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The Resiliency Scale for Young Adults Revisited

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Honours Psychology Thesis

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### **Abstract**

Resiliency has been examined in past research using a scale for children and adolescents, called the Resiliency Scales for Children and Adolescents (RSCA; Prince-Embury, 2006, 2007). This scale is based on a three-factor model for resiliency that includes Sense of Mastery, Sense of Relatedness, and Emotional Reactivity (Prince-Embury, 2006, 2007). The RSCA has recently been revised for young adults, by developing the Resiliency Scale for Young Adults (RSYA). The RSYA is a 50-item self-report measure, with each item rated on a scale from 0 = *Never*; to 4 = *Almost always*. The current study is a replication of a study by Prince-Embury et al. (2016) that presented psychometric support for the RSYA. A sample of first year undergraduate students at Western University (similar to the sample collected in the 2016 study), were administered the online RSYA at two time points during the Fall 2016 semester. The current study examines the internal consistency and the test-retest reliability of this measure, as well as replicating various analyses completed in the 2016 study. The results supported the internal consistency and also the test-retest reliability of the RSYA, which also showed negative relationships with stress, anxiety, depression and a positive relationship with life satisfaction. This scale holds promise for further studies of resiliency in young adults.

### **The Resiliency Scale for Young Adults Revisited**

Many young adults attending university move away from familiar surroundings, people, and daily patterns. This is a time in which young adults face many stressors. University, for example, brings with it a new environment without immediate parental support, more advanced academic challenges, and a need to create new social support networks (Prince-Embury, Saklofske, & Nordstokke, 2016; Paul & Brier, 2001). These various stressors can accumulate quickly, as events can often happen within a small time frame as students enter first year university.

The young adult's first experience of university and/or living independently has been found to be a time with an increased risk of developing stress-related pathologies (Galatzer-Levy, Burton, & Bonanno, 2012; Kadison & DiGeronimo, 2004). These pathologies typically include the development of feelings of fear, anxiety and especially acute or even pervasive stress (Latham & Green, 1997). Consequently, a number of university students fail and/or drop out of university each year. This number has been reported as up to 18% of first year students not continuing onto their second year of university (Macleans, 2010). Dropping out may be a result of the academic load being too difficult, an inability to adapt to the new environment, or not being able to cope with large amounts of change in a short period of time. As a result, these individuals can be at an elevated risk for engaging in risky behaviours such as drug or alcohol use; and are also at a greater risk for experiencing depression and/or anxiety (Prince-Embury et al., 2016; Paul & Brier; Galatzer-Levy et al., 2012).

With an increasing number of students entering university each year, it seems particularly important to focus on young adults and how they adapt to new environments. With this in mind, the study of the resiliency of young adults has become more prominent, with more measurement,

analyses, and understanding than previously available (Prince-Embury et al., 2016). In particular, researchers have begun to pay attention to what characteristics or traits young adults possess that lead to greater success in school, as well as what characteristics and traits are not so successful. Here, they have found that resiliency is a good predictor of how students cope and adapt in the new university setting (Prince-Embury et al., 2016).

### **Resiliency**

Resiliency has various definitions in research and popular literature (Luthar, 2006; Masten, 2007; Prince-Embury, 2013, 2014; Prince-Embury & Saklofske, 2013, 2014). Many of these definitions are inconsistent across researchers; some definitions are even inconsistent across one measure or article (Prince-Embury et al., 2016).

Resiliency has previously been defined as the way in which an individual reacts to his/her immediate adverse environment or circumstance (Werner, 1997). Personal resiliency was seen as a case-by-case reaction to external stimuli. An example would be a person being rated highly resilient when reacting to being in a horrific car accident, or rated when experiencing or having recently experienced a natural disaster. More contemporary resiliency definitions focus on how regular, everyday individuals rise above adverse and challenging environments and continue to thrive when it seems likely that most people would not thrive (Masten, 2001). This view posits that most individuals already have some sense of resiliency before any adverse events, and that some individuals have stronger characteristics of resiliency than others. Therefore, the contemporary definition of resiliency focuses on how individuals react to life events with their already existing characteristics of resiliency, and the past definition focused on how individuals reacted to extraordinary and typically psychologically traumatic events, and how only those individuals faced their adversity.

