

Resilience: The Role of Optimism, Perceived Parental Autonomy Support and Perceived Social Support in First Year University Students

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Abstract

Throughout our lifespan we face many challenges which are often referred to as transitions. The move to university is one such transition which may place individuals at risk of suffering ongoing significant life stress, anxiety and uncertainty. Optimism, promotion of independent functioning (PIF), promotion of volitional functioning (PVF) and perceived social support (PSS) appear to be beneficial in coping with university transition and positive adaptation to adversity as well as being associated both directly and indirectly with resilience. This study was conducted in two stages which examined the mechanisms of optimism, PIF, PVF and PSS and their predictive relationship with resilience in first year university students during two semesters. The results indicated that students with higher levels of optimism, PIF, PVF and PSS experienced higher levels of resilience. In Stage One (N = 95), the multiple regression analysis (MRA) indicated optimism ($ps < .01$), PIF ($ps < .05$) and PVF ($ps < .05$) independently and significantly predicted resilience. In Stage Two (N= 103) the MRA indicated that only optimism and PSS uniquely predicted resilience ($ps < .01$). This study contributed to the limited research conducted in Australia concerning the resilience of first year university students.

Keywords: resilience, university students, optimism, transition

1. Introduction

Throughout our lifespan we face many challenges which are often referred to as transitions. As such, it is argued by Latham and Green (1997) that transitions are central to our lives as they may include death, births, marriage, puberty, relocation, family breakdown, aspects of primary, secondary and tertiary education, illness, unemployment, injury or disability. Consistently, the literature indicates that transitions are a source of stress, uncertainty, anxiety and even fear, as individuals are going through a process of leaving the familiar behind and entering unfamiliar territory (Latham & Green, 1997). It has been suggested that how well an individual copes with a transition that has, or is, occurring is related to how resilient that individual is (Tusaie & Dyer, 2004). In order to become resilient an individual must experience some form of hardship or difficulty as resilience has been indicated to occur only in the presence of adversity (Luthar, Cicchetti, & Becker, 2000).

1.1 Resilience

Research indicates that resilience is beneficial for individuals facing adversity and transitions in their lives and as such various definitions of the concept of resilience have arisen. Luther, Cicchetti, and Becker (2000, p 543) suggest that resilience refers to “a dynamic process encompassing positive adaptation within the context of significant adversity” whereas Masten and Coatsworth (1998, p, 206) state that resilience is the “manifested competence in the context of significant challenges to adaptation or development” while Newman (2005, p 227) describes resilience as “the human ability to adapt in the face of tragedy, trauma, adversity, hardship and ongoing significant life stressors”.

The lack of consensus on a single definition acknowledges the extremely complex multidimensional concept of resilience; this complexity may also be seen through the continued focus on resilience research over the last five decades. Resilience research evolved from studies which focused on maladaptive outcomes suffered by individuals in the face of adversity (Luthar, Cicchetti, & Becker, 2000). These studies identified factors that left individuals vulnerable or at risk of suffering from maladaptive outcomes such as mental health disorders and

drug abuse (Rutter, 1985). Recognition that some individuals, regardless of vulnerability or presence of risk factors, positively adapted to adversity led to a move away from a deficit-based model into a strength-based model of investigation which focused on factors that potentially protected individuals from negative outcomes (Luthar, Cicchetti, & Becker, 2000; Rutter, 1985). In addition, the resulting outcome of an individual's interaction with stressful or adverse situations has been suggested to be related not only to the presence of risk factors and protective factors but also to buffering effects (Masten & Reed, 2002; Pooley & Cohen, 2010). Risk factors are those that can leave an individual vulnerable to negative outcomes while protective factors help to guard against maladaptive outcomes. Buffering or mediating effects are the interaction between the negative affects of risk factors and the positive influence of protective factors (Masten & Reed, 2002).

It is suggested that resilience can only be examined by investigating the factors/mechanisms that put an individual at risk (Unger, 2008). One particular area that has gained attention as a potentially considerable risk is the transition to university. University transitions have been suggested to place individuals at risk of suffering ongoing significant life stress, anxiety and uncertainty (Tusaie & Dyer, 2004). Some of the myriad of actual or potential challenges that occur during university transition can include: Concerns regarding skills and abilities to cope with the demands of university life, having and maintaining motivation, engagement with peers, the inconsistency of parental, teacher and university expectations as well as issues of parental support (Jackson et al., 2000; Urquhart & Pooley, 2007).

