Convergence and divergence of apathy and depression

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Discussion paper
Convergence and Divergence of Apathy and Depression

Abstract
Apathy and depression can occur as independent constructs in various diseases, however, they have also been shown to overlap in certain features. It is not always clear as to how these two constructs are practically and theoretically different (divergent) or similar (convergent). Therefore, this article aims to discuss how the relevant literature has attempted to explain the issue of divergence and convergence of these constructs and to clarify this important, albeit complex, relationship between features of apathy and depression. Finally, important considerations are outlined so that apathy and depression can be assessed and researched while taking in to account these divergent and convergent features.

Divergence
Apathy is defined as a lack of motivation pertaining to aspects of behaviour such as planning, doing things and experiencing emotions (Marin, 1996). It also includes features relating to indifference and emotional blunting, i.e. emotional neutrality (e.g. Levy, 2012; Radakovic & Abrahams, 2014). This is best exemplified through individuals not being concerned with, empathetic towards or emotionally expressive to others or their environment. Depression is most often defined through emotion, primarily as a low mood or sadness (World Health Organization, 1992). Specifically, depression is associated with feelings of dysphoria, guilt and hopelessness (Tagariello, Girardi & Amore, 2009), with these feelings often accompanied by negativity towards oneself (World Health Organization, 1992).

Based on these definitions, it seems apparent that the main divergence between apathy and depression is in relation to emotionality. While depression is characterised by emotionality itself (i.e. negative mood), apathy on the other hand is defined by emotional neutrality (i.e. no experience of positive or negative emotions). Research looking at subtypes of apathy has found emotional apathy to be least associated with depression, in healthy adults and amyotrophic lateral sclerosis patients (Radakovic & Abrahams, 2014; Radakovic et al., in press). Further, in dementia, characteristics of
Apathy are thought to be indifference, blunted emotions, low social engagement, diminished initiation and poor persistence in activities or tasks (Landes, Sperry, Strauss & Geldmacher, 2001; Tagariello et al., 2009). However, apathy research is still relatively new, as there are seldom studies that have directly looked at whether these specific aspects, or subdivisions, of apathy uniquely distinguish it from depression. Currently, many of the divergence assumptions are theoretical and have yet to be tested empirically.

**Convergence**

Apathy and depression share some common features (e.g. Levy et al., 1998; Tagariello et al., 2009). Interest is cited as the most common overlapping characteristic between apathy and depression (e.g. Landes et al., 2001; Kirsch-Darrow, Fernandez, Marsiske, Okun & Bowers, 2006) and is noted as being a part of the definition of depression (World Health Organization, 1992). Nevertheless, interest is thought to have an associated with both motivation and mood (Landes et al., 2001; Kirsch-Darrow et al., 2006). For example, when interest in an activity exists, it requires prospective enjoyment of the activity. This in turn provides motivation for such an activity, which is associated with a positive emotion or enjoyment of an activity. Further to this, interest has been observed as a separate factor specific to apathy and depression in Parkinson’s disease (Kirsch-Darrow, Marsiske, Okun, Bauer & Bowers, 2011). It is important to note that many tools that assess apathy or depression have items that ask about interest, for example interest in the well-being, activities, plans and surroundings of oneself or others (e.g. friends or family members). Therefore, it is important to be aware of and sensitive to how often these tools mention interest and this taken into account when choosing appropriate tools for assessing either depression or apathy.

Additionally, anosognosia, or a lack of insight or awareness, has in the past been considered an overlapping characteristic of apathy and depression (Landes et al., 2001). In a prospective follow up study, 199 patients with dementia were found to display anosognosia for apathy and increased awareness in relation to depression (Aalten et al., 2006). Research suggests that anosognosia may be related to depressed mood in Alzheimer’s disease (Verhülsdonk, Quack, Höft, Lange-Asschenfeldt & Supprian, 2013). A recent review, however, concluded that anosognosia was observed more in apathy...
than in depression (Mograbi & Morris, 2014). Furthermore, one study looking at amyotrophic lateral sclerosis patients with and without frontotemporal dementia found that patients with amyotrophic lateral sclerosis with frontotemporal dementia had profound lack of insight relating to apathy, observed through as a discrepancy between self-ratings and informant-ratings of behaviour change occurring since disease onset (Woolley, Moore & Katz, 2010). It is therefore possible that anosognosia in relation to apathy and depression is specific to disease type or even severity, which could account for these mixed findings. Thus, it would be important to record both self-observed and carer/informant-observed apathy and depression, to determine how they relate to anosognosia.

Fatigue is also considered one of the main criteria for diagnosing depression (e.g. Marsh, McDonald, Cummings & Ravina, 2006; Vilalta-Franch et al., 2006). Fatigue can be defined and observed as tiredness with a gradual onset and can occur as a symptom associated with various neurodegenerative diseases (e.g. Beiske & Svensson, 2010; Lo Coco & La Bella, 2012). Apathy has also been shown to be associated with fatigue in both Parkinson’s disease and multiple sclerosis (Cochrane et al., 2015). Another recent study found an association between apathy and fatigue in depressed Parkinson’s disease patients (Skorvanek et al., 2015). However, fatigue itself could be masked by the lack of motivation associated with apathy, tending towards incorrect classification of fatigue. These points could serve as a prompt to revise the diagnostic criteria for depression to take into account the relationship between fatigue and apathy, along with the consideration of the latter possibly concealing the former.

**Summary**

It is clear that apathy and depression as constructs have very complex relationships. There are several areas where apathy and depression converge. Interest seems to be the most prominent factor in this overlap, influencing assessment of both apathy and depression. Further to this, anosognosia seems to be an important point of convergence between the two, but is variable and related to type of disease or other clinical variables. Solutions to these issues could be to carefully choose apathy and depression tools that are matched for use in specific diseases, while recording carer’s/informant’s rated observations, in addition to self-assessment, to overcome the issue of lack of
insight. It would also be preferable to take into account the extent to which interest is used within apathy and depression tools, choosing tools that have no or minimal reference to interest. In relation to divergence, there are areas that are thought to be independent to apathy and independent to depression. The most implicit area is in relation to emotionality, with depression being associated with emotion and apathy being associated with emotional neutrality. However, while there is some evidence supporting this, it has seldom been examined in patient populations and requires further investigation. Further research looking at subtyping of apathy, and perhaps even depression, may help clarify these dissimilarities.

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