These more contemporary definitions view resiliency not as a reaction to a stimulus, but as an interaction between always present personality characteristics and the environment (Masten, 2007, 2014). This trait is present in each situation the individual experiences, whether that individual displays his/her level of resiliency in the current environment or not.

### **Existing Resiliency Models**

There are several models underlying resiliency research that aim to identify characteristics and traits of persons with high personal resiliency. A few examples of resiliency models that have led to the development of assessment measures include the Brief Resilience Scale (Smith et al., 2008), the Ego Resiliency 89-item scale (ER89; Block & Kremen, 1996) and the Connor-Davidson Resiliency Scale (CD-RISC; Connor & Davidson, 2003). Each of these scales focus on their own specific group of individuals or sample. In particular, the ER89 focuses on ego resiliency, which is defined as the behaviours of an individual that are aimed at lessening threats and maximizing pleasure, for example, behaviours like suppressing aggression and developing social skills. Furthermore, the CD-RISC focuses on individuals taking medications, and the Brief Resiliency Scale focuses on the recovery of individuals after experiencing stress. None of these scales, however, have a specific focus on young adults, which is the target group of the present thesis.

### **A Three-Factor Model of Resiliency**

A three-factor model of resiliency has been developed as a result of Prince-Embury's (2006, 2007, 2008a, 2008b, 2012, 2013), extensive research program and the existing resiliency literature (Prince-Embury & Saklofske, 2013, 2014; Masten, 2001, 2007, 2014). These researchers have found three clusters of typical systems that individuals develop over time, which can then highly influence their levels of resiliency. These three factors are Sense of

Mastery, Sense of Relatedness, and Emotional Reactivity. These three factors seem to correlate individually but also collectively with each other (Prince-Embury, 2006, 2007). For example, individuals who seem to possess a strong sense of optimism (Mastery), typically also possess the ability to trust other people (Relatedness). These people also tend to have control of how strongly they react emotionally to external and internal stimuli (Emotional Reactivity). An individual who is experiencing a transition in life from one high school to another, for example, may find it easy to trust other people and they may make friends as a result, and therefore will feel more optimistic about their future at their new school. With this sense of optimism, this individual may have more control over duration and strength of emotions, like anger or sadness.

**Sense of Mastery.** Characteristics such as confidence, mastery and self-efficacy are often found within the literature describing what individuals with high resiliency have in common (Prince-Embury, 2006, 2007). These characteristics are grouped under the factor Sense of Mastery in this model. Individuals with a high Sense of Mastery exhibit high self-confidence, and are able to look at an adverse situation or circumstance and see opportunity for growth or change in a positive way (Prince-Embury, 2006, 2007; White, 1959). These characteristics include a sense of how optimistic an individual is about his/her future, and how confident the individual is about his/her ability to adapt to the changing environment appropriately (Prince-Embury, 2006, 2007, 2013, 2014). Therefore, Sense of Mastery is considered a protective factor in this model, in that higher scores on this factor mean a higher level of resiliency.

**Sense of Relatedness.** Sense of Relatedness is another protective factor in this model. This factor describes a person's relation to others around him/her. Sense of Relatedness includes an individual's sense of social supports, ability to reach out to those supports, and trust in others (Prince-Embury, 2006, 2007, 2013, 2014). An example of a person with a high Sense of

Relatedness would be one who finds it easy to trust those around them, and is also able to ask for help if they need it from the people they trust.

**Emotional Reactivity.** Emotional Reactivity can be described as the threshold in which an individual can no longer regulate emotional reactions to external and internal stimuli (Prince-Embury, 2006, 2007). The threshold at which an individual can no longer control their emotions is established before the adverse environment or event that may exercise a person's resiliency. Therefore, Emotional Reactivity is a stable trait, in that it exists at the same level at all times. The two factors listed above are also stable traits. Prince-Embury (2006, 2007, 2013, 2014) included three functional aspects in this factor of Emotional Reactivity to further explain its underlying systems. They include sensitivity, amount of time it takes to recover after the emotional reaction, and the degree of impairment or functioning of the individual in relation to the emotional experience (Prince-Embury, 2006, 2007, 2013, 2014). Emotional Reactivity can decrease a person's level of personal resiliency. An example of having high Emotional Reactivity would be an individual who, when under stress, finds it difficult to control his/her anger.