1.2 Transition to University

Three mechanisms that appear to be beneficial in coping with university transition and positive adaptation to adversity as well as being associated both directly and indirectly with resilience are: optimism, perceived parental autonomy support (PAS) and perceived social support (PSS), (Tusaie, Puskar, & Sereika, 2007). Optimism has been described as a general tendency to expect a positive outcome even in the face of obstacles or when bad things happen (Scheier & Carver, 1985; Scheier & Carver, 1987). Optimism is indicated to have a positive affect on physical and psychosocial well-being, such as: Depressive symptomology, the impact of stress, self esteem, forming and maintaining relationships, choice of coping strategies, adjustment to university life, scholastic competence, and perception of support (Aspinwall & Taylor, 1992; Fass & Tubman, 2002; Ferguson & Goodwin, 2010; Hatchett & Park, 2004; Krypel & Henderson-King, 2010; Nes & Segerstron, 2006; Puskar et al., 2010).

It has been suggested students beginning the first year of university suffer from higher levels of stress than students continuing their university education (Baldwin, Chabliss, & Towler, 2003). During the first semester of the initial transition, optimism has been indicated to help students manage the move into the new university environment by lowering levels of stress, increasing self-esteem as well increasing the use of planning and active coping strategies (Brissette, Scheier, & Carver, 2002). As well as being advantageous for students in first semester, optimism has also been suggested to be valuable for students throughout their ongoing university studies (Baldwin, Chabliss, & Towler, 2003).

In addition to optimism, PAS has been suggested to help individuals cope with the move to university. PAS has been conceptualised as comprising of the promotion of independent functioning (PIF) and the promotion of volitional functioning (PVF) (Soenens et al., 2007). Promotion of independent functioning relates to parents encouraging their offspring to rely on themselves and to make their own decisions, possibly in line with the parent's values and goals while PVF refers to parents encouraging their offspring to explore, find and make decisions based on the offspring's interests' values and goals (Soenens, Vansteenkiste, & Sierens, 2009). PAS is positively associated with: Academic achievement, well-being, effortful control (self-regulation), academic performance, social and academic adjustment, autonomous motivation (self-determination), persistence and choice of coping strategies (Joussemet et al., 2005; Lokes et al., 2010; Ratelle et al., 2005; Soenens et al., 2007; Wong, 2008). For new students starting their university experience, the first six weeks are considered the most challenging time within the first year which may explain why parental support increases over the course of the first semester (Urquhart & Pooley, 2007, Tao, Dong, Pratt, Hunsberger, & Pancer, 2000). This result implies that parental support may be at its highest at the end of first semester.

Furthermore, perceived social support (PSS) such as support from extended family, siblings, teachers, schools, mentors and peers has been found to be beneficial in helping individuals positively adapt to the transition to university (Southwick et al., 2006; Urquhart & Pooley, 2007). PSS is indicated to be positively associated with well-being, intrinsic motivation, social and school bonding, school adjustment, self esteem, choice of coping strategies, self-reliance, academic achievement, and negatively related to effects of bullying, depression, loneliness, anxiety, distress and absenteeism (Armstrong, Birnie-Lefcovitch, & Ungar, 2005; Bernardon et al.,

2011; Bowes et al., 2010; Chirkov & Ryan, 2001; Cruza-Guet et al., 2008; Davidson et al., 2008; Furukawa, Sarason, & Sarason, 2008; Schneider et al., 2008; Weber, Puskar, & Ren, 2010).

First year university student's social support systems during the first semester of the academic year are suggested to be a time of social volatility (Brissette, Scheier, & Carver, 2002). The first semester is a time of adjustment for new university students where they are meeting new people, developing new friendships, evaluating, renegotiating or maintaining old friendships, homesickness, modification of parental support as well as knowledge acquisition of university resources (Paul & Brier, 2001; Urani, Miller, Johnson, & Petzel, 2003). Social supports when considered individually are unstable during the first semester of university for first year students, and although Tao and colleagues (2000) found overall social support to be stable over the course of the semester, this result is misleading as further analysis revealed that the individual support systems (parent, friend, sibling and teacher) changed in intensity. Parent and friend social support increased over the semester while sibling and teacher support decreased (Tao, Dong, Pratt, Hunsberger, & Pancer, 2000). Therefore, potentially PSS may become more stable as the year progresses and may increase the likelihood of successful university adjustment. This result suggests that PSS would be higher after the initial first semester transition to university.

