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*ARTICLE***The Psychometric of the Adult Resilience Doughnut Model, a Solution Focused, Ecological Model of Resilience**

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Abstract

The Resilience Doughnut is an ecological and Solution Focused model showing the interaction of resources that build resilience during a person's lifetime. In order to statistically validate the model, a 44-item scale (RDA) was developed and tested with 859 adults. Reliability was explored showing a very good fit $\alpha = 0.92$ and a good representation of the research constructs. All seven resource strengths of the RDA showed negative correlation with each of the subscales of the Depression, Anxiety, and Stress scale (DASS). While those in the moderate to severe depression symptoms range reported less than three resource strengths, those with mild to no depressive symptoms reported over three resource strengths scoring above the mean. The findings support strength-based interventions which focus on developing contextual and relational strengths as a way of impacting mental health outcomes.

Introduction

Resilience is seen as the ability to respond to adversity and stressful or traumatic situations in a healthy and productive way (Reivich & Shatte, 2002). Research into resilience has focused on individuals who have coped well despite adversity, exploring the emerging skills, strengths and protective factors in the process of developing a resilient mindset. Ecological approaches to resilience, focus on the contexts where skills and strengths are formed believing that a person's development was affected by everything in their surrounding environment.

The Solution Focused (SF) approach is guided by a series of assumptions similar to the ecological approaches. Some of these assumptions are: (a) the client is nested in a system which supports or maintains functional behaviour, (b) changing something can lead to further change, (c) resources are in relationships, contexts and bigger systems, (d) there are strengths one learns within the system that helps them to function within the system.

The Resilience Doughnut model emerged from these assumptions, linking the extensive ecological research on resilience and the solution focused assumptions. The model, similar to the Bronfenbrenner's (2005) series of concentric circles, has the individual in the centre, being influenced by seven micro systems. The individual develops within each system and adapts their behaviour which influences further system's as they emerge.

The reliability and validity of the model has previously been confirmed in a large sample of children aged 8–16 years (Anyan et al., 2016; Worsley & Hjemdal, 2017). It has also been shown to be a useful tool for explaining the many ways to promote resilience in adults, helping to manage and even overcome the detrimental effects of trauma and adversity (Worsley, 2014).

The purpose of the present study is to test the validity and reliability of the model when applied to adults. The importance of validating the model cannot be understated, since wellbeing and resilience has become a catch phrase for our decade. Validating the model will give a strength and SF contribution to the pool of evidence base research on resilience, which is more problem centric and heavily focused on reducing risk and adversity (Abela et al., 2008; Eisman et al., 2015).

Furthermore, having an empirically valid SF model of resilience informs policy makers and social change makers as well as provides a foundation for further research with diverse populations. The validity of the model will show that resilience is a process of navigating and negotiating with social ecologies and that relationships and contexts matter when working with individuals who want to change. Furthermore, by linking the strength and SF approach with the

dynamic of activating helpful resources to build resilience, will give credence to interventions that focus on what works and who is working.

Defining Resilience

Resilience has been defined as the ability to navigate and negotiate one's social ecology (Bellis et al., 2017; Ungar et al., 2008). It appears that over their life span, adults continue to navigate and negotiate with those around them, thereby building their personal competencies. This may be through caring for a family, sustaining a marriage, negotiating within the workplace, maintaining friendships, developing new skills or being part of a community (Bellis et al., 2017; Besser et al., 2014; Worsley, 2015).

In considering an ecological approach to development through the lifespan, Bronfenbrenner (2005) divided the person's environment into five different levels: the microsystem, the mesosystem, the exo-system, the macrosystem, and the chronosystem. Following on from Bronfenbrenner's work, the work by Rutter (2006), Ungar (2008) and Masten and Wright (2010), noted the interactional nature of the systems that help the developing person to navigate with the world around them.

The solution focused approach originated in a systems framework, branching out to include more dynamic questioning to help a person, group or organisation to move towards their preferred future (Durant, 2016). The starting point of all solution focused work is the preferred future. Moving towards this preferred future draws on the client's relationships, experiences and cultural understandings to inform the process. Finding what works, becomes a process of eliciting helpful responses within the meso, micro and macro systems that may be useful in the journey towards that preferred future. The outstanding benefit of using the solution focused approach is the knowledge that the process of change can change the process and the systems themselves (Bolton et al., 2017). Being client focused and respectful that the client is the only one who understands the system fully, places the therapist as a curious observer on the client's journey.