### **The Resiliency Scales for Children and Adolescents**

The three-factor model described above by Prince-Embury (2007, 2008a, 2008b, 2013, 2014) was developed into a scale used for measuring and conceptualizing personal resiliency in children and adolescents from ages 9-18 years. This scale is titled the Resiliency Scales for Children and Adolescents (RSCA; Prince-Embury, 2013) and it includes 64 items across three factors (Prince-Embury, 2006, 2007). This scale was developed for a third-grade reading level. It encompasses the three-factor model mentioned above, and a total of ten subscales within these factors. Sense of Mastery includes three subscales: optimism, self-efficacy and adaptability. An



individual who feels optimistic, who has a high sense of self-efficacy and can adapt easily to situations would have the ability to master their current situation when compared to a person who is not optimistic, finds it difficult to adapt and has low self-efficacy. Sense of Relatedness includes four subscales: trust, comfort with others, support, and tolerance. A person with a high Sense of Relatedness would find it easy to relate to other people, therefore finding it easy to trust others, rely on them, and to tolerate them, when compared to individuals with a low Sense of Relatedness. Emotional Reactivity includes three subscales. These are; sensitivity, recovery, and impairment. An individual with high Emotional Reactivity would be sensitive, find it hard to recover from highly emotional events, and would find these emotional events to be more overwhelming than a person with low Emotional Reactivity.

The RSCA has been analyzed for its factor structure, and subscale structure. Prince-Embury (2010) has concluded that the scale has a good factor structure. All of the factors that were expected to correlate with each other did, and the direction in which the correlations occurred appeared as expected. For example, Sense of Mastery was expected to correlate negatively with Emotional Reactivity, and Sense of Relatedness and Sense of Mastery correlated positively with each other. Also, the subscales of optimism, self-efficacy and adaptability were expected to correlate with each other positively, as they were all in the same factor (Prince-Embury, 2007, 2008).

### **The Resiliency Scale for Young Adults**

The current study is a replication and extension of the research study that first published the psychometric properties of The Resiliency Scale for Young Adults (RSYA; Prince-Embury et al., 2016). Prince-Embury and colleagues (2016) altered the RSCA in order to more appropriately measure young adult's level of resiliency, but still using the same three-factor

model as described above. Therefore, the RSYA included the three main factors; Sense of Mastery, Sense of Relatedness, and Emotional Reactivity, and all ten subscales. Gradual changes were made to the RSCA to develop a scale more suited for young adults. These changes are described below.

The RSYA was developed to further operationalize resiliency across the lifespan by continuing on from childhood and adolescence and into young adulthood. Young adulthood is a challenging time for most. The environment, daily living and social support networks typically change quickly when transitioning from teenager to young adult. Individuals who have a higher level of personal resiliency will, in theory, be able to withstand the challenges in each area of life, and to thrive in these circumstances as well. Individuals with more resiliency would be expected to better fulfill adult roles, relationships and academia (Prince-Embury et al., 2016; Paul & Brier, 2001).

As the challenges in young adulthood are different than the challenges in childhood and adolescence, the Sense of Mastery items were adjusted. These items were changed to reflect the ability of an individual to overcome demands by academia, their ability to remain and thrive independently, and use and develop coping skills for problem solving (Prince-Embury et al., 2016).

These young adults are not only navigating new environments, but they are also losing old environments and support networks as well. The necessary building of new social support networks is encompassed in the Sense of Relatedness factor in the current model. This factor includes a young adult's ability to separate from their family of origin, leave behind familiar living conditions, and high school friendships. The ability to leave behind certain relationships, especially those strong bonds built with friends and social supports in high school, are not easy

for many students (Paul & Brier, 2001). However, the ability to look forward and to develop new social networks is related to a high level of Sense of Relatedness, and also a high level of resiliency (Paul & Brier, 2001; Prince-Embury et al., 2016).

