Have You Found What You Are Looking For?

Relating the search for and Presence of Meaning

in Life to Depression and Anxiety

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Abstract

Globally, it is estimated that 5% of adults currently suffer from depression, and 4% of people currently experience an anxiety disorder. These disorders have the highest disease burden of nearly all of the most common mental health disorders. Several studies have found a negative association between meaning in life and anxiety, and depression symptoms. Few studies have investigated the relationship between these symptoms and the search for meaning in life and the presence of meaning in life. No study has investigated this in a representative sample. This correlational study investigates whether the search for and the presence of meaning in life are independently associated with anxiety symptoms, depression symptoms, and the comorbidity of anxiety and depression symptoms in a representative sample (n = 1511). The bivariate correlations show that there is a statistically significant strong to moderate negative association between the presence of meaning in life anxiety symptoms, depression symptoms, and their comorbidity, and a weak positive association between the search for meaning in life and those variables. This means that the negative association between meaning in life and anxiety symptoms, and depression symptoms found by other research, is driven by the absence of meaning in life rather than a lack of search for meaning in life. This study should therefore inform future research into how interventions in the experienced presence of meaning in life might alleviate anxiety and depression symptoms.

Keywords: anxiety symptoms, depression symptoms, search for meaning in life, presence of meaning in life

Introduction

Globally, it is estimated that 5% of adults currently suffer from depression (WHO, 2023), and 4% of

people currently experience an anxiety disorder (WHO, 2023). Depression and anxiety disorders have

the highest disease burden of nearly all of the most common mental health disorders, and their

disease burden exceeds that of cancer and cardiovascular diseases (GBD 2019 Mental Disorders

Collaborators, 2022; Reddy, 2010). This disease burden results in a 15% suicide risk for people who

experience major depressive disorder, and a heightened suicide risk, independent from mood and

personality disorders, for panic and post-traumatic stress disorder (Nepon, et al., 2010; Orsolini, et

al., 2020)

That depression and anxiety are often discussed in conjunction should not be a surprise given

the strong comorbidity between these disorders. One major study found a 45.7% comorbidity rate

between life-time major depressive disorder and life-time anxiety disorder (Kessler, et al., 2015).

Depression and anxiety are not unique in this regard. More generally, "comorbidity is the rule, rather

than the exception" for mental health disorders (Krueger & Eaton, 2015, p. 27).

Coupled with the dimensionality of mental health struggles, the biopsychosocial models of

disorders, and the heterogeneity of symptoms within these disorders, these high rates of

comorbidity have kindled interest in transdiagnostic approaches to mental health (Dalgleish, et al.,

2020; Krueger & Eaton, 2015). These transdiagnostic approaches are not equally reformist in their

aims. Some try to find factors underlying the diagnoses while maintaining the diagnostic taxonomy

provided by, for instance, the DSM-5. Other approaches abandon diagnostic taxonomies completely

in favor of understanding mental health struggles solely through their shared underlying factors

(Dalgleish, et al., 2020). This research is more typical of the former than the latter approach, because

it focuses on meaning in life as a transdiagnostic factor for both depressive and anxiety disorders as

understood by the DSM-5.

Meaning in Life

Meaning in life is a multifaceted construct related to coherence in life, goal-directedness, purpose, well-being, etc. (Steger, et al., 2006). Opinions on what constitutes a meaningful life are diverse: pursuing important goals (Klinger, 1977), the satisfaction of informed desires (Sobel, 1994), achieving one's potential (Maslow, 1971), etc. Note, however, that these are all subjectivist notions of what makes a life meaningful. Thus, meaning in life is a subjectivist construct. It can be constituted in an infinite amount of ways, which means that what makes my life meaningful can differ greatly from what makes your life meaningful (Steger, et al., 2006).[1]

However, this does not mean we cannot get an objective measure of the subjectively experienced level of meaning in people's lives. It also does not mean we can only investigate meaning in life as a whole (e.g. by asking "Do you feel your life is meaningful?"), as long as we do not parse the construct along substantive lines (i.e. ask about specifics goods that might make life meaningful, like friendships, wealth, health, etc.). The meaning in life questionnaire (MLQ), which this study uses, does this by dividing its ten items equally over the subconstructs the "search for meaning in life" (e.g. "I am seeking a purpose or mission for my life") and the "presence of meaning in life" (e.g. "My life has a clear sense of purpose") (Steger, et al., 2006).