1.3 Current Study

The mechanisms of optimism, PIF, PVF and PSS have all been associated with university adjustment and appear to be valuable in helping individuals cope with adverse, anxiety and stress provoking situations such as the transition to university. By utilising a multidimensional model within a resilience framework this study will examine resilience in young first year university students and their relationship to optimism, PIF, PVF and PSS. Specifically it is hypothesised that (1) optimism, PIF and PVF will independently and significantly predict resilience and (2) optimism, PIF, PVF and PSS will independently and significantly predict resilience. These will be outlined in two studies explained in the following section.

2. Method

2.1 Design

Stage One investigated the initial transition of first year university students during their first semester at university by examining three independent variables (optimism, PIF and PVF) and one dependent variable (resilience). Therefore the first hypothesis that optimism, PIF and PVF will independently and significantly predict resilience is the focus for Stage One.

Stage Two was designed to investigate the ongoing transition of first year university students during their second semester at university by examining four independent variables (optimism, PIF, PVF and PSS) and one dependent variable (resilience). Therefore, Stage Two addresses the second hypothesis, that Optimism, PIF, PVF and PSS will independently and significantly predict resilience.

2.2 Participants

In Stage One participants were 95 (73 Female and 22 Male) first year university students, completing their first semester of university education ranging between 17-19 years of age ($M = 18.09$, $SD = .547$). The majority of participants identified themselves as Australian (43%) or Caucasian (34%). The results indicated that generally, participants scored highly on the Resilience Scale of Adults ($M=176.45$, $SD=26.57$) from a maximum score of 231. Stage Two consisted of 103 (81 Female and 22 Male) first year, university students completing their second semester of university education in 2011 ranging between 17-19 years of age ($M = 17.92$, $SD = .458$). Again, similar to Stage One, the majority of participants identified themselves as Australian (77%).

2.3 Materials

Potential participants received an email from their respective course areas, those interested in participating were asked to complete the online survey, which took approximately 15 minutes to complete.

In relation to Stage One the online survey was comprised of five sections. Sections one and five were optional while sections two, three and four required participants to submit all answers before continuing. Section One, collected demographic information: Age, gender, faculty, campus, ethnicity, TER/ATAR and postcode. Section Two, contained the Resilience Scale for Adults (Friborg et al., 2003). Section Three contained the optimism scale, the Life Orientation Test – Revised (LOT-R), (Scheier, Carver & Bridges, 1994). Finally, section Four collected information on perceived parental autonomy support assessing both PIF and PVF using the measure from a 2007 study by Soenens et al.

Stage Two measures were similar to those used in Stage One with the addition of the Multidimensional Scale of Perceived Social Support (PSS). The final section of the online survey for both stages collected information for

participant inclusion in a prize draw.

2.3.1 Online Survey

Resilience Scale for Adults (Friborg et al., 2003). - The Resilience Scale for Adults (RSA) is a 33 item, 7-point semantic differential scale formation where each item has a positive and a negative statement. The items cover the 6 different areas; perception of self, planned future, social competence, structured style, family cohesion and social resources. An example of one item is, “My plans for the future are”, where the positive statements will be “possible to accomplish” and the negative statement will be “difficult to accomplish”. Cronbach’s alpha indicated that internal consistency ranged from adequate to high ($\alpha=.76$ to $\alpha=.87$). This scale was used in both stages. Please see reliability scores in Tables 1.

Life Orientation Test – Revised (Scheier, Carver & Bridges, 1994). - The Life Orientation Test - Revised (LOT-R) is a measure of optimism and pessimism, which consists of 10 items. Three items (3, 7 and 9) are stated in negative terms and assess pessimism; three items (1, 4, and 10) are stated in positive terms and assess optimism and 4 filler items. The LOT-R uses a 5-point Likert scale ranging from ‘1’ strongly agree to ‘5’ strongly disagree. An example of one item is “Overall, I expect more good things to happen to me than bad”. Cronbach’s alpha indicates an adequate internal reliability of $\alpha=.78$. This scale was used in both stages.