Emotional Reactivity is related to an individual's experience of negative emotions in response to an adverse environment (Prince-Embury, 2006, 2007). When the environment becomes challenging, one can experience an increase in stress, anxiety, or other negative mental states. These will be present more often and more intensely in individuals with low resiliency. When a student needs to balance the many areas of his/her life as is needed when entering university, it can be overwhelming and emotionally stimulating (Galatzer-Levy et al., 2012). Therefore, students may become highly emotionally reactive when in stressful situations during school, when building social networks or trying to balance challenges in new environments.

### **The Development of the RSYA**

**Phase One.** The development of the RSYA began when the authors adjusted some of the wording in the RSCA to reflect language more appropriate for young adults (Saklofske et al., 2013; Prince-Embury et al., 2016). This included changing words like 'family' to 'parents'. This adaptation of the RSCA was titled RSCA-A. The underlying three-factor structure remained the same, as did the items in the scale. Following this the authors made another revised version of the RSCA-A. This scale was the RSCA-A-R and it had an additional 8 items added to the Adaptability scale within the Sense of Mastery factor. These new items included more young adult appropriate challenges like turning challenging environments into opportunities for personal growth and learning (Prince-Embury et al., 2013).

A study by Saklofske and colleagues (2013) analyzed both the RSCA-A and the RSCA-A-R for their internal consistency. They analyzed whether the two scales were similar in

consistency to the original RSCA. This study analyzed all three factors and all ten subscales ( $N = 635$ , age range of 19-25 years). This study hypothesized that there was a positive correlation between items on the Sense of Mastery and Sense of Relatedness factors. This was hypothesized because both Sense of Mastery and Sense of Relatedness are protective factors, and therefore as one increases, the other should increase as well. It was also hypothesized that these two factors correlated negatively with the Emotional Reactivity factor, since Emotional Reactivity is not a protective factor, it should decrease as the other two factors increase. The hypothesis extended to the subscales, in that each subscale's items within a factor should correlate strongly with each other. Therefore, one item in the optimism scale should correlate strongly with the other items within that subscale. These various hypotheses were supported in this research (Prince-Embury et al., 2016; Saklofske et al., 2013).

**Phase Two.** In the next phase of the development of the RSYA, more phrases and words were adapted to be more appropriate for young adults (Saklofske et al., 2013). More items were also added to make a total of 105-items on this revised scale. This scale was then administered by Saklofske and colleagues (2013) to a sample of 209 young adult undergraduate students. The intention here was to add new items to the scale, and eliminate other items so that the scale only included items with high internal consistency. All but nine of the new items were kept in the scale, and were added to the items still left from the RSCA. Therefore, this new scale was 50-items in total, 5 items per subscale, and was titled the Resiliency Scale for Young Adults (RSYA; Prince-Embury et al., 2016).

**Phase Three.** The research study that is being replicated in the current thesis follows from the third phase of this line of research. Phase 3 included the study conducted by Prince-Embury and colleagues (2016) who analyzed the finalized version of the RSYA. This scale

includes 50-items. Each item is measured on a scale from  $0 = \textit{Never}$  to  $4 = \textit{Almost Always}$ .

There are ten subscales, each with 5 items. The factor structure and subscale structure is identical to the one in the RSCA and its revisions. Prince-Embury and colleagues (2016) collected data from 290 individuals and used confirmatory factor analysis to analyze factor and subscale structure. The scales and subscales were found to have good coefficient alphas (Prince-Embury et al., 2016). Convergent and discriminant validity were explored and the factors significantly correlated as expected with the Depression, Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995) and the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). A confirmatory factor analysis also supported the three-factors and ten subscales in the RSYA.

### **Current Study**

The current study aimed to replicate the 2016 study by Prince-Embury and colleagues. Drawing from university student samples these participants completed the same measures as the original sample online for research participation credit at Western University. The participants were further invited to fill out the same scale 2-3 months later to assess test-retest reliability for this scale.

It was hypothesized that this study replicated the findings of the initial RSYA study. Therefore, the first hypothesis was A) the RSYA has good internal consistency, and B) test-retest reliability shows high correlations between time 1 and time 2 responses. Second, it was hypothesized that A) Sense of Mastery and Sense of Relatedness, the protective factors, correlate negatively with the Depression, Anxiety and Stress Scales of the DASS-21, and B) Emotional Reactivity correlates positively with the DASS-21. These scales would, in theory, not be expected to be found at high levels among individuals who are highly resilient. Third, it was

hypothesized that A) Sense of Mastery and Relatedness will correlate positively with the SWLS, which measures how satisfied an individual is with his/her life, and B) Emotional Reactivity will correlate negatively with the SWLS. The SWLS measure would, in theory, be expected to be found at high levels among individuals who are highly resilient.

