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Short Communication

A latent profile analysis of dispositional hope and defense styles

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ABSTRACT

Dispositional hope and defense styles are linked with mental health. The present study examined profiles of individuals based on combinations of their responses on two dispositional hope indices (*pathways*: conceptualized routes to a desired goal, and *agency*: motivation and belief in one's ability to attain goals and overcome goal-related obstacles) and two defense styles (immature and mature). Participants ($N = 278$, $M_{age} = 39.25$ years, $SD = 12.95$) completed measures of dispositional hope, characteristic defense styles, and mental health. A latent profile analysis identified an optimal 3-profile solution: *Maladaptive* (low pathways, agency, mature defense style; and high immature defense style), *Ordinary* (average pathways, agency, mature defense style, and immature defense style), and *Adaptive* (high pathways, agency, mature defense style; and low immature defense style). Individuals in the adaptive profile reported significantly better mental health. Results could inform clinical treatments focusing on these two characteristics to promote favorable mental health outcomes.

1. Introduction

Depression and anxiety are two of the most common mental health problems worldwide (World Health Organization, 2001) and cause substantial personal distress. A greater understanding of the vulnerability and resilience factors associated with symptoms of depression and anxiety may assist in reducing the prevalence of these disorders. Of particular interest, dispositional hope and defense styles have been found to interact to jointly influence mental health markers such as depression and anxiety symptoms (Kwon, 2000, 2002; Reff, Kwon, & Campbell, 2005).

1.1. Dispositional hope

According to Snyder et al. (1991), hope is a dispositional construct which encompasses the belief in one's ability to achieve personal goals. Dispositional hope consists of two related but distinct cognitive components - *pathways* and *agency* (Snyder et al., 2000). Pathways are the conceptualized routes to a desired goal, while agency reflects the motivation and belief in one's ability to attain goals and overcome goal-related obstacles (Snyder et al., 2000). A number of studies have found an association between a higher level of dispositional hope and lower levels of depression and anxiety (e.g., Arnau, Rosen, Finch, Rhudy, & Fortunato, 2007; Lloyd & Hastings, 2009; Snyder, 2002).

1.2. Defense styles

Defense mechanisms are intrapsychic processes which mediate an individual's emotional response to stressful or threatening situations (Vaillant, 1992). Based on their adaptive or maladaptive value, defense mechanisms can be divided empirically and conceptually into two groups (mature and immature) referred to as defense styles. Mature defense mechanisms (e.g., anticipation, sublimation, humor) encourage acceptance of reality, and acknowledgement and constructive management of uncomfortable thoughts and feelings (Cramer, 2007), whereas immature defense mechanisms (e.g., passive-aggression, acting out, denial) typically lead to inaction or inappropriate responses to stressors and reality distortion (Cramer, 2007). A mature defense style in adults is associated with favorable social, occupational, and psychological functioning; while an immature defense style in adulthood is associated with psychological difficulties such as depression and anxiety (e.g., Perry & Cooper, 1989; Vaillant, Bond, & Vaillant, 1986).

1.3. Relationship between dispositional hope and mature and immature defense styles

Kwon (2000, 2002) and Reff et al. (2005) examined the relationships between dispositional hope and defense styles in conjunction with depression. Results of these studies suggested that low dispositional hope paired with either a low mature defense style or high immature defense style is a vulnerability factor for depression (Kwon, 2000, 2002; Reff et al., 2005).

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1.4. The present study

Past research (e.g., Kwon, 2000, 2002; Reff et al., 2005) investigating the relationship between dispositional hope, defense styles, and mental health has employed variable-centered techniques, such as multiple regression analysis. Such approaches limit forming inferences about individuals as results are at the level of the variable rather than the person (Merz & Roesch, 2011). A standard regression approach, for example, explores the main effects as well as an interaction - that does not guarantee that the implied "groups" (with high scores on one variable, low on another) obtained in a moderation analysis are always meaningful. Alternatively, person-centered approaches, such as a latent profile analysis (LPA) help identify specific combinations of variable scores that occur naturally within a sample and group individuals with similar scores across a set of variables. Unlike variable-centered approaches that examine the relationships between variables, a LPA classifies people into homogenous probability-based groupings and examines the relationships between individuals and their different pattern of responses (Collins & Lanza, 2009). A LPA provides a novel approach to examine the prevalence of different patterns of responses on a range of individual difference variables in a sample. For example, Bhullar, Rickwood, Carter, and Haridas (2016) investigated a typology of parent-carers of young people with mental illness and found three different profiles (labeled as *Sufferers*, *Battlers* and *Resilient*) with different levels of reported caregiving burden and participation in daily routine, personal control and social activities. Similarly, we do not expect a linear relationship between dispositional hope and defense styles. However, to date, no empirical research has examined profile-based combinations of dispositional hope and defense styles. Identification of such typologies can provide new insights into how hope and defense styles combine or co-exist within an individual and how profile membership is related to mental health outcomes.

