory (Beck et al 1961), while the strength and directionality of emotions was measured the PANAS (Positive and Negative Affect Scale) (Watson 1988b).

217 subjects were classified into groups of Controls, Negative-, Hyper- and Hypo-Emotionality by using the Positive-Affect (PA) and Negative-Affect NA) sub-divisions of PANAS:

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Controls n=27, Lowest 25% NA, Highest 25% PA

Negative-E n=50, Highest 50% NA, Lowest 50% PA

Hyper-E n=76, Highest 50% NA, Highest 50% PA

Hypo-E n=64, Lowest 50%NA, Lowest 50% PA

Severity of depressive symptoms are shown in Table 1:

Emotionality	BDI Mean	BDI SD	p
Positive-E Control	17.3	9.89	
Negative-E	43.9	7.21	<0.001
Hyper-E	35.7	9.61	<0.001
Hypo-E	35.8	10.1	<0.001

The results show that despite the 'control group' being in the Mild range for depressive symptoms on the BDI; all three of the hypothesized emotionality groups scored were significantly more severe in depressive symptoms than Controls; indeed within the 'Severe' depressive symptoms range for BDI scores.

These preliminary results seem clear and consistent with the hypothesis that depressive symptoms may be a consequence of at least three different emotional patterns – Negative-E, Hyper-E and Hypo-E. This conclusion, of course, requires replication in a clinical subject sample evaluated by face-to-face diagnostic interviewing. If correct, one potential implication may be that different emotionality sub-types could benefit from a different therapeutic approach; for example Hyper-E from a trial of serotoninergic agents, and Hypo-E from noradrenaline/ dopaminergic agents (Nutt et al 2007; Charlton 2009).

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