## Method

### Participants

The participants at time 1 were 290 undergraduates at a Canadian university (63 male, 227 female) between the ages of 17 and 38 years ( $M = 18.01$  years,  $SD = 1.43$ ). The participants at time 2 were 117 undergraduates from the first sample (19 male, 98 female) between the ages of 17 to 23 years ( $M = 17.97$  years,  $SD = .07$ ). The participants were primarily first year students (93.4% at time 1, and 95.7% at time 2). Participants were recruited through the university SONA recruitment software. Inclusion criteria included having access to SONA, being a current first year student at the University of Western Ontario and being a full-time student.

### Measures

**The Resiliency Scale for Young Adults.** The RSYA (Prince-Embury et al., 2016) was administered to participants at both time 1 and time 2 (see Appendix A). This scale contained 50 items, each rated on a Likert scale from 0 = *Never*; to 4 = *Almost Always*. A higher score within the protective factors (Sense of Mastery and Sense of Relatedness) indicates higher resiliency in the participant, and a lower score on Emotional Reactivity indicates higher resiliency. At time 2, 117 of the original sample completed the scales. As was done in the original 2016 study, two other questionnaires were administered to examine the convergent validity of the RSYA; the DASS-21 as well as the SWLS. The SWLS was only administered at time 1 and not time 2.

**Depression, Anxiety and Stress Scale.** This 21-item scale measures an individual's experienced levels of depression, anxiety and stress. It includes a 4-point Likert scale ranging from *0 = did not apply to me at all* to *3 = applied to me very much, or most of the time* (Lovibond & Lovibond, 1995). The reliability and validity for this scale has been supported (Osman et al., 2012) and was found to correlate positively with the Emotional Reactivity factor and its subscales within the RSYA, and negatively with the Sense of Mastery and Sense of Relatedness scales (Prince-Embury et al., 2016).

**Satisfaction with Life Scale.** This 5-item scale measures an individual's satisfaction with life, and includes a 7-point Likert scale ranging from *1 = strongly disagree* to *7 = strongly agree*. This scale is one of the most often employed measures in research with a positive psychology focus and has demonstrated good reliability and validity (Pavot & Diener, 1993). In Prince-Embury and colleagues (2016) study this scale was found to correlate positively with Sense of Mastery and Sense of Relatedness. It also correlated negatively with Emotional Reactivity in the RSYA.

## **Procedure**

An advertisement was posted on the Western University SONA portal where undergraduates could sign up to participate in studies for course credit. After signing up, students were directed to a link to complete the study measures and some basic demographic information (e.g., sex, age). In the Letter of Information, the participants were informed that this study would include two parts, and thus they would be contacted through email at a later date to participate in the second portion of the study.

Consent was assumed if upon reading the Letter of Information participants proceeded to complete the online study. The participants who completed the first part of the study in

September were contacted again in November of the same semester and asked to participate in the second part of the study. The second part included the measures listed above, excluding the SWLS. All scales were completed using Qualtrics, an online platform frequently used in research requiring the completion of questionnaires.

## Results

### RSYA Scoring

The RSYA has ten facets within the three factors and each facet consists of five items. Each item is rated out of 5 ( $0 = \text{Never}$ ; to  $4 = \text{Almost Always}$ ). Therefore, each facet has the potential to yield a total score between 0-20. Emotional Reactivity has a potential total factor score of 0-60, Sense of Mastery between 0-60 as well, and Sense of Relatedness between 0-80. For any missing data, pairwise deletion was used in SPSS 23 for correlational analyses and listwise was used for calculating the coefficient alpha values.

### Reliability

Test-retest analyses were done. This analysis was not done in the 2016 (Prince-Embury et al.) study, therefore the hypothesis for this was that the test-retest would show significant, positive correlations between time 1 scores and time 2 scores. Only those participants who completed both time 1 and time 2 scales were included in this analysis. Bivariate correlation was used to analyze the relationship between scores at time 1 and time 2. These scores highly correlated with each other, all being significant at the .001 level, ranging from  $r = .67$  to  $r = .78$  (see Table 1). Each individual factor correlated highly with itself between time points, as did the total scores across the RSYA. This result indicates good reliability in the RSYA and its individual factors.