The present study used a LPA to identify distinct profiles based on two dispositional hope indices (pathways and agency) and two defense styles (mature and immature) in a community sample. Based on Kwon's (2000, 2002) and Reff et al.'s (2005) research, we predicted that at least two qualitatively different profiles would emerge: (1) a *maladaptive* profile comprising low pathways, agency and mature defense style, and high immature defense style, and (2) an *adaptive* profile with high pathways, agency and mature defense style, and low immature defense style. We also examined the association between profile membership and mental health. We predicted that an adaptive profile would be associated with lower levels of symptoms of depression and anxiety.

2. Method

2.1. Participants and procedure

Two hundred and seventy-eight Australian adults (mean age = 39.25 years, $SD = 12.95$, female = 75.9%) provided data via an online survey.

Table 1
Bivariate correlations, means and standard deviations (*SD*) of key study variables.

Variables	1	2	3	4	5	6
1. Pathways	–	0.63*	0.53*	−0.28*	−0.50*	−0.36*
2. Agency		–	0.42*	−0.42*	−0.58*	−0.41*
3. Mature defense style			–	−0.28*	−0.48*	−0.35*
4. Immature defense style				–	0.57*	0.61*
5. Depressive symptoms					–	0.72*
6. Anxiety symptoms						–
Mean	12.39	11.96	5.96	3.93	11.14	8.50
(*SD*)	(1.91)	(2.26)	(1.30)	(1.13)	(10.06)	(8.42)

* $p < 0.01$.

2.2. Measures

2.2.1. Dispositional hope

The Adult Dispositional Hope Scale (Snyder et al., 1991) consists of two subscales (pathways and agency). Higher scores indicate greater levels of dispositional hope. In the present study, the scale showed good internal consistency for pathways ($\alpha = 0.75$) and agency ($\alpha = 0.78$).

2.2.2. Defense styles

The Defense Style Questionnaire (DSQ; Andrews, Singh, & Bond, 1993) assesses 20 defense mechanisms, categorized into three subscales: mature, immature, and neurotic. We used only mature and immature style subscales in the current study as done in previous research (Kwon, 2000, 2002; Reff et al., 2005). Higher scores reflect a greater propensity to utilize a particular defense style. The present study found good internal consistency for defense styles ($\alpha_{mature} = 0.72$; $\alpha_{immature} = 0.80$).

2.2.3. Mental health

The Depression Anxiety Stress Scales-21 (DASS-21; Lovibond & Lovibond, 2002) were used to measure levels of symptoms of depression and anxiety. The final summed scores were multiplied by two for comparison with DASS-42 norms (Lovibond & Lovibond, 2002). Higher scores reflect greater symptomatology. In the present study, the subscales showed excellent internal reliability with $\alpha_{depression} = 0.93$ and $\alpha_{anxiety} = 87$.

2.3. Statistical analyses

A LPA in Mplus (Muthén & Muthén, 1998–2010) was conducted to identify profiles based on participants' responses on measures of pathways, agency, mature and immature defense styles. Several model fit indices were used to determine the optimal profile model, including the Bayesian Information Criteria (BIC), simple size adjusted BIC (Schwarz, 1978; Sclove, 1987), Vuong-Lo-Mendel-Rubin (VLMR) test, and the Lo-Mendell-Rubin Adjusted (LRT) test. A combination of lowest BIC and adjusted BIC, with highest number of profiles, and lowest significant VLMR and LRT indicate best fit (Muthén & Muthén, 1998–2010). Entropy was also utilized as an index of model assessment, with values close to one considered ideal (Ostrander, Herman, Sikorski, Mascendaro, & Lambert, 2008).

To facilitate interpretation of profiles, we converted the four profiling variables into *Z* scores ($M = 0$, $SD = 1$).

3. Results

3.1. Descriptive statistics

The final sample comprised 278 respondents. Missing values (1.08%) were imputed using the expectation maximization algorithm. Little's MCAR test was not significant, $\chi^2(11) = 9.63$, $p = 0.564$, indicating that data were missing completely at random.

Table 1 shows intercorrelations, means, and standard deviations of key study variables. Pathways and agency were positively associated

Table 2
Model Fit Indices for 1- through 4-profile solutions.

Profiles	BIC	*Adj* BIC	VLMR	LRT	Entropy
1	3196.73	1371.37	–	–	–
2	3007.10	2965.88	−1575.86*	210.30*	0.80
3	2973.00	2915.92	−1466.97*	60.11*	0.74
4	2958.96	2886.03	−1435.85	40.73	0.73

Note. $N = 278$. All entropy values demonstrated an acceptable fit. A combination of lowest BIC and adjusted BIC with highest number of profiles and lowest significant VLMR and LRT indicate best fit.

* $p < 0.05$.