Extensive research has shown that there are three dynamics involved in the process of resilience (Benard, 2004; Grotberg, 1995; McGraw et al., 2008; Rutter, 2006; Ungar et al., 2008): internal or personal characteristics that help individuals overcome adversity (Benard, 2004; Friberg et al., 2003; Grotberg, 1995; Hjemdal et al., 2006; Lin et al., 2017); external or environmental influences that contribute to the building of internal assets or personal competencies (Friberg et al., 2003; Fuller et al., 1998; Hjemdal et al., 2006; Paulsen & Thomas, 2018; Ungar, 2008; Ungar & Lerner, 2008; Werner & Smith, 2001); and the interactions between internal characteristics and external resources, which may either hinder or enhance resilience, ultimately affecting an individual's response to adversity (Grigorenko et al., 2012; Hjemdal et al., 2006; G. McDonald et al., 2013; S. McDonald & Mair, 2010; Rutter, 2008).

Using these three dynamics involved in resilience, resilience is therefore defined as the process of continual development of personal competence while negotiating one's available resources in the face of adversity (Worsley & Hjemdal, 2017).

A Framework for Resilience: The Resilience Doughnut

The Resilience Doughnut model is based on the three above mentioned dynamics involved in resilience. The model is illustrated using a simple diagram of two circles. The inner circle represents an individual's internal characteristics (personal competencies), while the outer circle represents seven external factors that may contribute to building personal competencies. The interactions between an individual's internal and external worlds is visually represented by the inner circle situated within the outer circle (see Figure 1).

Figure 1

The Resilience Doughnut Model***Internal Characteristics of Psychological Resilience***

The inner circle of the model represents three categories of personal competence:

- I have—awareness of social resources (Fuller-Iglesias et al., 2008).
- I am—self-awareness and esteem (Bauer & Park, 2010; Gergen & Gergen, 2010).
- I can—experiences of self-efficacy (Fry & Debats, 2010b; Fry & Keyes, 2010).

External Structure of the Resilience Doughnut of Adults

The outer circle of the framework is divided into seven sections (Fry & Debats, 2010a; Gilgun et al., 2000; Windle & Woods, 2004), which represent the relationships and environmental factors contributing to the development of personal and social competencies during adulthood. These seven factors are: partner, skills, family, education, friends, community and work. The characteristics of each factor and the studies from which they have been derived are shown in Table 1 (Worsley, 2011).

Table 1*Characteristics of Each Factor in the Resilience Doughnut*

| Factor | Characteristics | Studies |
|-----------|---|--|
| Partner | Attachment, positive experiences, personal growth, autonomy, cooperation and collaboration | Atwool (2006); Moen et al. (2010) |
| Skills | Control and mastery, self-efficacy, goal setting and planning, challenges | Gillman et al. (2015); Vos et al. (2015) |
| Family | Connections with the wider family, transitions through life stages, good role models, successful role changes | Gottman et al. (2011) |
| Education | Positive experience of prior learning, enjoyment of learning, involvement in an educational institution, informal education, research | Arnup and Bowles (2016); Lin et al. (2017) |
| Friends | Networks of friends, ability to make friends, lifelong friendships, friendships of support | Domínguez and Arford (2010); Grandbois and Sanders (2009); Sanders et al. (2017) |
| Community | Valued contribution, spiritual connections, meaning and purpose, role models, supportive networks | Carr et al. (2017) |
| Work | Status of vocation, social support, relationships in work, role is valued, zest, satisfaction | Benadé et al. (2017); Holcomb (2009) |

The change process in SF approach is one of transformation in which clients rediscover and utilize existing skills, strengths, and protective factors to solve current challenges and are transformed through the SF process with regard to the ways in which they understand themselves, their relationships, the world they experience, and their future possibilities.

This interactive process is similarly observed in the process of resilience, and the protective factors associated with resilience outcomes are uncovered and cultivated during SF conversations and interventions (Bolton et. al. 2017).

The key characteristics of an SF approach include using miracle questions to help clients envisage their preferred future, scaling questions, assessing client's pre-existing strengths and assigning homework to activate these strengths (De Shazer et al., 2007; Durrant, 2016).

As a strength-based ecological model, the Resilience Doughnut for Adults (RDA) uses an SF approach to show how an individual's existing resource strengths can assist them towards their preferred future. It may also be used as a dynamic conversational model to prompt questions that may help individuals envisage their preferred future and identify their resource strengths. Moreover, the model can be used to compliment individuals on their progression (Worsley, 2011; 2012). An individual's resources may be observed in their everyday ordinary relationships at any given point in time and be activated by combining the strengths in homework activities.