Cronbach's alpha coefficients were used to determine time 1 and time 2 reliability within the RSYA factors and overall reliability. Table 1 shows the coefficient alpha values for both time 1 and 2. The values ranged from .84 to .90. These scores show good reliability, and replicated findings from the original paper by Prince-Embury and colleagues (2016).

**Table 1:** Coefficient Alpha for Time 1, Time 2 and Test-Retest.

Factor	Time 1		Time 2		Test-Retest	Number of Items
	Coefficient Alpha	<i>N</i>	Coefficient Alpha	<i>N</i>		
RSYA Total	.84	288	.90	116	.67**	50
Reactivity	.90	289	.93	117	.74**	15
Mastery	.89	289	.93	116	.67**	15
Relatedness	.90	289	.93	117	.78**	20

*Note.* RSYA = Resiliency Scale for Young Adults; \*\*  $p = .001$ .

### Convergent Validity

The RSYA in time 1 correlated with the DASS-21 as expected. The correlations ranged from  $r = -.28$  to  $r = .72$ , all of which were significant at the .001 level (see Table 2). Sense of Mastery and Relatedness, the protective factors, correlated negatively with all factors of the DASS-21. Emotional Reactivity correlated positively with the DASS-21. Each subscale of the DASS-21 was significantly negatively or positively correlated with each facet in the RSYA as expected, with all RSYA protective facets correlating negatively, and Emotional Reactivity correlating positively.

The RSYA at time 1 was also compared to the SWLS. It was found that both protective factors in the RSYA correlated positively, and significantly, with the SWLS. Emotional Reactivity correlated negatively. All correlations were significant at the .001 level, and ranged from  $r = -.28$  to  $r = .57$ . Therefore, results were found to support each hypothesis regarding these alternative scales, finding that the protective factors correlated negatively with the DASS-21, and

positively with the SWLS, and Emotional Reactivity correlating negatively with SWLS and positively with the DASS-21.

**Table 2:** RSYA Factors' Correlation with Established, Alternative Scales at Time 1.

Scale	<i>M</i>	<i>SD</i>	<i>N</i>	1	2	3	4	5	6	7
1. Mastery	41.13	8.12	289	-						
2. Relatedness	55.16	10.47	289	.68**	-					
3. Reactivity	24.26	9.42	289	-.44**	-.37**	-				
4. DASS Stress	14.17	4.73	289	-.38**	-.41**	.57**	-			
5. DASS Anxiety	12.85	4.67	289	-.37**	-.38**	.48**	.73**	-		
6. DASS Depression	12.74	5.02	288	-.49**	-.51**	.51**	.71**	.72**	-	
7. SWLS	24.06	6.60	290	.57**	.56**	-.28**	-.31**	-.34**	-.51**	-

*Note.* RSYA = Resiliency Scale for Young Adults; DASS = Depression, Anxiety, and Stress Scale; SWLS = Satisfaction with Life Scale; \*\*  $p = .001$ .

The correlations at time 2 showed significant relationships between the RSYA facets and the DASS-21 Scales as was seen at time 1 (see Table 3). This indicates the RSYA significantly relates with the DASS-21 across time points. The correlations ranged from  $r = -.22$  to  $r = .82$ .

**Table 3:** RSYA Factors' Correlation with DASS-21 Scales at Time 2.

Scale	<i>M</i>	<i>SD</i>	<i>N</i>	1	2	3	4	5	6
1. Mastery	40.70	8.94	114	-					
2. Relatedness	54.79	12.24	116	.71**	-				
3. Reactivity	25.24	11.02	116	-.34**	-.22*	-			
4. DASS Stress	14.55	5.37	117	-.56**	-.47**	.52**	-		
5. DASS Anxiety	12.53	5.16	116	-.52**	-.39**	.45**	.82**	-	
6. DASS Depression	13.70	5.58	117	-.63**	-.52**	.46**	.80**	.73**	-

*Note.* RSYA = Resiliency Scale for Young Adults; DASS = Depression, Anxiety, and Stress Scale; \*  $p = .05$ ; \*\*  $p = .001$ .

