RUNNING HEAD: Self and paranoia

**Self-Structure in Persecutory Delusions**

Lyn Ellett1, Jessica Kingston2, Eryna Tarant3, Christos Kouimtsidis3, Laura Vivarelli3, Paul Chadwick4\*

1University of Southampton

2Royal Holloway, University of London, United Kingdom

3Surrey and Borders Partnership NHS Foundation Trust

4University of Bath

Correspondence: Prof Paul Chadwick. Email: pdjc20@bath.ac.uk

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**Abstract**

There is currently limited research examining self-structure in clinical groups and no current data on the extent to which self-structure is amendable to change following psychological therapy. We address this important gap by examining self-structure in individuals with persecutory delusions using the card sort task, an established paradigm measuring key self-structure indices, including the degree to which self-structure is compartmentalised (characterised by primarily positive or negative attributes, as opposed to a mix of both), and the proportion and importance of negative attributes.In study 1, individuals with a schizophrenia spectrum diagnosis with current persecutory delusions (clinical group, n=27) and a healthy control group (n=47) were compared on self-structure indices. In study 2 (n = 27), the clinical group also completed the card sort task before and after randomisation to either a 12-week mindfulness-based psychological therapy or treatment as usual control. Self-structure differed significantly between the clinical and control groups. The clinical group had a greater proportion of negative attributes, assigned more importance to negative self-aspects and had more compartmentalised self-structures compared with controls. There were no associations between delusion severity and self-structure. Large effect sizes for reductions in compartmentalisation and proportion of negative attributes across self-aspects were found following mindfulness therapy. The findings highlight key differences in self-structure between individuals with persecutory delusions and healthy controls, and suggest that it might be possible to change self-structure following psychological therapy. These data support the central role of the self in theoretical models of paranoid thinking.

Keywords: compartmentalisation, self-structure, self-concept, persecutory delusions, schizophrenia

**Introduction**

Negative beliefs about the self and others play a central role in theoretical accounts of the aetiology and maintenance of persecutory delusions (Bentall et al., 2001; Chadwick et al., 1996; Freeman et al., 2002; Trower & Chadwick., 1995). It has been argued that persecutory delusions might serve a defensive function, either by blaming others for negative events and thereby preventing activation of underlying negative self-representations (Bentall et al., 1994), or by defending against either insecurity threat (‘poor me paranoia’) or alienation threat (‘bad me paranoia’) (Trower & Chadwick, 1995). A direct causal role of negative self-representations in the development and maintenance of persecutory delusions has also been proposed (Freeman et al., 2002), specifically by increasing a sense of threat (Garety et al., 2001). In support of these theoretical accounts, research has shown that paranoia is associated with low implicit and explicit self-esteem (Kesting & Lincoln, 2013), and is more likely to occur in those with negative self-concepts (Tiernan, Tracey, & Shannon, 2014) and negative self-schema (Muller et al., 2018). Additionally, experience sampling studies suggest reductions in self-esteem precede and predict the onset of paranoid beliefs (Thewissen et al., 2008, 2011), and daily contextual factors (e.g. feeling cared for by others) moderate the effect of self-esteem on paranoia (Monsonet et al., 2020). Longitudinal studies have also shown that negative self-beliefs predict the maintenance of paranoia over time (Fowler et al., 2012; Freeman et al., 2012; Vorontsova, Garety, & Freeman, 2013). Finally, the most recent meta-analysis of 25 studies found medium to large associations between negative self/other beliefs and paranoia (Humphrey et al., 2021).

Hitherto, research has focused almost exclusively on the (negative) content of self-knowledge, with much less emphasis on the *accessibility* of information about the self in different contexts (Monsonet et al., 2020; Thewissen et al., 2008, 2011). The accessibility of self-knowledge in a given context depends in part on *self-structure*; that is, the organisational structure of self-representations (Showers, 1992; Showers & Zeigler-Hill, 2006). It is argued individuals have multiple self-aspects (e.g. parent, sibling, friend), which have an associated set of positive (gentle, supportive) and/or negative (inpatient, boring) self-attributes. Self-attributes can be organised within a self-aspect in one of two main ways: *compartmentalised* self-structures describe self-aspects that are either predominantly positive or predominantly negative (e.g., loving, supportive, available parent; selfish, unavailable, disinterested sibling) whereas in *integrated* self-structures, positive and negative information co-exists within any one self-attribute (e.g., loving, supportive, inpatient, boring parent) (Showers, 1992). Depending on whether positively or negatively-valanced self-aspects are salient, individuals will primarily access positive or negative self-attributes. Compartmentalisation can therefore lead to overly positive (e.g., high self-esteem, positive self-evaluations) or negative (e.g., low self-esteem, negative self-evaluations) information about the self being accessed, giving rise to emotional vulnerability (Zeigler-Hill & Showers, 2007).