In order to empirically validate the model, a measure, based on the research into each of the representative systems, will undergo an item and confirmatory factor analysis to establish the best fit for the model, and to ascertain the items represent the research. This will establish the statistical validation of each of the seven factors which form the model. The measure will then be validated against a reputable measure of resilience to establish reliability. Further to this, the relationship of the model with measures associated with low resilience will be explored.

Scaled Development Process

The items in the Resilience Doughnut model were initially generated from research constructs gathered from studies of individuals who have shown resilience in the face of adversity (see Table 1). These items contributed to the development of the preliminary Resilience Doughnut tool. The outer circle was divided into seven subtests, with 10 items for each subtest. Items were represented by simple statements beginning with I have, I am, or I can, with a dichotomous response, Yes or No (Worsley, 2011).

To review the items, a questionnaire was developed and distributed to 30 adults in various settings in Sydney, Australia. The sample comprised five psychologists attending Resilience Doughnut training for children and adolescents, 10 adults attending a community music festival, six community members attending a local seminar and nine consulting psychologists in Epping, Sydney. Signed permission was sought from each participant to allow their comments and results to be used for future research. Each participant was asked to complete the questionnaire and provide feedback to the researchers regarding the wording of the questions and relevance to their life circumstances. The psychologists were asked to consider the responses with respect to their current clients' needs. Their feedback led to the removal of ambiguous and negatively worded items, which were replaced with positively worded items. Based on the feedback from the adults, the dichotomous response format was changed to a 6-point Likert scale (0 = never; 1 = almost never; 2 = not really; 3 = sort of; 4 = sometimes; 5 = always).

The questionnaire was then developed into an online format, allowing the responses to be visible when hovering the cursor over the question. The number allocated to each response was not visible to participants, allowing for a wider range of responses and stimulating further discussion with subsequent representative samples. The scores were collated for each item and divided by five, giving a total score out of 10 for each subtest. Total scores were visible to the participants.

Study Aims

In order to empirically validate the Resilience Doughnut model, the present study explores the psychometric properties of the RDA scale. Given that exploratory and confirmatory factor analysis (CFA) of the Resilience Doughnut for adolescents demonstrated its validity and strong theoretical foundation (Worsley & Hjemdal, 2017), CFA was conducted on the adult model to examine each of the subtests separately, establish the best fit and reduce the number of items.

It was hypothesised that the RDA subtest scores would be positively correlated with the subtest scores of another measure of resilience, the Resilience Scale for Adults (RSA) (Friborg et al., 2003; Hjemdal, 2007) and negatively correlated with the scores from the Depression, Anxiety, and Stress Scale (DASS) (Crawford et al., 2011). The RSA is a reputable measure of resilience which shows high validity and reliability. Originally drawn from Norwegian samples the RSA has been validated with samples across Europe and Australia and shows good reliability with other measures of wellbeing. It is positively worded and seeks to draw out the personal and social competencies an individual may experience when they are coping well (Hjemdal et al., 2012). The DASS is a common measure used for depression, anxiety, and stress by clinicians in Australia and the UK. It has high reliability and validity and is a useful measure to establish a preliminary clinical diagnosis of depression and anxiety (Crawford et al., 2011).

Exploration of the RDA model involved considering the external factors associated with a high level of personal competency and a low level of mental health concerns. To do so, we considered the number of RDA subtests scoring above the mean in relation to RSA-based competency scores and DASS-based mental health scores.

To determine a hierarchy of the RDA subtests with high scores, groups were formed based on the number of subtests scoring above the mean. For example, Group 0 was comprised of individuals with no subtest scoring above the mean, Group 1 was comprised of individuals with one subtest scoring above the mean, while Group 2 was comprised of individuals with two subtests scoring above the mean, and so on until eight groups were formed. The following questions were then explored:

1. What is the relationship between the number of RDA resource strengths scoring above the mean and DASS scores for depression, anxiety, and stress?
2. What is the relationship between the number of RDA resource strengths scoring above the mean and RSA scores for perception of self, planned future, social competence, structured style, family coherence and social resources?

Methods

Participants

Participants were a non-clinical sample drawn from professional development (PD) courses conducted by the researchers in schools and organisational settings in Australia and the UK from 2015 to 2017. Approximately 1500 teachers and employees attended the PD courses, arranged by their organisation aimed at building resilience, with a total of 859 adults (570 females and 289 males) aged 25–60 years voluntarily participating in the research. Being from Australia and UK, participants were of varied ethnological and religious backgrounds and cultures although all were English speaking.