## Discussion

This study aimed at replicating the 2016 paper by Prince-Embury and colleagues. The 2016 paper was the first to analyze the psychometric properties of the Resiliency Scale for Young Adults, as it has recently been adapted for young adults from the existing Resiliency Scales for Children and Adolescents. Prince-Embury and colleagues (2016) found that the RSYA has good internal consistency for the three factors, also satisfactory convergent-divergent validity. The factors include Sense of Mastery, Sense of Relatedness and Emotional Reactivity.

The first hypothesis for this study examined internal consistency of this scale. Coefficient alphas were calculated for participants' overall scores, and each of the three factors. This study found good internal consistency within each factor and also within the overall scale and is in line with the findings of the 2016 study. This indicates that each of the items within the factors and within the overall scale measure the same characteristics and traits within an individual.

The second part to this first hypothesis examined test-retest of the RSYA. This is the first time that test-retest statistics have been analyzed and reported for the RSYA. Time 1 data collections occurred in September and October and time 2 was in late November and December of the same year. There were strong significant correlations for the three RSYA factors between time 1 and 2. The test-retest shows that, although students would have typically been experiencing higher stress in December than September and October due to exams and final projects, their resiliency stayed stable, as it was expected to. Resiliency is a relatively stable trait, and should therefore be fairly consistent throughout different periods of an individual's life, for example, when beginning a term at university and undergoing their first batch of midterm examinations.

The second and third hypotheses of this study examined the convergent validity of the scale. This included the correlation between the three factors in the RSYA and other scales that are linked with resiliency including the SWLS and the Depression, Anxiety and Stress Scales of the DASS-21. In the 2016 study, it was found that the RSYA's factors correlated as expected with these scales. For example, the two protective factors, Sense of Mastery and Relatedness, correlated negatively with the DASS-21 and positively with the SWLS. This pattern was reversed with the Emotional Reactivity factor, in that there was a positive correlation with the DASS-21 and negative correlation with the SWLS. The current study found similar results.

There was a positive correlation with the protective factors and the SWLS, and a negative correlation with the DASS-21. Alternatively, there was a significant positive correlation with the DASS-21 for Emotional Reactivity and negative with the SWLS.

The positive relationship between the protective factors and SWLS indicates that those with high resiliency, defined here as high in Sense of Mastery and Relatedness, are more satisfied with their life overall. Being satisfied with life could be a major protective factor in young adults who are going through many life changes. Therefore, if we can see that high levels of resiliency are related to high satisfaction with life, then we may use this information to increase or help foster resiliency in individuals who may be in therapy or taking part in a mental health intervention, and therefore increase their satisfaction with life.

The strong relationship between Emotional Reactivity and the DASS-21 indicates that those who have strong reactive emotions, and have trouble managing them, are likely to have higher levels of stress, anxiety and depression. This could indicate that individuals who have low resiliency may be more prone to reacting negatively to stress and possibly experience greater levels of anxiety and depression when faced with life's challenges. Therefore, Emotional Reactivity could be an important area to focus on when treating individuals who struggle with stress, anxiety and depression. It may also be likely that working to alleviate stress, anxiety and depression along with emotional reactivity may increase a person's quality of life, and also level of resiliency.

Therefore, this study has found that the RSYA is a reliable and reasonably stable measure for indicating a person's trait levels of resiliency over time, and also at measuring the individual factors that comprise resiliency. The current study found the same significant results obtained in

the 2016 study (Prince-Embury et al.) and found more support for the scale by finding strong test-retest reliability. Therefore, this scale is a good measure of resiliency in university students.

### **Limitations and Future Directions**

The current study focused on individuals in university, as this is a sample that is easily reached. This is, however, a limitation in that there are many young adults who are not in university that may be adapting to life differently based on their levels of resiliency. This scale has yet to be used in a young adult population who is not in university, and as this scale may hopefully be used for the general population, should be examined with a wider sample of young adults. In the meantime, further research should examine the protective role that resiliency may serve in ensuring the well-being and academic success of university students, especially during this critical transition period in their lives.