Current Research

The distinction between the search for and the presence of meaning in life takes center stage in our research. As mentioned, this research tries to add to the transdiagnostic approaches to depression and anxiety disorders through investigating their association with the experienced meaning in one's life.

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[1]This means that, in the field of psychology, objectivist theories of well-being (e.g. objective list theories, which state that there are certain goods that are objectively good or conducive to ones well-being) are rejected (Crisp, 2021; Rice, 2013). It further means that important objections to subjectivism about meaning in life, like Rawls' example of a brilliant mathematician who only finds meaning in counting blades of grass, are largely ignored (Rawls, 1971).

Accumulating evidence suggests that meaning in life is associated with depressive and anxiety symptoms. A study on new army recruits found a statistically significant negative correlation between meaning in life and depressive symptoms (r = -.55) (Kleftaras & Psarra, 2012). Another study on adults recruited through Mechanical Turk, found that meaning in life explained a statistically significant part of the variance in anxiety, specifically related to health (R^2 *change* = .07) (Yek, et al., 2017). However, the focus on health anxiety, and the fact that the psychometric validity of the Purpose in Life Test, which the Klefteras and Psarra study uses to assess meaning in life, has long been disputed, also exemplify some of the limitations in current research (Crumbaugh & Maholick, 1964; Dyck, 1987). The most convincing evidence for the association between meaning in life and depressive and anxiety symptoms, might therefore be the recent meta-analysis on the association between the closely related construct purpose in life, and anxiety and depression symptoms: including 99 studies with a total of 66648 participants, the meta-analysis found statistically significant negative correlations between purpose in life and depression symptoms (r = -.49), and purpose in life and anxiety symptoms (r =-.36) (Boreham & Schutte, 2023). Thus, feeling a strong purpose to your life is associated with low levels of depression and anxiety symptoms, and feeling there is little purpose to your life is associated with higher levels of depression and anxiety symptoms; this relationship being somewhat stronger for depression symptoms than anxiety symptoms. However, from this we cannot conclude that these disorders have the same relation to the subconstructs of meaning in life as presented by the MLQ.

Hypotheses

The research on the association between meaning in life, and especially its subconstructs the search for and the presence of meaning in life specifically, and depressive and anxiety disorders is limited. And the research that exists is often also limited by its scope in participants (e.g. samples limited to army recruits, Chinese high school students, etc.) and subject (e.g. only pertaining to health anxiety) (Chen, et al., 2021: Kleftaras & Psarra, 2012; Yek, et al., 2017). Besides filling this gap in the research with a more fine-grained look at meaning in life in a more representative sample, this

research is also motivated by the following two reasons: First, scientific rigor. As mentioned, it would be premature to conclude that, because both disorders are associated with lower meaning in life, they relate to meaning in life in the same way when we take into account the subconstructs. Second, understanding these relations could be important for eventually translating this research into the meaning of life to clinical practice. Treating low search for meaning in life might arguably require different interventions (e.g. developing awareness of potential sources of meaning) than increasing the presence of meaning in life (e.g. activation-based interventions that increase the pursuit of sources of meaning).

Despite the limited research on the search for and presence of meaning in life, and its association with depressive and anxiety symptoms, we can theorize about how they might differentially relate to each other. Depressive disorders are generally typified by a depressed mood, a reduction in or loss of interest and pleasure, fatigue, suicidal ideation, etc. (American Psychiatry Association, 2013). These symptoms of depression might be related to meaning in life in the following way: loss of interest and fatigue might be indicative of a low search for meaning in life, while depressed mood and suicidal ideation might be more strongly associated with a lack of meaning in life. This leads us to our first hypothesis:

H1. Symptoms of depression negatively correlate with both the search for meaning in life and the presence of meaning in life.