Measures

Resilience Scale for Adults

The RSA measures protective factors associated with resilience and includes 33 items covering six dimensions: perception of self ($\alpha = .81$), planned future ($\alpha = .78$), social competence ($\alpha = .75$), family cohesion ($\alpha = .79$), social resources ($\alpha = .77$) and structured style ($\alpha = .67$) (Friborg et al., 2003; Hjemdal, 2007; Hjemdal et al., 2012; Hjemdal et al., 2006). Higher scores indicate higher levels of resilience. Previous studies have shown that higher RSA scores are negatively correlated with symptoms of depression and general/social anxiety, while lower scores have the ability to predict symptoms of depression when controlling for age, gender, stressful life events and severity of anxiety symptoms. The validity of the RSA has been supported by previous research (Anyan et al., 2020; Friborg et al., 2003; Hjemdal et al., 2012; Hjemdal et al., 2006; Morote, Hjemdal, Krysinska, et al., 2017; Morote, Hjemdal, Uribe, et al., 2017).

Depression, Anxiety, and Stress Scale

DASS (Crawford et al., 2011; Lovibond & Lovibond, 1995) includes 21 items covering three dimensions: depression, anxiety, and stress. The depression scale ($\alpha = .90$) assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia and inertia. The anxiety scale ($\alpha = .76$) assesses autonomic arousal, skeletal muscle effects, situational anxiety and subjective experiences of anxiety. The stress scale ($\alpha = .89$) measures chronic non-specific arousal such as difficulty relaxing, nervous arousal, impatience and being easily upset, agitated, irritable or over-reactive. Respondents rate the extent to which they have experienced each state over the past week using a 4-point severity/frequency scale. Scores for depression, anxiety, and stress are calculated by summing the scores for the relevant items (Crawford et al., 2011). The scores range on a continuum according to severity of symptoms, with arbitrary cutoff points of 9 and 13 for severe and extremely severe, respectively.

In developing DASS-21, normative data from samples of the general Australian adult population were used to determine the percentile norms and clinical cutoff points along three axes: depression, anxiety, and stress. While in reality the severity of depression and anxiety symptoms exists on a continuum, for clinical purposes, cut-off points are applied in each DASS scale to assess symptoms as mild, moderate, severe or extremely severe (Crawford et al., 2011; Lovibond & Lovibond, 1995).

Resilience Doughnut Tool

The Resilience Doughnut tool (Worsley, 2012, 2014) includes 70 items covering seven subtests: partner, skills, family, education, friends, community and work. Each item is represented by a positive statement related to its associated context, with responses based on a 6-point Likert scale. Sub-totals are collated to give an overall mean for each subtest.

Procedure

Participants responded using a computer program specifically designed to administer the three questionnaires and collect individual results. The estimated time required for participation was 30 minutes, with participants using their own devices in their own time. As part of the incentive, participants were given access to their RDA and RSA results, which highlighted their three strongest resources. Comments were entered into the open question section and participants were encouraged to discuss the results with their colleagues. The online format ensured consistency of instructions and delivery of the measures and improved the potential for honest responses. The de-identified data from each participant was immediately made available to researchers for statistical analysis.

Statistical Analysis

A Confirmatory Factor Analysis (CFA) was performed using Mplus 7.4 (Muthén & Muthén, 2012). First, each subtest was examined for goodness of fit using modification indices, followed by actual modifications involving deletion of items. Goodness of fit was determined using the following indices: root mean square error of approximation (RMSEA) of less than .08 (for 90% CI close to or $< .08$) and comparative fit index (CFI) and non-normed fit index (Tucker–Lewis index) values of greater than .95 (Hu & Bentler, 1999). Basic correlation analyses and three analyses of variance (ANOVAs) using stress, anxiety, and depressive symptoms as dependent variables were performed using SPSS version 25.

Results

A total of 859 participants were included in the analysis. The psychometric properties of the RDA were tested for reliability and validity, with each external factor treated as an independent subtest.

Confirmatory Factor Analysis

The final results of CFA are presented in Table 2. Initially, each of the seven subtests contained 10 items. A separate CFA was conducted for each subtest using a previously published procedure (Hjemdal et al., 2006). Fit and modification indices guided the selection of items for each subtest. Reliability of each subtest was tested using Cronbach's alpha, which showed that all subtests achieved acceptable reliability after 26 of the 70 items were removed to achieve best fit. Analysis was then carried out on the entire model, with the modifications resulting in 44 items showing a very good fit ($\alpha = .92$), and the remaining items showing a good fit to the research constructs (see Table 2).