Perceived Parental Autonomy Support (Soenens et al., 2007). - The survey for perceived parental autonomy support utilised in the current research project was adapted in 2007 by Soenens and colleagues. The survey comprises of 17 items, and measures both PIF and PVF. Of the nine items measuring PIF, seven were obtained from a 2003 study assessing autonomy granting by Silk and colleagues, with the remaining two items being obtained from the Perceptions of Parents Scale (Grolnick, Ryan, & Deci., 1991). Of the eight items measuring PVF, seven were obtained from autonomy support scale used within the Perceptions of Parents Scale while the remaining item was obtain from the 2003 study by Silk and colleagues (Grolnick, Ryan, & Deci., 1991; Silk et al., 2003). The survey uses a 5-point Likert scales ranging from ‘1’ strongly disagree to ‘5’ strongly agree. The survey asks participants to consider their relationship with their parents over the last three years. An example of one item is “Allow me to choose my own directions in life”. Cronbach’s alpha indicated adequate internal reliability for PIF ($\alpha=.76$) and a good internal reliability for PVF ($\alpha=.85$). This scale was used in both stages.

The Multidimensional Scale of Perceive Social Support (MSPSS). - Is a measure of an individual’s perception of their social supports consisting of 12 items which differentiate between the three social supports of family (questions 3, 4, 8, 11) significant others (questions 1, 2, 5, 10) and friends (questions 6, 7, 9, 12). The MSPSS uses a 7-point Likert scale ranging from ‘1’ very strongly disagree to ‘7’ very strongly agree (1988). An example of one item was “I can count on my friends when things go wrong”. Cronbach’s alpha ($\alpha=.88$) indicated a good internal reliability. This scale was used in Stage Two only

2.4 Procedure

After ethics was granted, the unit co-ordinators of selected units were contacted by email at the end of semester (stage one) or the beginning of semester (stage two) for their consent and commitment to forward an email containing relevant information about the research. All participants were informed that the survey was anonymous and that they were not compelled to participate.

For Stage One the units targeted were held in the first semester and for Stage Two the units targeted were those held in second semester for first year undergraduate degrees students. Potential participants were then given information about the study and directed to an internet web linked address if they wanted to participate. Participants were given the option to enter a prize draw for a \$50 visa card once they completed the survey.

3. Results

The data was analysed using the Predictive Analytics Software (PASW) Version 18. First, reverse scored survey items were recoded into new variables, 16 items for the RSA, 3 items for the LOT-R and 2 items for the PVF scale. New variables were computed to obtain overall scores for RSA (TotResil), LOT-R (TotOpt), PIF (TotPIF), PVF (TotPVF) and PSS (TotPSS). Second, reliability measures were considered and assumption testing was carried out before descriptives, correlations and multiple regressions were used to address each hypotheses.

Reliability of the measures of resilience, optimism, PIF, PVF and PSS was conducted for both Stage One and Stage Two data indicating good to high internal reliabilities for all scales (see Table 1).

Table 1. Overall Cronbach's Alpha of Survey Measures

Measure	α Stage One	α Stage Two	α Original
RSA	.92	.94	.76 -.85
LOT-R	.77	.80	.78
PIF	.72	.81	.76
PVF	.83	.88	.85
PSS	-	.91	.88

RSA = Resilience Scale for Adults, LOT-R = Life Orientation Test-Revised, PIF = Promotion of Independent functioning, PVF = Promotion of Volitional Functioning, PSS = Perceived Social Support

Data was initially screened for missing cases, incorrect data entry, normality and outliers. Frequencies and descriptives and examination of standardised scores revealed no univariate outliers. No systematic responses (there was variability) were detected. Each stage data set will be examined below.

In stage one. using Mahalanobis distance, residual scatterplots and Cook's distance two outliers were detected that exceeded Mahalanobis distance critical values χ^2 for $df = 3$, $\alpha = .01$) at 19.26 (Tabachnick & Fidell, 2007) indicating the cases were outside of the target population and were therefore removed. However in stage two no cases were detected that exceeded Mahalanobis distance.

