Background

Life meaning

The concept of life meaning is increasingly the focus of psychological research studies. The importance of having a sense of life meaning and purpose is summed up by Pinquart (2002, p. 90) who stated ‘purpose in life is a defining feature of mental health.’ In the literature, the terms meaning and purpose are often used interchangeably. In this paper, we utilize Steger’s (2009) definition of life meaning to examine the psychometrics of a life meaning measure with a sample of Australian adolescents. Steger’s definition posits that life meaning involves two key components – comprehension and purpose. Comprehension relates to making sense of one’s life, while purpose relates to having an overall life mission (Steger, 2009).

Life meaning has been the focus of research in both sub-disciplines of existential and positive psychology. From an existential perspective, Frankl (1963) proposed that finding meaning is a primary human drive. With this premise, he created logotherapy to assist people to find meaning in their lives. Hoffman, Vallejos, Cleare-Hoffman, and Rubin (2015) reported that while little empirical research exists for outcomes of existential therapy approaches, components of existential therapy (including relationships, emotions and meaning) are backed by empirical research.

From a different perspective, positive psychology is concerned with the good life or what makes life worth living (Ryff & Singer, 1998). Life meaning has emerged in this context as one of many variables...
linked to psychological well-being. For example, Meaning forms one of the five pillars in Seligman’s (2011) PERMA model of well-being – it sits alongside Positive emotions, Engagement, Relationships and Accomplishment as key factors of influence.

Having a sense of meaning and purpose also forms one of three critical components of the ‘golden triangle of happiness’ (Australian Unity, 2015). The three aspects of the triangle include personal relationships, financial control and a sense of purpose. These components emerged as key factors influencing well-being from 15 years of data from 60,000 participants completing the Australian Unity Wellbeing Index (Australian Unity, 2015). Moreover, findings from research conducted by Vella-Broderick, Park, and Seligman (2009) show that life meaning has a role to play in psychological health. Drawing on data from 332 Australian adults, these authors found that three factors predicted well-being – life satisfaction, positive affect and negative affect. Meaning and engagement variables were also measured, and were shown to account for the biggest variance in the three predictor variables, after controlling for personality variables and socio-economic status. Other research with adult populations show life meaning to be positively associated with intrinsic religiosity, extraversion and agreeableness, and negatively associated anxiety and depression (Steger, Frazier, Oishi, & Kaler, 2006), respectively.

In addition to relationships being reported between life meaning and mental health, there is preliminary empirical evidence that life meaning is linked to physical health. Roepke, Jayawickreme, and Riffle (2014) conducted a recent systematic review to examine the evidence for associations between life meaning and physical health. The general conclusion was that higher levels of meaning are associated with improved physical health. However, the authors also indicated that the mechanisms and causal pathways by which these associations occur are presently unclear, and that further research is required.

In adolescents, life meaning appears to be related to mental and physical well-being. Henry et al. (2014) reported that life meaning may play a mediating and moderating role (in females and males, respectively) in the relationship between bullying and suicidal ideation. Kiang and Fuligni (2010) demonstrated that life meaning acts as a mediator in the relationship between ethnic identity and adjustment. Brassai, Piko, and Steger (2011) reported that a lack of life meaning was associated with poor psychological health and quality of life among Romanian adolescents. These authors also found that life meaning may play a protective role in physical health behaviours (e.g. drug use, sexual health, physical inactivity and diet). More recently, Wilchek-Aviad (2014) examined life meaning and suicidal tendencies in Ethiopian immigrant youth and native-born Israeli youth (n = 277). A negative relationship was found between suicidal tendencies and life meaning, with the author concluding that meaning in life is critical to reducing suicidal trends in youth from both cultural groups.

Given the above association between life meaning and well-being, further examination of the role that life meaning plays in facilitating health in young people is warranted. In order to investigate this construct in an Australian context, a valid instrument for measuring life meaning is required. Therefore, the purpose of the current study is to report on the psychometric properties of the Meaning in Life Questionnaire (MLQ, Steger et al., 2006) using an Australian adolescent sample. We believe this is the first study to explore how the instrument performs using this specific sample population.