Table 2*Resilience Doughnut Subtest Confirmatory Factor Analysis Results*

| Subtest | No. items | Alpha | Chi-square | CFI | TLI | RMSEA |
|--------------|-----------|-------|------------|------|------|-------|
| Partner | 9 | 0.98 | 109.984* | .984 | .978 | .062 |
| Skills | 5 | 0.81 | 16.991* | .986 | .971 | .054 |
| Family | 6 | 0.85 | 29.982* | .980 | .967 | .036 |
| Education | 8 | 0.84 | 70.563* | .919 | .896 | .024 |
| Friends | 6 | 0.91 | 25.959* | .988 | .981 | .052 |
| Community | 5 | 0.87 | 15.088* | .993 | .985 | .045 |
| Work | 5 | 0.83 | 15.652* | .990 | .979 | .041 |
| Entire model | 44 | 0.92 | 1,873.115* | .950 | .946 | 1.000 |

Note. N = 859; CFI: comparative fit index; TLI: Tucker–Lewis index; RMSEA: root mean square error of approximation.

* $p < .001$

Exploration of Construct Validity

Pearson's correlation coefficient was used to measure the correlations between each of the seven modified RDA subtests with the RSA constructs (Friborg et al., 2003). All RDA subtests were weakly to moderately positively correlated ($p < .01$) with RSA constructs. However, the correlation between partner and structured style was not significant, and the correlation between partner and social competence was moderately significant ($p < .05$). All RDA subtests showed a moderate correlation with total RSA score (see Table 3).

Table 3*Correlations Between RDA and RSA*

| RDA subtests | RSA constructs | | | | | | |
|--------------|--------------------|----------------|-------------------|------------------|-----------------|------------------|-------------|
| | Perception of self | Planned future | Social competence | Structured style | Family cohesion | Social resources | Total score |
| Partner | .157** | .200** | .095* | .029 | .289** | .227** | .242** |
| Skill | .528** | .507** | .226** | .365** | .280** | .393** | .526** |
| Family | .327** | .312** | .272** | .160** | .626** | .509** | .532** |
| Education | .423** | .452** | .272** | .278** | .230** | .378** | .467** |
| Friends | .296** | .289** | .453** | .076* | .300** | .574** | .481** |
| Community | .197** | .228** | .283** | .094* | .192** | .224** | .290** |
| Work | .456** | .475** | .195** | .257** | .277** | .340** | .462** |

Note: N = 818; RDA: Resilience Doughnut for Adults; RSA: Resilience Scale for Adults

* $p < .05$, ** $p < .01$

Using Pearson's correlation coefficient, a further test of validity was conducted for each of the seven modified subtests from the RDA with respect to DASS (Crawford et al., 2011; Lovibond & Lovibond, 1995). All RDA subtests were weakly to moderately negatively correlated ($p < .01$) with each of the DASS subscales. However, the correlation between community and stress was negligible ($p < .05$) (see Table 4).

Table 4*Correlations between RDA and DASS*

| RDA factors | DASS scales | | |
|-------------|-------------|---------|---------|
| | Depression | Anxiety | Stress |
| Partner | -.106** | -.155** | -.111** |
| Skills | -.232** | -.257** | -.144** |
| Family | -.249** | -.262** | -.197** |
| Education | -.206** | -.221** | -.142** |
| Friends | -.222** | -.260** | -.147** |
| Community | -.130** | -.149** | -.091* |
| Work | -.261** | -.298** | -.196** |

Note. N = 818; RDA: Resilience Doughnut for Adults; DASS: Depression, Anxiety, and Stress Scale.