Self-structure has been examined in a range of clinical populations. Research has shown that individuals who were more depressed had more compartmentalised self-structures, used a greater proportion of negative attributes and evaluated their negative self-aspects as more important compared to those who were less depressed (Showers, 1992). Additionally, remitted bipolar disorder (*n*=18) and recovered depressed groups (*n*=16) (Taylor et al., 2007) and nonclinical individuals with high social anxiety (Stopa et al., 2010) have been shown to have more compartmentalised self-structures compared with healthy controls. In the most recent study, individuals with PTSD (*n*=23) were shown to have more compartmentalised self-structures compared to a healthy control group (*n*=22) (Clifford et al., 2020). Additionally, individuals with persistent delusional disorder (*n*=26) had less integrated interpersonal positive self-structures compared to controls (Mihic et al., 2018). However, this study only focused on two self-domains and did not assess compartmentalisation. A more global assessment of self-structure across multiple self-aspects, and incorporating the valance of self-aspects, is needed to provide a fuller picture of the role of self-structure in persecutory delusions. Therefore, the aim of study one was to compare self-structure in individuals with a schizophrenia spectrum disorder whose symptom profile included strongly held persecutory delusions and healthy controls.

**Study 1**

In study one, in line with research in other clinical groups, we first examine self-structure comparing a clinical group with persecutory delusions and a healthy control group. We hypothesised the clinical group would identify a lower number of self-aspects, would use fewer total number of items to describe their self-aspects, would have a greater proportion of negative attributes and greater compartmentalisation of self-structure compared with controls.

**Methods**

*Design*

A between-groups design was used to compare clinical and healthy control groups on five self-structure indices: 1. number of self-aspects identified; 2. total number of items used to describe self-aspects; 3. phi (measure of compartmentalisation of self-structure); 4. differential importance (rating of importance of negative self-aspects), and 5. proportion of negative attributes across the self-aspects.

*Participants*

An a priori power analysis indicated at least 21 participants per group were needed to achieve 80% power using a .05 alpha level (Cohen, 1992) and expecting a large effect size. A large effect size was expected on the basis of findings from previous research (e.g. Clifford et al., 2020). Two groups of participants were recruited – people with a schizophrenia spectrum diagnosis with current persecutory delusions (n=27) and healthy controls (n=47). The clinical group were all currently using mental health services within the same NHS Trust, ensuring a standardised package of care based on anti-psychotic medication, psychiatric review and case management (at the time of the study none was receiving a psychological therapy).

**Clinical Group.** Inclusion criteria were: (1) a diagnosis of a Schizophrenia-spectrum disorder (confirmed by a consultant psychiatrist); (2) experiencing current distressing persecutory delusions (assessed using the Psychotic   
Symptom Rating Scales; PSYRATS); (3) score at least 3 on the PSYRATS conviction item (to ensure presence of current persecutory delusion); (4) aged over 18 years of age. Exclusion criteria were: (1) organic cause for symptoms; (2) diagnosis of a learning disability, and (3) absence of distressing persecutory delusion. Participants were recruited from outpatient clinics in one NHS Trust in England. Diagnoses were Paranoid Schizophrenia (n=18), Schizoaffective Disorder (n=5) and Schizophrenia (n=4).

**Healthy Control Group.** Inclusion criteria were: (1) aged 18 or over; (2) no current or previous mental health diagnosis; (3) no history of contact with mental health services. All participants self-reported that they had no previous or current mental health diagnoses or contact with mental health services. Healthy controls were recruited using a student participation pool and online.

### *Measures*

### *Demographic information*

Participants self-reported basic demographic information, including age and gender.