**The Meaning in Life Questionnaire**

The MLQ was originally developed to improve the measurement of life meaning in a therapy context. It is a 10-item measure with two subscales – Presence (how meaningful one considers his/her life to be) and Search (a desire to discover new or more meaning in one’s life). Participants respond to each item on a 7-point Likert scale from 1 (‘absolutely untrue’) to 7 (‘absolutely true’), with item 9 reverse scored. An overall Life Meaning score can be obtained by summing responses to all 10 items (resulting in a maximum score of 70). A score can also be calculated for the Presence subscale by summing responses to items 1, 4, 5, 6 and 9 (with a maximum score of 35). Items on the Presence subscale are concerned with the degree to which participants feel they already have some source of meaning in their lives. For example, item 1 states ‘I understand my life’s meaning.’ Similarly, scores for the Search subscale can be calculated by summing participant responses to items 2, 3, 7, 8 and 10 (also resulting in a maximum
score of 35). Search items examine the extent to which an individual is searching for meaning in their lives. For example, item 3 states ‘I am always looking to find my life’s purpose.’ Higher scores indicate higher levels of presence or search for meaning.

The MLQ was initially derived from 44 items across three studies with American college students (Steger et al., 2006). It has been used in many studies since. Schulenberg, Strack, and Buchanan (2011) provided a comprehensive outline of comparison statistics on research using the MLQ. Of the 15 studies reported on by Schulenberg et al. (2011), 11 used college student populations (including American, Indian and Japanese), two used adult populations, and two used clinical populations (mentally ill patients, and a smoking cessation sample population). Across the studies, mean scores on the Presence subscale ranged between 21.15 (SD = 6.05) in a study of Spanish college students, and 28.16 (SD = 6.93) in a study involving mentally ill patients. For the Search subscale, the lowest mean score reported was 17.95 (SD = 6.95), again in the Spanish student population, while the highest mean score reported was 26.6 (SD = 6.97), again among those with mental illness.

The relationship between the two independent subscales of the MLQ (Presence and Search) and their well-being associations have received growing attention in the literature. One of the strengths of the MLQ is its ability to differentiate between the degree to which an individual reports life meaning, and the degree to which they are also seeking it. This allows for explorations of how having meaning, and searching for it separately and concurrently influence well-being.

Steger (2010) provides information on scoring and interpreting the MLQ. Individuals can theoretically highly endorse items on both subscales at the same time. That is, individuals can report currently experiencing meaning in their lives, and at the same time report that they are searching for additional meaning. Alternatively, individuals may endorse items more highly on the Presence subscale as compared with the Search subscale, suggesting that while they feel a sense of life meaning, they feel less of a desire to search for more meaning. An opposite combination of responses (more highly endorsed Search than Presence items), suggests that an individual may still be searching for meaning while having limited meaning in their life at the present time. A fourth theoretical combination may be low-scoring responses on all items, suggesting the respondent feels he/she lacks meaning, and at the same time, is not searching for it.

Steger (2010) reports that are no formal cut-off scores to determine what constitutes a high score or a low score on the MLQ. As such, other methods have been used to examine the range of MLQ scores with respect to psychological well-being variables. For example, Park, Park, and Peterson (2010) divided presence of meaning scores into quartiles to examine relationships between life satisfaction, search for meaning, and presence of meaning. These authors found negative relationships between life satisfaction and search for meaning in three quartiles of presence scores (0–25%; 26–50%; 50–75%), with the only exception those scoring in the top 25% (76–100%) of the sample. This suggests that searching for meaning was only related to life satisfaction when individuals already have meaning in their lives. In a separate example, Cohen and Cairns (2010) conducted a study with 106 Australian adults to examine relationships between presence and search for meaning and depression/happiness scores. They utilized bivariate scatterplots and correlations to examine relationships between the variables, and reported that ‘participants who reported high levels of search for meaning and low levels of presence of meaning in life, recorded clinical levels of depression’ (p. 3).