Anxiety disorders are generally typified as consisting of excessive worrying, uncontrollable worrying, and physical symptoms (dizziness, rapid heartbeat, shallow breathing, etc.) (American Psychiatry Association, 2013). What triggers these anxiety symptoms, the object of anxiety, differs between the different anxiety disorders. Meaning of life might be related to these symptoms, not through a lack of search for meaning, but through an unanswered search for meaning in one's life.

That is, the prospect of a life without meaning combined with an unanswered search for meaning, might be more indicative of anxiety. This leads us to our second hypothesis:

H2. Symptoms of anxiety negatively correlate with the presence of meaning in life, but not with the search for meaning in life.

As mentioned, there is significant comorbidity between depression and anxiety disorders. We would therefore be remiss if we did not include this in our study. Our previous hypotheses suggests that symptoms for depression and anxiety both negatively correlate with the presence of meaning in life, but that they are differently associated with search for meaning in life. This leads us to our third and final hypothesis:

H3. The comorbidity of symptoms of depression and symptoms of anxiety negatively correlates with the presence of meaning in life, but not with search for meaning in life.

Method

Participants

The study included 1725 participants, 1511 of which filled out all the instruments used for this study. 1120 (64.9%) identified as female, 605 (35.1%) identified as male. The participants' average age was 53.93 years old (SD = 12.76 years, range: 29 to 83 years old).

Materials

Depression symptoms were measured using the Inventory of Depressive Symptoms (IDS) (Rush, et al., 1986). The scale contains 30 items assessing the presence of depression symptoms, rated on a 4-point scale ranging from 0 to 3 (M =14.3 , SD = 11.12).[2]

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[2] Cronbach's α cannot be reported, because NESDA does not provide item scores, only scale scores.

Anxiety symptoms were measured using Beck's Anxiety Inventory (BAI) (Beck, et al., 1988). The scale contains 21 items assessing the presence of anxiety symptoms, rated on a 4-point scale ranging from 0 to 3 (M =7.49 , SD = 7.71).[3]

The search for meaning in life, and the presence of meaning in life were measured using the Meaning in Life Questionnaire (MLQ) (Steger, et al., 2006). The scale contains 10 items in total measured on a 7-point Likert scale (Cronbach's α = .751, M = 41.26, SD = 8.80), with 5 items measuring the search for meaning in life (Cronbach's α = .853, M = 18.99, SD = 6.39), and 5 items measuring the presence of meaning in life (Cronbach's α = .845, M = 22.27, SD = 6.12).

Procedure

We used the Netherlands Study of Depression and Anxiety (NESDA) dataset (wave 7). NESDA is a multi-institution longitudinal study into the prevalence and etiology of depression and anxiety. On average assessments, which involved instruments other than the ones included in this study, took 4 hours and were complete in a single sitting. Assessments were administered by trained staff. Participants received 15 euro as a reward for participating in the study. The NESDA study was approved by the VU University Medical Centre Ethical Review Board and ethical review boards of all other participating universities (Penninx, et al., 2008).

Design and Data Analysis

This is a correlational study concerning the association between depression and anxiety symptoms and the search for, and presence of meaning in life. The dependent variables are: a) depression symptoms, b) anxiety symptoms, and c) the interaction between depression symptoms and anxiety symptoms (i.e. the comorbidity between the two). The independent variables are: d) search for meaning in life, and e) presence of meaning in life.

We used bivariate correlational analysis to determine the strength and direction of the associations between the independent and dependent variables. We ran three hierarchical

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[3] Cronbach's α cannot be reported, because NESDA does not provide item scores, only scale scores.

regressions, one for each dependent variable, to determine whether the independent variables (the search for, and presence of meaning in life) are independently associated with either dependent variable (depression symptoms, anxiety symptoms, and their comorbidity).