### *Card sorting task (Linville, 1987; Showers, 1992;)*

The card sorting task assesses self-structure, that is how individuals structure positive and negative information about themselves amongst various meaningful self-aspects (Linville, 1985, 1987; Showers, 1992). Participants were given a randomly ordered deck of index cards, each containing a self-descriptive attribute; 20 positive (e.g. successful, happy) and 20 negative (e.g. lazy, unworthy). Participants identify different self-aspects (e.g. son, friend, mother etc) and sort the cards into groups which describe each self-aspect. Participants can form as many self-aspect groups as they would like, placing as many attributes in each as desired. Participants were not required to use all attributes and could reuse attributes across different self-aspect groups. After completing the card sorting task, participants provide three supplementary ratings regarding the positivity, negativity, and importance of each self-aspect identified during the task, rated on a 0-7 scale.

We extracted descriptive data which included the total number of self-aspects identified, and the total number of cards used to describe all self-aspects. Consistent with previous research (Showers., 1992), three indices of self-structure were also calculated: phi coefficient, differential importance, and the proportion of negative attributes.

*Phi Coefficient:*

A *phi (ϕ) coefficient* is based on the chi-square statistic and is an indication of the propensity for positive and negative attributes to appear in different self-aspects. A chi-square statistic, which is a measure of deviation from a random sort, is calculated for each participant using the expected frequencies, which represent chance values for the number of positive and negative attributes in each self-aspect, and the observed frequencies, which are ascertained from the actual proportions in the card sort. The Phi (Φ) coefficient is then normalised by dividing it by the total number of attributes included in the card sort (*N*):

Phi can range from 0 (perfectly random sort which indicates that positive and negative attributes are evenly distributed across self-aspects) to 1 (perfectly compartmentalized sort which indicates self-aspects containing solely positive or negative attributes).

*Differential Importance (DI):*

Differential importance is calculated using a within-subject correlation between participants’ valence rating of their self-aspects (i.e., positivity ratings minus negativity ratings) and importance ratings of their self-aspects. Differential importance scores can range from -1 (negative self-aspects are given more importance than positive ones, i.e. a more negatively compartmentalised/integrated self-structure) to +1 (positive self-aspects are given more importance than negative ones, i.e. a more positively compartmentalised/integrated self-structure) (Showers, 1992).

*Proportion of negative attributes:*

The proportion of negative attributes is calculated by dividing the number of negative attributes by the total number of attributes given by a participant in the card sort task. This produces scores that range from 0 to 1, with 0 indicating that there are no negative attributes within a card sort and 1 indicating that the card sort consists of only negative attributes.

**Results & Discussion**

*Sample Characteristics*

The clinical group were significantly older (*M* = 41.6, *SD* = 1.55) than the healthy control group (*M* = 19.0, *SD* = 1.29), *t* (70) = 18.75, *p*<.0005, and there was a greater proportion of males in the clinical group (*n* = 20) than in the healthy control group (*n* = 9), *χ²* = 21.71, *p*<.0005.

*Self-Structure – clinical versus control group*

Self-structure indices for the two groups are summarised in Table 1. All participants were able to identify multiple self-aspects (range 2-19). Examples of self-aspects identified included ‘social self’, ‘self with family’, ‘self as a son’, ‘self as a child’ etc.

*Insert Table 1 Here.*

The first analysis assessed whether, overall, self-structure differed across the two groups. We conducted a Multivariate Analysis of Covariance (MANCOVA) with the self-structure indices as dependent variables and group (clinical vs healthy control) as the between-subjects factor; age and gender were added as covariates. There was a statistically significant difference in self-structure based on group, *F* (1,68) = 4.62, *p*<.001. Age, *F* (1,68) = 2.4, *p*=.06, and gender, *F* (1,68) = 1.26, *p* = .30 were not significant covariates (and were therefore not controlled for in subsequent analyses). Follow up univariate ANOVAs showed significantly lower number of self-aspects, *F* (1,72) = 23.65, *p*<.001, fewer total number of cards used, *F* (1, 72) = 39.23, *p*<.0005, and a greater proportion of negative attributes, *F* (1,72) = 25.36, *p*<.001, in the clinical group compared with the healthy controls. The clinical group also attributed significantly greater importance to negative self-aspects compared to controls, *F* (1,72) = 8.68, *p*<.004. Finally, compartmentalisation was higher in the clinical group, *F* (1,72) = 4.80, *p*<.03.

Overall, these results suggest that there were significant differences in all self-structure indices between individuals with persecutory delusions and healthy controls. However, the cross-sectional design means that no conclusions regarding causality can be made and the study is silent about whether self-structure might be amendable to change following psychological therapy. We address this issue in study two.