With adult samples, the general trend appears to be that endorsing Presence items more highly than Search items is associated with better psychological well-being (Cohen and Cairns, 2010; Park et al., 2010). However, the inverse also appears to be true. That is, poor mental health (including clinical levels of depression) has been associated with the combination of lower Presence, and higher Search scores (Cohen and Cairns, 2010; Park et al., 2010). Intriguingly, when individuals have high scores on Presence and Search simultaneously, they also report high levels of psychological well-being (Cohen and Cairns, 2010). Steger, Oishi, and Kashdan (2009) similarly observed this pattern with older adults.

While particular patterns of responses (with respect to Presence and Search scores) and well-being outcomes appear to be consistent across adults samples, different relationships seem to exist when examining data from younger participants. While the researchers did not use the MLQ, Bronk, Hill,
Lapsley, Talib, and Finch (2009) found that purpose in life was associated with life satisfaction across three age groups of adolescents, emerging adults, and adults. Searching for purpose, however, was only related to life satisfaction in the adolescent and emerging adult data-sets. Further research is warranted.

Other studies using the MLQ have reported higher scores on the Search subscale compared to scores on the Presence subscale in younger samples (Brassai, Piko, & Steger, 2012; Steger et al., 2009). One proposal is that searching for meaning may be part of the normal adolescent development process. Steger et al. (2006) noted that it may be part of identity formation, and Steger, Bundick and Yeager (2012) outlined the developmental aspects of life meaning (i.e. cognitive development, identity and self-understanding, and social modelling, respectively).

While more research is needed to understand the mechanisms by which life meaning develops and emerges in adolescence, a starting point is having a valid measurement instrument. To date, the psychometric properties of the MLQ have been reported using American, Chinese, Romanian and Argentinean adolescent samples. However, it is yet to be validated for use with Australian adolescents.

Kiang and Fuligni (2010) used the MLQ to investigate the role of life meaning in American youth with varied ethnic backgrounds (Latin, Asian and European American). Using data from a sample of 579 high school students, the MLQ was found to have internal consistency. The Cronbach alpha levels ranged between .84 and .91 for Presence, and between .87 and .90 for Search across the three groups. Group modelling analyses were conducted to examine the structural validity of the measure, and the following results were reported using the combined group data: chi-square ($\chi^2$) goodness-of-fit (34) = 142.82, $p < .000$; comparative fit index (CFI) = .97; and Root Mean Square Error of Approximation (RMSEA) = .08.

As well as Kiang and Fuligni’s (2010) research with American adolescents, Zhang and Xu (2011) examined the psychometric properties of the MLQ in a sample of Chinese high school students ($n$ = 744). This research focused on comparing life meaning in students who had or had not been exposed to a disaster (earthquake). The authors concluded that the MLQ had ‘good usability’ with this population. Specifically, they reported the measure had satisfactory internal consistency ($\alpha = .81$ for Presence and $\alpha = .79$ for Search). Exploratory factor analysis (EFA) revealed two factors, and the measure had adequate construct validity and test-retest reliability over a four-week period. A more recent study by Zhang and Xu (2013) also used the MLQ with Chinese adolescents; however psychometric properties of the measure were not reported in the translated abstract.

In a related adolescent study, Brassai et al. (2012) administered the MLQ to examine existential attitudes in Romanian high school students ($n$ = 426). In this sample, the mean score for Search ($M = 25.00$, $SD = 5.9$) was higher than the mean score for Presence ($M = 22.90$, $SD = 6.5$). The measure showed internal reliability ($\alpha = .81$ for Presence, and $\alpha = .79$ for Search), and a two-factor structure emerged from an EFA. Item loadings ranged between .67 and .82, and the two factors accounted for 57.6% of total variance. Confirmatory factor analysis (CFA) results were also included in this paper; $\chi^2$ goodness-of-fit (34) = 172.86, $p < .000$, CFA = .96, and RMSEA = .10.

Further, Gongora and Solano (2011) investigated how the MLQ performed using a sample of Argentinean adolescents ($n$ = 180). Cronbach alpha levels of $\geq 80$ were reported for both Presence and Search subscales. Similar to Zhang and Xu (2011) and Brassai et al. (2012), a two-factor structure emerged from EFA, with the two factors accounting for 47.11% of variance. Gongora and Solano also conducted a CFA on their data. They reported a better fit if item 9 was not included (this item is reverse scored, and it reads ’my life has no clear purpose’). However, the translated abstract did not indicate if these CFA results were specific to adolescent data, or if they also encompassed the adult data ($n$ = 707) collected as part of the study.