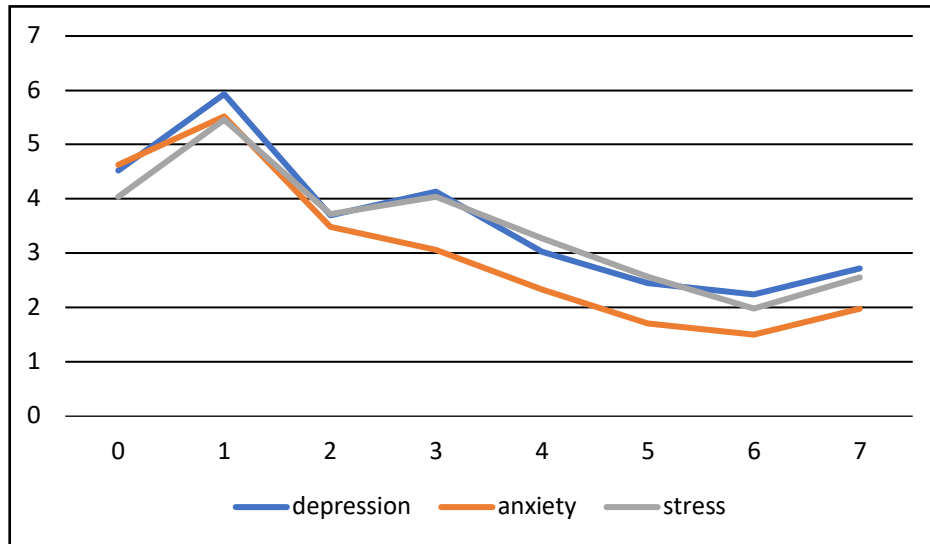
* $p < .05$, ** $p < .01$

Exploration of the Model*Categories of Strengths*

To explore the number of strengths needed to reduce depression, anxiety, and stress, mean scores were estimated for each of the seven RDA subtests. Scores above the mean were classified as high and those below the mean as low. Based on this, eight groups of participants were developed. Group 0 represented those with no strengths above the mean, Group 1 represented those with one subtest scoring above the mean, Group 2 represented those with two subtests scoring above the mean, and so on. To explore whether the number of subtests with scores above the mean had implications for reported symptoms, three separate ANOVAs using stress, anxiety, and depression as dependent variables were conducted. The results indicated significant results for stress ($F(7, 673) = 8.39$; $p < .001$), anxiety ($F(7, 673) = 16.44$; $p < .001$) and depression ($F(7, 673) = 14.80$; $p < .001$) (see Table 5).

Table 5*DASS Subscale Scores According to the Number of RD Strengths Above the Mean*

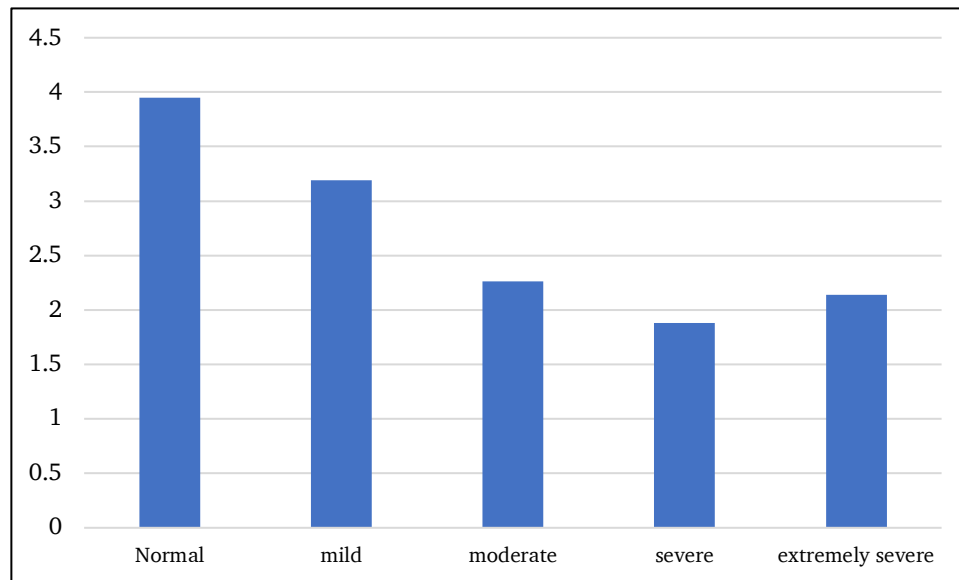
| | Number of subtests above the mean | | | | | | | |
|------------|-----------------------------------|------|------|------|------|------|------|------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Depression | 4.52 | 5.93 | 3.70 | 4.13 | 3.02 | 2.45 | 2.24 | 2.72 |
| Anxiety | 4.63 | 5.52 | 3.49 | 3.06 | 2.33 | 1.71 | 1.50 | 1.98 |
| Stress | 4.04 | 5.46 | 3.72 | 4.04 | 3.27 | 2.57 | 1.98 | 2.56 |

Figure 2*Symptoms According to Number of Strengths above the Mean*

To establish the number of participants achieving a clinical score for depression in DASS, proportion scoring within severity ranges was explored. The established severity labels are used to describe the range of scores in the population (Crawford et al., 2011). For example, mild indicates that the score is above the population mean but the depression is likely to be less severe than that of an individual seeking professional help. In the present study, only 10.3% of the sample reported moderate to severe symptoms of depression, with the remaining reporting mild to no symptoms of depression, again highlighting the nonclinical sample. Due to a small sample of participants in the extremely severe group (7), scoring for this group may be unreliable. However, when grouping those with moderate to severe depression there were fewer than three resource strengths as indicated by the RDA subtests scoring above the mean (moderate = 2.26, severe = 1.88, extremely severe = 2.14), while those with mild to no depressive symptoms reported more than three resource strengths scoring above the mean (mild = 3.19, normal = 3.95) (see Table 6).