**Study 2**

Research examining the stability of self-structure indices and the extent to which they are amendable to change following psychological therapy in any clinical group is sparse. We were therefore interested in examining stability in our clinical group by assessing whether self-structure indices changed following a 12-week mindfulness-based group intervention. Research is starting to suggest that mindfulness is causally related to paranoia. For example, mindfulness has been found to moderate the effect of trait paranoia on state paranoia in day to day life (Kingston, Lassman, Matias & Ellett, 2019) and to reduce paranoia in both clinical (Ellett., 2013; Ellett et al., 2020) and nonclinical groups (Shore et al., 2018; Kingston et al., 2019). There are several reasons why mindfulness might enhance an integrated self-structure. De-centring from and non-judgementally observing experience may (1) encourage more balanced consideration of self-referent information whereby positive and negative experiences can be accessed; (2) enable individuals to non-judgementally attend to new information in their environments that may help to modify globally negative self-views; (3) help to develop meta-cognitive awareness of the interaction between context and content. One study has examined self-structure following a single brief (16 minute) mindfulness exercise in a healthy group and found that compartmentalisation was lower in participants who had taken part in a mindfulness exercise compared to an unfocused attention condition (Dummel & Stahl., 2018). However, without a baseline measure of compartmentalisation it is possible that effects were driven by unfocused attention rather than mindfulness. Furthermore, there was no examination of effects over time. To our knowledge, there are currently no published studies examining whether self-structure changes following psychological therapy. Therefore, in study two, we examined whether self-structure indices were associated with delusional symptom severity and depression in the same clinical group of participants who took part in study one. The clinical group were randomised to receive either a 12-week mindfulness-based group psychological therapy (alongside treatment as usual) or treatment as usual alone. Consistent with pilot RCT methodology, we report descriptive statistics and effect sizes for all self-structure comparisons both within (pre-post mindfulness therapy group only) and between (mindfulness vs treatment as usual control) participants.

**Methods**

*Design*

# A pilot randomised controlled trial design was used to examine stability of self-structure following a group mindfulness intervention (the main findings from the pilot trial reporting feasibility, acceptability and clinical outcomes are reported in Ellett et al., 2020). Clinical participants (the same clinical group from Study one) were randomised to either the intervention arm (12-week group mindfulness therapy + treatment as usual [TAU]) or the control arm (TAU alone). Block randomisation was undertaken, using a computerised service from a Clinical Trials Unit, and post-group assessments were conducted by a research assistant who was blind to group allocation.

# *Participants*

We followed good practice guideline recommendations for pilot RCTs of at least 12 participants per study arm (Julious, 2005). Participants were the same 27 individuals who took part in study one; randomisation allocated n=14 to the group mindfulness intervention and n=13 to control.

*Measures*

*Psychotic Symptoms Rating Scale (PSYRATS: Delusions subscale) (Haddock et al., 1999)*

A 6-item rating scale designed to measure the different dimensions of delusions: cognitive interpretation (amount and duration of preoccupation, conviction, and disruption) and emotional characteristics (amount and intensity of distress). Each item is measured by the rater on a 5-point scale ranging from 0-4, yielding a possible score range of 0-24. Acceptable inter-rater reliability and validity have been reported (Haddock et al., 1999).

*Beck Depression Inventory II (Beck et al., 1996)*

A 21-item self-report questionnaire that measures the severity of depression. It has been found to be both reliable and valid, and is the gold standard measure of depression.

### *Card Sorting Task (Linville, 1987; Showers, 1992;)*

*The same task a*s reported in study one.

*Group Mindfulness-based Intervention*

Mindfulness groups were facilitated by two qualified clinical psychologists (LE and JK), with weekly supervision from a Consultant Clinical Psychologist (PC). The intervention was delivered using our published manualised protocol (Chadwick., 2006), consisting of 12 sessions each lasting 90 minutes. The first half of each session was devoted to formal mindfulness practice (10 minutes) and guided enquiry, and discussion of key mindfulness principles (acceptance, kindness, recognising and letting go of habitual reactions). The second half of sessions focussed on understanding paranoia and its impact, building positive self-schematic experience, and positive behaviour change – with mindfulness principles informing all these areas. The protocol has previously been shown to benefit people with schizophrenia experiencing distressing voices (Dannahy et al., 2011; Chadwick et al., 2016) and people diagnosed with chronic depression (Strauss et al., 2012).