Other limitations in this study include the disproportion of gender. There were predominantly more females than males in this study. Therefore, the results may not be taking into account any gender differences in resiliency levels or patterns. Also, a large portion of the participants dropped out before time 2. The demographic information of the participants may be analyzed to see if there is a pattern in which individuals completed the measures at both time points or just time 1.

Lastly, the factor structure for this resiliency model has not been replicated in a university sample, as it was not replicated in this study. Therefore, this could be explored in future research to make sure that the resiliency factor structure does hold up as expected with the three factors Sense of Mastery, Sense of Relatedness and Emotional Reactivity.

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## Appendix A

**Resiliency Scale for Young Adults (RSYA)**

Here is a list of things that happen to people, and that people think, feel, or do. Read each sentence carefully, and choose the one answer (Never, Rarely, Sometimes, Often, or Almost Always) that tells about you best. Please try to answer every question. There are no right or wrong answers.

<b>Never</b>	<b>Rarely</b>	<b>Sometimes</b>	<b>Often</b>	<b>Almost Always</b>
<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

1. I always try and look on the bright side.	0	1	2	3	4
2. People say that I am easy to upset.	0	1	2	3	5
3. My life will be happy.	0	1	2	3	4
4. I can forgive my family if they upset me.	0	1	2	3	4
5. I can make major changes in my life when I need to.	0	1	2	3	4
6. My feelings are easily hurt.	0	1	2	3	4
7. When I get upset, I stay upset for about a week.	0	1	2	3	4
8. If I have a problem, I can solve it.	0	1	2	3	4
9. People know who I really am.	0	1	2	3	4
10. I like people.	0	1	2	3	4
11. If something bad happens, I can ask my friends for help.	0	1	2	3	4
12. I can get so upset that I can't stand how I feel.	0	1	2	3	4
13. There are people who will help me if something bad happens.	0	1	2	3	4
14. I welcome changes in my life as chances to grow.	0	1	2	3	4
15. I do things well.	0	1	2	3	4
16. I find meaning in hardships that come my way.	0	1	2	3	4
17. I can let others see my real feelings.	0	1	2	3	4

18. When I get upset, I react without thinking.	0	1	2	3	4
19. I can overcome life crises that come my way.	0	1	2	3	4
20. I look for the 'good' in life.	0	1	2	3	4
21. I view obstacles as challenges to overcome.	0	1	2	3	4
22. I can meet new people easily.	0	1	2	3	4
23. I welcome changes to my life.	0	1	2	3	4
24. I can trust others.	0	1	2	3	4
25. I can make up with friends after a fight.	0	1	2	3	4
26. I can ask for help when I need to.	0	1	2	3	4
27. When I am upset, I make mistakes.	0	1	2	3	4
28. I feel I'm in control of my life.	0	1	2	3	4
29. When I get upset, I stay upset for the whole day.	0	1	2	3	4
30. If people let me down, I can forgive them.	0	1	2	3	4
31. If I get upset or angry, there is someone I can talk to.	0	1	2	3	4
32. I get so upset that I lose control.	0	1	2	3	4
33. I can be myself around others.	0	1	2	3	4
34. When I get upset, I don't think clearly.	0	1	2	3	4
35. I am good at figuring things out.	0	1	2	3	4
36. When I am upset, I do things that I later feel bad about.	0	1	2	3	4
37. I get very upset when things don't go my way.	0	1	2	3	4
38. I don't hold grudges against those who upset or hurt me.	0	1	2	3	4
39. When I get upset, I stay upset for about a month.	0	1	2	3	4
40. I can make friends easily.	0	1	2	3	4
41. My family or friends will help me if something bad happens to me.	0	1	2	3	4
42. When I get upset, I stay upset for several days.	0	1	2	3	4

43. People accept me for who I really am.	0	1	2	3	4
44. I feel calm with people.	0	1	2	3	4
45. When I am upset, it is hard for me to recover.	0	1	2	3	4
46. No matter what happens, things will be all right.	0	1	2	3	4
47. It is easy for me to get upset.	0	1	2	3	4
48. People like me.	0	1	2	3	4
49. I am able to resolve conflicts with others.	0	1	2	3	4
50. I try to be positive.	0	1	2	3	4