From the review of current literature, life meaning appears to be a factor influencing psychological well-being in both adult and adolescent samples. Research using the MLQ as a measurement tool for assessing meaning allows for greater understanding of two contributing factors – presence of meaning and search for meaning. The MLQ has been used extensively in adult research, and more recently with adolescents. Having a valid measurement tool to examine this construct in Australian adolescents would enable clinicians to assess the degree to which clients may be experiencing a lack of meaning in their lives, and to intervene accordingly. As such, the purpose of this study is to investigate how the
MLQ performs using data from a sample of Australian adolescents. Consistent with previous research, it was hypothesized that the MLQ would have internal consistency; and that the MLQ data would fit a two-factor model proposed by the original scale authors, using CFA.

**Method**

**Participants**

One hundred and thirty-five participants (25.2% male and 74.8% female; age range 12–18 years; $M = 15.18$ years, $SD = 1.42$) were recruited as part of a broader doctoral project investigating relationships between positive emotion and life satisfaction. The doctoral project included three testing times. Data used in this study were from testing Time 1 ($n = 135$), collected between May and July in 2006. The majority of the sample in this study (66%; $n = 89$) attended private high schools in Brisbane, Queensland, Australia.

**Measures**

The MLQ was administered to participants as part of a larger test battery. As previously outlined, each subscale comprises 5 items on a 7-point scale (1 = Absolutely Untrue, 7 = Absolutely True). Item 9 is reverse scored. Presence and Search scores are derived by summing responses to items on each subscale (Presence = 1, 4, 5, 6, 9; Search = 2, 3, 7, 8, 10). The MLQ has good internal consistency, with Cronbach alpha levels for both subscales ranging from .86 to .88 (Steger et al., 2006).

**Procedure**

The broader doctoral study received ethics approval from the Psychology Ethics Committee at the University of Southern Queensland. The study design included a control and experimental group. Principals from two independent high schools in Brisbane, Queensland, were approached to assist with recruiting participants for the control group of study. Following permission from Principals, information packages and consent forms were sent home to parents/guardians. Young people with parent/guardian consent completed questionnaire packages at school at three testing times (in May, June, and October). These time frames coincided with pre, post, and 3-month follow-up of an intervention programme attended by participants in the experimental group.

For the experimental group, data were collected at the site of a national youth development programme in Sydney, New South Wales, Australia. As part of programme registration procedures, information sheets and consent forms outlining the study were sent home to parents/guardians. Participants with consent were invited to complete the questionnaire battery upon arrival and at the conclusion of the youth programme. They were also followed up by mail 3 months later. The first author of this paper collected the data at all three sites. She was employed at one of the high schools where the data was collected in 2006, and was a volunteer for the organization conducting the youth programme.

**Data screening and analysis**

Cases with no missing values on MLQ data were utilized in this study ($n = 135$). As per MLQ administration instructions, item 9 was reverse scored prior to analysis. Histograms and Mahalanobis distance were used to examine the data-set for any univariate outliers. To identify outliers, $z$ scores for all predictor scores were calculated to identify $z$ scores with a likelihood occurrence of 1 in 1000 ($z > 3.29$). No univariate outliers were found. Histograms were generated and examined for assumptions of normality. There was no evidence of skewness or kurtosis in the histograms for 8 out of the 10 items. Two items were skewed, however were well within a range of +/- 1 so analyses were conducted using methods for normally distributed data.
The structural validity of the MLQ was examined using a CFA with Maximum Likelihood Estimation in AMOS (Arbuckle, 1999). As there can be more than one model with good fit of the data (Kline, 2013), we tested the most parsimonious model as a point of comparison. This model comprised of one latent variable (Life Meaning), rather than the two latent variables (Presence and Search) in the two-factor model. In the one-factor model (see Figure 1), direct paths from all items to an overall Life Meaning variable were specified. In the two-factor model (see Figure 2), direct paths from each subscale factor (Presence and Search) to their respective items were specified. A correlation between the latent variables was also specified. A number of fit indices were considered. As per Iacobucci’s (2010) recommendations, $\chi^2$, standardized root mean square residual (SRMR) and the CFI results for both models are reported to examine model fit.