Results

Assumptions for both the bivariate correlations and hierarchical regressions were met. Residuals plots between the independent and dependent variables showed no discernable pattern, and thus indicate a linear relationship between these variables and no heteroscedasticity. Normal P-P plots showed that the residuals were approximately normally distributed. Durbin-Watson tests showed that observations were independent. The VIF scores indicated that there was no multicollinearity between the search for and presence of meaning in life. Cook's distance indicated that there were no significant outliers.

Our first hypothesis (H1), which stated that we expect symptoms of depression to correlate negatively with both the search for meaning in life and the presence of meaning in life, was rejected. Although symptoms of depression did correlate negatively with the presence of meaning in life ($r = -.45$, $p < .001$), it did not negatively correlate with the search for meaning in life ($r = .19$, $p < .001$). Thus, low presence of meaning in life is associated with more severe symptoms of depression, but low search for meaning in life is not.

Our second hypothesis (H2), which stated that we expect symptoms of anxiety to negatively correlate with the presence of meaning in life, but not with the search for meaning in life, was confirmed. Symptoms of anxiety negatively correlated with the presence of meaning in life ($r = -.36$ $p < .001$), but they did not negatively correlate with the search for meaning in life ($r = .14$, $p < .001$). This means that low presence of meaning in life is associated with more severe symptoms of anxiety, but low search for meaning in life is not.

Our third and final hypothesis (H3), which stated that we expect the comorbidity of symptoms of anxiety and depression to negatively correlate with the presence of meaning in life, but not with the search for meaning in life, was confirmed as well. The comorbidity of anxiety and

depression symptoms negatively correlated with the presence of meaning in life ($r = -.35$, $p < .001$), but it did not negatively correlate with the search for meaning in life ($r = .12$, $p < .001$). This means that low presence of meaning in life is associated with a more severe comorbidity of anxiety and depression symptoms, but low search for meaning in life is not.

We also ran three hierarchical regressions to determine whether the search for meaning in life and the presence of meaning in life are independently related to depression symptoms, anxiety symptoms, and their comorbidity. Step 1) of each hierarchical regression included the demographic variables age and gender to reduce noise. Step 2) introduced the search for meaning in life. And step 3) introduced the presence of meaning in life.

The first hierarchical regressions pertained to depression symptoms. At step 1), both age and gender were statistically significant. At step 2), the variable search for meaning in life was added, which was a statistically significant predictor of depression symptoms, but in the opposite direction as hypothesized ($\beta = 0.19$, $p < .001$). Age and gender remained statistically significant. At step 3), the variable presence of meaning in life was added, which was a statistically significant predictor of depression symptoms ($\beta = -0.45$, $p < .001$). Age, gender, and the search for meaning in life remained statistically significant (see table 1). This means that the variables search for meaning in life and presence of meaning in life, were independent predictors of depression symptoms.

The second hierarchical regression pertained to anxiety symptoms. At step 1), gender was statistically significant. At step 2), the variable search for meaning in life was added, which was a statistically significant predictor of depression symptoms ($\beta = 0.17$, $p < .001$). Gender remained statistically significant. At step 3), the variable presence of meaning in life was added, which was a statistically significant predictor of depression symptoms ($\beta = -0.43$, $p < .001$). Gender, and the search for meaning in life remained statistically significant (see table 2). This means that the variables search for meaning in life and presence of meaning in life, were independent predictors of anxiety symptoms.

The third hierarchical regression pertained to the interaction between depression and anxiety symptoms. At step 1), gender was statistically significant. At step 2), the variable search for meaning in life was added, which was a statistically significant predictor of depression symptoms (β = 0.12, $p < .001$). Gender was no longer statistically significant. At step 3), the variable presence of meaning in life was added, which was a statistically significant predictor of depression symptoms (β = -0.36, $p < .001$). The search for meaning in life remained statistically significant, and gender was statistically significant again (see table 3). This means that the variables search for meaning in life and presence of meaning in life, were independent predictors of the comorbidity of depression and anxiety symptoms.