3.1 Descriptives

Preliminary descriptive results revealed that in Stage One, participants scored highly on the measures of optimism, ($M=19.68$, $SD=3.56$) from a maximum of 30, PIF, ($M=33.35$, $SD=4.34$) from a maximum of 45 and PVF, ($M=29.77$, $SD=5.09$) from a maximum of 40 (refer Table 2).

Table 2. Stage 1. Means and Standard Deviations for Resilience, Optimism, PIF and PVF

Variable	M	SD	Range
Resilience	176.45	26.57	33-231
Optimism	19.68	3.56	6-30
PIF	33.35	4.34	9-45
PVF	29.77	5.09	8-40

Note. PIF = Promotion of Independent Functioning, PVF = Promotion of Volitional Functioning.

** $p < .01$. $N = 95$

For Stage Two the results indicated that generally, participants scored highly on the Resilience Scale of Adults ($M=165.09$, $SD=31.26$) from a maximum score of 231. Participants also generally scored highly on the measures of optimism, ($M=18.76$, $SD=4.07$) from a maximum of 30, PIF, ($M=32.17$, $SD=5.64$) from a maximum of 45, PVF, ($M=28.51$, $SD=5.75$) from a maximum of 40 and PSS, ($M=63.83$, $SD=12.83$), (refer Table 3).

Table 3. Stage 2. Means and Standard Deviations for Resilience, Optimism, PIF, PVF and PSS

Variable	M	SD	Range
Resilience	165.09	31.26	33-231
Optimism	18.76	4.07	6-30
PIF	32.17	5.64	9-45
PVF	28.51	5.75	8-40
PSS	63.83	12.83	12-84

Note. PIF = Promotion of Independent Functioning, PVF = Promotion of Volitional Functioning.

** $p < .01$. $N = 103$

3.2 Correlation Analysis

Relationships between the predictor and independent variables were examined using Pearson's r correlation. Examination of the scatter plots indicated that the variables met the assumptions of homoscedasticity. Multicollinearity was initially examined using a correlation matrix followed by use of the variance inflation factor (VIF) for indications of strong linear relationships between the predictor variables. Correlations between the variables were $< .8$, the VIF and tolerance for the predictor variables were within an acceptable range indicating no multicollinearity within the data.

Specifically in Stage One, optimism, PIF and PVF were positively correlated with resilience, with optimism ($r = .72, p < .01$), indicating the strongest relationship with resilience in comparison with PVF ($r = .43, p < .01$), and PIF ($r = .32, p < .01$), (refer Table 4). The positive correlations between the significant predictor variables indicate that the higher the score on each predictor variable measure, the higher the score of resilience.

Table 4. Stage 1. Correlations Between Variables (Resilience, Optimism, PIF and PVF)

Scale	2	3	4
1. Resilience	.72**	.32**	.43**
2. Optimism	-	.14**	.32**
3. PIF	-	-	.36**
4. PVF	-	-	-

Note. PIF = Promotion of Independent Functioning, PVF = Promotion of Volitional Functioning.

** $p < .01$. $N = 95$.

For Stage Two, optimism, PIF, PVF and PSS were positively correlated with resilience, where both PSS ($r = .78, p < .01$), and optimism ($r = .72, p < .01$), displayed stronger relationships with resilience in comparison with PIF ($r = .57, p < .01$), and PVF ($r = .52, p < .01$), (refer Table 5). The positive correlations between the significant predictor variables indicate that the higher the score on each predictor variable measure, the higher the score of resilience.

Table 5. Stage 2. Correlations Between Variables (Resilience, Optimism, PIF, PVF and PSS).

Scale	2	3	4	5
1. Resilience	.72**	.57**	.52**	.78**
2. Optimism	-	.43**	.39**	.56**
3. PIF	-	-	.59**	.53**
4. PVF	-	-	-	.47**
5. PSS	-	-	-	-

Note. PIF = Promotion of Independent Functioning, PVF = Promotion of Volitional Functioning, PSS = Perceived Social Support. ** $p < .01$. $N = 103$.