Table 6*Number of Strengths According to Clinical Depression Symptoms*

| | Normal | Mild | Moderate | Severe | Extremely severe |
|------------------------|--------|------|----------|--------|------------------|
| Number of strengths | 3.95 | 3.19 | 2.26 | 1.88 | 2.14 |
| Number of participants | 479 | 116 | 61 | 17 | 7 |

Figure 3*Number of Strengths According to Categories of Depressive Symptoms*

Further exploration of the model considered the relationship between the number of RDA subtests scoring above the mean and signs of resilience and personal competency established by the RSA. A moderate to strong correlation ($p < .000$) was found between all RSA subscales and the sum of RDA strengths above the mean. This suggests that stronger connection and support are associated with higher perceptions of self, planned future, social competence, structured style and family cohesion. Each of these subscales contributes to resilience as determined by the total RSA score, which showed a high correlation with the RDA sum of strengths ($p < .000$) (see Table 7).

Table 7*Correlations Between RSA Subscales and RDA Sum of Strengths Above the Mean*

| | RSA subscales | | | | | |
|----------|--------------------|----------------|-------------------|------------------|-----------------|-----------|
| | Perception of self | Planned future | Social competence | Structured style | Family cohesion | RSA Total |
| RDA | .520*** | .508*** | .370*** | .263*** | .458*** | .634*** |
| <i>n</i> | 736 | 746 | 736 | 737 | 736 | 737 |

* $p < .001$

Discussion

Adulthood is frequently associated with adversity, grief, critical incidents and trauma across the life stages. When these occur, a range of reactions can occur. As noted in the literature, individuals with stronger support networks appear to have healthier coping mechanisms (Cacioppo et al., 2011; Hobfoll et al., 2011; McKinley et al., 2019). Drawing on constructs identified in the literature, the RDA includes seven contexts in which support may be found and suggests that a certain number of strong supports (referred to as strengths) can lead to the successful navigation through adversity.

Psychometric Qualities of the Resilience Doughnut Model

Using CFA, goodness of fit was established for the model, resulting in a reduction of items based on fit and modification indices. This process yielded 44 items that appeared reliable and valid according to the research constructs. The seven contextual supports were treated as subtests. Each showed a positive correlation with the subscales of the RSA, which measures both personal and social competencies as well as social resources, both within and external to the individual's family (Hjemdal et al., 2006). Further, a strong negative correlation was found with the DASS subscales, which measure depression, anxiety, and stress. The results support the research findings that individuals with healthier coping styles (high competency and low depression, anxiety, and stress) appear to have strong and supportive networks of friends, family and community, as indicated by the RDA.

Does the Number of Resilience Resources Influence Stress, Anxiety, and Depression?

The model exploration considered the relationship between depression, anxiety, and stress and the number of resource strengths (established by the RDA subtest scores above the mean). Respondents scoring zero, one and two resource strengths above the mean showed a graduated decline in reported depression and stress scores, with a significant difference for those scoring five, six, and seven strengths above the mean. Similarly, a gradual decline in anxiety symptoms was found for up to five strengths above the mean.

To further explore the number of strengths necessary to reduce depression, anxiety, and stress, participants were grouped according to their DASS scores for depression. The number of strengths for each level of symptom severity was then established. Participants with mild to no depressive symptoms reported having three or more strengths over the mean, while those with moderate to severe depression reported less than three strengths over the mean. Those with extreme severe depression scores, however, reported slightly more strengths than those with severe depression. While the score is still below three strengths, it is important to note that due to the non-clinical sample, and with only seven subjects in this group the results for this group may be unreliable. Despite the smaller extremely severe group, however, these results support the hypothesis that there is a strong negative correlation between resource strengths and depression, anxiety, and stress symptoms. Further, the results suggest that the presence of three or more strengths may influence the severity of depression symptoms. In order to draw further conclusions, it would be helpful to consider a clinical sample in future research, where a larger representative group may occur in the clinical range of depression scores.

Conversely the group scoring mild to no depressive symptoms reported 3.19 and 3.95, strengths above the mean, highlighting there were not 4 or higher strengths as may be expected. It is important to note that each of these strengths indicate significant social capital or social systems in which a person is nested. That is, in each of the strengths there exists a network of relationships and systems that establish the degree of strength. Having more than four strengths may be unusual for the adults in this sample, given the nature of work and family involvement as all of the participants were workers. Furthermore, when work is a dominant factor there may be only time for two-three other significant factors above the mean. However, it is notable that there was a significant decrease in anxiety and depression scores (regardless of the clinical range) with those scoring five through six and seven strengths above the mean.