Table 1

Hierarchical Regression Depression

Variable	B	95% CI for B		$SE\ B$	β	R^2	ΔR^2
		LL	UL				
Step 1						0.013	0.013***
Constant	7.00***	3.68	10.33	1.70			
Age	0.07**	0.02	0.11	0.02	0.07**		
Gender	2.14***	0.95	3.33	0.61	0.09***		
Step 2						0.050	0.037***
Constant	0.57	-3.09	4.24	1.87			
Age	0.07**	0.03	0.12	0.02	0.08**		
Gender	1.89**	0.72	3.06	0.60	0.08**		
Search for meaning	0.34***	0.25	0.43	0.04	0.19***		
Step 3						0.252	0.202***
Constant	19.57***	15.82	23.32	1.91			
Age	0.06**	0.02	0.10	0.02	0.07**		
Gender	2.15***	1.12	3.19	0.53	0.09***		
Search for meaning	0.32***	0.24	0.34	0.04	0.18***		
Presence of meaning	-0.82***	-0.91	-0.74	0.04	-0.45***		

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 2

Hierarchical Regression Anxiety

Variable	B	95% CI for B		$SE\ B$	β	R^2	ΔR^2
		LL	UL				

Variable	B	95% CI for B		SE B	β	R^2	ΔR^2
		LL	UL				
Step 1						0.009	0.009**
Constant	4.05***	1.77	6.34	1.17			
Age	0.02	-0.02	0.05	0.02	0.03		
Gender	1.48***	0.67	2.30	0.42	0.09***		
Step 2						0.030	0.021***
Constant	0.76	-1.78	3.30	1.29			
Age	0.02	-0.01	0.05	0.02	0.03		
Gender	1.36**	0.55	2.17	0.41	0.09**		
Search for meaning	0.17***	0.11	0.23	0.03	0.14***		
Step 3						0.146	0.116***
Constant	10.62***	7.87	13.37	1.40			
Age	0.01	-0.01	0.04	0.02	0.02		
Gender	1.50***	0.73	2.26	0.39	0.09***		
Search for meaning	0.16***	0.11	0.22	0.03	0.14***		
Presence of meaning	-0.43***	-0.49	-0.37	0.03	-0.34***		

Note. *p < .05. **p < .01. ***p < .001.

Table 3

Hierarchical Regression Comorbidity Depression*Anxiety

Variable	B	95% CI for B		SE B	β	R^2	ΔR^2
		LL	UL				
Step 1						0.004	0.004
Constant	73.59	-16.76	163.94	46.06			
Age	0.76	-0.45	1.98	0.62	0.03		
Gender	33.84*	1.50	66.17	16.49	0.05*		
Step 2						0.017	0.013***
Constant	-32.03	-132.74	68.67	51.34			
Age	0.89	-0.32	2.01	0.62	0.04		
Gender	29.80	-2.37	61.97	16.40	0.05		
Search for meaning	5.55***	3.15	7.95	1.22	0.12***		
Step 3						0.144	0.127***
Constant	374.66***	266.24	483.08	55.27			
Age	0.61	-0.53	1.74	0.58	0.03		
Gender	35.47*	5.42	65.51	15.32	0.06*		
Search for meaning	5.16***	2.91	7.40	1.14	0.11***		
Presence of meaning	-17.64***	-19.98	-15.30	1.19	-0.36***		

Note. *p < .05. **p < .01. ***p < .001.