**Results**

**Descriptive statistics**

Results of descriptive statistics and scale analyses for the MLQ can be seen below in Table 1. The mean score for Search was higher than the mean score for Presence in this sample, but this difference is not significant. Scale reliability analysis indicated acceptable alpha levels for both subscales.
Structural validity of MLQ

Standardized regression coefficients and squared multiple correlations for the one-factor and two-factor model can be seen in Figures 1 and 2, respectively. For example, in Figure 1, the regression coefficient of .68 between item 1 (MLQ_1) and Life Meaning indicates that a difference of 1 standard deviation on Life Meaning predicts a difference of .68 standard deviations on item 1 (Kline, 2013). The squared

Table 1. Descriptive statistics for the Meaning in Life Questionnaire (n = 135).

| Subscale | Mean (LCL–UCL) | SD | Items | α   | Score range |
|----------|----------------|----|-------|-----|-------------|
| Presence | 23.14 (22.13–24.15) | 5.96 | 1, 4, 5, 6, 9 | .82 | 6–35        |
| Search   | 24.41 (23.37–25.45) | 6.17 | 2, 3, 7, 8, 10 | .84 | 5–35        |

Notes: LCL = 95% lower confidence limit; UCL = 95% upper confidence limit; higher scores indicate higher levels of Presence and Search.

Structural validity of MLQ

Standardized regression coefficients and squared multiple correlations for the one-factor and two-factor model can be seen in Figures 1 and 2, respectively. For example, in Figure 1, the regression coefficient of .68 between item 1 (MLQ_1) and Life Meaning indicates that a difference of 1 standard deviation on Life Meaning predicts a difference of .68 standard deviations on item 1 (Kline, 2013). The squared
multiple correlation above item 1 (.47) indicates that 47% of its variance is accounted for by the Life Meaning variable (Schieriber, Stage, King, Nora, & Barlow, 2006).

In the one-factor model, five out of the ten regression coefficients were between .10 and .30. Suhr (2006) standardized path coefficients with absolute values below .10 are considered to be small effects, and below .30 to be moderate effects. In addition to the small-to-moderate regression coefficients, the one-factor model also had five factors accounting for little shared variance on the latent variable Life Meaning (e.g. items 2, 3, 7, 8 and 10 each accounted for variances ranging between 1% and 7%).

Conversely, in the two-factor model, all of the regression coefficients were above .50. Absolute values above .50 are considered large effects, according to Suhr (2006). Item 9 (Presence subscale) and item 10 (Search subscale) accounted for the least variance in each of the subscales with 26% and 29% of variance, respectively. The latent variables of Presence and Search showed a small and non-significant correlation ($r$ = −.13).

Model fit results for the one-factor model included $\chi^2$ goodness-of-fit (35) = 312.00, $p < .001$; SRMR = .23; and CFI = .47. CFA results for the two-factor model included $\chi^2$ goodness-of-fit (34) = 73.93, $p < .001$; SRMR = .10; and CFI = .92.

**Discussion**

Results from the current sample of Australian youth supported the hypotheses, and were generally consistent with previous research investigating the psychometric properties of the MLQ. Specifically, the measure was found to have satisfactory internal consistency, supporting the first hypothesis. The alpha level for the Presence subscale (.82) was consistent with alpha levels reported in Schulenberg et al. (2011), which ranged from .81 to .93 across 15 studies. This result is also consistent with results reported by Kiang and Fuligni (2010), Zhang and Xu (2011), Brassai et al. (2012) and Gongora and Solano’s (2011) with other adolescent samples. Similarly, the alpha level of the Search subscale (.84) was comparable to the alpha levels reported in Schenburg et al., which ranged from .83 to .93. Again, this result was congruent with results reported by Kiang and Fuligni, Zhang and Xu, Brassai et al., and Gongora and Solano with adolescents from America, China, Romania and Argentina. With respect to descriptive statistics, mean scores for both subscales were similar to those reported by Brassai et al., and the relationship between the two subscales scores reported by these authors (i.e. higher mean score on Search compared to Presence) was also evident in the results of this study. This lends support to the premise that search for meaning may be a normal process associated with adolescent growth and development. Exploring this idea with Australian adolescents is an area for future research.