Again, further research is needed to assess groups of adults who are rich in strengths, to consider their scores of resilience and depressive and anxiety symptoms and to establish the number of strengths needed to tip the balance towards more resilient outcomes.

Access to Resources as a Predictor of Resilience

The RDA model shows that there is a number of resources or relational strengths needed to build resilience. Relationships change throughout adulthood, and transitions through the life cycle affect the strength of relationships over time. It has been suggested that support and access to social resources contribute to the personal skills needed to cope with life difficulties (Flores et al., 2018; Foster et al., 2019).

Indications of Validity

The strong positive correlations found between each RSA subscale and the sum of RDA strengths above the mean indicate that higher scores in the social resource category are associated with higher levels of competence and resilience as well as lower levels of depressive symptoms. While the strong correlations between the RSA and RDA indicate support for construct validity given that both are measures of resilience, each measure has a focus on different aspects of resilience. The RSA focuses on competencies in several social domains, while the RDA focuses on the relative strength of resources. Therefore, considering the strong correlations, the more resources a person has, the higher their levels of social and personal competencies; that is, the more resource strengths, the better the outcomes.

Implications

The findings suggest that people who have strong connections with resources from a number of different contexts have higher levels of resilience and better mental health. The implications being that a focus on developing contextual and relational strengths may be a more effective way to improve wellbeing and resilience.

Strength-based interventions that have been shown to be successful in helping people develop resilience tend to focus on what is working and identify the positive experiences that are already thriving (Brehm & Doll, 2009; Domínguez & Arford, 2010; Pinkerton & Dolan, 2007). Traditional mental health interventions, however, have focused on reducing the symptoms of mental health disorders such as depression, anxiety and stress. Rather, it may be simpler, and perhaps more in line with current research, to focus on and provide support for an individual's existing strengths. Building on existing strengths will lead to a positive flow-on effect to other areas of an individual's life, helping to reduce the negative effects that can threaten to undermine self-esteem. Focusing and building on existing resource strengths will enable the development of social and personal competencies, potentially promoting resilience features such as adaptability, hopefulness, readiness for change, future thinking and an enhanced sense of purpose and meaning (Mannix, 2010).

Many successful resilience interventions are underpinned by connections between positive intentional relationships in various contexts. Several case studies have noted the resilience responses of individuals as they negotiate life's challenges (Mooney-Somers et al., 2010; Sampson, 2005). Positive turning points for many of these individuals arise from the effects of external factors (Araneta, 2010; Shaffer et al., 2007). Additionally, some case studies have demonstrated 'tipping points' (negative changes) arising from the loss or disengagement from one's external resources (Doherty et al., 2009; Hou et al., 2010). The present research suggests that three or more supportive resources are needed to prevent a decline into depression and anxiety, and the strongest available resources significantly contribute to personal resilience. This is supported by previous studies using a strength framework (Donnon & Hammond, 2007).

Another possible clinical implication may be linked to therapy. Using an SF approach in therapy necessitates curiosity on the part of the therapist. The aim of the SF therapist is to focus clients away from their pervasive problems and towards their strengths, feelings of hope and the solutions that may already exist. A number of assumptions guide SF therapists, including maintaining client agency, remaining a curious observer and the belief there are exceptions to the problem. Most SF therapy is conversational, using everyday language and carefully worded questions. Using the RD model as a conversational tool, SF therapists can explore the relative strengths of each contextual factor and the resources in everyday relationships that may help their clients' to successfully progress through the difficulties they are facing. Simply having a conversation about what is working in each area can uncover the competencies experienced in the past and shared through relationships. Thus, the RDA may be a useful tool in identifying the strengths on which to focus during conversations.

If resilience can be found in the ordinary everyday magic of people's lives, communities, families and connections (Masten, 2001), the RDA may be a tool to guide the conversation in uncovering the ordinary everyday magic that occurs in the lives of clients through their interactions with those around them.

The aim of this research was to validate the whole RDA model including the seven contextual strengths. The non-clinical sample allowed the researchers to establish validity and reliability of the RDA measure and test the assumptions that strong resources lead to more personal and social competence, and thereby lower levels of stress, depression and anxiety.

To test the model further, future research, using a clinical sample to explore the number of resource strengths with those with mental illness, would be of interest. Similarly, research with a sample of people going through a change in

their life stages, such as first-time parents or retirees, could explore the effects of changes in RDA strengths on wellbeing. Furthermore, research into people who are disconnected from their strongest and most helpful resources during disasters, pandemics or as a result of trauma could inform recovery and intervention strategies for the future. From this research so far, it would seem that strategies that focus on increasing the connections, and resource strengths, rather than the symptoms of mental illness will be most effective.

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