Exploratory Analysis: Sensitivity Analysis

We ran one additional hierarchical analysis to determine whether the association between the comorbidity of anxiety and depression symptoms and meaning in life would be independent from anxiety symptoms, and depression symptoms separately. The hierarchical regression took meaning in life as the dependent variable, and anxiety symptoms, depression symptoms, and their

comorbidity as independent variables. At step 1), both age and gender were statistically significant. At step 2), the variables anxiety symptoms and depression symptoms were added, depression symptoms were statistically significant, anxiety symptoms were not. Gender remained statistically significant and age was no longer statistically significant. At step 3), the variable comorbidity of anxiety and depression symptoms was added, which was not statistically significant. Gender and depression remained statistically significant (see table 4). This means that the association between comorbidity of anxiety and depression symptoms and meaning in life is not independent from the association between depression symptoms and meaning in life.

Table 4

*Sensitivity Analysis Comorbidity Depression*Anxiety*

Variable	B	95% CI for B		SE B	β	R^2	ΔR^2
		LL	UL				
Step 1						0.007	0.004**
Constant	41.67***	39.05	44.28	1.33			
Age	-0.04*	-0.07	-0.01	0.02	-0.06*		
Gender	1.03*	0.10	1.97	0.48	0.06*		
Step 2						0.038	0.031***
Constant	42.64***	40.05	45.23	1.32			
Age	-0.03	-0.06	0.01	0.02	-0.04		
Gender	1.33**	0.40	2.52	0.47	0.07**		
Anxiety	0.01	-0.08	0.10	0.05	0.01		
Depression	-0.15***	-0.21	-0.08	0.03	-0.19***		
Step 3						0.040	0.002
Constant	42.29***	39.68	44.90	1.33			
Age	-0.03	-0.07	0.01	0.02	-0.04		
Gender	1.24**	0.31	2.17	0.47	0.07**		
Anxiety	0.10	-0.03	0.24	0.07	0.09		
Depression	-0.11**	-0.18	-0.04	0.04	-0.14**		
Comorbidity	0.00	-0.01	0.00	0.00	-0.13		

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

Discussion

The significant level of comorbidity between depression and anxiety symptoms, combined with dimensional views of psychopathology, biopsychosocial models, and the heterogeneity of symptoms, has driven transdiagnostic research on depression and anxiety, and psychopathologies more generally (Dalgleish, et al., 2020; Kessler, et al., 2015; Krueger & Eaton, 2015). One potential

transdiagnostic factor for anxiety and depression that has received attention is subjectively experienced meaning in life (Boreham & Schutte, 2023; Chen, et al., 2021: Kleftaras & Psarra, 2012; Yek, et al., 2017). We hypothesized that: (H1) depression symptoms would negatively correlate with both the search for meaning in life and the presence of meaning in life, (H2) anxiety symptoms would negatively correlate with the presence of meaning in life, but not with the search for meaning in life, and (H3) the comorbidity of depression and anxiety symptoms would negatively correlate with the presence of meaning in life, but not with the search for meaning in life. Our first hypothesis (H1) was disconfirmed, our second (H2) and third (H3) were confirmed.

The negative correlation between the presence of meaning in life and depression symptoms, anxiety symptoms and their comorbidity is moderate to strong. The search for meaning in life, on the other hand, is only weakly positively associated with these variables. The hierarchical regressions show that the search for meaning in life, and the presence of meaning in life are independently related to depression symptoms, anxiety symptoms, and their comorbidity. However, further analyses showed that the comorbidity of depression and anxiety symptoms is not independently associated with meaning in life; its association disappears when taking into account depression symptoms separately.

We theorized that the apathetic symptoms of depression, one of the core aspects of depressive disorders (American Psychiatry Association, 2013), would entail that people would be apathetic about meaning in their life, resulting in a low search for meaning. Our data does not support this view, and it is unclear why. One option is that the extent to which people seek meaning in life, while depressed, differs a lot. Some people might feel too apathetic to seek meaning; others might fully immerse themselves in the search for meaning as a way out of their depression. Although the association between depression symptoms and the search for meaning in life is positive, meaning the more severe the depression symptoms the more actively participants sought meaning in their life, this association is weak. A weak association between the two is consistent with a large degree of diversity in how actively people seek meaning when depressed.