The second and final hypothesis was that the data would fit the two-factor model proposed by the original scale authors. CFA results of both of the models tested supported this hypothesis. With respect to regression coefficients, half of the paths for the one-factor model had low-to-medium effect sizes, while all ten of the paths for the two-factor model had large effect sizes (above .50). Indicators in the one-factor model also explained low proportions of variance on the latent variable of Life Meaning. Conversely, on the two-factor model, the majority of indicator variables shared proportions of variance with their latent variable.

Results of the two-factor model were also consistent with those identified in previous research. For example, Gongora and Solano (2011) reported that CFA would provide better fit if item 9 was removed. In our two-factor model, the proportion of shared variance for item 9 with Presence was also low (26%). The other item of interest in our two-factor model was item 10, which shared only 29% of variance with the Search latent variable. Steger et al. (2006) explained that while developing the MLQ, the challenge was to include enough items to fulfil psychometric needs (e.g. internal reliabilities), while at the same time balancing best fit of the model. This may explain why these items performed less well than other indicator variables in the two-factor model.

In addition to regression coefficients and variances, a number of fit indices were examined as part of the CFA. $\chi^2$, SRMR and the CFI were considered as fit indices (Iacobucci, 2010). The $\chi^2$ result was significant for both models ($p < .001$), which is not ideal. However, $\chi^2$ increases with sample size, and Iacobucci
L. M. Rose et al. (2010, p. 91) stated that 'a $\chi^2$ will almost always be significant (indicating poor fit) even with only modest sample sizes.' In an attempt to address this, an adjustment to $\chi^2$ is made by some researchers, which involves dividing the $\chi^2$ by the degrees of freedom. Marsh and Hocevar (1985) reported that different researchers have used a range of $\chi^2/df$ ratios to suggest acceptable model fit. These ranged from under two, and up to five. When this calculation was applied to one-factor model (i.e. $312/35 = 8.91$), the adjusted $\chi^2$ was greater than five, suggesting poor model fit. When this calculation was applied to the two-factor model (i.e. $73.92/34 = 2.17$) the adjusted $\chi^2$ was between two and $K$three, suggesting good model fit.

The SRMR was the second of the fit indices to be considered. Iacobucci (2010) reported that the SRMR is a ‘badness-of-fit’ index, where values close to 1 indicate a poor fit. The SRMR result for the one-factor model was .23, suggesting a poorer fit. The SRMR result for the two-factor model was .10, suggesting acceptable model fit. Lastly, CFI results were examined. CFI is a ‘goodness-of-fit index’, where values close to 1 indicate a good fit (Iacobucci, 2010). For the one-factor model, the CFI result of .47 suggests a poor fit. The current result of .92 for the two-factor model suggests acceptable model fit based on this criterion.

The combined results of the internal reliability analysis and CFA results suggest that the two-factor MLQ has adequate psychometric properties with this population of Australian adolescents. This is despite the small sample size, which we recognize falls short of Schieriber et al’s (2006) recommendation of 10 cases per estimated parameter in the model. Nevertheless, our two-factor CFA findings showed acceptable regression coefficients, and the majority of items shared proportions of variance with their respective latent variable (either Presence or Search). These results are comparable with those of the original scale authors (Steger et al., 2006), and other studies since (Brassai et al., 2012).

**Conclusion**

This is the first published study of the psychometric properties of the MLQ using an Australian adolescent sample. The current Australian youth data support the MLQ as a reliable, two-factor measure of life meaning of young people. The MLQ has application in therapy settings, to assist clinicians to explore levels of life meaning with adolescent clients and tailor interventions accordingly. Given the potential for life meaning to influence health behaviours (e.g. physical activity and diet behaviours), the measure also has potential value in health promotion settings. Future research could explore the role of life meaning in preventing mental illness and promoting healthy behaviours in Australian youth.

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