3.3 Multiple Regression Analysis

In order to address the hypotheses standard multiple regression analysis (MRA) was used to analyse the variables in the current study. That is for Stage One, it is hypothesised that optimism, PIF and PVF will independently and significantly predict resilience, and for Stage Two that optimism, PIF, PVF and PSS will independently and significantly predict resilience. In Stage One, the resulting R value was significantly different from zero $F(3, 91) = 42.30, p < .001$, indicating that the regression model for resilience was significant. The model accounted for approximately 58% ($R^2 = .582$, Adjusted $R^2 = .569$) of the variance of resilience. Examination of the standardised regression coefficients (β) revealed that the predictor variable of optimism (64% of the unique variance) was the strongest predictor, while PIF (17% of the unique variance) and PVF (16% of the unique variance) were significant. PIF and PVF made contributions to the amount of explained variance in the

regression model however they made much less of a contribution than optimism (refer Table 6). Cross-validating the regression model using Steins formula revealed an $R^2=0.55$ indicating that the current regression model would adequately predict a different sample of data from the same population (Field, 2009). In summary optimism, PIF and PVF were all significant predictors of resilience.

Table 6. Stage 1. Summary of Multiple Regression Analysis for Variables Predicting Resilience

Predictor Variables	B	SE B	β
Constant	22.08	16.57	-
Optimism	4.77	.533	.64**
PIF	1.06	.444	.17*
PVF	.844	.396	.16*

Note. PIF = Promotion of Independent Functioning, PVF = Promotion of Volitional Functioning.

$R^2 = .58$ ($p < .001$). * $p < .05$, ** $p < .01$.

In Stage Two - The resulting R value was significantly different from zero $F(4, 98) = 69.45$, $p < .001$, again indicating that the regression model for resilience was significant. The model accounted for approximately 74% ($R^2 = .739$, Adjusted $R^2 = .729$) of the variance of resilience. Examination of the standardised regression coefficients (β) revealed that the predictor variables of optimism (37% of the unique variance), and PSS (47% of the unique variance) made significant and unique contributions to the amount of explained variance in the regression model. While PIF (10% of the unique variance) and PVF (9% of the unique variance) were not significant predictors (refer Table 7). Comparing the regression model using Steins formula revealed an $R^2 = .72$ indicating that the current regression model would predict a different sample of data from the same population very well (Field, 2009).

In summary, optimism and PSS were significant predictors of resilience while PIF and PVF were not significant.

Table 7. Stage 2: Summary of Multiple Regression Analysis for Variables Predicting Resilience

Predictor Variables	B	SE B	β
Constant	5.69	10.59	
Optimism	2.87	.49	.37**
PIF	.57	.38	.10
PVF	.49	.36	.09
PSS	1.15	.17	.47**

Note. PIF = Promotion of Independent Functioning, PVF = Promotion of Volitional Functioning, PSS = Perceive Social Support. $R^2 = .74$ ($p < .001$). * $p < .05$, ** $p < .01$.

4. Discussion

The aim of current study was to investigate the resilience of first year university students during the initial transition of first semester (Stage One) and the ongoing transition of second semester (Stage Two) and the contribution of the mechanisms of optimism, PIF, PVF and PSS to their resilience.

For Stage One, consistent with expectations and prior research, the results support the hypothesis that optimism, PIF and PVF will independently and significantly predict resilience. This hypothesis was confirmed through the use of standard multiple regression analysis whereby optimism, PIF and PVF significantly predicted resilience and accounted for 64%, 17% and 16% respectively of the variance of the regression model $F(3, 91) = 42.30$, $p < .001$. All three predictor variables were positively associated with resilience. This study indicates that as scores for optimism, PIF and PVF increased by one, scores for resilience increase by 4.77, 1.06 and .84 respectively confirming for this sample that optimism is the strongest predictor of resilience.

For Stage Two, the hypothesis that optimism, PIF, PVF and PSS will independently and significantly predict

resilience was only partially supported. Consistent with expectations and prior research the results indicate that optimism and PSS independently and significantly predict resilience (Brisette, Scheier, & Carver, 2002; Zimet, Dahlem, Zimet, & Farley, 1988). Although, PIF and PVF contributed unique variance to the model of resilience 10% and 9% respectively, the contribution was not considered significant, therefore, contrary to prior research PIF and PVF did not independently or significantly predict resilience (Soenens et al., 2007). In contrast optimism (37%) and PSS (47%) were able to account for a total of 84% of the unique variance of the regression model $F(4, 98) = 69.45, p < .001$. All four predictor variables were positively associated with resilience. The results regarding the significant predictor variables (optimism, PSS) reveal that as optimism scores increase by one, resilience scores increase by 2.87 and when scores for PSS increase by one, scores for resilience increase by 1.15 confirming for this sample both optimism and PSS are valuable contributors to the model with optimism the strongest predictor of resilience.