The disconfirmation of the first hypothesis raises some doubts about the theorizing behind the second hypothesis, despite our data confirming our second hypothesis. We argued that anxiety symptoms, in the context of the construct of meaning in life, might be understood as an unanswered search for meaning in life. That is, severe anxiety symptoms would be associated with low presence of meaning in life, but not with a low search for meaning in life. This was confirmed by our data. However, our data also shows that the association between anxiety symptoms and search for meaning, and depression symptoms and search for meaning, hardly differ. This calls into question the idea that depression and anxiety symptoms are each related to the search for and presence of meaning in life in a distinct way, an idea the theorizing in support of our second hypothesis tried to push. Thus, although our second hypothesis was confirmed, our other results raise some doubts about the notion that this is because of the reason we postulated.

That we only found a negative association between the presence of meaning in life and our dependent variables (depression symptoms, anxiety symptoms, and their comorbidity), also suggests that the negative association between meaning in life (or purpose in life) and these dependent variables that other research has found, is mainly driven by an absence of experienced meaning in life. The subconstruct search for meaning in life is only weakly associated with the dependent variables. But perhaps more importantly, the direction of the association is positive, even though other research clearly points toward a negative association between anxiety and depressive symptoms on the one hand, and meaning or purpose in life on the other hand (Boreham & Schutte, 2023; Chen, et al., 2021: Kleftaras & Psarra, 2012; Yek, et al., 2017).

Limitations and Future Research

When it comes to the clinical use of our results, the greatest limitation of our research is its correlational nature. In some instances, the theoretical framework clearly supports a specific causal order over another, but that is not the case here. That is, although we can grasp how the absence of experienced meaning in life can cause symptoms of depression and anxiety, the reverse, symptoms

of depression and anxiety causing an absence of experience meaning in life, seems like a plausible order of events as well.

This means that further research into the causal order of the association between the presence of meaning in life and depression and anxiety symptoms is needed, before this research can inform our clinical practice. This research, however, need not start from scratch. Logotherapy, which aims at developing meaning in life as a way to treat all sorts of mental health disorders, has a decades old therapeutic tradition (Schulenberg, et al., 2008). And although it has not risen to prominence like behavioral therapy, cognitive therapy, and their amalgamation(s), both in clinical practice and in academic research, it has received some attention from researchers. To give some indication, this research suggests that logotherapy is effective in: increasing meaning in life and reducing symptoms of depression in depressed patients (Sun, et al., 2022), increasing hope in life in women that suffer from depression (Mohammadi, et al., 2014), reducing symptoms of depression in cancer patients (Koulaee, et al., 2018), and reducing anxiety about death in cancer patients (Heidary, et al., 2023). Research that looks to bridge the gap between our study, and other studies like it, and the clinical practice could therefore turn to this research on logotherapy.

Besides the correlational nature of our research, NESDA's use of the meaning of life questionnaire should also be scrutinized. If we reflect on the items the MLQ uses to assess the presence of meaning in life, three out of the five items clearly inquire after something other than the presence of meaning in one's life. If we take the construct of meaning in life to be closely related to that of purpose in life, we could argue that items 4 ("My life has a clear sense of purpose"), and 9 ("My life has no clear purpose") of the MLQ inquire after the presence of meaning in life (Steger, et al., 2006, p. 93). In contrast, although item 1 ("I understand my life's meaning") is used to measure the presence of meaning in life, it actually inquires after whether you know what makes your life meaningful (Steger, et al., 2006, p. 93). Something similar can be said for items 5 ("I have a good sense of what makes my life meaningful") and 6 ("I have discovered a satisfying life purpose") (Steger, et al., 2006, p. 93). These three items do not ask participants whether meaning is present in

their lives, but whether they find themselves in a certain epistemic position, namely that of knowing, sensing, or having discovered meaning or purpose. But one can be in such an epistemic position without meaning being present in one's life. Think of a parent who, after divorce and the loss of custody, realizes that their family life was what gave their life meaning and purpose. This person would understand their life's meaning, they would have a good sense of what makes their life meaningful, and they would have discovered a satisfying life purpose: having a family and taking care of them. This means that they will be in agreement with items 1, 5, and 6. However, given that they have lost their family life, this meaning would not be present in their lives. In short, we must question the construct validity of the subconstruct presence of meaning in life as featured in the MLQ.