*Therapy fidelity*

Therapy fidelity was assessed by participants using a checklist indicating adherence to four key elements of the therapy protocol for that week (e.g. Session 3: ‘we did a mindfulness practice’; ‘we talked about what we noticed after the mindfulness practice’; ‘we talked about distressing beliefs using an ABC table’; ‘we were asked about what we learned from today’s session’). Checklists were administered by the study research assistant (without the group therapists being present) immediately after three randomly selected therapy sessions. Fidelity was reported as 100% for all three sessions.

**Results and Discussion**

Descriptive statistics on the study measures are summarised in Table 2.

*Self-Structure – association with delusion symptom severity and depression*

We conducted correlational analyses to examine whether self-structure indices were related to delusion symptom severity and depression. There were no significant associations between delusion severity (measured using the PSYRATS Delusion Subscale) and any of the self-structure indices. The only significant association was between depression and proportion of negative attributes (see Table 2).

*Insert Table 2 Here.*

*Self-Structure following mindfulness or treatment as usual*

Descriptive statistics, effect sizes and 95% confidence intervals for the self-structure indices both as a within-subject comparison (pre-post in the mindfulness condition only), and as a between-subject comparison (mindfulness vs treatment as usual at post intervention) are shown in Table 3. Within-subject comparisons in the mindfulness group only showed large effect sizes for reductions in both compartmentalisation and proportion of negative attributes across self-aspects. There was a small effect size showing an increase in differential importance, suggesting that positive self-aspects were given more importance than negative ones at post intervention. Between-subjects comparisons at post intervention showed a medium effect on proportion of negative attributes, and small effects on compartmentalisation and differential importance at post intervention between the mindfulness group and controls.

*Insert Table 3 Here.*

**General Discussion**

Our two studies make important novel contributions. Study one assessed if, and in what ways, self-structure differs between people with persecutory delusions in the context of a schizophrenia-spectrum diagnosis and healthy controls. Study two explored a related question of whether within the clinical sample, self-structure indices were associated with delusion severity and depression, and whether participation in a group mindfulness-based intervention changed self-structure in individuals with persecutory delusions – in fact, this is the first study to directly test this potential benefit of mindfulness in any clinical group.

Our data suggest that self-structure significantly differs between individuals with persecutory delusions and healthy controls. Specifically, participants in the clinical group reported fewer self-aspects, used fewer items to describe their self-aspects, had a greater proportion of negative attributes across their self-aspects, assigned greater importance to their negative self-aspects, and had more compartmentalised self-structures. These findings suggest that the way negative self-referent information is structured may be important for understanding the experiences of individuals with persecutory delusions, in addition to the specific content of negative beliefs. This is consistent with theoretical accounts which emphasise the importance of negative self-views in persecutory delusions (Bentall et al., 1994; Trower & Chadwick, 1995; Freeman et al., 2002). That self-structure was also shown to be more compartmentalised in individuals with persecutory delusions is consistent with previous studies in other clinical groups (Taylor et al., 2007; Clifford et al., 2020). This raises an interesting possibility that compartmentalised self-structures might be transdiagnostic. It will be important to determine in future research the extent to which compartmentalised self-structure precedes the onset of (psychotic) symptoms, or occurs as a response to symptom onset.

Self-structure indices were found to be unrelated to overall delusional severity (total score on the PSYRATS Delusions subscale) ) and depression (with the exception of proportion of negative attributes). In the present study, the lack of relationship between delusional severity and self-structure is not a result of restriction of range of PSYRATS scores (PSYRATS mean total score was mid-range). The separability of delusional belief severity and self-structure fits well with therapeutic approaches to delusions that work directly with self-processes rather than with persecutory beliefs. For example, Chadwick (2003) describes how two-chair enactments may be used to support people with psychosis to decentre from and gain new insights into the self-structure. Delusions are increasingly viewed as lying on continua functions with ordinary behaviour (Strauss, 1969). Paranoia in particular has been conceptualised as an evolved psychological trait selected because of its adaptive value in ancestral environments (Ellett et al., 2003) and there is growing evidence that it is indeed a common human response to perceived interpersonal threat (Fenigstein & Vanable, 1992; Ellett & Chadwick, 2007; Freeman et al., 2011). Future research might examine the relationship between paranoia and self-indices in sub-clinical samples.