The transition to university is considered to be a time of ongoing significant life stress, anxiety and uncertainty. Numerous studies have indicated that individuals with higher levels of optimism experience lower levels of stress (Baldwin, Chablis, & Towler, 2003; Puskar et al., 2010; Tusaie, Puskar, & Sereika, 2007). The results of this study propose that students experiencing a first year transition who have higher levels of optimism are better able to overcome stress and in turn adjust better to the transition to university supporting previous findings by Tusaie and Dyer (2004). Consistent with this notion it is assumed that while optimism has direct effects on levels of stress, adjustment and resilience it is further supposed that optimism may also be indirectly influential through the choice of coping strategies and perceived support (Aspinwall & Taylor, 1992; Krypel, & Henderson-King, 2010; Tusaie, Puskar, & Sereika, 2007). Although important to recognise a causal link cannot be implied by these findings, higher levels of optimism may be beneficial for the initial development of a student's social network which may in turn be beneficial for helping students adjust socially during the transition to university (Aspinwall & Taylor, 1992; Brisette, Scheier, & Carver, 2002; Soenens et al., 2007).

Prior research suggests that PIF and PVF are important in enabling students to achieve positive academic outcomes (Chirkov & Ryan 2001; Lekes, Gingras, Pilippe, Kaestner, & Fang 2010; Ratelle, Larose, Guay, & Senecal, 2005; Wong 2008). The results of this study were ambiguous with Stage One indicating that PIF and PVF although weak, were both significant and independent predictors of resilience while Stage Two indicates that PIF and PVF were not significant. It appears that when PIF and PVF are considered in connection with optimism alone they are tools that are useful in predicting resilience in first year university students. Considering PIF, PVF in conjunction with both optimism and PSS reveal that PIF and PVF are no longer of value for predicting resilience. One explanation for this ambiguity concerns the scales used to measure PIF, PVF and PSS. Promotion of independent functioning and PVF measure parental autonomy support while PSS measures support from parents, friends and significant others. It is possible that the parent subscale of the PSS measures the same constructs as the scales measuring PIF and PVF and may be subsumed by the PSS scale. While it is beyond the scope of this article, further analyses of these measures may prove revealing. In addition, many studies investigating PAS, PIF or PVF have often revealed only indirect effects in relation to academic outcomes. Wong (2008) indicated PAS appeared to have a direct effect on identified regulation and through identified regulation indirect effects on academic performance, while Lekes and Colleagues (2010) indicate PAS was indirectly associated with well-being through the positive association with intrinsic life goals.

As expected, results from this study indicate that PSS, (from parents, friends and significant others such as teachers, mentors and university resources), significantly predict resilience. Students scoring higher on the measure for PSS scored higher on the measure for resilience $F(4, 98) = 69.45, p < .001$. Furthermore, these results indicate that PSS is a strong predictor of resilience when compared to optimism, PIF and PVF. These results support the findings of Tusaie and colleagues, (2007) who found that in older rural adolescents PSS from friends was more advantageous for psychosocial resilience than PSS from family. Perceived social support has also been suggested to be helpful for anxiety, school adjustment and academic achievement indicating that students with high levels of PSS cope with the transition to university better than students with low levels of PSS. These findings suggest that PSS may be an important mechanism in the development of resilience in first year university students. Further to this, it is possible that PSS has a positive reciprocal relationship with optimism. Optimism is suggested to be positively associated with perceptions of support, forming and maintaining relationships while PSS is positively associated with optimism, choice of coping style as well as social and school bonding (Brisette, Scheier, & Carver, 2002; Schneider et al., 2005; Tusaie et al., 2007; Urquhart & Pooley, 2007).