One thing that is puzzling in light of this, is that Cronbach's α of the presence of meaning in life scale is high enough to suggest that the five items measure the same construct (Cronbach's α = .845), because the conceptual analysis suggests that 3 of the 5 items in the scale not only do not inquire after the intended target, namely the presence of meaning in life, while also suggesting that the other 2 items that do inquire after this. It is therefore unclear whether the 3 items inquiring whether the participant finds themselves in a certain epistemic position are not interpreted as such, and are instead interpreted as inquiring after whether meaning is present in their life, or whether our assessment that the other 2 items do inquire after the presence of meaning in life is erroneous.

A dispute about whether one of the key instruments used in our research measures what it intends to is of course a limiting factor of our research. Future research should therefore either use a different instrument to measure the presence of meaning in life that does not run into this problem, or it should include an analysis of whether the MLQ does in fact measure the presence of meaning in life.

The Meaningful Life Measure (MLM) might be a better alternative (Morgan & Farsides, 2009). The MLM, like the MLQ, measures meaning in life through several subconstructs (purposeful life, principled life, valued life, exciting life, accomplished life), derived via a factor analysis of responses to several other instruments that measure meaning in life (Morgan & Farsides, 2009),

namely the Purpose in Life questionnaire (Crumbaugh & Maholick, 1964), the Life Regard Index (Battista & Almond, 1973), and the Psychological Well-Being: Purpose in Life questionnaire (Ryff, 1989). The MLM also includes two items that inquire after a epistemic positions, namely item 17 ("I have discovered: ...no mission or purpose in life (1); ...clear-cut goals and a satisfying life purpose (7)"), and item 18 ("I have a clear idea of what my future goals and aims are") (Morgan & Farsides, 2009, p. 211). However, both items intend to measure the subconstruct purposeful life, and the constructs purpose in life and meaning in life differ in an important way: one can discover what makes one's life meaningful without having a meaningful life, but one cannot discover what gives purpose to one's life, without living a purposeful life. This is because creating or finding a purpose is a purely mental act. Similar to how setting a goal can create a goal-directed life. Thus, in discovering one's purpose, one's life becomes purposeful. For a life to be meaningful, on the other hand, it generally requires certain goods to materialize (e.g. friendships, romantic relationships, a family, health, fame, etc.). This is why the MLM items do not fall prey to the same objections raised for the MLQ items. Another thing to note is that unlike the MLQ, the MLM does not distinguish between the search for and the presence of meaning in life. However, given that we only found a weak correlation between search for meaning in life and anxiety and depression symptoms, the impact of omitting the search for meaning in life might only be minimal.

As for analyses of whether the MLQ actually measures presence of meaning in life, one can use confirmatory factor analysis to empirically assess the construct validity of a construct (O'Leary-Kelly & Vokurka, 1998).

Conclusion

There is a moderate to strong negative correlation between the presence of meaning in life and anxiety symptoms, depression symptoms, and the comorbidity of anxiety and depression symptoms. The search for meaning in life, on the other hand, is only weakly positively correlated to these variables. This means that the association between meaning in life and anxiety symptoms, depression symptoms, and their comorbidity established in the literature, is driven by the absence of

meaning in life rather than the lack of a search for meaning in life. Due to its correlational nature, we cannot formulate any clinical advice based on this study. However, this study should inform further research into how interventions in the perceived presence of meaning in life, perhaps through the use of logotherapy, might alleviate anxiety and depression symptoms.

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