Findings from clinical participants provide the first evidence that group mindfulness-based therapy might alter self-structure in people with persecutory delusions – indeed, this is the first mindfulness study to show this in any clinical group. Specifically, compartmentalisation and proportion of negative attributes both reduced with large effect sizes. Clearly, these are only proof of concept findings and will need to be replicated with larger clinical samples, and with an active control condition, but they nonetheless point to a further potential benefit of mindfulness for psychosis. The findings on change in self-structure fit well with contemporary mindfulness-based approaches to psychosis which explicitly seek to increase the number of positive self-attributes, to de-emphasise the priority given to negative self-attributes, and to establish more balance between positive and negative self-attributes (Chadwick, 2006).

There are several limitations that warrant consideration. The cross-sectional element of the design in study one means no inferences about causality can be made and the use of pilot RCT methodology in study two meant that this study was by definition proof of concept (and no statistical significance testing was undertaken for this reason). Whilst sample size (*n*=27) was comparable to other published research on self-structure in clinical populations - people with bipolar disorder (*n*=18), recovered depression (*n*=16) and PTSD (*n*=23) - nonetheless replication of findings will be important. Finally, we did not measure other self-related variables that have been shown to be important in psychosis such as self/other schemas and self-esteem, or other variables that are hypothesised to interact with compartmentalisation, such as self-complexity.

*Conclusions*

We present novel data examining self-structure in individuals with persecutory delusions, including the extent to which self-structure is amendable to change following psychological therapy. Findings support the central role of the self in theoretical models of paranoid thinking. Our studies suggest that individuals with persecutory delusions have more compartmentalised and negative self-structures compared with healthy controls, that self-structure may be unrelated to overall delusional intensity, and that in line with its theoretical underpinnings (Chadwick, 2006), mindfulness for psychosis might reduce compartmentalisation and establish greater emotional balance in self-structure in people with current persecutory delusions.

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**Table 1.** Descriptive statistics for self-structure across the two groups.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Clinical (n=27)  Mean (SD) | Control (n=47)  Mean (SD) | Effect Size  (Cohen’s d) | 95% CI |
| Number of self aspects | 4.41 (1.74) | 7.15 (2.61) | 1.17 | 0.66,1.64 |
| Total number of items | 26.78 (17.10) | 56.17 (20.64) | 1.51 | 0.98,2.04 |
| Percentage Negative | .45 (.24) | .22 (.15) | -1.23 | -0.71,-1.74 |
| Phi coefficient | .64 (.53) | .46 (.14) | -0.53 | -0.05,-1.01 |
| Differential Importance | -.03 (.59) | .32 (.43) | 0.71 | 0.22-1.20 |

**Table 2.** Correlation matrix for self-structure indices, delusion severity and depression.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Mean (SD) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1. Number of Groups | 4.41 (1.74) | - |  |  |  |  |  |  |
| 2. Total items | 26.78 (17.10) | .69\*\* | - |  |  |  |  |  |
| 3. Phi | .64 (.53) | .02 | -.09 | - |  |  |  |  |
| 4. DI | -.03 (.59) | -.03 | .09 | .87 | - |  |  |  |
| 5. Proportion negative | .45 (.24) | .01 | .94 | .52 | -.08 | - |  |  |
| 6. PSYRATS Delusion Total | 14.04 (5.93) | .09 | .05 | .04 | .15 | .05 | - |  |
| 7. BDI | 24.40 (14.59) | -.10 | .001 | -.25 | .05 | .53\*\* | .14 | - |

\*\* sig at .01 level.

**Table 3.** Descriptive statistics, effect sizes and 95% CIs for self-structure indices.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Baseline: Mindfulness  Mean (sd) | Baseline: TAU  Mean (sd) | Post Intervention: Mindfulness Group  Mean (sd) | Post Intervention: TAU Group  Mean (sd) | Mindfulness Within Subjects Effect Size  (95% CI) | Between Subjects Effect Size (95% CI) |
| Percentage Negative | .40 (.24) | .51 (.24) | .21 (.21) | .35 (.32) | 0.84 (0.54,1.15) | 0.52 (-0.25,1.29) |
| Phi coefficient | .69 (.53) | .58 (.54) | .10(.84) | .29 (.67) | 0.84 (0.53,1.14) | 0.25 (-0.51,1.01) |
| Differential Importance | .11 (.57) | .13 (.64) | .23 (.52) | .17 (.40) | -0.22 (-0.50,0.06) | 0.13 (-0.63,0.88) |