In summary, the results indicated that optimism and PSS independently and significantly predict resilience with both indicated to be very strong predictors. The results for PIF and PVF were ambiguous, with PIF and PVF only

significantly and independently predicting resilience when not potentially subsumed by the PSS measure. In addition, it is possible that PIF and PVF may only be significantly associated with resilience indirectly, through their influence on other potential mechanisms of resilience such as intrinsic life goals. Overall scores for resilience were high, indicating that the first year students participating in this study have managed to manoeuvre successfully through the stress posed by the transition to university whilst maintaining mental health and well-being. The multidimensional model of resilience suggests that there are many protective mechanisms which help to foster resilience and fall into the categories of: Individual, relationship, community, cultural and physical ecological mechanisms (The Resilience Research Centre, 2010). The current results indicate that optimism, PIF, PVF and PSS are individual and relationship mechanisms that are beneficial for students in their transition to their first year of academic study at university.

A strength of this research study is that participants were acquired from different faculties and disciplines. In addition, the use of Steins formula in cross-validating the accuracy of the regression model provides added confidence in the ability of this model to generalise across different samples of this population. Furthermore, this study has contributed to the limited research that has been conducted concerning the resilience of first year university students in Australia and their relationship with optimism, PIF, PVF and PSS as no known studies have examined all four mechanisms and their predictive relationship with resilience in first year university students across two semesters in Australia.

The strong positive relationship between the mechanisms of optimism, PSS and resilience suggests that individuals who are highly resilient will most likely rate highly on one of the mechanisms of optimism or PSS. With this in mind, devising and implementing programs that help to increase an individual's optimistic outlook, build on positive relationships with parents and friends or repair maladaptive relationships may be valuable in helping less resilient individuals develop or extend these mechanisms, and in turn assist in coping with adverse, traumatic and stressful transitions and situations. Supporting this notion the Penn Resiliency Program, a school based intervention program for 10-14 year olds utilising cognitive behaviour therapy and social problem solving skills, has been indicated to increase optimism, increase positive reinterpretation and reduce depression and anxiety and in turn increase resilience (Gillham & Reivich, 2004; The Penn Resiliency Project, 2007). In addition, further examination of the measures utilised for PIF, PVF and PSS (parenting subscale) may reveal whether the scales are measuring the same construct.

4.1 Limitations and Future Research

Limitations exist in all research and the limitations of the present project include the use of self-report online questionnaires which may be subject to bias, for example: due to participants' desire to conform to accepted societal standards or lack of self-awareness. Further to this, participants were only recruited from one university limiting somewhat generalisability. In addition due to a lack of gender and ethnic diversity an investigation into gender and ethnicity was not possible and perhaps this can be addressed in future research. The use of a correlational cross-sectional design does not allow for "causality" whereby for example it cannot be claimed that higher levels of optimism cause higher levels of resilience or that higher levels of resilience cause higher levels of optimism, it can only be claimed that they have a positive association. As an individual's level of resilience is a fluid and evolving concept the use of cross-sectional design which only investigates one point in time may be limiting, perhaps a mixed method design may provide a better understanding of the intricacies of resilience.

4.2 Conclusion

The aim of current study was to investigate the resilience of first year university students during the initial transition from high school to university during first semester (Stage One) and the ongoing transition of second semester (Stage Two) and the contribution of the mechanisms of optimism, PIF, PVF and PSS to their resilience. The results indicated that, in Stage One and Two, optimism and PSS independently and significantly predict resilience, with both indicated to be very strong predictors. The results for PIF and PVF were ambiguous, with PIF and PVF only significantly and independently predicting resilience when not potentially subsumed by the PSS measure. The finding in Stage One that PIF and PVF weakly predicted resilience possibly suggests that PIF and PVF may be most influential and uniquely associated with resilience indirectly, through their influence on other potential mechanisms of resilience. This research resulted from the identification of the stressful and challenging circumstances posed by the transition to university and the positive impact of resilience in promoting positive outcomes in times of change. A review of the literature indicated that the mechanisms of optimism, PIF, PVF and PSS have all been associated with university adjustment and appear to be valuable in helping individuals cope with adverse, anxiety and stress provoking situations such as the transition to university. The identification of optimism and PSS as predictors of resilience and helpful in times of transition may encourage

further exploration into not only other potentially beneficial mechanisms but also into interventions that may have a positive impact not only on the transition to university but changes occurring throughout the lifespan. This study helps to address the gap in the literature concerning resilience, optimism, PIF, PVF and PSS in Australian university students and asserts to students and universities the importance of external supports for facilitating students positively.

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